



Otter Tail Power Company
Before the
North Dakota Public Service Commission

Application for Authority to
Increase Electric Rates in North Dakota
Case No. PU-23

November 2, 2023

Volume 4A
Work Papers

PUBLIC DOCUMENT - NOT PUBLIC DATA HAS BEEN EXCISED



**Otter Tail Power Company
North Dakota General Rate Case Documents
Case No. PU-23-**

Work Papers

A. 2024 Test Year Workpapers

1. Jurisdictional Cost of Service Study (JCOSS)
2. Class Cost of Service Study (CCOSS)
3. Functionalization
4. Input Summary
5. 2024 Test Year Adjustments
 - TY-01 – Normalized Plant in Service
 - TY-02 – Rate Case Expenses
 - TY-03 – Director Restricted Stock
 - TY-04 – Pension_OPEB Benefits
 - TY-05 – Rider Revenue Removal
 - TY-06 – Investor Relations
 - TY-07 – LT Incentives
 - TY-08 – Employee Gifts and Recognition
 - TY-09 – ESSRP
 - TY-10 – Plant Outage Normalization

B. 2024 Regulatory Year Workpapers

1. Jurisdictional Cost of Service Study (JCOSS)
2. Functionalization
3. Input Summary
4. Work Papers A-D, ND

C. Interim Cost of Service Study

1. Jurisdictional Interim Cost of Service Study
2. Proposed Interim Test Year Adjustments
 - ITY-01 – Proration of Federal ADIT
 - ITY-02 – 2018 Incentive Comp Settlement
 - ITY-03 – Langdon Repower Rider Revenue

D. Bulkley Cost of Capital Workpapers

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget TEST YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	REFERENCE		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	RATE BASE		Page 2-1 Line 32		1,841,431,164		661,733,555		1,179,697,609		1
2											2
3	TOTAL AVAILABLE FOR RETURN		Page 7-1 Line 43		107,112,742		21,208,695		85,904,047		3
4											4
5	RATE OF RETURN EARNED				5.82%		3.21%		7.28%		5
6											6
7	RATE OF RETURN REQUESTED		Page 17-1 Line 11				7.85%				7
8											8
9	OPERATING INCOME REQUIRED						51,946,084				9
10											10
11	TOTAL AVAILABLE FOR RETURN						21,208,695				11
12											12
13	OPERATING INCOME DEFECIENCY						30,737,389				13
14											14
15	INCREMENTAL TAXES	GRCF =	1.322837				9,923,169				15
16											16
17	REVENUE INCREASE REQUIRED						40,660,558				17
18											18
19	PERCENTAGE INCREASE						22.26%				19
20											20
21											21
22											22
23											23
24											24
25	RETURN ON EQUITY						1.93%				25
26											26
27											27
28											28
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32											32
33											33
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OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget TEST YEAR 2024 - Simple Average

NORTH DAKOTA

LINE NO	ITEM	ALLOC	REFERENCE		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	ELECTRIC PLANT IN SERVICE		Page 3-1 Line 52		3,200,417,998		1,259,341,147		1,941,076,852		1
2											2
3	ACCUMULATED DEPRECIATION		Page 4-12 Line 22		(1,093,333,627)		(461,242,346)		(632,091,280)		3
4											4
5	NET PLANT EXCLUDING BIG STONE PLANT CAPITALIZED ITEMS				2,107,084,372		798,098,800		1,308,985,571		5
6											6
7	NET CAPITALIZED ITEMS - BIG STONE PLANT		Page 4-1 Line 28		0		0		0		7
8											8
9	NET ELECTRIC PLANT IN SERVICE				2,107,084,372		798,098,800		1,308,985,571		9
10											10
11	PLANT HELD FOR FUTURE USE		Page 4-1 Line 47		12,038		4,921		7,117		11
12											12
13	CONSTRUCTION WORK IN PROGRESS		Page 5-1 Line 31		1,770,919		780,995		989,924		13
14											14
15	MATERIALS AND SUPPLIES		Page 5-1 Line 39		33,967,093		14,737,569		19,229,523		15
16											16
17	FUEL STOCKS		Page 5-1 Line 46		10,476,711		4,495,117		5,981,594		17
18											18
19	PREPAYMENTS		Page 5-1 Line 49		49,187,428		18,630,686		30,556,742		19
20											20
21	CUSTOMER ADVANCES		Page 5-1 Line 51		(1,876,522)		(710,769)		(1,165,753)		21
22											22
23	CASH WORKING CAPITAL		Page 5-1 Line 53		6,322,479		1,464,908		4,857,571		23
24											24
25	ACCUMULATED DEFERRED INCOME TAXES		Page 6-1 Line 16		(365,513,353)		(175,768,672)		(189,744,681)		25
26											26
27	UNAMORTIZED BALANCE - SPIRITWOOD		Page 6-1 Line 19		0		0		0		27
28											28
29	UNAMORTIZED RATE CASE EXPENSE		Page 6-1 Line 22		0		0		0		29
30											30
31											31
32	TOTAL AVERAGE RATE BASE				1,841,431,164		661,733,555		1,179,697,609		32
33											33
34											34
35											35
36											36
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38											38
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OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget TEST YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	PLANT IN SERVICE										1
2	A/C 101 & 106 - Direct MN	Direct MN			61,800,001		0		61,800,001		2
3	A/C 101 & 106 - Direct ND	Direct ND			0		0		0		3
4	A/C 101 & 106 - Direct SD	Direct SD			0		0		0		4
5	Subtotal A/C 101 & 106 - Direct Assigned				61,800,001		0		61,800,001		5
6											6
7	PRODUCTION PLANT										7
8	A/C 101 & 106 - BASE DEMAND	E1			615,526,547		270,055,400		345,471,147		8
9	PEAK DEMAND	D1			409,182,398		161,565,372		247,617,026		9
10	BASE ENERGY	E2			466,637,663		209,898,508		256,739,154		10
11											11
12	SUBTOTAL A/C 101 & 106				1,491,346,608		641,519,280		849,827,327		12
13											13
14	A/C 114 - BASE DEMAND	E1			1,206,597		529,381		677,216		14
15	PEAK DEMAND	D1			381,658		150,697		230,960		15
16	BASE ENERGY	E1			0		0		0		16
17											17
18	SUBTOTAL A/C 114				1,588,255		680,078		908,176		18
19											19
20	TOTAL PRODUCTION PLANT	P10	310-317, 330-335, 340-347		1,492,934,862		642,199,358		850,735,504		20
21											21
22											22
23	TRANSMISSION PLANT										23
24	A/C 101 & 106	D2			550,572,537		215,798,006		334,774,531		24
25	A/C 101 & 106 (Direct FERC)	Direct FERC			274,079,794		0		274,079,794		25
26	A/C 114	D2			58,287		22,846		35,441		26
27											27
28	TOTAL TRANSMISSION PLANT		350-350.1, 353-356, 358		824,710,618		215,820,852		608,889,767		28
29											29
30											30
31	DISTRIBUTION PLANT										31
32	PRIMARY DEMAND	D3	360, 362, 364-365, 367		254,804,754		118,538,756		136,265,998		32
33	SECONDARY DEMAND	D4	365, 367-369.1		143,014,220		69,647,623		73,366,597		33
34	PRIMARY CUSTOMER	C2	364-365, 367		119,159,338		52,084,671		67,074,667		34
35	SECONDARY CUSTOMER	C3	365, 367-369.1, 370.2		87,138,987		38,091,927		49,047,061		35
36	STREETLIGHTING	C4	364-365, 367, 373		24,540,852		10,226,986		14,313,866		36
37	AREA LIGHTING	C5	364-365, 367, 371.2		15,570,818		8,488,723		7,082,095		37
38	METERS	C6	370		64,567,120		28,784,055		35,783,065		38
39	LOAD MANAGEMENT	C9	370.1		8,899,439		3,888,421		5,011,018		39
40											40
41	TOTAL DISTRIBUTION PLANT	P60			717,695,528		329,751,161		387,944,367		41
42											42
43											43
44	GENERAL PLANT										44
45	PRODUCTION	P10			41,841,785		17,998,620		23,843,165		45
46	TRANSMISSION	D2			19,903,693		7,801,292		12,102,401		46
47	DISTRIBUTION	P60			30,817,789		14,159,489		16,658,300		47
48	CUSTOMER ACCOUNTS	OXC			24,517,241		10,761,420		13,755,822		48
49	CUSTOMER SERVICE & INFO	OXI			5,696,124		2,508,909		3,187,215		49
50	LOAD MANAGEMENT	C9	397.3		165,980		72,521		93,459		50
51											51
52	TOTAL GENERAL PLANT	P90	389-398, 390.1-390.3, 391.1-391.6, 394.2, 397.1-397.2		122,942,613		53,302,252		69,640,361		52
53											53
54											54
55	INTANGIBLE PLANT	P90	302-303		42,134,377		18,267,524		23,866,853		55
56											56
57											57
58	TOTAL PLANT IN SERVICE	EPIS			3,200,417,998		1,259,341,147		1,941,076,852		58
59											59
60											60
61											61
62											62
63											63
64											64
65											65
66											66

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget TEST YEAR 2024 - Simple Average

NORTH DAKOTA

LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	ACCUMULATED DEPRECIATION										1
2	PRODUCTION PLANT										2
3	BASE DEMAND	E1	108, 115		(276,623,436)		(121,365,444)		(155,257,992)		3
4	PEAK DEMAND	D1	108, 115		(152,944,750)		(60,390,123)		(92,554,627)		4
5	BASE ENERGY	E2	108		(142,385,598)		(64,046,533)		(78,339,065)		5
6	Direct MN										6
7	TOTAL PRODUCTION PLANT				(571,953,785)		(245,802,101)		(326,151,684)		7
8											8
9											9
10	TRANSMISSION PLANT	D2	108, 115		(159,735,443)		(62,608,626)		(97,126,817)		10
11	TRANSMISSION PLANT (Direct FERC)	Direct FERC			(25,180,544)		0		(25,180,544)		11
12	TOTAL TRANSMISSION PLANT				(184,915,987)		(62,608,626)		(122,307,361)		12
13											13
14											14
15	DISTRIBUTION PLANT	P60	108, 115		(268,541,408)		(123,383,576)		(145,157,832)		15
16											16
17											17
18	GENERAL PLANT	P90	108		(50,534,999)		(21,909,647)		(28,625,352)		18
19											19
20											20
21	INTANGIBLE PLANT	P90	108		(17,387,448)		(7,538,396)		(9,849,052)		21
22											22
23											23
24	TOTAL ACCUMULATED DEPRECIATION				(1,093,333,627)		(461,242,346)		(632,091,280)		24
25											25
26											26
27	NET PLANT EXCLUDING BSP CAPITALIZED ITEMS				2,107,084,372		798,098,800		1,308,985,571		27
28											28
29											29
30	BSP CAPITALIZED ITEMS	P10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		30
31											31
32											32
33	TOTAL NET PLANT IN SERVICE	NEPIS			2,107,084,372		798,098,800		1,308,985,571		33
34											34
35											35
36											36
37											37
38											38
39											39
40											40
41											41
42	PLANT HELD FOR FUTURE USE										42
43	PRODUCTION PLANT	P10			0		0		0		43
44	TRANSMISSION PLANT	D2			9,038		3,542		5,496		44
45	DISTRIBUTION PLANT	P60			3,000		1,378		1,622		45
46	GENERAL PLANT	P90			0		0		0		46
47	INTANGIBLE PLANT	P90			0		0		0		47
48											48
49	TOTAL PLANT HELD FOR FUTURE USE		105		12,038		4,921		7,117		49
50											50
51											51
52											52
53											53
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61											61
62											62

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NORTH DAKOTA

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	CONST WORK-IN-PROGRESS - Direct Assigned										1
2	PRODUCTION PLANT - Direct MN	P10		Directly Assigned to Jurisdiction	0		0		0		2
3	PRODUCTION PLANT - Direct ND	P10		Directly Assigned to Jurisdiction	0		0		0		3
4	PRODUCTION PLANT - Direct SD	P10		Directly Assigned to Jurisdiction	0		0		0		4
5	PRODUCTION PLANT - Direct FERC	Direct FERC		Directly Assigned to FERC	0		0		0		5
6	TRANSMISSION PLANT - Direct MN	D2		Directly Assigned to Jurisdiction	0		0		0		6
7	TRANSMISSION PLANT - Direct ND	D2		Directly Assigned to Jurisdiction	0		0		0		7
8	TRANSMISSION PLANT - Direct SD	D2		Directly Assigned to Jurisdiction	0		0		0		8
9	TRANSMISSION PLANT - Direct FERC	Direct FERC		Directly Assigned to FERC	0		0		0		9
10	DISTRIBUTION PLANT - Direct MN	P60		Directly Assigned to Jurisdiction	0		0		0		10
11	DISTRIBUTION PLANT - Direct ND	P60		Directly Assigned to Jurisdiction	0		0		0		11
12	DISTRIBUTION PLANT - Direct SD	P60		Directly Assigned to Jurisdiction	0		0		0		12
13	DISTRIBUTION PLANT - Direct FERC	Direct FERC		Directly Assigned to FERC	0		0		0		13
14	GENERAL PLANT - Direct MN	P90		Directly Assigned to Jurisdiction	0		0		0		14
15	GENERAL PLANT - Direct ND	P90		Directly Assigned to Jurisdiction	0		0		0		15
16	GENERAL PLANT - Direct SD	P90		Directly Assigned to Jurisdiction	0		0		0		16
17	GENERAL PLANT - Direct FERC	Direct FERC		Directly Assigned to FERC	0		0		0		17
18	INTANGIBLE PLANT - Direct MN	P90		Directly Assigned to Jurisdiction	0		0		0		18
19	INTANGIBLE PLANT - Direct ND	P90		Directly Assigned to Jurisdiction	0		0		0		19
20	INTANGIBLE PLANT - Direct SD	P90		Directly Assigned to Jurisdiction	0		0		0		20
21	INTANGIBLE PLANT - Direct FERC	Direct FERC		Directly Assigned to FERC	0		0		0		21
22	TOTAL CWIP - Direct Assigned			ALLOWED ONLY IN MN & FERC	0		0		0		22
23											23
24											24
25	CONST WORK-IN-PROGRESS - SHORT-TERM										25
26	PRODUCTION PLANT	P10			0		0		0		26
27	TRANSMISSION PLANT	D2			359,000		140,711		218,289		27
28	DISTRIBUTION PLANT	P60			1,086,337		499,127		587,211		28
29	GENERAL PLANT	P90			325,581		141,157		184,424		29
30	INTANGIBLE PLANT	P90			0		0		0		30
31											31
32	TOTAL CWIP - SHORT-TERM			ALLOWED ONLY IN MN, ND & FERC	1,770,919		780,995		989,924		32
33											33
34											34
35	CONST WORK-IN-PROGRESS - LONG TERM										35
36	PRODUCTION PLANT (AFUDC Projects)	P10			0		0		0		36
37	PRODUCTION PLANT (Rider Projects)	P10			0		0		0		37
38	TRANSMISSION PLANT (AFUDC Projects)	D2			0		0		0		38
39	TRANSMISSION PLANT (Rider Projects)	D2			0		0		0		39
40	DISTRIBUTION PLANT	P60			0		0		0		40
41	GENERAL PLANT	P90			0		0		0		41
42	INTANGIBLE PLANT	P90			0		0		0		42
43											43
44	TOTAL CWIP - LONG TERM - AFUDC Projects			ALLOWED ONLY IN MN & FERC	0		0		0		44
45	TOTAL CWIP - LONG TERM - Rider Projects				0		0		0		45
46											46
47											47
48	TOTAL CONSTRUCTION WORK-IN-PROGRESS		107		1,770,919		780,995		989,924		48
49											49
50											50
51	MATERIALS & SUPPLIES										51
52	PRODUCTION	P10			8,651,753		3,721,629		4,930,123		52
53	TRANSMISSION	D2			9,116,226		3,573,123		5,543,103		53
54	DISTRIBUTION	P60			16,199,114		7,442,817		8,756,297		54
55											55
56	TOTAL MATERIALS AND SUPPLIES		154, 158.1		33,967,093		14,737,569		19,229,523		56
57											57
58											58
59	FUEL STOCKS										59
60	COAL STOCKS	E1			8,165,846		3,582,674		4,583,172		60
61	FUEL OIL STOCKS	D1			2,310,865		912,443		1,398,422		61
62											62
63	TOTAL FUEL STOCKS		1510		10,476,711		4,495,117		5,981,594		63
64											64
65											65
66	PREPAYMENTS	NEPIS	128, 228.3		49,187,428		18,630,686		30,556,742		66
67											67
68	CUSTOMER ADVANCES	NEPIS	235, 253		(1,876,522)		(710,769)		(1,165,753)		68
69											69
70	CASH WORKING CAPITAL	OX		SEPARATELY CALCULATED BY JURISDIC	6,322,479		1,464,908		4,857,571		70
71											71
72											72
73											73
74											74
75											75
76											76
77											77

OTTER TAIL POWER COMPANY
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	ACCUMULATED DEFERRED INCOME TAXES										1
2	ITEMS SD FLOWS THROUGH										2
3	FEDERAL	NPMNR			(27,894)		(11,583)		(16,311)		3
4	MINNESOTA	NPISM			0		0		0		4
5	NORTH DAKOTA	NPISN			0		0		0		5
6											6
7	SUBTOTAL				(27,894)		(11,583)		(16,311)		7
8											8
9	ALL OTHER										9
10	FEDERAL	NEPIS EXDA			(294,490,488)		(126,341,210)		(168,149,278)		10
11	FEDERAL (Direct FERC)	Direct FERC			(20,921,619)		0		(20,921,619)		11
12	MINNESOTA	NPISM			0		0		0		12
13	NORTH DAKOTA	NPISN			(50,073,352)		(49,415,879)		(657,473)		13
14											14
15	SUBTOTAL				(365,485,459)		(175,757,089)		(189,728,370)		15
16											16
17	TOTAL ACCUMULATED DEFERRED INCOME TAXES		190,255,281-283		(365,513,353)		(175,768,672)		(189,744,681)		17
18											18
19											19
20	UNAMORTIZED BALANCE - SPIRITWOOD PLANT	P10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		20
21											21
22											22
23	UNAMORTIZED RATE CASE EXPENSES	R10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		23
24											24
25											25
26											26
27											27
28	TOTAL AVERAGE RATE BASE				1,841,431,164		661,733,555		1,179,697,609		28
29											29
30											30
31											31
32											32
33											33
34											34
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54											54
55											55

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LINE NO	ITEM	ALLOC			TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	OPERATING REVENUES										1
2	SALES OF ELECTRICITY				464,563,634		182,686,888		281,876,746		2
3	OTHER OPERATING REVENUE				62,763,924		12,979,433		49,784,491		3
4											4
5	TOTAL OPERATING REVENUE				527,327,558		195,666,321		331,661,237		5
6											6
7											7
8	OPERATING EXPENSES										8
9	PRODUCTION EXPENSES				196,825,368		87,108,465		109,716,903		9
10	TRANSMISSION EXPENSES				35,939,490		14,086,555		21,852,935		10
11	DISTRIBUTION EXPENSES				18,488,356		8,393,231		10,095,125		11
12	CUSTOMER ACCOUNTING EXPENSES				16,621,213		7,295,595		9,325,619		12
13	CUSTOMER SERVICE AND INFORMATION EXPENSES				12,622,058		1,331,017		11,291,041		13
14	SALES EXPENSES				583,457		135,872		447,585		14
15	ADMINISTRATIVE AND GENERAL EXPENSES				50,936,338		20,775,268		30,161,070		15
16	CHARITABLE CONTRIBUTIONS				0		0		0		16
17	DEPRECIATION EXPENSE				80,537,485		33,093,414		47,444,072		17
18	AMORTIZATION OF BIG STONE PLANT CAPITALIZED COSTS				0		0		0		18
19	SPIRITWOOD AMORTIZATION				0		0		0		19
20	GENERAL TAXES				18,693,896		7,103,488		11,590,408		20
21											21
22	TOTAL OPERATING EXPENSES				431,247,662		179,322,905		251,924,757		22
23											23
24							0				24
25	NET OPERATING INCOME BEFORE INCOME TAXES				96,079,897		16,343,417		79,736,480		25
26											26
27											27
28	INCOME TAX EXPENSE										28
29	INVESTMENT TAX CREDIT				(6,628,472)		(2,939,781)		(3,688,691)		29
30	DEFERRED INCOME TAXES				2,209,233		(1,925,497)		4,134,730		30
31	INCOME TAXES				(297,609)		(0)		(297,609)		31
32											32
33	TOTAL INCOME TAX EXPENSE				(4,716,848)		(4,865,278)		148,430		33
34											34
35											35
36											36
37	NET OPERATING INCOME				100,796,745		21,208,695		79,588,050		37
38											38
39											39
40	Allowance for Funds Used During Construction				6,315,997		0		6,315,997		40
41	Allowance for Funds Used During Construction - MN Only				0		0		0		41
42	Allowance for Funds Used During Construction - SD Only				0		0		0		42
43	TOTAL ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION				6,315,997		0		6,315,997		43
44											44
45							0				45
46	TOTAL AVAILABLE FOR RETURN				107,112,742		21,208,695		85,904,047		46
47											47
48											48
49											49
50											50
51	AVERAGE CENTS PER KWH										51
52											52
53											53
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OTTER TAIL POWER COMPANY
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North Dakota Budget TEST YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	OPERATING REVENUES										1
2											2
3	SALES OF ELECTRICITY	R10	440, 442, 444-445	108, 115	464,563,634		182,686,888		281,876,746		3
4											4
5											5
6	OTHER OPERATING REVENUES										6
7	SALES FOR RESALE										7
8	MUNICIPALITIES & OFF SYSTEM SALES			DIRECTLY ASSIGNED TO FERC JURISDICTION	0		0		0		8
9	NON-ASSOCIATED UTILITIES, CO-OPS & OPA										9
10	BUY SELL TRANSACTIONS	D2			0		0		0		10
11	ALL OTHER TRANSACTIONS										11
12	BASE DEMAND	E1			0		0		0		12
13	PEAK DEMAND	D1			0		0		0		13
14	BASE ENERGY	E2			6,947,794		3,125,191		3,822,604		14
15	PEAK ENERGY	D1			0		0		0		15
16											16
17	TOTAL ALL OTHER TRANSACTIONS				6,947,794		3,125,191		3,822,604		17
18											18
19	TOTAL SALES FOR RESALE				6,947,794		3,125,191		3,822,604		19
20											20
21											21
22	OTHER ELECTRIC REVENUES										22
23	LATE FEES	C1	450	DIRECTLY ASSIGNED TO JURISDICTION	809,880		316,187		493,694		23
24	CONNECTION FEES	C1	451	DIRECTLY ASSIGNED TO JURISDICTION	340,532		136,812		203,720		24
25	RENT FROM ELECTRIC PROPERTY	NEPIS	454		435,931		165,117		270,814		25
26	RENT FROM ELECTRIC PROPERTY - BIG STONE	NEPIS	454		0		0		0		26
27	RENT FROM ELECTRIC PROPERTY - COYOTE	NEPIS	454		0		0		0		27
28	OTHER MISC ELECTRIC REVENUE	NEPIS	456		1,395,880		528,717		867,164		28
29	OTHER MISC ELECTRIC REVENUE - MN	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		29
30	OTHER MISC ELECTRIC REVENUE - ND	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		30
31	OTHER MISC ELECTRIC REVENUE - SD	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		31
32	ITA DEFICIENCY PAYMENTS	NEPIS	456		848,757		321,483		527,274		32
33		NEPIS			0		0		0		33
34	MISCELLANEOUS SERVICES	NEPIS			0		0		0		34
35	WHEELING		456	DIRECTLY ASSIGNED TO FERC JURISDICTION	425,279		0		425,279		35
36	LOAD CONTROL AND DISPATCH	NEPIS EXDA	456		19,546,874		8,385,927		11,160,947		36
37	LOAD CONTROL AND DISPATCH (Direct FERC)	Direct FERC	456	DIRECTLY ASSIGNED TO FERC JURISDICTION	32,012,996		0		32,012,996		37
38	RESIDENTIAL CONSERVATION SERVICES	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		38
39											39
40	TOTAL OTHER ELECTRIC REVENUES				55,816,129		9,854,243		45,961,887		40
41											41
42	TOTAL OTHER OPERATING REVENUES				62,763,924		12,979,433		49,784,491		42
43											43
44							0				44
45	TOTAL OPERATING REVENUES				527,327,558		195,666,321		331,661,237		45
46											46
47											47
48											48
49											49
50											50
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OTTER TAIL POWER COMPANY
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NORTH DAKOTA

LINE NO	ITEM	ALLOC	FERC ACCOUNTS	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	OPERATING EXPENSES									1
2	PRODUCTION EXPENSES									2
3	PROD EXPENSES EXCLUDING PURCHASED POWER									3
4	BASE DEMAND	E1	500, 502, 505-507, 509-511, 535, 537-543, 546, 548-554, 556-557	16,248,297		7,128,759		9,119,538		4
5	PEAK DEMAND	D1	500, 502, 506-507, 509-511, 535, 537-543, 546, 548-554, 556-557	8,794,983		3,472,693		5,322,291		5
6	BASE ENERGY	E2	501, 512-514, 544-546, 548-554	67,526,672		30,374,204		37,152,468		6
7	PEAK ENERGY	D1	547	10,397,281		4,105,359		6,291,922		7
8	BASE DEMAND (Direct MN)			0		0		0		8
9	PEAK DEMAND (Direct MN)			377,143		0		377,143		9
10										10
11	TOTAL EXCLUDING PURCHASED POWER			103,344,377		45,081,015		58,263,362		11
12						0				12
13						0				13
14	PURCHASED POWER					0				14
15	BUY SELL TRANSACTIONS	D2		0		0		0		15
16	ALL OTHER TRANSACTIONS					0				16
17	BASE DEMAND	E1	555	1,921,959		843,238		1,078,721		17
18	PEAK DEMAND	D1		0		0		0		18
19	BASE ENERGY	E2	555	91,559,032		41,184,212		50,374,820		19
20	PEAK ENERGY	D1		0		0		0		20
21										21
22	TOTAL ALL OTHER TRANSACTIONS			93,480,991		42,027,450		51,453,541		22
23										23
24	TOTAL PURCHASED POWER			93,480,991		42,027,450		51,453,541		24
25										25
26	TOTAL PRODUCTION EXPENSES			196,825,368		87,108,465		109,716,903		26
27										27
28										28
29	TRANSMISSION EXPENSES	D2	560, 561.1-561.2, 561.4-561.6, 562-563, 565-568, 569.1-569.3, 570-573	35,939,490		14,086,555		21,852,935		29
30	TRANSMISSION EXPENSES (Direct MN)			0		0		0		30
31	TRANSMISSION EXPENSES (Direct FERC)	Direct FERC		0		0		0		31
32	TOTAL TRANSMISSION EXPENSES			35,939,490		14,086,555		21,852,935		32
33										33
34										34
35	DISTRIBUTION EXPENSES									35
36	PRIMARY DEMAND	D3	580-584, 588-590, 592-594, 598	5,199,469		2,418,866		2,780,603		36
37	SECONDARY DEMAND	D4	580-581, 583-584, 588, 590, 593-595, 598	2,273,887		1,107,378		1,166,509		37
38	PRIMARY CUSTOMER	C2	580-581, 583-584, 588-590, 593-594, 598	3,917,270		1,712,243		2,205,027		38
39	SECONDARY CUSTOMER	C3	580-581, 583-584, 587-588, 590, 593-595, 598	1,431,452		625,745		805,707		39
40	STREETLIGHTING	C4	580-581, 583-585, 588-590, 593-594, 596, 598	526,349		219,347		307,002		40
41	AREA LIGHTING	C5	580-581, 583-584, 588-590, 593-594, 598	183,855		100,232		83,623		41
42	METERS	C6	580-581, 586, 588, 597-598	4,956,073		2,209,420		2,746,653		42
43	LOAD MANAGEMENT	C9		0		0		0		43
44										44
45	TOTAL DISTRIBUTION	OXD		18,488,356		8,393,231		10,095,125		45
46										46
47										47
48	CUSTOMER ACCOUNTING EXPENSES									48
49	METER READING	C7	901-902	6,074,375		2,685,754		3,388,622		49
50	OTHER	C8	901, 903-905	10,546,838		4,609,841		5,936,997		50
51										51
52	TOTAL CUSTOMER ACCOUNTS	OXC		16,621,213		7,295,595		9,325,619		52
53										53
54										54
55										55
56										56
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65										65

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	CUSTOMER SERVICE & INFORMATION EXPENSE										1
2	CONSERVATION & PROMOTIONAL REBATES	C1	908	DIRECTLY ASSIGNED TO JURISDICTION	9,600,172		0		9,600,172		2
3	OTHER	C1	907-910		3,021,886		1,331,017		1,690,869		3
4											4
5	TOTAL CUSTOMER SERV & INFORMATION EXP	OXI			12,622,058		1,331,017		11,291,041		5
6											6
7											7
8	SALES EXPENSES										8
9	OFF-PEAK DEVELOPMENT	C1	912	DIRECTLY ASSIGNED TO JURISDICTION	274,978		(0)		274,979		9
10	OTHER	C1	912-913, 916		308,479		135,872		172,606		10
11											11
12	TOTAL SALES EXPENSES				583,457		135,872		447,585		12
13											13
14											14
15	ADMINISTRATIVE & GENERAL EXPENSES										15
16	SALARIES, SUPPLIES, PENSIONS & BENEFITS										16
17	PRODUCTION	OXPD			11,088,805		4,706,353		6,382,452		17
18	TRANSMISSION	D2			5,274,827		2,067,479		3,207,348		18
19	DISTRIBUTION	OXD			8,167,253		3,707,720		4,459,534		19
20	CUSTOMER ACCOUNTS	OXC			6,497,498		2,851,965		3,645,533		20
21	CUSTOMER SERVICE & INFO	C1			1,509,573		664,905		844,668		21
22											22
23	TOTAL SALARIES, SUPPLIES, PENSIONS, AND BENEFITS		920-922, 926		32,537,956		13,998,421		18,539,535		23
24											24
25	LOAD MANAGEMENT EXPENSES	C9			0		0		0		25
26											26
27	OUTSIDE SERVICES	NEPIS	923		1,083,910		410,552		673,358		27
28											28
29	PROPERTY INSURANCE	NEPIS	924		4,230,959		1,602,557		2,628,402		29
30											30
31	INJURIES & DAMAGES	NEPIS	925		4,536,918		1,718,445		2,818,473		31
32											32
33	REGULATORY COMMISSION EXPENSE	R10	928	DIRECTLY ASSIGNED TO JURISDICTION	3,510,684		861,954		2,648,730		33
34											34
35	GENERAL ADVERTISING	C1	930.1		0		0		0		35
36											36
37	MISCELLANEOUS, RENTS, MAINTENANCE	P90	930.2, 931, 935		5,035,910		2,183,338		2,852,571		37
38											38
39	TOTAL ADMINISTRATIVE & GENERAL EXP				50,936,338		20,775,268		30,161,070		39
40											40
41											41
42	CHARITABLE CONTRIBUTIONS	C1	426.1	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		42
43											43
44							0				44
45											45
46	TOTAL O & M EXPENSES				332,016,280		139,126,003		192,890,278		46
47											47
48											48
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50											50
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	DEPRECIATION EXPENSE										1
2	PRODUCTION										2
3	BASE DEMAND	E1			15,980,135		7,011,106		8,969,029		3
4	PEAK DEMAND	D1			11,086,374		4,377,447		6,708,927		4
5	BASE ENERGY	E2			13,122,662		5,902,711		7,219,951		5
6											6
7	TOTAL PRODUCTION				40,189,172		17,291,264		22,897,908		7
8											8
9											9
10	TRANSMISSION	D2			8,706,848		3,412,666		5,294,181		10
11	TRANSMISSION (Direct FERC)	Direct FERC			4,176,849		0		4,176,849		11
12	TOTAL TRANSMISSION				12,883,697		3,412,666		9,471,030		12
13											13
14											14
15	DISTRIBUTION	P60			18,610,423		8,550,713		10,059,710		15
16											16
17											17
18	GENERAL	P90			4,236,745		1,836,857		2,399,887		18
19											19
20											20
21	INTANGIBLE	P90			4,617,449		2,001,913		2,615,536		21
22											22
23											23
24	TOTAL DEPRECIATION EXPENSE		403		80,537,485		33,093,414		47,444,072		24
25											25
26											26
27											27
28											28
29											29
30											30
31	BIG STONE EXPENSE OFFSETS	P10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		31
32											32
33											33
34	SPIRITWOOD AMORTIZATION	P10	406	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		34
35											35
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37											37
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	GENERAL TAXES	NEPIS EXD			16,557,620		7,103,488		9,454,132		1
2	GENERAL TAXES (Direct FERC)	Direct FERC			2,136,276		0		2,136,276		2
3	TOTAL GENERAL TAXES		408.1		18,693,896		7,103,488		11,590,408		3
4											4
5	NET OPERATING INCOME BEFORE TAX (NOIBT)				96,079,897		16,343,417		79,736,480		5
6											6
7	INVESTMENT TAX CREDIT										7
8	AMORTIZE PRIOR YEARS CREDIT	EPIS			(6,628,472)		(2,939,781)		(3,688,691)		8
9	DEBITS UTILIZED	EPIS			0		0		0		9
10											10
11	TOTAL INVESTMENT TAX CREDIT		411.4		(6,628,472)		(2,939,781)		(3,688,691)		11
12											12
13	DEFERRED INCOME TAXES										13
14	ITEMS SOUTH DAKOTA FLOWS THROUGH										14
15	FEDERAL	NPMNR			0		0		0		15
16	MINNESOTA	NPISM			0		0		0		16
17	NORTH DAKOTA	NPISN			(31,934)		(31,515)		(419)		17
18											18
19	SUBTOTAL				(31,934)		(31,515)		(419)		19
20											20
21	ALL OTHER										21
22											22
23	FEDERAL- transfer from Current Income Taxes - NOL				(6,470,322)		(6,241,694)		(228,628)		23
24	FEDERAL (NEPIS)	NEPIS			12,091,374		4,579,841		7,511,533		24
25	FEDERAL				1,125,275		(1,661,853)		2,787,128		25
26											26
27	MINNESOTA- transfer from Current Income Taxes - NOL				(425,430)		0		(425,430)		27
28	MINNESOTA (NPISM)	NPISM			3,008,510		0		3,008,510		28
29	MINNESOTA				2,353,601		0		2,353,601		29
30											30
31	NORTH DAKOTA- transfer from Current Income Taxes - NOL				(1,339,765)		(1,339,765)		0		31
32	NORTH DAKOTA (NPISN)	NPISN			1,122,373		1,107,636		14,737		32
33	NORTH DAKOTA				(1,237,709)		(232,129)		(1,005,580)		33
34											34
35	SUBTOTAL				2,241,167		(1,893,982)		4,135,149		35
36											36
37	TOTAL DEFERRED INCOME TAXES		410.1-410.2, 411.1-411.2		2,209,233		(1,925,497)		4,134,730		37
38											38
39											39
40	CURRENT INCOME TAXES										40
41	FEDERAL- transfer to Deferred Income Taxes - NOL				6,470,322		6,241,694		228,628		41
42	FEDERAL CURRENT INCOME TAX				(6,470,322)		(6,241,695)		(228,627)		42
43	FEDERAL INCOME TAXES			SEPARATELY CALCULATED BY JURISDIC	0		(1)		1		43
44											44
45	MINNESOTA- transfer to Deferred Income Taxes - NOL				0		0		0		45
46	MINNESOTA CURRENT INCOME TAX				(490,140)		0		(490,140)		46
47	MINNESOTA INCOME TAXES			SEPARATELY CALCULATED BY JURISDIC	(490,140)		0		(490,140)		47
48											48
49	NORTH DAKOTA - transfer to Deferred Income Taxes - NOL				1,339,765		1,339,765		0		49
50	NORTH DAKOTA CURRENT INCOME TAX				(1,147,235)		(1,339,765)		192,530		50
51	NORTH DAKOTA INCOME TAXES			SEPARATELY CALCULATED BY JURISDIC	192,530		0		192,530		51
52											52
53	TOTAL CURRENT INCOME TAXES		409.1		(297,609)		(0)		(297,609)		53
54											54
55	TOTAL INCOME TAXES				(4,716,848)		(4,865,278)		148,430		55
56											56
57											57
58	NET OPERATING INCOME				100,796,745		21,208,695		79,588,050		58
59											59
60	AFDC	CWIPLT			6,315,997		0		6,315,997		60
61	AFDC - MN Only	CWIPLT			0		0		0		61
62	AFDC - SD Only	CWIPLT			0		0		0		62
63	Total AFDC	CWIPLT	419.1	ALLOWED ONLY IN MN & FERC	6,315,997		0		6,315,997		63
64											64
65	TOTAL AVAILABLE FOR RETURN				107,112,742		21,208,695		85,904,047		65
66											66
67											67
68	RATE OF RETURN ON RATE BASE				5.82%		3.21%		7.28%		68
69											69
70											70
71											71
72											72
73											73
74											74

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
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NORTH DAKOTA

LINE NO	ITEM	ALLOC	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	DEVELOPMENT OF FEDERAL INCOME TAX EXPENSE								1
2									2
3	NET OPERATING INCOME BEFORE TAX (NOIBT)		96,079,897		16,343,417		79,736,480		3
4	LESS: INTEREST COST	CALCULATED BY JURISDICTION	41,457,520		14,425,792		27,031,729		4
5									5
6	NET INCOME BEFORE TAX		54,622,376		1,917,625		52,704,751		6
7									7
8	FEDERAL SCHEDULE M ADJUSTMENTS:								8
9	ADDITIONAL TAX DEPRECIATION	NEPIS	75,740,068		28,688,010		47,052,058		9
10	OTHER SCHEDULE M ITEMS	NEPIS	11,330,739		4,291,736		7,039,003		10
11			0		0		0		11
12			0		0		0		12
13			0		0		0		13
14			0		0		0		14
15			0		0		0		15
16			0		0		0		16
17			0		0		0		17
18									18
19	SUBTOTAL FEDERAL SCHEDULE M ADJUSTMENTS		87,070,807		32,979,746		54,091,061		19
20									20
21	FEDERAL ADJUSTED INCOME BEFORE INCOME TAXES		(32,448,431)		(31,062,120)		(1,386,310)		21
22									22
23	LESS:								23
24	MINNESOTA STATE INCOME TAXES	PER MINNESOTA STATE TAX CALCULATION	(490,140)		0		(490,140)		24
25	NORTH DAKOTA STATE INCOME TAXES	PER NORTH DAKOTA STATE TAX CALCULATION	(1,147,235)		(1,339,765)		192,530		25
26									26
27	FEDERAL TAXABLE INCOME		(30,811,056)		(29,722,356)		(1,088,700)		27
28	FEDERAL TAX RATE		21.00%		21.00%		21.00%		28
29									29
30	FEDERAL INCOME TAX BEFORE CREDITS		(6,470,322)		(6,241,695)		(228,627)		30
31	INVESTMENT TAX CREDIT - DEBITS UTILIZED	EPIS	0		0		0		31
32	FEDERAL INCOME TAXES before transfer to Deferred due to NOL		(6,470,322)		(6,241,695)		(228,627)		32
33	Less Current Federal Income Taxes Transferred to Deferred Income Taxes due to NOL		6,470,322		6,241,694		228,628		33
34	FEDERAL INCOME TAXES		0		(1)		1		34
35									35
36									36
37									37
38									38
39									39
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60									60
61									61

OTTER TAIL POWER COMPANY
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NORTH DAKOTA

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LINE NO	ITEM	ALLOC	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	DEVELOPMENT OF MINNESOTA STATE INCOME TAX EXPENSE								1
2									2
3	FEDERAL ADJUSTED INCOME BEFORE INCOME TAXES		(5,001,428)		0		(5,001,428)		3
4									4
5	MINNESOTA ADJUSTMENTS TO FEDERAL SCHEDULE M:								5
6	PAYSOP ADJUSTMENT	NEPIS	0		0		0		6
7	CHANGE IN EXCESS TAX DEPRECIATION - MN	NEPIS	0		0		0		7
8	CHANGE IN ACRS - ORDINARY LOSS	NEPIS	0		0		0		8
9	PREFERRED DIVIDENDS PAID CREDIT	NEPIS	0		0		0		9
10	MISCELLANEOUS ADJUSTMENTS TO FED SCHEDULE M	NEPIS	0		0		0		10
11									11
12	TOTAL MINNESOTA ADJUSTMENTS TO FED SCHEDULE M		0		0		0		12
13									13
14	MINNESOTA TAXABLE INCOME		(5,001,428)		0		(5,001,428)		14
15	MINNESOTA TAX RATE		9.80%		0.00%		9.80%		15
16									16
17	MINNESOTA INCOME TAX prior to transfer to Deferred Income Tax due to NOL		(490,140)		0		(490,140)		17
18	Minnesota Current Income Tax transfer to Deferred Income Tax due to NOL		0		0		0		18
19	MINNESOTA INCOME TAX		(490,140)		0		(490,140)		19
20									20
21									21
22									22
23									23
24									24
25									25
26									26
27	DEVELOPMENT OF NORTH DAKOTA STATE INCOME TAX EXPENSE								27
28									28
29	FEDERAL ADJUSTED INCOME BEFORE INCOME TAXES		(23,191,587)		(31,062,120)		7,870,534		29
30									30
31	NORTH DAKOTA ADJUSTMENTS TO FEDERAL SCHEDULE M:								31
32	CHANGE IN EXCESS TAX DEPRECIATION - ND	NEPIS	(2,206)		(1,673)		(533)		32
33	CHANGE IN ACRS - ORDINARY LOSS - ND	NEPIS	0		0		0		33
34	CHANGE IN INCOME FROM ADR PROPERTY - ND	NEPIS	0		0		0		34
35	MISCELLANEOUS ADJUSTMENTS TO FED SCHEDULE M	NEPIS	0		0		0		35
36									36
37	TOTAL NORTH DAKOTA ADJUSTMENTS TO FED SCHEDULE M		(2,206)		(1,673)		(533)		37
38									38
39	SUBTOTAL		(23,193,793)		(31,063,794)		7,870,001		39
40	DEDUCTION OF FEDERAL INCOME TAXES		3,374,179		0		3,374,179		40
41									41
42	NORTH DAKOTA TAXABLE INCOME		(26,567,972)		(31,113,794)		4,545,821		42
43	NORTH DAKOTA TAX RATE		4.31%		4.31%		4.31%		43
44									44
45	NORTH DAKOTA INCOME TAX prior to transfer to Deferred Income Tax due to NOL		(1,147,235)		(1,339,765)		192,530		45
46	North Dakota Current Income Tax transfer to Deferred Income Tax due to NOL		1,339,765		1,339,765		-		46
47	NORTH DAKOTA INCOME TAX		192,530		0		192,530		47
48									48
49									49
50									50
51									51
52									52
53									53
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62									62
63									63
64									64

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NORTH DAKOTA

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ALLOCATION FACTORS

LINE NO	ITEM	FACTOR	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	MWH CONSUMPTION AT GENERATORS - PARTIAL	E1	5,645,126		2,476,736		3,168,390		1
2	PERCENTAGE		100.000000%		43.873883%		56.126117%		2
3									3
4	MWH CONSUMPTION AT GENERATORS - TOTAL	E2	6,171,457		2,775,986		3,395,471		4
5	PERCENTAGE		100.000000%		44.981047%		55.018953%		5
6									6
7	GENERATION DEMAND FACTOR	D1	719,976		284,282		435,694		7
8	PERCENTAGE		100.000000%		39.484927%		60.515073%		8
9									9
10	TRANSMISSION DEMAND FACTOR	D2	725,298		284,282		441,016		10
11	PERCENTAGE		100.000000%		39.195200%		60.804800%		11
12									12
13	DISTRIBUTION - PRIMARY DEMAND FACTOR	D3	851,393		396,080		455,313		13
14	PERCENTAGE		100.000000%		46.521407%		53.478593%		14
15									15
16	DISTRIBUTION - SECONDARY DEMAND FACTOR	D4	1,119,241		545,068		574,173		16
17	PERCENTAGE		100.000000%		48.699789%		51.300211%		17
18									18
19	CUSTOMER OR METER FACTORS								19
20	TOTAL RETAIL CUSTOMERS	C1	135,411		59,643		75,768		20
21	PERCENTAGE		100.000000%		44.045905%		55.954095%		21
22									22
23	RETAIL SERVICE LOCATIONS	C2	136,449		59,642		76,807		23
24	PERCENTAGE		100.000000%		43.710104%		56.289896%		24
25									25
26	SECONDARY SERVICE LOCATIONS	C3	136,414		59,632		76,782		26
27	PERCENTAGE		100.000000%		43.713988%		56.286012%		27
28									28
29	STREET LIGHTING FACTOR	C4	13,235,267		5,515,574		7,719,693		29
30	PERCENTAGE		100.000000%		41.673311%		58.326689%		30
31									31
32	AREA LIGHTING FACTOR	C5	9,628,628		5,249,227		4,379,401		32
33	PERCENTAGE		100.000000%		54.516874%		45.483126%		33
34									34
35	METER FACTOR	C6	57,578,353		25,668,459		31,909,894		35
36	PERCENTAGE		100.000000%		44.580051%		55.419949%		36
37									37
38	METER READING FACTOR	C7	206,170		91,157		115,013		38
39	PERCENTAGE		100.000000%		44.214483%		55.785517%		39
40									40
41	SYSTEM SERVICE LOCATIONS	C8	136,457		59,643		76,814		41
42	PERCENTAGE		100.000000%		43.708274%		56.291726%		42
43									43
44	LOAD MANAGEMENT FACTOR	C9	41,469		18,119		23,350		44
45	PERCENTAGE		100.000000%		43.692879%		56.307121%		45
46									46
47									47
48									48
49									49
50									50
51									51
52									52
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LINE NO	ITEM	ALLOCATION FACTORS FACTOR	TOTAL COMPANY		NORTH DAKOTA		OTHER		LINE NO
1	GROSS PLANT IN SERVICE								1
7	PRODUCTION PLANT	P10	1,492,934,862		642,199,358		850,735,504		2
8	PERCENTAGE		100.000000%		43.015899%		56.984101%		3
9									4
10	DISTRIBUTION PLANT	P60	717,695,528		329,751,161		387,944,367		5
11	PERCENTAGE		100.000000%		45.945829%		54.054171%		6
12									7
13	GENERAL PLANT	P90	122,942,613		53,302,252		69,640,361		8
14	PERCENTAGE		100.000000%		43.355392%		56.644608%		9
15									10
16									11
17	ELECTRIC PLANT IN SERVICE	EPIS	3,200,417,998		1,259,341,147		1,941,076,852		12
18	PERCENTAGE		100.000000%		39.349271%		60.650729%		13
19									14
20	NET ELECTRIC PLANT IN SERVICE	NEPIS	2,107,084,372		798,098,800		1,308,985,571		15
21	PERCENTAGE		100.000000%		37.876927%		62.123073%		16
22									17
23	NET ELECTRIC PLANT IN SERVICE Excluding Direct Assignment	NEPIS EXD	1,860,299,622		798,098,800		1,062,200,821		18
24	PERCENTAGE		100.000000%		42.901627%		57.098373%		19
25									20
23	OPERATION AND MAINTENANCE EXPENSE								18
24	PRODUCTION EXPENSE (EXCL ENERGY)	OXPD	26,965,239		11,444,690		15,520,549		19
26	PERCENTAGE		100.000000%		42.442381%		57.557619%		20
27									21
28	DISTRIBUTION EXPENSE	OXD	18,488,356		8,393,231		10,095,125		22
29	PERCENTAGE		100.000000%		45.397391%		54.602609%		23
30									24
31	CUSTOMER ACCOUNTS EXPENSE	OXC	16,621,213		7,295,595		9,325,619		25
32	PERCENTAGE		100.000000%		43.893273%		56.106727%		26
33									27
34	CUSTOMER SERVICE & INFORMATION EXPENSE	OXI	3,021,886		1,331,017		1,690,869		28
35	PERCENTAGE		100.000000%		44.045905%		55.954095%		29
36									30
37	OTHER DEFERRED INCOME TAX FACTOR								31
38	MINNESOTA	NPISM	930,206,443		0		930,206,443		32
39	PERCENTAGE		100.000000%		0.000000%		100.000000%		33
40									34
41	NORTH DAKOTA	NPISN	1,052,218,734		798,098,800		254,119,933		35
42	PERCENTAGE		100.000000%		98.686980%		1.313020%		36
43									37
44	EXCLUDING SOUTH DAKOTA	NPMNR	1,921,953,640		798,098,800		1,123,854,839		38
45	PERCENTAGE		100.000000%		41.525393%		58.474607%		39
46									40
47	LONG-TERM CWIP RATIO (W/AFDC)	CWIPLT	0		0		0		41
48	PERCENTAGE		100.000000%		0.000000%		100.000000%		42
49									43
50	REVENUE	R10	464,563,634		182,686,888		281,876,746		44
51	PERCENTAGE		100.000000%		39.324406%		60.675594%		45
52									46
53	LABOR AND RELATED EXPENSE	LRE	151,972,523		63,326,356		88,646,167		47
54	PERCENTAGE		100.000000%		41.669609%		58.330391%		48
55									49
56	TOTAL O & M EXPENSE	OX							50
57	PERCENTAGE								51
58									52
59									53
60									54
61									55
62									56
63									57
64									58
65									59
66									60

OTTER TAIL POWER COMPANY
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NORTH DAKOTA

LINE NO	ITEM	AMOUNT	AMOUNT AS A PERCENT OF TOTAL	COST OF CAPITAL	RATE OF RETURN	LINE NO
1	CAPITAL STRUCTURE - RATE OF RETURN					1
2						2
3						3
4	LONG-TERM DEBT	902,118,455	46.50%	4.68%	2.18%	4
5						5
6	PREFERRED STOCK	0	0.000%	0.00%	0.00%	6
7						7
8	COMMON EQUITY	1,037,715,500	53.50%	10.60%	5.67%	8
9						9
10						10
11	TOTAL	1,939,833,955	100.00%		7.85%	11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
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LINE NO	ITEM	ALLOCATION	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	CASH WORKING CAPITAL CALCULATION - REVENUE LEAD DAYS								1
2									2
3	REVENUES								3
4	COMPUTER MAINTAINED BILLINGS		399,914,764		160,399,254		239,515,509		4
5	MANUALLY MAINTAINED BILLINGS		71,894,259		28,835,608		43,058,650		5
6	COST OF ENERGY REVENUES	R10	(6,094,976)		(6,094,976)		0		6
7	SALES FOR RESALE		6,947,794		3,125,191		3,822,604		7
8	RENT FROM ELECTRIC PROPERTY		435,931		165,117		270,814		8
9	MISCELLANEOUS		1,395,880		528,717		867,164		9
10	ITA DEFICIENCY PAYMENTS		848,757		321,483		527,274		10
11	WHEELING		425,279		0		425,279		11
12	LOAD CONTROL AND DISPATCH		19,546,874		8,385,927		11,160,947		12
13	RENT FROM ELECTRIC PROPERTY - BIG STONE		0		0		0		13
14	RENT FROM ELECTRIC PROPERTY - COYOTE		0		0		0		14
15	PROFIT ON MATERIALS AND SUPPLIES		0		0		0		15
16	RUBBER GOODS TESTING		0		0		0		16
17	RESIDENTIAL CONSERVATION SERVICES		0		0		0		17
18									18
19	TOTAL REVENUES		495,314,562		195,666,321		299,648,241		19
20									20
21									21
22	REVENUE LEAD DAYS FROM SERVICE TO COLLECTION								22
23	COMPUTER MAINTAINED BILLINGS		N/A		39.8		N/A		23
24	MANUALLY MAINTAINED BILLINGS		N/A		26.7		N/A		24
25	COST OF ENERGY REVENUES		N/A		126.8		N/A		25
26	SALES FOR RESALE		N/A		19.9		N/A		26
27	RENT FROM ELECTRIC PROPERTY		N/A		-63.3		N/A		27
28	MISCELLANEOUS		N/A		40.4		N/A		28
29	ITA DEFICIENCY PAYMENTS		N/A		27.5		N/A		29
30	WHEELING		N/A		39.3		N/A		30
31	LOAD CONTROL AND DISPATCH		N/A		28.8		N/A		31
32	RENT FROM ELECTRIC PROPERTY - BIG STONE		N/A		34.3		N/A		32
33	RENT FROM ELECTRIC PROPERTY - COYOTE		N/A		34.3		N/A		33
34	PROFIT ON MATERIALS AND SUPPLIES		N/A		34.3		N/A		34
35	RUBBER GOODS TESTING		N/A		34.3		N/A		35
36	RESIDENTIAL CONSERVATION SERVICES		N/A		34.3		N/A		36
37									37
38									38
39	REVENUE DOLLAR DAYS (REVENUES X REVENUE LEAD DAYS)								39
40	COMPUTER MAINTAINED BILLINGS		15,916,607,589		6,383,890,322		9,532,717,267		40
41	MANUALLY MAINTAINED BILLINGS		1,919,576,711		769,910,744		1,149,665,967		41
42	COST OF ENERGY REVENUES		(772,842,957)		(772,842,957)		0		42
43	SALES FOR RESALE		137,913,720		62,035,036		75,878,684		43
44	RENT FROM ELECTRIC PROPERTY		(27,581,376)		(10,446,977)		(17,134,398)		44
45	MISCELLANEOUS		56,337,728		21,339,000		34,998,728		45
46	ITA DEFICIENCY PAYMENTS		23,340,818		8,840,784		14,500,033		46
47	WHEELING		16,700,704		0		16,700,704		47
48	LOAD CONTROL AND DISPATCH		562,949,971		241,514,696		321,435,276		48
49	RENT FROM ELECTRIC PROPERTY - BIG STONE		0		0		0		49
50	RENT FROM ELECTRIC PROPERTY - COYOTE		0		0		0		50
51	PROFIT ON MATERIALS AND SUPPLIES		0		0		0		51
52	RUBBER GOODS TESTING		0		0		0		52
53	RESIDENTIAL CONSERVATION SERVICES		0		0		0		53
54									54
55	TOTAL DOLLAR DAYS		17,833,002,909		6,704,240,648		11,128,762,261		55
56									56
57									57
58	AVG REVENUE LEAD DAYS (TOTAL REV DOLLAR DAYS / TOTAL REV)		36.0		34.3		37.1		58
59									59
60									60

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NORTH DAKOTA

LINE NO	ITEM		OPERATING EXPENSE		EXPENSE PER DAY 365 DAYS PER YEAR		EXPENSE LAG DAYS		EXCESS REVENUE LEAD DAYS OF 37.2 OVER EXPENSE LAG DAYS		NET REVENUE LAG DOLLARS		LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF												1
2	LEAD-LAG FACTORS-MINNESOTA JURISDICTION												2
3	FUEL - COAL		E2	23,731,084	65,017		19.1		18.1		1,176,152		3
4													4
5	FUEL - OIL		E1	4,853,219	13,296		8.9		28.3		376,424		5
6													6
7	PURCHASED POWER			42,840,818	117,372		32.8		4.4		519,958		7
8													8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE		LRE	32,770,879	89,783		10.5		26.7		2,399,008		9
10													10
11	ALL OTHER O&M EXPENSE			55,175,329	151,165		12.5		24.7		3,735,294		11
12													12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)			7,696,095	21,085		297.1		-259.9		(5,480,530)		13
14													14
15	COAL CONVERSION TAXES			44,991	123		35.6		1.6		198		15
16													16
17	FEDERAL INCOME TAXES			(947,371)	(2,596)		0.0		37.2		0		17
18													18
19	STATE INCOME TAXES			(490,140)	(1,343)		0.0		37.2		0		19
20													20
21	INCREMENTAL FEDERAL INCOME TAXES			0	0		0.0		37.2		0		21
22													22
23	INCREMENTAL STATE INCOME TAXES			0	0		0.0		37.2		0		23
24													24
25	BANK BALANCES		NEPIS								0		25
26													26
27	SPECIAL DEPOSITS		NEPIS								890,930		27
28													28
29	WORKING FUNDS		NEPIS								5,165		29
30													30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING		LRE	(2,705,740)	(7,413)		0.0				0		31
32													32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING		LRE	(4,373,754)	(11,983)		0.0				0		33
34													34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN		R10	0	0		0.0				0		35
36													36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND		R10	0	0		61.2				0		37
38													38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX		R10	0	0		0.0				0		39
40													40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES		R10	0	0		36.9				0		41
42													42
43													43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - MINNESOTA										3,622,600		44
45													45
46													46
47													47
48													48
49													49
50													50
51													51
52													52
53													53
54													54
55													55
56													56
57													57
58													58
59													59
60													60

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget TEST YEAR 2024 - Simple Average

NORTH DAKOTA

LINE NO	ITEM		OPERATING EXPENSE		EXPENSE PER DAY 365 DAYS PER YEAR		EXPENSE LAG DAYS		EXCESS REVENUE LEAD DAYS OF 34.3 OVER EXPENSE LAG DAYS		NET REVENUE LAG DOLLARS		LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF												1
2	LEAD-LAG FACTORS-NORTH DAKOTA JURISDICTION												2
3	FUEL - COAL	E2	23,301,382		63,839		19.1		15.2		969,721		3
4													4
5	FUEL - OIL	E1	4,561,691		12,498		8.9		25.4		317,569		5
6													6
7	PURCHASED POWER		42,027,450		115,144		32.8		1.5		176,170		7
8													8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE	29,067,115		79,636		10.5		23.8		1,896,928		9
10													10
11	ALL OTHER O&M EXPENSE		40,168,364		110,050		12.5		21.8		2,400,197		11
12													12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)		7,062,203		19,349		297.1		-261.9		(5,066,851)		13
14													14
15	COAL CONVERSION TAXES		41,285		113		35.6		-1.3		(146)		15
16													16
17	FEDERAL INCOME TAXES		(1)		(0)		0.0		34.3		0		17
18													18
19	STATE INCOME TAXES		0		0		0.0		34.3		0		19
20													20
21	INCREMENTAL FEDERAL INCOME TAXES		0		0		0.0		34.3		0		21
22													22
23	INCREMENTAL STATE INCOME TAXES		0		0		0.0		34.3		0		23
24													24
25	BANK BALANCES	NEPIS									0		25
26													26
27	SPECIAL DEPOSITS	NEPIS									817,548		27
28													28
29	WORKING FUNDS	NEPIS									4,740		29
30													30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE	(2,399,937)		(6,575)		0.0				0		31
32													32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE	(3,879,432)		(10,629)		0.0				0		33
34													34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	0	ASSIGN TO JURIS	0		0.0				0		35
36													36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	(303,808)	ASSIGN TO JURIS	(832)		61.2				(50,965)		37
38													38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10	(72)		(0)		13.8				(3)		39
40													40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10	0		0		0.0				0		41
42													42
43													43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - NORTH DAKOTA										1,464,908		44
45													45
46													46
47													47
48													48
49													49
50													50
51													51
52													52
53													53
54													54
55													55
56													56
57													57
58													58
59													59
60													60

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget TEST YEAR 2024 - Simple Average

NORTH DAKOTA

LINE NO	ITEM		OPERATING EXPENSE		EXPENSE PER DAY 365 DAYS PER YEAR		EXPENSE LAG DAYS		EXCESS REVENUE LEAD DAYS OF 37.1 OVER EXPENSE LAG DAYS	NET REVENUE LAG DOLLARS		LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF											1
2	LEAD-LAG FACTORS-SOUTH DAKOTA JURISDICTION											2
3	FUEL - COAL	E2	4,740,714		12,988		19.1		18.0	233,659		3
4												4
5	FUEL - OIL	E1	975,772		2,673		8.9		28.2	75,415		5
6												6
7	PURCHASED POWER		8,559,385		23,450		32.8		4.3	101,540		7
8												8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE	6,706,379		18,374		10.5		26.6	489,106		9
10												10
11	ALL OTHER O&M EXPENSE		9,795,171		26,836		12.5		24.6	660,436		11
12												12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)		1,638,182		4,488		297.1		-260.0	(1,167,028)		13
14												14
15	COAL CONVERSION TAXES		9,577		26		35.6		1.5	40		15
16												16
17	FEDERAL INCOME TAXES		(1,714,347)		(4,697)		0.0		37.1	0		17
18												18
19	STATE INCOME TAXES		0		0		0.0		37.1	0		19
20												20
21	INCREMENTAL FEDERAL INCOME TAXES		0		0		0.0		37.1	0		21
22												22
23	INCREMENTAL STATE INCOME TAXES		0		0		0.0		37.1	0		23
24												24
25	BANK BALANCES	NEPIS								0		25
26												26
27	SPECIAL DEPOSITS	NEPIS								189,642		27
28												28
29	WORKING FUNDS	NEPIS								1,099		29
30												30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE	(553,715)		(1,517)		0.0			0		31
32												32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE	(895,064)		(2,452)		0.0			0		33
34												34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	0	ASSIGN TO JURIS	0		0.0			0		35
36												36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	0	ASSIGN TO JURIS	0		61.2			0		37
38												38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10	0		0		0.0			0		39
40												40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10	0		0		0.0			0		41
42												42
43												43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - SOUTH DAKOTA									583,910		44
45												45
46												46
47												47
48												48
49												49
50												50
51												51
52												52
53												53
54												54
55												55
56												56
57												57
58												58
59												59
60												60

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget TEST YEAR 2024 - Simple Average

NORTH DAKOTA

LINE NO	ITEM			OPERATING EXPENSE		EXPENSE PER DAY 365 DAYS PER YEAR		EXPENSE LAG DAYS		EXCESS REVENUE LEAD DAYS OF 30.5 OVER EXPENSE LAG DAYS		NET REVENUE LAG DOLLARS		LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF													1
2	LEAD-LAG FACTORS-FERC JURISDICTION													2
3	FUEL - COAL	E2		29,488		81		19.1		11.4		920		3
4														4
5	FUEL - OIL	E1		6,599		18		8.9		21.6		391		5
6														6
7	PURCHASED POWER			53,338		146		32.8		-2.3		(332)		7
8														8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE		1,211,778		3,320		10.5		20.0		66,465		9
10														10
11	ALL OTHER O&M EXPENSE			1,440,325		3,946		12.5		18.0		71,069		11
12														12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)			64,907		178		297.1		-266.6		(47,413)		13
14														14
15	COAL CONVERSION TAXES			379		1		35.6		-5.1		(5)		15
16														16
17	FEDERAL INCOME TAXES			3,374,179		9,244		0.0		30.5		281,952		17
18														18
19	STATE INCOME TAXES			193,770		531		0.0		30.5		16,192		19
20														20
21	INCREMENTAL FEDERAL INCOME TAXES			0		0		0.0		30.5		0		21
22														22
23	INCREMENTAL STATE INCOME TAXES			0		0		0.0		30.5		0		23
24														24
25	BANK BALANCES	NEPIS										0		25
26														26
27	SPECIAL DEPOSITS	NEPIS										260,313		27
28														28
29	WORKING FUNDS	NEPIS										1,509		29
30														30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE		(100,051)		(274)		0.0				0		31
32														32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE		(161,730)		(443)		0.0				0		33
34														34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	ASSIGN TO JURIS	0		0		0.0				0		35
36														36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	ASSIGN TO JURIS	0		0		61.2				0		37
38														38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10		0		0		0.0				0		39
40														40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10		0		0		0.0				0		41
42														42
43	TOTAL CASH WORKING CAPITAL REQUIREMENT - FERC											651,061		43
44														44
45														45
46														46
47														47
48														48
49														49
50														50
51														51
52														52
53														53
54														54
55														55
56														56
57														57
58														58
59														59
60														60

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget TEST YEAR 2024 - Simple Average

NORTH DAKOTA

LINE NO	ITEM		OPERATING EXPENSE		EXPENSE PER DAY 365 DAYS PER YEAR		EXPENSE LAG DAYS		EXCESS REVENUE LEAD DAYS OF 36.0 OVER EXPENSE LAG DAYS		NET REVENUE LAG DOLLARS		LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF												1
2	LEAD-LAG FACTORS - TOTAL CO.												2
3	FUEL - COAL			E2							2,380,452		3
4													4
5	FUEL - OIL			E1							769,799		5
6													6
7	PURCHASED POWER										797,337		7
8													8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE			LRE							4,851,507		9
10													10
11	ALL OTHER O&M EXPENSE										6,866,997		11
12													12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)										(11,761,822)		13
14													14
15	COAL CONVERSION TAXES										87		15
16													16
17	FEDERAL INCOME TAXES										281,952		17
18													18
19	STATE INCOME TAXES										16,192		19
20													20
21	INCREMENTAL FEDERAL INCOME TAXES										0		21
22													22
23	INCREMENTAL STATE INCOME TAXES										0		23
24													24
25	BANK BALANCES			NEPIS							0		25
26													26
27	SPECIAL DEPOSITS			NEPIS							2,158,433		27
28													28
29	WORKING FUNDS			NEPIS							12,513		29
30													30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING			LRE							0		31
32													32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING			LRE							0		33
34													34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN			R10	ASSIGN TO JURIS						0		35
36													36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND			R10	ASSIGN TO JURIS						(50,965)		37
38													38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX			R10							(3)		39
40													40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES			R10							0		41
42													42
43													43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - TOTAL COMPANY										6,322,479		44
45													45
46													46
47													47
48													48
49													49
50													50
51													51
52													52
53													53
54													54
55													55
56													56
57													57
58													58
59													59
60													60

The North Dakota Class Cost of Service Study can be found in Volume 3, Schedule E-3.

Otter Tail Power Company
Functionalization
Test Year 2024

2024 Functionalization Page 1 of 6

Line No.	Description	Accounts 101	Simple Average 2024		Accounts 106	Simple Average 2024		Accounts 114	Simple Average 2024		Line No.
1	Production:		(1)			(1)			(1)		1
2	Steam	310 - 317	571,495,169		310 - 316	0		310 - 317	1,588,255		2
3	Wind	341 - 347	657,818,354		344 - 347	0		344 - 347	0		3
4	Hydro	330 - 335	13,285,684		330 - 335	0		330 - 335	0		4
5	Solar		62,522,146								5
6	Other IC	340 - 347	224,720,179		340 - 347	0		340 - 347	0		6
7											7
8	Transmission	350 - 358	824,652,331		350 - 358	0		350 - 358	58,287		8
9											9
10	Distribution:										10
11	Land	360	1,497,656		360	0		360	0		11
12	Station Equipment	362	140,726,088		362	0		362	586		12
13	Poles, Towers & Fixtures	364	88,713,769		364	0					13
14	Overhead Conductors & Devices	365	62,678,781		365	0					14
15	Underground Conduit	366	0		366	0					15
16	Underground Conductors & Devices	367	130,042,166		367	0					16
17	Line Transformers	368	130,954,946		368	0					17
18	Services	369	14,188,329		369	0					18
19	Underground Services	369.1	50,453,703		369.1	0					19
20	Meters	370	28,397,520		370	0					20
21	Smart Meters	370.05	36,169,600								21
22	Load Management Switches	370.1	8,899,439		370.1	0					22
23	Interruption Monitors	370.2	0		370.2	0					23
24	Installation on Customers' Premises	371.0	0		371.0	0					24
25	EV Charging	371.1	1,771,302								25
26	All Other Private Lighting	371.2	10,003,929		371.2	0					26
27	Streetlighting & Signal Systems	373	14,969,064		373	0					27
28			719,466,292			0					28
29	General:										29
30	Land	389	1,163,225		389	0					30
31	Structures & Improvements	390	30,082,306		390	0					31
32	General Office Buildings	390.1	6,672,208		390.1	0					32
33	Fleet Service Center Building	390.2	896,880		390.2	0					33
34		390.25	2,154,593								34
35	Central Stores Buildings	390.3	5,414,880		390.3	0					35
36	Office Furniture	391	603,912		391	0					36
37	Office Equipment	391.1	327,896		391.1	0					37
38	Duplicating Equipment	391.2	772,361		391.2	0					38
39	Engineering Computers	391.3	0		391.3	0					39
40	Business Computers	391.4	0		391.4	0					40
41	Computer Systems	391.5	4,156,850		391.5	0					41
42	Computer Related Equipment	391.6	3,281,758		391.6	0					42
43	Transportation Equipment	392 & 392.1	43,084,688		392	0					43
44	Stores Equipment	393	0		393	0					44
45	Tools, Shop & Garage Equipment	394	6,840,127		394	0					45
46	Central Stores Tools	394.1									46
47	AMR Equipment	394.2	401,984		394.2	0		101 (Above)	3,196,902,767.25		47
48	Laboratory Equipment	395			395	0		101.7 Intangible (1)	42,134,377.00		48
49	Power-Operated Equipment	396	1,750,019		396	0		Agrees to FERC T/B; GL 865A Report	3,239,037,144.25		49
50	Communication Equipment & Communications Towers	397 & 397.4	7,117,723		397	0					50
51	Radio Tele-Communication Equipment	397.1	1,060,758		397.1	0		106 (Above)	0.00		51
52	Microwave Equipment	397.2	6,994,464		397.2	0		114 (Above); Agrees to FERC T/B	1,647,128.00		52
53	Radio Load Control Equipment	397.3	165,980		397.3	0		PHFU (1)			53
54	Miscellaneous Equipment	398	0		398	0		Total Plant in Service (F/S)	3,240,684,272.25		54
55			122,942,613			0		(1) Actual Year Work Paper A-1	3,240,684,272.00		55
										Agrees to Actual Year Work Paper A-1	(0.25)

			2024		Functionalization		Page 2 of 6	
Description			Accounts		Operating Statement Amounts			
Line #					Test Year 2024			
1	Steam Power Generation:			(2)				
2	Supervision and Engineering	401 - 500		2,158,400				
3	Fuel	401 - 501		51,977,346				
4	Steam Expense	401 - 502		5,403,987				
5	Electrical Expense	401 - 505		1,975,891				
6	Miscellaneous Expense	401 - 506		4,956,569				
7	Rent	401 - 507			401 =	66,472,193.39		
8	Allowances	401 - 509						
9								
10	Steam Power Maintenance:							
11	Supervision and Engineering	402 - 510		606,686				
12	Structures	402 - 511		967,805				
13	Boiler	402 - 512		5,404,699				
14	Electric	402 - 513		972,464				
15	Miscellaneous	402 - 514		1,209,743	402 =	9,161,397.51		
16								
17	Hydro:							
18	Supervision and Engineering	401 - 535		11,290				
19	Electric Expense	401 - 537 & 538		30,770				
20	Miscellaneous Expense	401 - 539		13,173	401 =	55,233.00		
21	Rents	401 - 540						
22	Supervision & Engineering	402 - 541		22				
23	Structures	402 - 542		7,294				
24	Reservoirs - Dams	402 - 543		341,324				
25	Electric	402 - 544		3,006				
26	Miscellaneous Expense	402 - 545		6,468	402 =	358,114.00		
27								
28	IC:							
29	Supervision and Engineering	401 - 546		121,216				
30	Supervision and Engineering-Wind	401 - 546(W)		1,487,738				
31	Fuel	401 - 547		10,397,281				
32	Generation Expense	401 - 548		471,033				
33	Generation Expense-Wind	401 - 548(W)		1,361,579				
34	Miscellaneous Expense	401 - 549		1,426,052				
35	Miscellaneous Expense-Wind	401 - 549(W)		4,165,532				
36	Rents	401 - 550		-	401 =	21,279,055.00		
37	Rents-Wind	401 - 550(W)		1,848,624				
38	Supervision and Engineering	402 - 551		30,637				
39	Supervision and Engineering-Wind	402 - 551(W)		170,196				
40	Structures	402 - 552		84,795	402 =	4,538,545.00		
41	Generating and Electric	402 - 553		1,033,581				
42	Generating and Electric-Wind	402 - 553(W)		1,157,939				
43	Miscellaneous Expense	402 - 554		267,415				
44	Miscellaneous Expense-Wind	402 - 554(W)		1,793,982	Production 401 =	87,806,481.39		
45					Production 402 =	14,058,056.51		
46	Other Power Supply Expenses:							
47	System Control and Dispatch	401 - 556		485,549				
48	Other Expenses	401 - 557		26,453	401 =	512,002.00		
49								
50	Transmission Expenses:							
51	Supervision and Engineering	401 - 560		231,636				
52	Load Dispatching	401 - 561		4,161,282				
53	Station Expense	401 - 562		342,727				
54	Overhead Lines	401 - 563		794,989				
55	Transmission of Electricity by Others	401 - 565		23,131,177				
56	Miscellaneous Expense	401 - 566		927,529				
57	Rents	401 - 567		36,260	401 =	30,385,410.76		
58	Supervision and Engineering	402 - 568		310,515				
59	Computer Hardware, Software, etc	402 - 569		969,859				
60	Station Equipment	402 - 570		1,525,157				
61	Overhead System	402 - 571		1,877,768				
62	Underground Lines	402 - 572		130				
63	Maintenance of Miscellaneous Plant	402 - 573		-				
64	Day-Ahead & Real-Time and Transmission Market Expense	401 - 575		759,810				
65	Computer Software	402 - 576		260,227	402 =	4,943,655.53		
66								
67	Distribution Expense:							
68	Operation, Supervision & Engineering	401 - 580		408,414				
69	Load Dispatching	401 - 581		195,497				
70	Station Expenses	401 - 582		292,870				
71	Line Expenses	401 - 583		255,629				
72	Underground Line Expenses	401 - 584		2,380,523				
73	Streightlighting & Signal System	401 - 585						
74								
75	Not Used	401 - 586.01						
76	Not Used	401 - 586.02						
77	Not Used	401 - 586.03						
78	Not Used	401 - 586.04						
79	Not Used	401 - 586.05						
80	Not Used	401 - 586.06						
81	Not Used	401 - 586.07						
82	Meter Expenses:	401 - 586		2,109,573				
83	Other Distribution Expenses	401 - 587		1,401				
84	Miscellaneous Distribution Expenses	401 - 588		3,792,991				
85	Rents	401 - 589		233,543	401 =	9,670,442.78		
86	Maintenance, Supervision & Engineering	402 - 590		982,657				
87	Maintenance of Station Equipment	402 - 592		744,378				
88	Maintenance of Overhead Lines	402 - 593		4,154,764				
89	Maintenance of Underground Lines	402 - 594		805,694				
90	Maintenance of Line Transformers	402 - 595		236,669				
91	Maintenance of Streetlighting & Signal	402 - 596		176,602				
92	Maintenance of Meters:	402 - 597		597,884				
93	Not Used	402 - 597.01						
94	Not Used	402 - 597.02						
95	Not Used	402 - 597.03						
96	Maintenance of Property in A/C 371	402 - 598		184,398	402 =	7,883,045.56		

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				2024		Functionalization		Page 3 of 6	
	Description		(3) Statement Amounts Test Year 2024						
		Accounts							
Line #									
1	Customer Accounting:								
2	Supervision	401 - 901	23,039						
3	Meter Reading Expenses	401 - 902	5,849,342						
4	Customer Records & Collection Expense	401 - 903	7,768,248						
5	Uncollectible Accounts	401 - 904	1,200,621						
6	Miscellaneous Expenses	401 - 905	1,187,249	401 =	16,028,499.40				
7									
8	Customer Service and Information Expense:								
9	Supervision	401 - 907	765,449						
10									
11	Customer Assistance Expenses	401 - 908	1,892,860						
12	Not Used	401 - 908.2							
13	Not Used	401 - 908.3							
14	Not Used	401 - 908.4							
15	Not Used	401 - 908.11							
16	Not Used	401 - 908.12							
17	Not Used	401 - 908.13							
18	Conservation Investment Program - SD	401 - 908.16	485,000						
19	Conservation Investment Program - ND	401 - 908.17	0						
20	Conservation Investment Program - MN	401 - 908.18	9,000,000						
21	Not Used	401 - 908.22							
22	Not Used	401 - 908.23							
23	Info & Instr Advertising Expense	401 - 909	209,751						
24	Miscellaneous Expenses	401 - 910	117,574	401 =	12,470,633.78				
25									
26	Sales Expenses:								
27	Supervisory Labor and Expenses	401 - 911	12,190						
28	Minnesota Economic Development	401 - 912	274,979						
29	North Dakota Economic Development	401 - 912	5,943						
30	South Dakota Economic Development	401 - 912							
31	Not Used	401 - 912.04							
32	Expenses - Sales & Demonstrations	401 - 912							
33	Not Used	401 - 912.10							
34	Not Used	401 - 912.11 & 12							
35	Not Used	401 - 912.13							
36	Not Used	401 - 912.14							
37	Not Used	401 - 912.20							
38	Not Used	401 - 912.21 & 22							
39	Not Used	401 - 912.23							
40	Not Used	401 - 912.24							
41	Not Used	401 - 912.30							
42	Not Used	401 - 912.32							
43	Not Used	401 - 912.33							
44	Not Used	401 - 912.34							
45	Advertising	401 - 913	1,348						
46	Miscellaneous Sales Expense	401 - 916	296,288						
47	Not Used	401 - 916.02							
48	Not Used	401 - 916.03							
49	Not Used	401 - 916.04							
50	Not Used	401 - 916.08							
51	Not Used	401 - 916.10							
52	Not Used	401 - 916.11							
53	Not Used	401 - 916.12							
54	Not Used	401 - 916.13							
55	Not Used	401 - 916.20							
56	Not Used	401 - 916.21							
57	Not Used	401 - 916.22							
58	Not Used	401 - 916.23							
59	Not Used	401 - 916.30							
60	Not Used	401 - 916.31							
61	Not Used	401 - 916.32							
62	Not Used	401 - 916.33		401 =	590,748.00				
63									
64	Operating Expenses - Admin & General:								
65	Salaries, Office Supplies & Expenses	401 - 920	20,291,006						
66	Various Admin & General Expenses	401 - 921	12,108,238						
67	Capitalized Admin & General Expenses	401 - 922	(2,720,136)						
68	Outside Services Employed	401 - 923	1,083,910						
69	Property Insurance	401 - 924	2,729,000						
70	Property Insurance-Wind	401 - 924(W)	1,501,959						
71	Injuries & Damages	401 - 925	4,536,918						
72	Employee Pensions & Benefits	401 - 926	1,079,188						
73	Regulatory Commission Expenses	401 - 928	3,151,279						
74	Miscellaneous General Expenses	401 - 930	3,520,649	A/C 930.01 Included in This Account					
75	Informational Advertising	401 - 930.01							
76	Rents	401 - 931	562,704	401 =	47,844,715.00				
77	Maintenance Expenses	402 - 935	1,810,327	A/C 935.06 Included in This Account					
78	Radio Load Control Equipment	402 - 935.06							

Check Totals	Amounts
Total 401 =	205,308,933.11
Total 402 =	28,695,084.59
Plus 555 (2)	90,662,127
Total	324,666,144.70
GL Total (2)	324,666,145.00
Difference	(0.30)

(2) FDW Transactions - 2011 located in Misc W/P file
(3) FDW Transactions - 2011 located in Misc W/P file

Check Totals	Amounts
Total 401 =	205,308,933.11
Total 402 =	28,695,084.59
Plus 555 (2)	90,662,127
Total	324,666,144.70
Gl. Total (2)	324,666,145.00
Difference	(0.30)

(2) FDW Transactions - 2011 located in Misc W/P file
(3) FDW Transactions - 2011 located in Misc W/P file

Line #	Factors						2024	Functionalization	Page 4 of 6	Line #
1	Base/Peak Split	Peak	Base							1
2	2024 Excluding Wind - (3)	24.03%	75.97%	100.00%	(3) Current Year Work Paper C-1, Page 1.					2
3	2024 Wind - (4)	31.49%	68.51%	100.00%	(4) Current Year Work Paper C-1_a, Page 1.					3
4										4
5										5
6	Distribution Rate Base:	Primary	Secondary	Primary	Secondary	Street	Area			6
7	(3)	Demand	Demand	Customer	Customer	Lights	Lights	Meters	Load	7
28									Management	28
29	Ending Balances									29
30	Land	1,497,656								30
31	Station Equipment	140,726,674								31
32	Poles, Towers & Fixtures	53,111,404		28,722,762	0	4,417,399	2,462,203			32
33	Overhead Conductors & Devices	36,618,097	18,726,676	1,772,760	1,654,124	2,438,389	1,468,735			33
34	Underground Conduit	0	0	0	0	0	0			34
35	Underground Conductors & Devices	22,850,922	2,693,847	88,663,816	11,481,631	2,716,000	1,635,950			35
36	Line Transformers	0	82,044,955	0	48,909,996	0	0			36
37	Services	0	11,596,627	0	2,591,703	0	0			37
38	Underground Services	0	27,952,158	0	22,501,544	0	0			38
39	Meters							28,397,520		39
40	Smart Meters							36,169,600		40
41	Load Management Switches								8,899,439	41
42	Interruption Monitors				0					42
43	Installation on Customers' Premises									43
44	EV Charging		1,447,748		323,554		10,003,929			44
45	All Other Private Lighting									45
46	Streetlighting & Signal Systems					14,969,064				46
47										47
48	Total Ending Balances	254,804,753	144,462,010	119,159,338	87,462,552	24,540,852	15,570,818	64,567,120	8,899,439	48
49										49
50		Primary	Secondary	Primary	Secondary	Street	Area		Load	50
51	Distribution Expenses	Demand	Demand	Customer	Customer	Lights	Lights	Meters	Management	51
52	Operation, Supervision & Engineering	54,423	40,602	96,890	40,146	3,382	2,023	170,949	0	52
53	Load Dispatching	22,817	19,567	48,377	19,347	1,889	1,119	82,382	0	53
54	Station Expenses	292,870								54
55	Line Expenses	77,351	96,867	26,289	45,823	5,910	3,389			55
56	Underground Line Expenses	301,376	404,184	1,169,369	448,197	35,821	21,576			56
57	Streetlighting & Signal System					0				57
58	Meter Expenses:							2,109,573	0	58
59	Other Distribution Expenses				1,401					59
60	Miscellaneous Distribution Expenses	505,430	377,080	899,826	372,843	31,406	18,788	1,587,619	0	60
61	Rents	139,818		75,614		11,629	6,482			61
62	Maintenance, Supervision & Engineering	497,564	167,994	186,469	55,673	57,942	17,015			62
63	Maintenance of Station Equipment	744,378								63
64	Maintenance of Overhead Lines	2,251,497	760,874	765,195	106,537	172,026	98,635			64
65	Maintenance of Underground Lines	102,002	136,797	395,776	151,693	12,124	7,303			65
66	Maintenance of Line Transformers		148,276		88,393					66
67	Maintenance of Streetlighting & Signal					176,602				67
68	Maintenance of Meters:							597,884	0	68
69	Maintenance of Property in A/C 371	85,057	28,718	31,876	9,517	9,905	2,909	16,416	0	69
70	Rounding	309.00	(13.00)	(191.00)	(12.00)	(26.00)	(15.00)	(53.00)		70
71	Total Distribution Expenses	5,074,892	2,180,947	3,695,490	1,339,557	518,608	179,224	4,564,770	0	71
72										72
73										73
74										74
75		Production	Transmission	Distribution	Customer	Customer				75
76	Labor Ratios: 2024 (1)	34.08%	16.21%	25.10%	Accounting	Service	1.000000			76
77										77

(1) C-2, Page 1 of 2

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Line #			Amount	2024	Functionalization	Page 6 of 6	Line #
1	Customer Accounting Expenses						1
2	Meter Reading		5,857,762				2
3	Other		10,170,737				3
4							4
5	Total Customer Accounts		16,028,499				5
6							6
7	Customer Service & Info Expense - MN		9,000,000				7
8	- ND		0				8
9	- SD		485,000				9
10	- Other		2,985,634				10
11							11
12	Total Customer Serv & Information Exp		12,470,634				12
13							13
14	Sales Expenses - MN		274,979				14
15	- ND		5,943				15
16	- SD		0				16
17	- Other		309,826				17
18							18
19	Total Sales Expenses		590,748				19
20							20
21	Administrative & General Expenses						21
22	Salaries, Supplies, Pensions & Benefits						22
23	Production		10,482,304				23
24	Transmission		4,986,321				24
25	Distribution		7,720,546				25
26	Customer Accounts		6,142,118				26
27	Customer Service & Info		1,427,007				27
28							28
29	Total A&G Salaries, Supplies, Pensions & Benefits		30,758,296				29
30							30
31	Administrative & General Expenses						31
32	Load Management		0				32
33	Outside Services (A/C 923)		1,083,910				33
34	Property Insurance (A/C 924)		4,230,959				34
35	Injuries & Damages (A/C 925)		4,536,918				35
36							36
37	General Advertising (A/C 930.1)		0				37
38	Misc, Rents, Maintenance		5,893,680				38

	(A)	(B)	(C)	(D)	(E)	(F)
		2024 Test Year Adjustments				
Line	Total Company 2024 Regulatory Year	Normalize Langdon Upgrade Project	Changes in Allocations Due to Effect of Test Year Adjustments	OTP Total Company 2024 Test Year	ND Allocation	OTP ND 2024 Test Year
1	Plant in Service					
2	A/C 101 & 106 - Direct MN	\$0		\$0	0.0%	\$0
3	A/C 101 & 106 - Direct ND	\$0		\$0	100.0%	\$0
4	A/C 101 & 106 - Direct SD	\$0		\$0	0.0%	\$0
5	Subtotal A/C 101 & 106 - Direct Assign	\$0		\$0		\$0
6	Production Plant					
7	A/C 101 & 106 - Base Demand (E1)	\$615,526,547		\$615,526,547	43.9%	\$270,055,397
8	A/C 101 & 106 - Peak Demand (D1)	\$401,843,629	7,338,769	\$409,182,398	39.5%	\$161,565,371
9	A/C 101 & 106 - Base Energy (E2)	\$450,671,354	15,966,308	\$466,637,663	45.0%	\$209,898,506
10	Subtotal A/C 101 & 106	\$1,468,041,531	23,305,077	\$1,491,346,608		\$641,519,275
11						
12	A/C 114 - Base Demand (E1)	\$1,206,597		\$1,206,597	43.9%	\$529,381
13	A/C 114 - Peak Demand (D1)	\$381,658		\$381,658	39.5%	\$150,697
14	A/C 114 - Base Energy (E1)	\$0		\$0	43.9%	\$0
15	Subtotal A/C 114	\$1,588,255		\$1,588,255		\$680,078
16						
17	Total Production Plant	\$1,469,629,785	23,305,077	\$1,492,934,862		\$642,199,353
18						
19	Transmission Plant					
20	A/C 101 & 106 (D2)	\$550,572,537		\$550,572,537	39.2%	\$215,798,007
21	A/C 101 & 106 (Direct FERC)	\$274,079,794		\$274,079,794	0.0%	\$0
22	A/C 114 (D2)	\$58,287		\$58,287	39.2%	\$22,846
23	Total Transmission Plant	\$824,710,618		\$824,710,618		\$215,820,853
24						
25	Distribution Plant					
26	Primary Demand (D3)	\$254,804,754		\$254,804,754	46.5%	\$118,538,757
27	Secondary Demand (D4)	\$143,014,221		\$143,014,221	48.7%	\$69,647,624
28	Primary Customer (C2)	\$119,159,338		\$119,159,338	43.7%	\$52,084,671
29	Secondary Customer (C3)	\$87,138,987		\$87,138,987	43.7%	\$38,091,926
30	Streetlighting (C4)	\$24,540,852		\$24,540,852	41.7%	\$10,226,985
31	Area Lighting (C5)	\$15,570,817		\$15,570,817	54.5%	\$8,488,723
32	Meters (C6)	\$64,567,120		\$64,567,120	44.6%	\$28,784,055
33	Load Management (C9)	\$8,899,439		\$8,899,439	43.7%	\$3,888,421
34	Total Distribution Plant	\$717,695,529		\$717,695,529		\$329,751,162
35						
36	General Plant					
37	Production (P10)	\$41,841,785		\$41,841,785	43.0%	\$17,998,620
38	Transmission (D2)	\$19,903,693		\$19,903,693	39.2%	\$7,801,292
39	Distribution (P60)	\$30,817,789		\$30,817,789	45.9%	\$14,159,489
40	Customer Accounts (OXC)	\$24,517,242		\$24,517,242	43.9%	\$10,761,420
41	Customer Service & Info (OXI)	\$5,696,124		\$5,696,124	44.0%	\$2,508,909
42	Load Management (C9)	\$165,980		\$165,980	43.7%	\$72,521
43	Total General Plant	\$122,942,613		\$122,942,613		\$53,302,252
44						
45	Intangible Plant (P90)	\$42,134,377		\$42,134,377	43.4%	\$18,267,524
46						
47	Total Plant in Service	\$3,177,112,923	23,305,077	\$3,200,418,000		\$1,259,341,144
48						
49	Accumulated Depreciation					
50	Production Plant					
51	Base Demand (E1)	(\$276,623,436)	-	(\$276,623,436)	43.9%	(\$121,365,443)
52	Peak Demand (D1)	(\$152,831,378)	(113,373)	(\$152,944,750)	39.5%	(\$60,390,123)
53	Base Energy (E2)	(\$142,138,944)	(246,654)	(\$142,385,598)	45.0%	(\$64,046,533)
54	Total Production Plant	(\$571,593,758)	(360,027)	(\$571,953,785)		(\$245,802,099)
55						
56	Transmission Plant (D2)	(\$159,735,443)		(\$159,735,443)	39.2%	(\$62,608,627)
57	Transmission Plant - Direct FERC	(\$25,180,544)		(\$25,180,544)	0.0%	\$0
58	Total Transmission Plant	(\$184,915,987)		(\$184,915,987)		(\$62,608,627)
59						
60	Distribution Plant (P60)	(\$268,541,408)		(\$268,541,408)	45.9%	(\$123,383,576)
61						
62	General Plant (P90)	(\$50,534,999)		(\$50,534,999)	43.4%	(\$21,909,647)
63						
64	Intangible Plant (P90)	(\$17,387,448)		(\$17,387,448)	43.4%	(\$7,538,396)
65						
66	Total Accumulated Depreciation	(\$1,092,973,600)	(360,027)	(\$1,093,333,627)		(\$461,242,344)

		(A)	(B)	(C)	(D)	(E)	(F)
		2024 Test Year Adjustments					
Line		Total Company 2024 Regulatory Year	Normalize Langdon Upgrade Project	Changes in Allocations Due to Effect of Test Year Adjustments	OTP Total Company 2024 Test Year	ND Allocation	OTP ND 2024 Test Year
67							
68	Total Net Plant in Service	\$2,084,139,322	22,945,050		\$2,107,084,372		\$798,098,800

Line		(A) Total Company 2024 Regulatory Year	(B) 2024 Test Year Adjustments	(C) Changes in Allocations Due to Effect of Test Year Adjustments	(D) OTP Total Company 2024 Test Year	(E) ND Allocation	(F) OTP ND 2024 Test Year
			Normalize Langdon Upgrade Project				
69							
70	Plant Held for Future Use						
71	Production Plant (P10)	\$0			\$0	43.0%	\$0
72	Transmission Plant (D2)	\$9,038			\$9,038	39.2%	\$3,542
73	Distribution Plant (P60)	\$3,000			\$3,000	45.9%	\$1,378
74	General Plant (P90)	\$0			\$0	43.4%	\$0
75	Intangible Plant (P90)	\$0			\$0	43.4%	\$0
76	Total Plant Held for Future Use	\$12,038			\$12,038		\$4,921
77							
78	Unamortized Holding Company Expense						
79	Unamortized Holding Company Expense - MN	\$0			\$0	0.0%	\$0
80	Unamortized Holding Company Expense - ND	\$0			\$0	100.0%	\$0
81	Unamortized Holding Company Expense - SD	\$0			\$0	0.0%	\$0
82	Unamortized Holding Company Expense - FERC	\$0			\$0	0.0%	\$0
83	Total Unamortized Holding Company Expense				\$0		\$0
84							
85	CIP Tracker Balance						
86	CIP Tracker - MN	\$0			\$0	0.0%	\$0
87	CIP Tracker - ND	\$0			\$0	100.0%	\$0
88	CIP Tracker - SD	\$0			\$0	0.0%	\$0
89	CIP Tracker - FERC	\$0			\$0	0.0%	\$0
90	Total CIP Tracker Balance	\$0			\$0		\$0
91							
92	Const Work-in-Progress - Direct Assigned						
93	Production Plant - Direct MN	\$0			\$0	0.0%	\$0
94	Production Plant - Direct ND	\$0			\$0	100.0%	\$0
95	Production Plant - Direct SD	\$0			\$0	0.0%	\$0
96	Production Plant - Direct FERC	\$0			\$0	0.0%	\$0
97	Transmission Plant - Direct MN	\$0			\$0	0.0%	\$0
98	Transmission Plant - Direct ND	\$0			\$0	100.0%	\$0
99	Transmission Plant - Direct SD	\$0			\$0	0.0%	\$0
100	Transmission Plant - Direct FERC	\$0			\$0	0.0%	\$0
101	Distribution Plant - Direct MN	\$0			\$0	0.0%	\$0
102	Distribution Plant - Direct ND	\$0			\$0	100.0%	\$0
103	Distribution Plant - Direct SD	\$0			\$0	0.0%	\$0
104	Distribution Plant - Direct FERC	\$0			\$0	0.0%	\$0
105	General Plant - Direct MN	\$0			\$0	0.0%	\$0
106	General Plant - Direct ND	\$0			\$0	100.0%	\$0
107	General Plant - Direct SD	\$0			\$0	0.0%	\$0
108	General Plant - Direct FERC	\$0			\$0	0.0%	\$0
109	Intangible Plant - Direct MN	\$0			\$0	0.0%	\$0
110	Intangible Plant - Direct ND	\$0			\$0	100.0%	\$0
111	Intangible Plant - Direct SD	\$0			\$0	0.0%	\$0
112	Intangible Plant - Direct FERC	\$0			\$0	0.0%	\$0
113	Total CWIP - Major Projects - Direct Assigned	\$0			\$0		\$0
114							
115	Const Work-in-Progress - Short-Term	\$0					
116	Production Plant (P10)	\$0			\$0	43.0%	\$0
117	Transmission Plant (D2)	\$359,000			\$359,000	39.2%	\$140,711
118	Distribution Plant (P60)	\$1,086,337			\$1,086,337	45.9%	\$499,127
119	General Plant (P90)	\$325,581			\$325,581	43.4%	\$141,157
120	Intangible Plant (P90)	\$0			\$0	43.4%	\$0
121	Total CWIP - Short-Term	\$1,770,919			\$1,770,919		\$780,995
122							
123	Const Work-in-Progress - Long Term						
124	Production Plant (AFUDC Projects P10)	\$0			\$0	43.0%	\$0
125	Production Plant (Rider Projects)	\$0			\$0	0.0%	\$0
126	Transmission Plant (AFUDC Projects)	\$0			\$0	0.0%	\$0
127	Transmission Plant (Rider Projects)	\$0			\$0	0.0%	\$0
128	Distribution Plant (P60)	\$0			\$0	45.9%	\$0
129	General Plant (P90)	\$0			\$0	43.4%	\$0
130	Intangible Plant (P90)	\$0			\$0	43.4%	\$0
131	Total CWIP - Long Term AFUDC Projects	\$0			\$0	0.0%	\$0
132	Total CWIP - Long Term Rider Projects	\$0			\$0	0.0%	\$0
133							
134	Total Construction Work-in-Progress	\$1,770,919			\$1,770,919		\$780,995

	(A)	(B)	(C)	(D)	(E)	(F)
		2024 Test Year Adjustments				
Line	Total Company 2024 Regulatory Year	Normalize Langdon Upgrade Project	Changes in Allocations Due to Effect of Test Year Adjustments	OTP Total Company 2024 Test Year	ND Allocation	OTP ND 2024 Test Year
135						
136						
137	Materials & Supplies					
137	Production (P10)	\$8,651,753		\$8,651,753	43.0%	\$3,721,629
138	Transmission (D2)	\$9,116,226		\$9,116,226	39.2%	\$3,573,123
139	Distribution (P60)	\$16,199,114		\$16,199,114	45.9%	\$7,442,817
140	Total Materials and Supplies	\$33,967,093		\$33,967,093		\$14,737,569
141						
142	Fuel Stocks					
143	Coal Stocks (E1)	\$8,165,846		\$8,165,846	43.9%	\$3,582,674
144	Fuel Oil Stocks (D1)	\$2,310,865		\$2,310,865	39.5%	\$912,443
145	Total Fuel Stocks	\$10,476,711		\$10,476,711		\$4,495,117
146						
147	Prepayments (NEPIS)	\$49,187,427		\$49,187,427	37.9%	\$18,630,685
148						
149	Customer Advances & Deposits					
150	Customer Advances & Deposits (NEPIS)	(\$1,876,522)		(\$1,876,522)	37.9%	(\$710,769)
151	Customer Deposits (Direct MN)			\$0	100.0%	\$0
152						
153	Cash Working Capital	\$3,629,386		\$3,629,386		\$1,464,907
154						
155	Accumulated Deferred Income Taxes					
156	<i>Items SD Flows Through</i>					
157	Federal (NPMNR)	(\$27,894)		(\$27,894)	41.5%	(\$11,583)
158	Minnesota (NPISM)	\$0		\$0	0.0%	\$0
159	North Dakota (NPISN)	\$0		\$0	98.7%	\$0
160	<i>Subtotal</i>	(\$27,894)		(\$27,894)		(\$11,583)
161	<i>All Other</i>					
162	Federal (NEPIS EXDA)	(\$294,490,488)		(\$294,490,488)	42.9%	(\$126,341,211)
163	Federal (Direct FERC)	(\$20,921,619)		(\$20,921,619)	0.0%	\$0
164	Minnesota (NPISM)	\$0		\$0	0.0%	\$0
165	North Dakota (NPISN)	(\$50,073,352)		(\$50,073,352)	98.7%	(\$49,415,878)
166	<i>Subtotal</i>	(\$365,485,459)		(\$365,485,459)		(\$175,757,089)
167						
168	Total Accumulated Deferred Income Taxes	(\$365,513,353)		(\$365,513,353)		(\$175,768,672)
169						
170	Unamortized Rate Case Expenses					
171	Minnesota	\$0		\$0	0.0%	\$0
172	North Dakota	\$0		\$0	100.0%	\$0
173	South Dakota	\$0		\$0	0.0%	\$0
174	FERC	\$0		\$0	0.0%	\$0
175	Total Unamortized Rate Case Expenses	\$0		\$0		\$0
176						
177	Total Average Rate Base	\$1,815,793,022	22,945,050	-	\$1,838,738,072	\$661,733,554

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
	Total Company 2024 Regulatory Year	Rate Case Expenses	Normalize Langdon Upgrade Project	Normalize Pension and PRM	Non-Employee Director Restricred Stock	Rider Roll-In	ESSRP	2024 Test Year Employee Recognition and Gift Expense
Line								
1	Operating Revenues							
2	Sales of Electricity - Minnesota (Direct MN/R10)	\$237,847,135						
3	Sales of Electricity - North Dakota (Direct ND/R10)	\$205,989,209	-	-		(\$23,302,321)		
4	Sales of Electricity - South Dakota (Direct SD/R10)	\$44,029,611	-	-				
5	Sales of Electricity - FERC (Direct FERC/R10)	\$0	-	-				
6	Total Retail Sales	\$487,865,955	\$0	\$0	\$0	\$0	(\$23,302,321)	\$0
7								
8	Other Operating Revenues							
9	Other Sales for Resale							
10	Municipalities (Direct FERC)	\$0	-	-				
11	Non-Asset Wholesale Transactions (D2)	\$0	-	-				
12	All Other Transactions	\$0						
13	Base Demand (E1)	\$0	-	-				
14	Peak Demand (D1)	\$0	-	-				
15	Base Energy (E2)	\$6,947,794	-	-				
16	Peak Energy (D1)	\$0	-	-				
17								
18	Total Other Sales for Resale	\$6,947,794	\$0	\$0	\$0	\$0	\$0	\$0
19								
20	Other Electric Revenues							
21	Late Fees - Minnesota (Direct MN/C1)	\$395,253	-	-				
22	Late Fees - North Dakota (Direct ND/C1)	\$316,187	-	-				
23	Late Fees - South Dakota (Direct SD/C1)	\$98,441	-	-				
24	Subtotal Late Fees	\$809,881	\$0	\$0	\$0	\$0	\$0	\$0
25	Connection Fees - Minnesota (Direct MN/C1)	\$171,798	-	-				
26	Connection Fees - North Dakota (Direct ND/C1)	\$136,812	-	-				
27	Connection Fees - South Dakota (Direct SD/C1)	\$31,922	-	-				
28	Subtotal Connection Fees	\$340,532	\$0	\$0	\$0	\$0	\$0	\$0
29	Rent from Electric Property (NEPIS)	\$435,931	-	-				
30	Rent from Electric Property - Big Stone (NEPIS)	\$1,395,880	-	-				
31	Rent from Electric Property - Coyote (NEPIS)	\$0	-	-				
32	Other Miscellaneous Electric Revenue (NEPIS)	\$0	-	-				
33	Other Miscellaneous Electric Revenue (Direct MN/C1)	\$0	-	-				
34	Other Miscellaneous Electric Revenue (Direct ND/C1)	\$0	-	-				
35	Other Miscellaneous Electric Revenue (Direct SD/C1)	\$0	-	-				
36	Subtotal Other Miscellaneous Electric Revenue	\$1,831,811	\$0	\$0	\$0	\$0	\$0	\$0
37	Integrated Transmission Deficiency Payments (NEPIS)	\$848,757	-	-				
38	Miscellaneous Services (NEPIS)	\$0	-	-				
39	Wheeling - All Jurisdictions (NEPIS)	\$425,279	-	-				
40	Load Control & Dispatching, MAPP & MISO (NEPIS EXDA)	\$19,546,874	-	-				
41	Load Control & Dispatching, MAPP & MISO (Direct FERC)	\$32,012,996	-	-				
42	Subtotal Load Control & Dispatching, MAPP & MISO	\$52,833,906	\$0	\$0	\$0	\$0	\$0	\$0
43	Loan Pool Interest - Minnesota (Direct MN/C1)	\$0	-	-				
44	Loan Pool Interest - North Dakota (Direct ND/C1)	\$0	-	-				
45	Loan Pool Interest - South Dakota (Direct SD/C1)	\$0	-	-				
46	Subtotal Loan Pool Interest	\$0	\$0	\$0	\$0	\$0	\$0	\$0
47	Total Other Electric Revenues	\$55,816,130	\$0	\$0	\$0	\$0	\$0	\$0
48								
49	Total Other Operating Revenues	\$62,763,924	\$0	\$0	\$0	\$0	\$0	\$0
50								
51	Total Operating Revenues	\$550,629,879	\$0	\$0	\$0	\$0	(\$23,302,321)	\$0
52								
53	Operating Expenses							
54	Production Expenses							
55	<i>Production Expenses Excl Purchased Power</i>							
56	Base Demand (E1)	\$15,513,031	-	-	735,266			
57	Peak Demand (D1)	\$8,562,412	-	-	232,571			
58	Base Energy (E2)	\$67,526,672	-	-				
59	Peak Energy (D1)	\$10,397,281	-	-				
60	Base Demand (Direct MN)	\$0	-	-				
61	Peak Demand (Direct MN)	\$377,143	-	-				
62	Total Excluding Purchased Power	\$102,376,539	\$0	\$0	\$967,837	\$0	\$0	\$0
63								
64	<i>Purchased Power</i>							
65	Base Demand (E1)	\$1,921,959	-	-				
66	Peak Demand (D1)	\$0	-	-				
67	Base Energy (E2)	\$91,559,032	-	-				
68	Peak Energy (D1)	\$0	-	-				
69	Total Purchased Power	\$93,480,991	-	-				
70	Total Production Expenses	\$195,857,530	\$0	\$0	\$967,837	\$0	\$0	\$0
71								
72	Transmission Expenses (D2)	\$35,329,066	-	-	610,424			

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
								2024 Test Year
Line	Total Company 2024 Regulatory Year	Rate Case Expenses	Normalize Langdon Upgrade Project	Normalize Pension and PRM	Non-Employee Director Restricted Stock	Rider Roll-In	ESSRP	Employee Recognition and Gift Expense
73	Transmission Exoenses (Direct MN)	\$0	-	-				
74	Transmission Expenses (Direct FERC)	\$0	-	-				
75	Total Transmission Expenses	\$35,329,066	\$0	\$0	\$610,424	\$0	\$0	\$0
76								
77	Distribution Expenses							
78	Primary Demand (D3)	\$5,074,895	-	-	124,574			
79	Secondary Demand (D4)	\$2,180,947	-	-	92,940			
80	Primary Customer (C2)	\$3,695,488	-	-	221,782			
81	Secondary Customer (C3)	\$1,339,557	-	-	91,895			
82	Streetlighting (C4)	\$518,608	-	-	7,741			
83	Area Lighting (C5)	\$179,224	-	-	4,631			
84	Meters (C6)	\$4,564,769	-	-	391,304			
85	Load Management (C9)	\$0	-	-				
86	Total Distribution	\$17,553,488	\$0	\$0	\$934,867	\$0	\$0	\$0
87								
88	Customer Accounting Expenses							
89	Meter Reading (C7)	\$5,857,762	-	-	216,613			
90	Other (C8)	\$10,170,737	-	-	376,101			
91	Total Customer Accounts	\$16,028,499	\$0	\$0	\$592,714	\$0	\$0	\$0
92								
93	Customer Service & Info Expenses							
94	Conservation & DSM Rebates - MN (Direct MN/E2)	\$9,000,000	-	-	109,283			
95	Conservation & DSM Rebates - ND (Direct ND/E2)	\$0	-	-				
96	Conservation & DSM Rebates - SD (Direct SD/E2)	\$485,000	-	-	5,889			
97	Other (C1)	\$2,985,633	-	-	36,253			
98	Total Customer Serv & Infomation Exp	\$12,470,633	\$0	\$0	\$151,425	\$0	\$0	\$0
99								
100	Sales Expenses							
101	Off-Peak Development - MN (Direct MN/C1)	\$274,979	-	-				
102	Off-Peak Development - ND (Direct ND/C1)	\$0	-	-				
103	Off-Peak Development - SD (Direct SD/C1)	\$0	-	-				
104	Other (C1)	\$308,479	-	-				
105	Total Sales Expenses	\$583,458	\$0	\$0	\$0	\$0	\$0	\$0
106								
107	Administrative & General Expenses							
108	<i>Salaries, Supplies, Pensions & Benefits</i>							
109	Production (OXPD)	\$8,891,759	-	-	895,984	208,215	48,555	76,811
110	Transmission (D2)	\$4,229,715	-	-	426,210	99,046	23,097	36,538
111	Distribution (OXD)	\$6,549,060	-	-	659,920	153,357	35,762	56,574
112	Customer Accounts (OXC)	\$5,210,136	-	-	525,003	122,004	28,451	45,007
113	Customer Service & Info (C1)	\$1,210,478	-	-	121,975	28,345	6,610	10,457
114	Total A&G Salaries, Supp, Pensions & Benefits	\$26,091,148	\$0	\$0	\$2,629,092	\$610,967	\$142,475	\$225,387
115								
116	Load Management (C9)	\$0	-	-				
117	Outside Services (A/C 923) (NEPIS)	\$1,083,910	-	-				
118	Property Insurance (A/C 924) (NEPIS)	\$4,230,959	-	-				
119	Injuries & Damages (A/C 925) (NEPIS)	\$4,536,918	-	-				
120	Regulatory Commission Exp (A/C 928) - MN (Direct MN/R10)	\$1,518,965	-	-				
121	Regulatory Commission Exp (A/C 928) - ND (Direct ND/R10)	\$502,550	359,404					
122	Regulatory Commission Exp (A/C 928) - SD (Direct SD/R10)	\$113,656	-					
123	Regulatory Commission Exp (A/C 928) - FERC (Direct FERC/R)	\$1,016,109	-					
124	Total Regulatory Commission Expense	\$3,151,280	\$359,404	\$0	\$0	\$0	\$0	\$0
125	General Advertising (A/C 930.1) (C1)	\$0	-					
126	Misc, Rents, Maintenance (P90)	\$4,799,643	-					
127	Total Administrative & General Expense	\$43,893,858	\$359,404	\$0	\$2,629,092	\$610,967	\$142,475	\$225,387
128								
129	Charitable Contributions (& Cust Dep Int)							
130	Minnesota Only (Direct MN/C1)	\$0	-	-				
131	North Dakota Only (Direct ND/C1)	\$0	-	-				
132	South Dakota Only (Direct SD/C1)	\$0	-	-				
133	Total Charitable Contributions (& Cust Dep Int)	\$0	-	-				
134								
135	Total O & M Expenses	\$321,716,532	\$359,404	\$0	\$5,886,359	\$610,967	\$142,475	\$225,387
136								
137	Depreciation Expense							
138	Production							
139	Base Demand (E1)	\$15,980,135	-					
140	Peak Demand (D1)	\$10,730,060		356,314				
141	Base Energy (E2)	\$12,347,461		775,201				
142	Total Production	\$39,057,656	\$0	\$1,131,515	\$0	\$0	\$0	\$0
143	Transmission (D2)	\$8,706,848	-					
144	Transmission (Direct FERC)	\$4,176,849	-	-				

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
	Total Company 2024 Regulatory Year	Rate Case Expenses	Normalize Langdon Upgrade Project	Normalize Pension and PRM	Non-Employee Director Restricred Stock	Rider Roll-In	ESSRP	2024 Test Year Employee Recognition and Gift Expense
Line								
145	Total Transmission	\$12,883,697	\$0	\$0	\$0	\$0	\$0	\$0
146	Distribution (P60)	\$18,610,423	-	-				
147	General (P90)	\$4,236,745						
148	Intangible (P90)	\$4,617,449						
149	Total Depreciation Expense	\$79,405,970	\$0	\$1,131,515	\$0	\$0	\$0	\$0
150								
157								
158	General Taxes (NEPIS EXDA)	\$16,557,620						
159	General Taxes (Direct FERC)	\$2,136,276						
160	Total General Taxes	\$18,693,896	\$0	\$0	\$0	\$0	\$0	\$0
161								
162	Total Operating Expense Before Tax	678,945,176	359,404	1,131,515	9,143,626	610,967	142,475	225,387
163								
164	Net Operating Income Before Tax	\$130,813,481	(\$359,404)	(\$1,131,515)	(\$5,886,359)	(\$610,967)	(\$23,302,321)	(\$142,475)
165								(\$225,387)
166	Wind Investment Tax Credit & Production Tax Credit							
167	Amortization of Prior Year Credit (EPIS)	(\$741,779)						
168	Production Tax Credits (E2)	(\$5,886,693)						
169	Investment Tax Credits (EPIS)	\$0						
170	Debits Utilized (EPIS)							
171	Total Wind Investment Tax Credit & Production Tax Credit	(\$6,628,472)	\$0	\$0	\$0	\$0	\$0	\$0
172								
173	Deferred Income Taxes							
174	Items SD Flows Through	\$0						
175	Federal (NPMNR)	\$0						
176	Minnesota (NPISM)	\$0	-	-				
177	North Dakota (NPISN)	(\$31,934)	-	-				
178	Subtotal	(\$31,934)	-	-				
179	All Other							
180	Transfer of federal current income taxes due to NOL	\$897,726	-	-				
181	Federal (NEPIS)	\$12,091,374	-	-				
182	Federal (NEPIS)	\$12,989,100	\$0	\$0	\$0	\$0	\$0	\$0
183	Transfer of Minnesota current income taxes due to NOL	\$198,272	-	-				
184	Minnesota (NPISM)	\$3,663,420	-	-				
185	Minnesota (NPISM)	\$3,861,692	\$0	\$0	\$0	\$0	\$0	\$0
186	Transfer of North Dakota current income taxes due to NOL	(\$104,822)	-	-				
187	North Dakota (NPISN)	\$1,122,373	-	-				
188	North Dakota (NPISN)	\$1,017,551	\$0	\$0	\$0	\$0	\$0	\$0
189	Subtotal	\$17,868,343	-	-				
190	Total Deferred Income Taxes	\$17,836,409	\$0	\$0	\$0	\$0	\$0	\$0
191								
192	Current Income Taxes							
193	Federal Current Income Tax Transfer due to NOL	(\$897,726)	-	-				
194	Federal Current Income Tax	\$897,726	-	-				
195	Federal Income Taxes	\$0	\$0	\$0	\$0	\$0	\$0	\$0
196	Minnesota Income Tax Transfer due to NOL	(\$198,272)	-	-				
197	Minnesota Income Tax	\$198,272	-	-				
198	Minnesota Income Taxes (Direct MN)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
199	North Dakota Income Tax Transfer due to NOL	\$0	-	-				
200	North Dakota Income Tax		-	-				
201	North Dakota Income Taxes (Direct ND)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
202	Subtotal State Income Taxes	\$0	-	-				
203	Total Current Income Taxes	\$0	\$0	\$0	\$0	\$0	\$0	\$0
204								
205	Total Income Taxes	\$11,207,937	\$0	\$0	\$0	\$0	\$0	\$0
206								
207	Net Operating Income	\$119,605,544	(\$359,404)	(\$1,131,515)	(\$5,886,359)	(\$610,967)	(\$23,302,321)	(\$142,475)
208								(\$225,387)
212	Total Allowance for Funds Used During Construction	\$0						
213								
214	Total Available for Return	\$119,605,545	(\$359,404)	(\$1,131,515)	(\$5,886,359)	(\$610,967)	(\$23,302,321)	(\$142,475)
								(\$225,387)

	(I)	(J)	(O)	(P)	(Q)	(R)	(S)
	Adjustments						
Line	Investor Relations	Long-Term Incentive	Total Test Year Adjustments	Changes in Allocations Due to Effect of Test Year Adjustments	OTP Total Company 2024 Test Year	ND Allocation	OTP ND 2024 Test Year
1	Operating Revenues						
2	Sales of Electricity - Minnesota (Direct MN/R10)		-		\$237,847,135	0.00%	\$0
3	Sales of Electricity - North Dakota (Direct ND/R10)		(23,302,321)		\$182,686,888	100.00%	\$182,686,888
4	Sales of Electricity - South Dakota (Direct SD/R10)		-		\$44,029,611	0.00%	\$0
5	Sales of Electricity - FERC (Direct FERC/R10)		-		\$0	0.00%	\$0
6	Total Retail Sales	\$0	\$0	(\$23,302,321)	\$464,563,634		\$182,686,888
7							
8	Other Operating Revenues						
9	Other Sales for Resale						
10	Municipalities (Direct FERC)		-		\$0	0.00%	\$0
11	Non-Asset Wholesale Transactions (D2)		-		\$0	39.20%	\$0
12	All Other Transactions		-		\$0		\$0
13	Base Demand (E1)		-		\$0	43.87%	\$0
14	Peak Demand (D1)		-		\$0	39.48%	\$0
15	Base Energy (E2)		-		\$6,947,794	44.98%	\$3,125,191
16	Peak Energy (D1)		-		\$0	39.20%	\$0
17							
18	Total Other Sales for Resale	\$0	\$0	\$0	\$6,947,794		\$3,125,191
19							
20	Other Electric Revenues						
21	Late Fees - Minnesota (Direct MN/C1)		-		\$395,253	0.00%	\$0
22	Late Fees - North Dakota (Direct ND/C1)		-		\$316,187	100.00%	\$316,187
23	Late Fees - South Dakota (Direct SD/C1)		-		\$98,441	0.00%	\$0
24	Subtotal Late Fees	\$0	\$0	\$0	\$809,881		\$316,187
25	Connection Fees - Minnesota (Direct MN/C1)		-		\$171,798	0.00%	\$0
26	Connection Fees - North Dakota (Direct ND/C1)		-		\$136,812	100.00%	\$136,812
27	Connection Fees - South Dakota (Direct SD/C1)		-		\$31,922	0.00%	\$0
28	Subtotal Connection Fees	\$0	\$0	\$0	\$340,532		\$136,812
29	Rent from Electric Property (NEPIS)		-		\$435,931	37.88%	\$165,117
30	Rent from Electric Property - Big Stone (NEPIS)		-		\$1,395,880	37.88%	\$528,716
31	Rent from Electric Property - Coyote (NEPIS)		-		\$0	37.88%	\$0
32	Other Miscellaneous Electric Revenue (NEPIS)		-		\$0	37.88%	\$0
33	Other Miscellaneous Electric Revenue (Direct MN/C1)		-		\$0	44.05%	\$0
34	Other Miscellaneous Electric Revenue (Direct ND/C1)		-		\$0	44.05%	\$0
35	Other Miscellaneous Electric Revenue (Direct SD/C1)		-		\$0	44.05%	\$0
36	Subtotal Other Miscellaneous Electric Revenue	\$0	\$0	\$0	\$1,831,811		\$693,834
37	Integrated Transmission Deficiency Payments (NEPIS)		-		\$848,757	37.88%	\$321,483
38	Miscellaneous Services (NEPIS)		-		\$0	37.88%	\$0
39	Wheeling - All Jurisdictions (NEPIS)		-		\$425,279	0.00%	\$0
40	Load Control & Dispatching, MAPP & MISO (NEPIS EXDA)		-		\$19,546,874	42.90%	\$8,385,928
41	Load Control & Dispatching, MAPP & MISO (Direct FERC)		-		\$32,012,996	0.00%	\$0
42	Subtotal Load Control & Dispatching, MAPP & MISO	\$0	\$0	\$0	\$52,833,906		\$8,707,411
43	Loan Pool Interest - Minnesota (Direct MN/C1)		-		\$0	44.05%	\$0
44	Loan Pool Interest - North Dakota (Direct ND/C1)		-		\$0	44.05%	\$0
45	Loan Pool Interest - South Dakota (Direct SD/C1)		-		\$0	44.05%	\$0
46	Subtotal Loan Pool Interest	\$0	\$0	\$0	\$0		\$0
47	Total Other Electric Revenues	\$0	\$0	\$0	\$55,816,130		\$9,854,243
48							
49	Total Other Operating Revenues	\$0	\$0	\$0	\$62,763,924		\$12,979,434
50							
51	Total Operating Revenues	\$0	\$0	(\$23,302,321)	\$527,327,558		\$195,666,322
52							
53	Operating Expenses						
54	Production Expenses						
55	<i>Production Expenses Excl Purchased Power</i>						
56	Base Demand (E1)		735,266		\$16,248,297	43.87%	\$7,128,758
57	Peak Demand (D1)		232,571		\$8,794,983	39.48%	\$3,472,693
58	Base Energy (E2)		-		\$67,526,672	44.98%	\$30,374,206
59	Peak Energy (D1)		-		\$10,397,281	39.48%	\$4,105,359
60	Base Demand (Direct MN)		-		\$0	0.00%	\$0
61	Peak Demand (Direct MN)		-		\$377,143	0.00%	\$0
62	Total Excluding Purchased Power	\$0	\$0	\$967,837	\$103,344,376		\$45,081,016
63							
64	<i>Purchased Power</i>						
65	Base Demand (E1)		-		\$1,921,959	43.87%	\$843,238
66	Peak Demand (D1)		-		\$0	39.48%	\$0
67	Base Energy (E2)		-		\$91,559,032	44.98%	\$41,184,214
68	Peak Energy (D1)		-		\$0	39.48%	\$0
69	Total Purchased Power				\$93,480,991		\$42,027,452
70	Total Production Expenses	\$0	\$0	\$967,837	\$196,825,367		\$87,108,468
71							
72	Transmission Expenses (D2)			610,424	\$35,939,490	39.20%	\$14,086,555

	(I)	(J)	(O)	(P)	(Q)	(R)	(S)
	Adjustments						
Line	Investor Relations	Long-Term Incentive	Total Test Year Adjustments	Changes in Allocations Due to Effect of Test Year Adjustments	OTP Total Company 2024 Test Year	ND Allocation	OTP ND 2024 Test Year
73			-		\$0	0.00%	\$0
74			-		\$0	0.00%	\$0
75	Total Transmission Expenses	\$0	\$0	\$610,424	\$35,939,490		\$14,086,555
76							
77	Distribution Expenses						
78	Primary Demand (D3)		124,574		\$5,199,469	46.52%	\$2,418,866
79	Secondary Demand (D4)		92,940		\$2,273,887	48.70%	\$1,107,378
80	Primary Customer (C2)		221,782		\$3,917,270	43.71%	\$1,712,243
81	Secondary Customer (C3)		91,895		\$1,431,452	43.71%	\$625,745
82	Streetlighting (C4)		7,741		\$526,349	41.67%	\$219,347
83	Area Lighting (C5)		4,631		\$183,855	54.52%	\$100,232
84	Meters (C6)		391,304		\$4,956,073	44.58%	\$2,209,420
85	Load Management (C9)		-		\$0	43.69%	\$0
86	Total Distribution	\$0	\$0	\$934,867	\$18,488,355		\$8,393,231
87							
88	Customer Accounting Expenses						
89	Meter Reading (C7)		216,613		\$6,074,375	44.21%	\$2,685,753
90	Other (C8)		376,101		\$10,546,838	43.71%	\$4,609,840
91	Total Customer Accounts	\$0	\$0	\$592,714	\$16,621,213		\$7,295,594
92							
93	Customer Service & Info Expenses						
94	Conservation & DSM Rebates - MN (Direct MN/E2)		109,283		\$9,109,283	0.00%	\$0
95	Conservation & DSM Rebates - ND (Direct ND/E2)		-		\$0	100.00%	\$0
96	Conservation & DSM Rebates - SD (Direct SD/E2)		5,889		\$490,889	0.00%	\$0
97	Other (C1)		36,253		\$3,021,886	44.05%	\$1,331,017
98	Total Customer Serv & Infomation Exp	\$0	\$0	\$151,425	\$0	\$12,622,058	\$1,331,017
99							
100	Sales Expenses						
101	Off-Peak Development - MN (Direct MN/C1)		-		\$274,979	0.00%	\$0
102	Off-Peak Development - ND (Direct ND/C1)		-		\$0	100.00%	\$0
103	Off-Peak Development - SD (Direct SD/C1)		-		\$0	0.00%	\$0
104	Other (C1)		-		\$308,479	44.05%	\$135,872
105	Total Sales Expenses	\$0	\$0	\$0	\$583,458		\$135,872
106							
107	Administrative & General Expenses						
108	Salaries, Supplies, Pensions & Benefits						
109	Production (OXPD)	967,481	2,197,046		\$11,088,805	42.44%	\$4,706,353
110	Transmission (D2)	460,221	1,045,112		\$5,274,827	39.20%	\$2,067,479
111	Distribution (OXD)	712,580	1,618,193		\$8,167,253	45.40%	\$3,707,720
112	Customer Accounts (OXC)	566,897	1,287,362		\$6,497,498	43.89%	\$2,851,964
113	Customer Service & Info (C1)	131,708	299,095		\$1,509,573	44.05%	\$664,905
114	Total A&G Salaries, Supp, Pensions & Benefits	\$0	\$2,838,887	\$6,446,808	\$32,537,956		\$13,998,421
115							
116	Load Management (C9)		-		\$0	43.69%	\$0
117	Outside Services (A/C 923) (NEPIS)		-		\$1,083,910	37.88%	\$410,552
118	Property Insurance (A/C 924) (NEPIS)		-		\$4,230,959	37.88%	\$1,602,557
119	Injuries & Damages (A/C 925) (NEPIS)		-		\$4,536,918	37.88%	\$1,718,445
120	Regulatory Commission Exp (A/C 928) - MN (Direct MN/R10)		-		\$1,518,965	0.00%	\$0
121	Regulatory Commission Exp (A/C 928) - ND (Direct ND/R10)		359,404		\$861,954	100.00%	\$861,954
122	Regulatory Commission Exp (A/C 928) - SD (Direct SD/R10)		-		\$113,656	0.00%	\$0
123	Regulatory Commission Exp (A/C 928) - FERC (Direct FERC/R1)		-		\$1,016,109	0.00%	\$0
124	Total Regulatory Commission Expense	\$0	\$0	\$359,404	\$3,510,684		\$861,954
125	General Advertising (A/C 930.1) (C1)		-		\$0	44.05%	\$0
126	Misc, Rents, Maintenance (P90)	236,267		236,267	\$5,035,910	43.36%	\$2,183,338
127	Total Administrative & General Expense	\$236,267	\$2,838,887	\$7,042,479	\$50,936,337		\$20,775,268
128							
129	Charitable Contributions (& Cust Dep Int)						
130	Minnesota Only (Direct MN/C1)		-		\$0	44.05%	\$0
131	North Dakota Only (Direct ND/C1)		-		\$0	44.05%	\$0
132	South Dakota Only (Direct SD/C1)		-		\$0	44.05%	\$0
133	Total Charitable Contributions (& Cust Dep Int)				\$0	44.05%	\$0
134							
135	Total O & M Expenses	\$236,267	\$2,838,887	\$10,299,746	\$332,016,278		\$139,126,005
136							
137	Depreciation Expense						
138	Production						
139	Base Demand (E1)		-		\$15,980,135	43.87%	\$7,011,105
140	Peak Demand (D1)		356,314		\$11,086,374	39.48%	\$4,377,447
141	Base Energy (E2)		775,201		\$13,122,662	44.98%	\$5,902,711
142	Total Production	\$0	\$0	\$1,131,515	\$40,189,171		\$17,291,263
143	Transmission (D2)		-		\$8,706,848	39.20%	\$3,412,666
144	Transmission (Direct FERC)		-		\$4,176,849	0.00%	\$0

		(I) Adjustments	(J)	(O)	(P)	(Q)	(R)	(S)
Line		Investor Relations	Long-Term Incentive	Total Test Year Adjustments	Changes in Allocations Due to Effect of Test Year Adjustments	OTP Total Company 2024 Test Year	ND Allocation	OTP ND 2024 Test Year
145	Total Transmission	\$0	\$0	\$0		\$12,883,697		\$3,412,666
146	Distribution (P60)			-		\$18,610,423	45.95%	\$8,550,713
147	General (P90)			-		\$4,236,745	43.36%	\$1,836,857
148	Intangible (P90)			-		\$4,617,449	43.36%	\$2,001,913
149	Total Depreciation Expense	\$0	\$0	\$1,131,515		\$80,537,485		\$33,093,414
150								
157								
158	General Taxes (NEPIS EXDA)			-		\$16,557,620	42.90%	\$7,103,489
159	General Taxes (Direct FERC)			-		\$2,136,276	0.00%	\$0
160	Total General Taxes	\$0	\$0	\$0		\$18,693,896		\$7,103,489
161								
162	Total Operating Expense Before Tax	236,267	2,838,887	14,688,528		693,633,704		290,570,156
163								
164	Net Operating Income Before Tax	(\$236,267)	(\$2,838,887)	(\$34,733,582)		\$96,079,899		\$16,343,414
165								
166	Wind Investment Tax Credit & Production Tax Credit							
167	Amortization of Prior Year Credit (EPIS)			-		(\$741,779)	39.35%	(\$291,885)
168	Production Tax Credits (E2)			-		(\$5,886,693)	44.98%	(\$2,647,896)
169	Investment Tax Credits (EPIS)			-		\$0	39.35%	\$0
170	Debits Utilized (EPIS)			-		\$0	39.35%	\$0
171	Total Wind Investment Tax Credit & Production Tax Credit	\$0	\$0	\$0	\$0	(\$6,628,472)		(\$2,939,781)
172								
173	Deferred Income Taxes							
174	Items SD Flows Through			-				
175	Federal (NPMNR)			-		\$0	41.53%	\$0
176	Minnesota (NPISM)			-		\$0	98.69%	\$0
177	North Dakota (NPISN)			-		(\$31,934)	98.69%	(\$31,515)
178	Subtotal			-		(\$31,934)		(\$31,515)
179	All Other							
180	Transfer of federal current income taxes due to NOL			-		(\$6,244,483)	100.00%	(\$6,241,694)
181	Federal (NEPIS)			-		\$12,091,374	37.88%	\$4,579,841
182	Federal (NEPIS)	\$0	\$0	\$0		\$5,846,891		(\$1,661,853)
183	Transfer of Minnesota current income taxes due to NOL			-		(\$336,807)		\$0
184	Minnesota (NPISM)			-		\$3,663,420	0.00%	\$0
185	Minnesota (NPISM)	\$0	\$0	\$0		\$3,326,613		\$0
186	Transfer of North Dakota current income taxes due to NOL			-		(\$1,339,764)		(\$1,339,764)
187	North Dakota (NPISN)			-		\$1,122,373	98.69%	\$1,107,636
188	North Dakota (NPISN)	\$0	\$0	\$0		(\$217,391)		(\$232,128)
189	Subtotal					\$8,956,113		(\$1,893,981)
190	Total Deferred Income Taxes	\$0	\$0	\$0		\$8,924,179		(\$1,925,497)
191								
192	Current Income Taxes							
193	Federal Current Income Tax Transfer due to NOL			-		\$6,241,694	0.00%	\$0
194	Federal Current Income Tax			-		(\$6,241,694)	0.00%	\$0
195	Federal Income Taxes	\$0	\$0	\$0		\$0		\$0
196	Minnesota Income Tax Transfer due to NOL			-		\$336,807		\$0
197	Minnesota Income Tax			-		(\$336,807)		\$0
198	Minnesota Income Taxes (Direct MN)	\$0	\$0	\$0		\$0		\$0
199	North Dakota Income Tax Transfer due to NOL			-		\$1,339,764	0.00%	\$0
200	North Dakota Income Tax			-		(\$1,339,764)	0.00%	\$0
201	North Dakota Income Taxes (Direct ND)	\$0	\$0	\$0		\$0		\$0
202	Subtotal State Income Taxes					\$0		\$0
203	Total Current Income Taxes	\$0	\$0	\$0		\$0		\$0
204								
205	Total Income Taxes	\$0	\$0	\$0		\$2,295,707		(\$4,865,278)
206								
207	Net Operating Income	(\$236,267)	(\$2,838,887)	(\$34,733,582)		\$93,784,192		\$21,208,693
208								
212	Total Allowance for Funds Used During Construction					\$0		\$0
213								
214	Total Available for Return	(\$236,267)	(\$2,838,887)	(\$34,733,582)		\$93,784,193		\$21,208,694

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 ND TY-01 and Required Schedule B-3

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ND Share
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ADJUSTMENT TO ANNUALIZE PLANT-IN-SERVICE ON CURRENT AND FUTURE CAPITAL PROJECTS

Line No.		(A) System-Wide	(B) Allocation Factor	(C) Allocation Percentage	(D) ND Test-Year Amount	(E) CLP B-3 Reference
	Plant-in-Service Additions & Retirements					
1						
2	Production (Wind)	23,305,077				
3	Peak Demand	7,338,769	D1	39.484927%	2,897,707	Col (B); Line 1
4	Base Energy	15,966,308	E2	44.981047%	7,181,813	Col (B); Line 1
5	Transmission	-	D2	50.297428%	0	
6	Distribution - Load Mgmt	-	D3	44.665400%	0	
7	General					
8	Production	-	P10	53.311371%	0	
9	Transmission	-	D2	50.297428%	0	
10	Distribution	-	P60	44.943677%	0	
11	Customer Acctg	-	OXC	47.321236%	0	
12	Customer Srvc	-	OXI	46.634204%	0	
13	Total General	0			0	
14	Intangible	0	P90	49.310850%	0	
15	Total Plant-in-Service Additions	23,305,077			10,079,520	Col (B); Line 6
	Accumulated Depreciation					
	Additions & Retirements					
16						
17	Production (Wind)	(360,027)				
	Peak Demand	(113,373)		39.484927%	(44,765)	Col (B); Line 7
	Base Energy	(246,654)		44.981047%	(110,948)	Col (B); Line 7
18	Transmission	0		50.297428%	0	
19	Distribution	0	P60	44.943677%	0	
20	General	0	P90	49.310850%	0	
21	Intangible	0	P90	49.310850%	0	
22	Total A/D Additions	(360,027)			(155,713)	Col (B); Line 12
	L-T Construction Work-in-Progress					
	Transfers					
23	Production	0	0	0.000000%	0	
24	Total CWIP Transfers	(1)			0	

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 ND TY-01 and Required Schedule C-7

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ND Share
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ADJUSTMENT TO ANNUALIZE DEPRECIATION & OTHER OPERATING EXPENSE ON CURRENT & FUTURE CAPITAL PROJECTS

	(A)	(B)	(C)	(D)	(E)
Line No.	Depreciation Expense	System-Wide	Allocation Factor	Allocation Percentage	ND Test-Year Amount
	<u>Additions</u>				<u>CLP C-7 Reference</u>
1					
2	Production	1,131,515			
3	Peak Demand	356,314	D1	39.484927%	140,690
4	Base Energy	775,201	E2	44.981047%	348,693
5	Transmission	0	D2	50.297428%	0
6	Distribution	0	P60	44.943677%	0
7	General	0	P90	49.310850%	0
8	Intangible	0	P90	49.310850%	0
9	Total Depreciation Expense Additions	1,131,515			489,384
					Col (C); Line 14
10	<u>AFUDC in L-T CWIP Removed</u>	0	CWIPLT	-	-
11	Operating Income Impact	(1,131,515)		(489,384)	
12	ND Tax Rate	24.405%			
13	Income Tax Impact: ND Tax Rate is	(276,145)		(119,434)	Col (B); Line 19
14	Net Operating Income Impact	<u>(855,370)</u>		<u>(369,950)</u>	Col (B); Line 23

Otter Tail Power Company
Capitalized Projects Adjustment
Adjustment Annualizes the Investment

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(A)	(B)	(C)	(D)	(E)	(F)
Projects Moved from CWIP @ 12/31/22 to Capitalized Accounts During 2024					
Line No.	Project	Project Description	Function	Amount in CWIP @ 12/31/23	Total Project Costs
1		Langdon Repower	Production	25,055,154	46,610,154

(A)	(B)	(C)	(D)	(E)	(F)	(G)
Test Year Adjustment to Plant in Service to Transfer Project Costs to Capitalized Accounts						
Line No.	Project	Project Description	Function	Amount Capitalized @ 12/31/23	Simple Average Plant-in-Service @ 12/31/24	2024 Test Year Plant-in-Service Adjustment
2		Langdon Repower	Production	-	23,305,077	23,305,077
3				Total 2024 Test Year Adjustment to Plant in Service		<u>23,305,077</u>

Otter Tail Power Company
Capitalized Projects Adjustment
Adjustment Annualizes the Investment

(A)	(B)	(C)	(D)	(E)	(F)	(G)
Test Year Adjustment to Accumulated Depreciation to Reflect Increase in Plant in Service						
Line No.	Project	Project Description	Function	Simple Aver A/D @ 12/31/24	Simple Average A/D @ 12/31/24 TY	2024 Test Year A/D Adjustment
4		Langdon Repower	Production	(51,433)	(411,460)	(360,027)
5				Total 2024 Test Year Adjustment to Accumulated Depreciation		<u>(360,027)</u>

(A)	(B)	(C)	(D)	(E)	(F)	(G)
Test Year Adjustment Depreciation Expense to Reflect Increase in Plant in Service						
Line No.	Project	Project Description	Function	Depreciation Expense 2024	Annual Depreciation Expense	2021 Test Year Expense Adjustment
6		Langdon Repower	Production	102,865	1,234,380	1,131,515
7				Total 2024 Test Year Adjustment to Depreciation Expense		<u>1,131,515</u>

OTTER TAIL POWER COMPANY
TEST YEAR ADJUSTMENTS

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 ND TY-02 and Required Schedule C-7

ADJUSTMENT FOR AMORTIZED RATE CASE EXPENSES

		(A)	(B)	(C)	(D)	(E)
						CLP C-7
Line No.	Description	Total Utility	Allocator	Allocator %	ND	Reference
1	2024 Rate Case Expense Adjustment	N/A	Directly Assigned	100.00%	359,404	Col (B); Line 12
2	Income Tax Impact: ND Tax Rate from Sch C-7 is 24.40%				<u>(87,712)</u>	Col (B); Line 21
3	Net Operating Income Impact				<u><u>(271,692)</u></u>	Col (B); Line 25

OTTER TAIL POWER COMPANY
TEST YEAR ADJUSTMENTSTY-02
ND Share
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Rate Case Expense Amortization

Line No.	(A) Description	(B) Amount
1	Rate Case Expenses	\$1,080,000
2	External Attorney Fees	\$750,000
3	Administrative Costs, Consultants, etc.	\$155,000
4	PSC Costs	175,000
5	Estimated rate case expenses	<u>\$1,080,000</u>
6	Regulated revenue	\$511,853,779
7	Unregulated revenue	<u>848,434</u>
8	Total regulated and unregulated revenue	<u>\$512,702,213</u>
9	Percent unregulated	0.17%
10	Less allocation to unregulated activity	<u>\$1,787</u>
11	Total estimated rate case expenses	<u>\$1,078,213</u>
12	Three Year amortization	\$359,404
13	2024 O&M Budget for FERC 928-ND	<u>-</u>
14	Amount of Test Year adjustment	<u>\$359,404</u>

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 ND TY-03 and Required Schedule C-7

TY-03
ND Share
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Test Year Adjustment for Director Restricted Stock

	(A)	(B)	(C)	(D)	(E)
					CLP
					C-7
Line					Reference
No.	Description from JCOSS INPUT SUMMARY	Total Utility	Allocator	Allocator %	ND share
	Administrative and General Expense				
	<u>Salaries, Supplies, Pensions & Benefits</u>				
1	Production	208,218	OXPD	42.442380%	88,373
2	Transmission	99,038	D2	39.195200%	38,818
3	Distribution	153,353	OXD	45.397390%	69,618
4	Customer Accounts	122,010	OXC	43.893270%	53,554
5	Customer Service & Information	28,349	C1	44.045910%	12,487
	Total A&G Salaries, Supplies, Pensions & Benefits	<u>610,968</u>			<u>262,850</u> Col (E); Line 12
6	Total	<u>610,968</u>			<u>262,850</u> Col (E); Line 16
7	Operating Income Impact	(610,968)			<u>(262,850)</u>
8	Income Tax Impact: SD Tax Rate is 24.40%				<u>(64,148)</u> Col (E); Line 21
9	Net Operating Income Impact				<u><u>(198,702)</u></u> Col (E); Line 25

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 ND TY-04 and Required Schedule C-7

TY-04
ND Share
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Normalization adjustment for Pension and Retiree Medical

Line No.	Description from JCOSS INPUT SUMMARY	(A) Total Utility	(B) Allocator	(C) Allocator %	(D) ND	(E) CLP C-7 Reference
<u>Production</u>						
1	Base Demand	735,266	E1	43.873883%	322,590	
2	Peak Demand	232,571	D1	39.484927%	91,831	
3	Total Production Expense	967,837			414,420	Col (D); Line 6
4	Transmission Expense	610,424	D2	39.195070%	239,257	Col (D); Line 7
<u>Distribution Expense</u>						
5	Primary Demand	124,575	D3	46.521407%	57,954	
6	Secondary Demand	92,940	D4	48.699789%	45,261	
7	Primary Customer	221,782	C2	43.710104%	96,941	
8	Secondary Customer	91,896	C3	43.713988%	40,171	
9	Streetlighting	7,741	C4	41.673311%	3,226	
10	Area Lighting	4,630	C5	54.516874%	2,524	
11	Meters	391,303	C6	44.580051%	174,443	
12	Load Management	-				
13	Total Distribution Expense	934,867			420,521	Col (D); Line 8
<u>Customer Accounting Expense</u>						
14	Meter Reading	216,613	C7	44.214500%	95,774	
15	Other	376,101	C8	43.708300%	164,387	
16	Total Customer Accounts	592,714			260,162	Col (D); Line 9
<u>Customer Service & Info Expense (MN CIP)</u>						
17	- MN	109,283	Direct	0.000000%	-	
18	- ND	-	Direct	0.000000%	-	
19	- SD	5,889	Direct	0.000000%	-	
20	- Other	36,253	C1	44.045900%	15,968	
21	Total Customer Service & Information Expense	151,425			15,968	Col (D); Line 10
<u>Administrative and General Expense Salaries, Supplies, Pensions & Benefits</u>						
22	Production	895,984	OXPD	42.442381%	380,277	
23	Transmission	426,210	D2	39.195070%	167,053	
24	Distribution	659,920	OXD	45.397391%	299,587	
25	Customer Accounts	525,003	OXC	43.893273%	230,441	
26	Customer Service & Information	121,975	C1	44.045900%	53,725	
	Total A&G Salaries, Supplies, Pensions & Benefits	2,629,092			1,131,083	Col (D); Line 12
27	Total	5,886,358			2,481,410	Col (D); Line 16
28	Operating Income Impact	(5,886,358)			(2,481,410)	
29	Income Tax Impact: SD Tax Rate is	24.40%			(605,586)	Col (D); Line 21
30	Net Operating Income Impact				(1,875,825)	Col (D); Line 25

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 TY-05 and Required Schedule C-7

TY-05
ND Share
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ADJUSTMENT FOR REMOVAL OF RIDER REVENUES

	(A)	(B)	(C)	(D)	(E)
Line No. Description	Total Utility	Allocator	Allocator %	ND	CLP C-7 Reference
1 Remove Renewable Rider Revenues		N/A	Directly Assigned	(15,539,967)	
2 Remove Metering & Distribution Technology Rider Revenues		N/A	Directly Assigned	(618,840)	
3 Remove Generation Rider Revenues		N/A	Directly Assigned	(3,595,685)	
4 Remove Transmission Rider Revenues		N/A	Directly Assigned	(3,547,829)	
5 Operating Income Impact				(23,302,321)	Col (F); Line 2
6 Income Tax Impact: ND Tax Rate is 24.40%				(5,686,908)	Col (F); Line 21
7 Net Operating Income Impact				<u>(17,615,413)</u>	Col (F); Line 25

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 ND TY-06 and Required Schedule C-7

TY-06
ND Share
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Adjustment for Investor Relations

Line No.	Description from JCOSS INPUT SUMMARY	(A) Total Utility	(B) Allocator	(C) Allocator %	(D) ND share	(E) CLP C-7 Reference
	Administrative and General Expense					
1	Misc, Rents, Maintenance	236,267	P90	43.354130%	102,433	
2	Total	<u>236,267</u>			<u>102,433</u>	Col (I); Line 12
3	Operating Income Impact	(236,267)			(102,433)	
4	Income Tax Impact: SD Tax Rate is 24.40%				<u>(24,999)</u>	Col (I); Line 21
5	Net Operating Income Impact				<u><u>(77,433)</u></u>	Col (I); Line 25

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 ND TY-07 and Required Schedule C-7

TY-07
ND Share
Page 1 of 1

Adjustment for Long-term Incentives

Line No.	Description from JCOSS INPUT SUMMARY	(A) Total Utility	(B) Allocator	(C) Allocator %	(D) ND share	(E) CLP C-7 Reference
	Administrative and General Expense					
	<u>Salaries, Supplies, Pensions & Benefits</u>					
1	Production	967,493	OXPD	42.442381%	410,606	
2	Transmission	460,184	D2	39.195200%	180,370	
3	Distribution	712,561	OXD	45.397391%	323,484	
4	Customer Accounts	566,926	OXC	43.893273%	248,842	
5	Customer Service & Information	131,724	C1	44.045905%	58,019	
	Total A&G Salaries, Supplies, Pensions & Benefits	<u>2,838,887</u>			<u>1,221,321</u>	Col (J); Line 12
6	Total	<u>2,838,887</u>			<u>1,221,321</u>	Col (J); Line 16
7	Operating Income Impact	(2,838,887)			(1,221,321)	
8	Income Tax Impact: SD Tax Rate is 24.40%				<u>(298,062)</u>	Col (J); Line 21
9	Net Operating Income Impact				<u><u>(923,259)</u></u>	Col (J); Line 25

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 ND TY-08 and Required Schedule C-7

TY-08
ND Share
Page 1 of 1

Adjustment for Employee Recognition and Gifts

	(A)	(B)	(C)	(D)	(E)	
					CLP	
					C-7	
Line					Reference	
No.	Description from JCOSS INPUT SUMMARY	Total Utility	Allocator	Allocator %	ND share	
	Administrative and General Expense					
	<u>Salaries, Supplies, Pensions & Benefits</u>					
1	Production	76,812	OXPD	42.442380%	32,601	
2	Transmission	36,535	D2	39.195200%	14,320	
3	Distribution	56,572	OXD	45.397390%	25,682	
4	Customer Accounts	45,010	OXC	43.893270%	19,756	
5	Customer Service & Information	10,458	C1	44.045910%	4,606	
	Total A&G Salaries, Supplies, Pensions & Benefits	<u>225,387</u>			<u>96,965</u>	Col (H); Line 12
6	Total	<u>225,387</u>			<u>96,964</u>	Col (H); Line 16
7	Operating Income Impact	(225,387)			(96,964)	
8	Income Tax Impact: SD Tax Rate is 24.40%				<u>(23,664)</u>	Col (H); Line 21
9	Net Operating Income Impact				<u><u>(73,300)</u></u>	Col (H); Line 25

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 ND TY-09 and Required Schedule C-7

TY-09
ND Share
Page 1 of 1

Adjustment for ESSRP

	(A)	(B)	(C)	(D)	(E)
					CLP
Line					C-7
No.	Description from JCOSS INPUT SUMMARY	Total Utility	Allocator	Allocator %	ND share
	Administrative and General Expense				
	<u>Salaries, Supplies, Pensions & Benefits</u>				
1	Production	48,555	OXPD	42.442380%	20,608
2	Transmission	23,095	D2	39.195200%	9,052
3	Distribution	35,761	OXD	45.397390%	16,235
4	Customer Accounts	28,452	OXC	43.893270%	12,489
5	Customer Service & Information	6,611	C1	44.045910%	2,912
	Total A&G Salaries, Supplies, Pensions & Benefits	<u>142,474</u>			<u>61,295</u>
					Col (G); Line 12
6	Total	<u>142,474</u>			<u>61,294</u>
					Col (G); Line 16
7	Operating Income Impact	(142,474)			(61,294)
8	Income Tax Impact: SD Tax Rate is 24.40%				<u>(14,959)</u>
					Col (G); Line 21
9	Net Operating Income Impact				<u><u>(46,335)</u></u>
					Col (G); Line 25

OTTER TAIL POWER COMPANY
Reference Workpaper for 2024 ND TY-01 and Required Schedule C-7

TY-10
ND Share
Page 1 of 1

ADJUSTMENT FOR PLANT O&M OUTAGE EXPENSES

		(A)	(B)	(C)	(D)	(E)
Line No.	Description	Total Utility	Allocator	Allocator %	ND	CLP TBD Reference
1	2024 Plant Outage Adjustment					Col (D); Line 10
	Base	1,936,260	E1	43.873900%	849,513	
	Peak	612,457	D1	39.484900%	241,828	
	Total	<u>2,548,717</u>			<u>1,091,341</u>	
2	Operating Income Impact	(2,548,717)			(1,091,341)	
3	Income Tax Impact: ND Tax Rate is	24.40%			<u>266,341</u>	Col (D); Line 19
4	Net Operating Income Impact				<u>(825,000)</u>	Col (D); Line 21

OTTER TAIL POWER COMPANY
TEST YEAR ADJUSTMENTS

TY-02
Total Company
Page 2 of 2

Normalization of Plant O&M Outage Expenses

(A)		(B)	(C)	(D)
Line				
No.	Description	Total	Parntershare of Plant	OTP Total
1	2022 Actual Coyote Outage Costs	\$9,758,662	35%	\$3,415,532
2	2021 Actual BSP Outage Costs	7,849,014	54%	4,230,619
3	Total Plant Outage Costs	\$17,607,676		<u>\$7,646,150</u>
4	Major Plant Outage occurs every 3 years			3
5	Additional outage costs per year for a normalized year			\$2,548,717
6	2024 Budgeted Major Outage Costs			-
7	Add outage costs to the 2024 O&M Budget			2,548,717

NORTH DAKOTA

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget REGULATORY YEAR 2024 - Simple Average

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LINE NO	ITEM	ALLOC	REFERENCE	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	RATE BASE		Page 2-1 Line 32	1,878,410,729	651,646,255	1,226,764,474	1
2							2
3	TOTAL AVAILABLE FOR RETURN		Page 7-1 Line 43	134,544,164	42,604,664	91,939,500	3
4							4
5	RATE OF RETURN EARNED			7.16%	6.54%	7.49%	5
6							6
7	RATE OF RETURN REQUESTED		Page 17-1 Line 11		7.41%		7
8							8
9	OPERATING INCOME REQUIRED				48,286,988		9
10							10
11	TOTAL AVAILABLE FOR RETURN				42,604,665		11
12							12
13	OPERATING INCOME DEFECIENCY				5,682,322		13
14							14
15	INCREMENTAL TAXES	GRCF = 1.322837			1,834,464		15
16							16
17	REVENUE INCREASE REQUIRED				7,516,785		17
18							18
19	PERCENTAGE INCREASE				3.65%		19
20							20
21							21
22							22
23							23
24							24
25	RETURN ON EQUITY				8.15%		25
26							26
27							27
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OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget REGULATORY YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	REFERENCE	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	ELECTRIC PLANT IN SERVICE		Page 3-1 Line 52	3,238,912,922	1,249,259,538	1,989,653,384	1
2							2
3	ACCUMULATED DEPRECIATION		Page 4-12 Line 22	(1,094,302,064)	(461,085,774)	(633,216,290)	3
4							4
5	NET PLANT EXCLUDING BIG STONE PLANT CAPITALIZED ITEMS			2,144,610,858	788,173,764	1,356,437,095	5
6							6
7	NET CAPITALIZED ITEMS - BIG STONE PLANT		Page 4-1 Line 28	0	0	0	7
8							8
9	NET ELECTRIC PLANT IN SERVICE			2,144,610,858	788,173,764	1,356,437,095	9
10							10
11	PLANT HELD FOR FUTURE USE		Page 4-1 Line 47	12,038	4,921	7,117	11
12							12
13	CONSTRUCTION WORK IN PROGRESS		Page 5-1 Line 31	1,770,919	780,990	989,928	13
14							14
15	MATERIALS AND SUPPLIES		Page 5-1 Line 39	33,967,093	14,737,248	19,229,845	15
16							16
17	FUEL STOCKS		Page 5-1 Line 46	10,476,711	4,495,117	5,981,594	17
18							18
19	PREPAYMENTS		Page 5-1 Line 49	49,187,428	18,601,559	30,585,869	19
20							20
21	CUSTOMER ADVANCES		Page 5-1 Line 51	(1,876,522)	(709,657)	(1,166,864)	21
22							22
23	CASH WORKING CAPITAL		Page 5-1 Line 53	5,775,557	1,304,937	4,470,621	23
24							24
25	ACCUMULATED DEFERRED INCOME TAXES		Page 6-1 Line 16	(365,513,353)	(175,742,621)	(189,770,733)	25
26							26
27	UNAMORTIZED BALANCE - SPIRITWOOD		Page 6-1 Line 19	0	0	0	27
28							28
29	UNAMORTIZED RATE CASE EXPENSE		Page 6-1 Line 22	0	0	0	29
30							30
31	TOTAL AVERAGE RATE BASE			1,878,410,729	651,646,257	1,226,764,472	31
32							32
33							33
34							34
35							35
36							36
37							37
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OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget REGULATORY YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	PLANT IN SERVICE						1
2	A/C 101 & 106 - Direct MN	Direct MN		61,800,001	0	61,800,001	2
3	A/C 101 & 106 - Direct ND	Direct ND		0	0	0	3
4	A/C 101 & 106 - Direct SD	Direct SD		0	0	0	4
5	Subtotal A/C 101 & 106 - Direct Assigned			61,800,001	0	61,800,001	5
6							6
7	PRODUCTION PLANT						7
8	A/C 101 & 106 - BASE DEMAND	E1		615,526,547	270,055,400	345,471,147	8
9	PEAK DEMAND	D1		401,843,629	158,667,665	243,175,964	9
10	BASE ENERGY	E2		450,671,354	202,716,696	247,954,659	10
11							11
12	SUBTOTAL A/C 101 & 106			1,529,841,532	631,439,760	898,401,772	12
13							13
14	A/C 114 - BASE DEMAND	E1		1,206,597	529,381	677,216	14
15	PEAK DEMAND	D1		381,658	150,697	230,960	15
16	BASE ENERGY	E1		0	0	0	16
17							17
18	SUBTOTAL A/C 114			1,588,255	680,078	908,176	18
19							19
20	TOTAL PRODUCTION PLANT	P10	310-317, 330-335, 340-347	1,531,429,786	632,119,838	899,309,948	20
21							21
22	TRANSMISSION PLANT						22
23	A/C 101 & 106	D2		550,572,537	215,798,006	334,774,531	23
24	A/C 101 & 106 (Direct FERC)	Direct FERC		274,079,794	0	274,079,794	24
25	A/C 114	D2		58,287	22,846	35,441	25
26							26
27	TOTAL TRANSMISSION PLANT		350-350.1, 353-356, 358	824,710,618	215,820,852	608,889,767	27
28							28
29							29
30	DISTRIBUTION PLANT						30
31	PRIMARY DEMAND	D3	360, 362, 364-365, 367	254,804,754	118,538,756	136,265,998	31
32	SECONDARY DEMAND	D4	365, 367-369.1	143,014,220	69,647,623	73,366,597	32
33	PRIMARY CUSTOMER	C2	364-365, 367	119,159,338	52,084,671	67,074,667	33
34	SECONDARY CUSTOMER	C3	365, 367-369.1, 370.2	87,138,987	38,091,927	49,047,061	34
35	STREETLIGHTING	C4	364-365, 367, 373	24,540,852	10,226,986	14,313,866	35
36	AREA LIGHTING	C5	364-365, 367, 371.2	15,570,818	8,488,723	7,082,095	36
37	METERS	C6	370	64,567,120	28,784,055	35,783,065	37
38	LOAD MANAGEMENT	C9	370.1	8,899,439	3,888,421	5,011,018	38
39							39
40	TOTAL DISTRIBUTION PLANT	P60		717,695,528	329,751,161	387,944,367	40
41							41
42							42
43	GENERAL PLANT						43
44	PRODUCTION	P10		41,841,785	17,997,065	23,844,720	44
45	TRANSMISSION	D2		19,903,693	7,801,292	12,102,401	45
46	DISTRIBUTION	P60		30,817,789	14,159,489	16,658,300	46
47	CUSTOMER ACCOUNTS	OXC		24,517,241	10,761,420	13,755,822	47
48	CUSTOMER SERVICE & INFO	OXI		5,696,124	2,508,909	3,187,215	48
49	LOAD MANAGEMENT	C9	397.3	165,980	72,521	93,459	49
50							50
51	TOTAL GENERAL PLANT	P90	389-398, 390.1-390.3, 391.1-391.6, 394.2, 397.1-397.2	122,942,613	53,300,696	69,641,917	51
52							52
53							53
54	INTANGIBLE PLANT	P90	302-303	42,134,377	18,266,991	23,867,386	54
55							55
56	TOTAL PLANT IN SERVICE	EPIS		3,238,912,922	1,249,259,538	1,989,653,384	56
57							57
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59							59
60							60
61							61
62							62
63							63
64							64
65							65
66							66

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget REGULATORY YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	ACCUMULATED DEPRECIATION										1
2	PRODUCTION PLANT										2
3	BASE DEMAND	E1	108, 115		(276,623,436)		(121,365,444)		(155,257,992)		3
4	PEAK DEMAND	D1	108, 115		(152,831,378)		(60,345,358)		(92,486,019)		4
5	BASE ENERGY	E2	108		(142,138,944)		(63,935,586)		(78,203,358)		5
6	Direct MN										6
7	TOTAL PRODUCTION PLANT				(572,922,222)		(245,646,388)		(327,275,834)		7
8											8
9											9
10	TRANSMISSION PLANT	D2	108, 115		(159,735,443)		(62,608,626)		(97,126,817)		10
11	TRANSMISSION PLANT (Direct FERC)	Direct FERC			(25,180,544)		0		(25,180,544)		11
12	TOTAL TRANSMISSION PLANT				(184,915,987)		(62,608,626)		(122,307,361)		12
13											13
14											14
15	DISTRIBUTION PLANT	P60	108, 115		(268,541,408)		(123,383,576)		(145,157,832)		15
16											16
17											17
18	GENERAL PLANT	P90	108		(50,534,999)		(21,909,007)		(28,625,991)		18
19											19
20											20
21	INTANGIBLE PLANT	P90	108		(17,387,448)		(7,538,176)		(9,849,272)		21
22											22
23											23
24	TOTAL ACCUMULATED DEPRECIATION				(1,094,302,064)		(461,085,774)		(633,216,290)		24
25											25
26											26
27	NET PLANT EXCLUDING BSP CAPITALIZED ITEMS				2,144,610,858		788,173,764		1,356,437,095		27
28											28
29											29
30	BSP CAPITALIZED ITEMS	P10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		30
31											31
32											32
33	TOTAL NET PLANT IN SERVICE	NEPIS			2,144,610,858		788,173,764		1,356,437,095		33
34											34
35											35
36											36
37											37
38											38
39											39
40											40
41											41
42	PLANT HELD FOR FUTURE USE										42
43	PRODUCTION PLANT	P10			0		0		0		43
44	TRANSMISSION PLANT	D2			9,038		3,542		5,496		44
45	DISTRIBUTION PLANT	P60			3,000		1,378		1,622		45
46	GENERAL PLANT	P90			0		0		0		46
47	INTANGIBLE PLANT	P90			0		0		0		47
48											48
49	TOTAL PLANT HELD FOR FUTURE USE		105		12,038		4,921		7,117		49
50											50
51											51
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61											61
62											62

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget REGULATORY YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	CONST WORK-IN-PROGRESS - Direct Assigned						1
2	PRODUCTION PLANT - Direct MN	P10	Directly Assigned to Jurisdiction	0	0	0	2
3	PRODUCTION PLANT - Direct ND	P10	Directly Assigned to Jurisdiction	0	0	0	3
4	PRODUCTION PLANT - Direct SD	P10	Directly Assigned to Jurisdiction	0	0	0	4
5	PRODUCTION PLANT - Direct FERC	Direct FERC	Directly Assigned to FERC	0	0	0	5
6	TRANSMISSION PLANT - Direct MN	D2	Directly Assigned to Jurisdiction	0	0	0	6
7	TRANSMISSION PLANT - Direct ND	D2	Directly Assigned to Jurisdiction	0	0	0	7
8	TRANSMISSION PLANT - Direct SD	D2	Directly Assigned to Jurisdiction	0	0	0	8
9	TRANSMISSION PLANT - Direct FERC	Direct FERC	Directly Assigned to FERC	0	0	0	9
10	DISTRIBUTION PLANT - Direct MN	P60	Directly Assigned to Jurisdiction	0	0	0	10
11	DISTRIBUTION PLANT - Direct ND	P60	Directly Assigned to Jurisdiction	0	0	0	11
12	DISTRIBUTION PLANT - Direct SD	P60	Directly Assigned to Jurisdiction	0	0	0	12
13	DISTRIBUTION PLANT - Direct FERC	Direct FERC	Directly Assigned to FERC	0	0	0	13
14	GENERAL PLANT - Direct MN	P90	Directly Assigned to Jurisdiction	0	0	0	14
15	GENERAL PLANT - Direct ND	P90	Directly Assigned to Jurisdiction	0	0	0	15
16	GENERAL PLANT - Direct SD	P90	Directly Assigned to Jurisdiction	0	0	0	16
17	GENERAL PLANT - Direct FERC	Direct FERC	Directly Assigned to FERC	0	0	0	17
18	INTANGIBLE PLANT - Direct MN	P90	Directly Assigned to Jurisdiction	0	0	0	18
19	INTANGIBLE PLANT - Direct ND	P90	Directly Assigned to Jurisdiction	0	0	0	19
20	INTANGIBLE PLANT - Direct SD	P90	Directly Assigned to Jurisdiction	0	0	0	20
21	INTANGIBLE PLANT - Direct FERC	Direct FERC	Directly Assigned to FERC	0	0	0	21
22	TOTAL CWIP - Direct Assigned		ALLOWED ONLY IN MN & FERC	0	0	0	22
23							23
24	CONST WORK-IN-PROGRESS - SHORT-TERM						24
25	PRODUCTION PLANT	P10		0	0	0	25
26	TRANSMISSION PLANT	D2		359,000	140,711	218,289	26
27	DISTRIBUTION PLANT	P60		1,086,337	499,127	587,211	27
28	GENERAL PLANT	P90		325,581	141,153	184,428	28
29	INTANGIBLE PLANT	P90		0	0	0	29
30							30
31	TOTAL CWIP - SHORT-TERM		ALLOWED ONLY IN MN, ND & FERC	1,770,919	780,990	989,928	31
32							32
33	CONST WORK-IN-PROGRESS - LONG TERM						33
34	PRODUCTION PLANT (AFUDC Projects)	P10		0	0	0	34
35	PRODUCTION PLANT (Rider Projects)	P10		0	0	0	35
36	TRANSMISSION PLANT (AFUDC Projects)	D2		0	0	0	36
37	TRANSMISSION PLANT (Rider Projects)	D2		0	0	0	37
38	DISTRIBUTION PLANT	P60		0	0	0	38
39	GENERAL PLANT	P90		0	0	0	39
40	INTANGIBLE PLANT	P90		0	0	0	40
41							41
42	TOTAL CWIP - LONG TERM - AFUDC Projects		ALLOWED ONLY IN MN & FERC	0	0	0	42
43	TOTAL CWIP - LONG TERM - Rider Projects			0	0	0	43
44							44
45							45
46							46
47	TOTAL CONSTRUCTION WORK-IN-PROGRESS		107	1,770,919	780,990	989,928	47
48							48
49	MATERIALS & SUPPLIES						49
50	PRODUCTION	P10		8,651,753	3,721,308	4,930,445	50
51	TRANSMISSION	D2		9,116,226	3,573,123	5,543,103	51
52	DISTRIBUTION	P60		16,199,114	7,442,817	8,756,297	52
53							53
54	TOTAL MATERIALS AND SUPPLIES		154, 158.1	33,967,093	14,737,248	19,229,845	54
55							55
56	FUEL STOCKS						56
57	COAL STOCKS	E1		8,165,846	3,582,674	4,583,172	57
58	FUEL OIL STOCKS	D1		2,310,865	912,443	1,398,422	58
59							59
60	TOTAL FUEL STOCKS		1510	10,476,711	4,495,117	5,981,594	60
61							61
62	PREPAYMENTS	NEPIS	128, 228.3	49,187,428	18,601,559	30,585,869	62
63	CUSTOMER ADVANCES	NEPIS	235, 253	(1,876,522)	(709,657)	(1,166,864)	63
64	CASH WORKING CAPITAL	OX		5,775,557	1,304,937	4,470,621	64
65							65
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NORTH DAKOTA

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget REGULATORY YEAR 2024 - Simple Average

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	ACCUMULATED DEFERRED INCOME TAXES										1
2	ITEMS SD FLOWS THROUGH										2
3	FEDERAL	NPMNR			(27,894)		(11,564)		(16,330)		3
4	MINNESOTA	NPISM			0		0		0		4
5	NORTH DAKOTA	NPISN			0		0		0		5
6											6
7	SUBTOTAL				(27,894)		(11,564)		(16,330)		7
8											8
9	ALL OTHER										9
10	FEDERAL	NEPIS EXDA			(294,490,488)		(126,327,051)		(168,163,438)		10
11	FEDERAL (Direct FERC)	Direct FERC			(20,921,619)		0		(20,921,619)		11
12	MINNESOTA	NPISM			0		0		0		12
13	NORTH DAKOTA	NPISN			(50,073,352)		(49,404,006)		(669,346)		13
14											14
15	SUBTOTAL				(365,485,459)		(175,731,057)		(189,754,402)		15
16											16
17	TOTAL ACCUMULATED DEFERRED INCOME TAXES		190, 255, 281-283		(365,513,353)		(175,742,621)		(189,770,733)		17
18											18
19											19
20	UNAMORTIZED BALANCE - SPIRITWOOD PLANT	P10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		20
21											21
22											22
23	UNAMORTIZED RATE CASE EXPENSES	R10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		23
24											24
25											25
26											26
27											27
28	TOTAL AVERAGE RATE BASE				1,878,410,729		651,646,257		1,226,764,472		28
29											29
30											30
31											31
32											32
33											33
34											34
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NORTH DAKOTA

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget REGULATORY YEAR 2024 - Simple Average

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LINE NO	ITEM	ALLOC			TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	OPERATING REVENUES										1
2	SALES OF ELECTRICITY				487,865,956		205,989,209		281,876,746		2
3	OTHER OPERATING REVENUE				62,763,924		12,976,906		49,787,018		3
4											4
5	TOTAL OPERATING REVENUE				550,629,880		218,966,115		331,663,764		5
6											6
7											7
8	OPERATING EXPENSES										8
9	PRODUCTION EXPENSES				195,480,388		86,694,044		108,786,343		9
10	TRANSMISSION EXPENSES				35,329,066		13,847,298		21,481,768		10
11	DISTRIBUTION EXPENSES				17,553,489		7,972,703		9,580,786		11
12	CUSTOMER ACCOUNTING EXPENSES				16,028,499		7,035,433		8,993,066		12
13	CUSTOMER SERVICE AND INFORMATION EXPENSES				12,470,633		1,315,049		11,155,584		13
14	SALES EXPENSES				583,457		135,872		447,585		14
15	ADMINISTRATIVE AND GENERAL EXPENSES				43,893,859		17,534,200		26,359,659		15
16	CHARITABLE CONTRIBUTIONS				0		0		0		16
17	DEPRECIATION EXPENSE				79,405,970		32,603,918		46,802,053		17
18	AMORTIZATION OF BIG STONE PLANT CAPITALIZED COSTS				0		0		0		18
19	SPIRITWOOD AMORTIZATION				0		0		0		19
20	GENERAL TAXES				18,693,896		7,102,692		11,591,204		20
21											21
22	TOTAL OPERATING EXPENSES				419,439,257		174,241,209		245,198,048		22
23											23
24							0				24
25	NET OPERATING INCOME BEFORE INCOME TAXES				131,190,623		44,724,906		86,465,717		25
26											26
27											27
28	INCOME TAX EXPENSE										28
29	INVESTMENT TAX CREDIT				(6,628,472)		(2,939,568)		(3,688,904)		29
30	DEFERRED INCOME TAXES				2,209,233		5,059,809		(2,850,575)		30
31	INCOME TAXES				7,381,694		0		7,381,694		31
32											32
33	TOTAL INCOME TAX EXPENSE				2,962,455		2,120,241		842,214		33
34											34
35											35
36											36
37	NET OPERATING INCOME				128,228,167		42,604,665		85,623,502		37
38											38
39											39
40	Allowance for Funds Used During Construction				6,315,997		0		6,315,997		40
41	Allowance for Funds Used During Construction - MN Only				0		0		0		41
42	Allowance for Funds Used During Construction - SD Only				0		0		0		42
43	TOTAL ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION				6,315,997		0		6,315,997		43
44											44
45							0				45
46	TOTAL AVAILABLE FOR RETURN				134,544,164		42,604,665		91,939,499		46
47											47
48											48
49											49
50											50
51	AVERAGE CENTS PER KWH										51
52											52
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NORTH DAKOTA

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	OPERATING REVENUES										1
2											2
3	SALES OF ELECTRICITY	R10	440, 442, 444-445	108, 115	487,865,956		205,989,209		281,876,746		3
4											4
5											5
6	OTHER OPERATING REVENUES										6
7	SALES FOR RESALE										7
8	MUNICIPALITIES & OFF SYSTEM SALES			DIRECTLY ASSIGNED TO FERC JURISDICTION	0		0		0		8
9	NON-ASSOCIATED UTILITIES, CO-OPS & OPA										9
10	BUY SELL TRANSACTIONS	D2			0		0		0		10
11	ALL OTHER TRANSACTIONS										11
12	BASE DEMAND	E1			0		0		0		12
13	PEAK DEMAND	D1			0		0		0		13
14	BASE ENERGY	E2			6,947,794		3,125,191		3,822,604		14
15	PEAK ENERGY	D1			0		0		0		15
16											16
17	TOTAL ALL OTHER TRANSACTIONS				6,947,794		3,125,191		3,822,604		17
18											18
19	TOTAL SALES FOR RESALE				6,947,794		3,125,191		3,822,604		19
20											20
21											21
22	OTHER ELECTRIC REVENUES										22
23	LATE FEES	C1	450	DIRECTLY ASSIGNED TO JURISDICTION	809,880		316,187		493,694		23
24	CONNECTION FEES	C1	451	DIRECTLY ASSIGNED TO JURISDICTION	340,532		136,812		203,720		24
25	RENT FROM ELECTRIC PROPERTY	NEPIS	454		435,931		164,859		271,072		25
26	RENT FROM ELECTRIC PROPERTY - BIG STONE	NEPIS	454		0		0		0		26
27	RENT FROM ELECTRIC PROPERTY - COYOTE	NEPIS	454		0		0		0		27
28	OTHER MISC ELECTRIC REVENUE	NEPIS	456		1,395,880		527,890		867,990		28
29	OTHER MISC ELECTRIC REVENUE - MN	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		29
30	OTHER MISC ELECTRIC REVENUE - ND	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		30
31	OTHER MISC ELECTRIC REVENUE - SD	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		31
32	ITA DEFICIENCY PAYMENTS	NEPIS	456		848,757		320,980		527,777		32
33		NEPIS			0		0		0		33
34	MISCELLANEOUS SERVICES	NEPIS			0		0		0		34
35	WHEELING		456	DIRECTLY ASSIGNED TO FERC JURISDICTION	425,279		0		425,279		35
36	LOAD CONTROL AND DISPATCH	NEPIS EXDA	456		19,546,874		8,384,987		11,161,887		36
37	LOAD CONTROL AND DISPATCH (Direct FERC)	Direct FERC	456	DIRECTLY ASSIGNED TO FERC JURISDICTION	32,012,996		0		32,012,996		37
38	RESIDENTIAL CONSERVATION SERVICES	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		38
39											39
40	TOTAL OTHER ELECTRIC REVENUES				55,816,129		9,851,715		45,964,414		40
41											41
42	TOTAL OTHER OPERATING REVENUES				62,763,924		12,976,906		49,787,018		42
43											43
44							0				44
45	TOTAL OPERATING REVENUES				550,629,880		218,966,115		331,663,764		45
46											46
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	OPERATING EXPENSES						1
2	PRODUCTION EXPENSES						2
3	PROD EXPENSES EXCLUDING PURCHASED POWER						3
4	BASE DEMAND	E1	500, 502, 505-507, 509-511, 535, 537-543, 546, 548-554, 556-557	15,513,031	6,806,169	8,706,862	4
5	PEAK DEMAND	D1	500, 502, 506-507, 509-511, 535, 537-543, 546, 548-554, 556-557	8,562,412	3,380,862	5,181,550	5
6	BASE ENERGY	E2	501, 512-514, 544-546, 548-554	67,526,672	30,374,204	37,152,468	6
7	PEAK ENERGY	D1	547	10,397,281	4,105,359	6,291,922	7
8	BASE DEMAND (Direct MN)			0	0	0	8
9	PEAK DEMAND (Direct MN)			0	0	0	9
10							10
11	TOTAL EXCLUDING PURCHASED POWER			101,999,397	44,666,595	57,332,802	11
12					0		12
13	PURCHASED POWER				0		13
14	BUY SELL TRANSACTIONS	D2		0	0	0	14
15	ALL OTHER TRANSACTIONS				0		15
16	BASE DEMAND	E1	555	1,921,959	843,238	1,078,721	16
17	PEAK DEMAND	D1		0	0	0	17
18	BASE ENERGY	E2	555	91,559,032	41,184,212	50,374,820	18
19	PEAK ENERGY	D1		0	0	0	19
20							20
21							21
22	TOTAL ALL OTHER TRANSACTIONS			93,480,991	42,027,450	51,453,541	22
23							23
24	TOTAL PURCHASED POWER			93,480,991	42,027,450	51,453,541	24
25							25
26	TOTAL PRODUCTION EXPENSES			195,480,388	86,694,044	108,786,343	26
27							27
28	TRANSMISSION EXPENSES	D2	560, 561.1-561.2, 561.4-561.6, 562-563, 565-568, 569.1-569.3, 570-572	35,329,066	13,847,298	21,481,768	28
29	TRANSMISSION EXPENSES (Direct MN)			0	0	0	29
30	TRANSMISSION EXPENSES (Direct FERC)	Direct FERC		0	0	0	30
31	TOTAL TRANSMISSION EXPENSES			35,329,066	13,847,298	21,481,768	31
32							32
33							33
34	DISTRIBUTION EXPENSES						34
35	PRIMARY DEMAND	D3	580-584, 588-590, 592-594, 598	5,074,583	2,360,768	2,713,816	35
36	SECONDARY DEMAND	D4	580-581, 583-584, 588, 590, 593-595, 598	2,180,960	1,062,123	1,118,837	36
37	PRIMARY CUSTOMER	C2	580-581, 583-584, 588-590, 593-594, 598	3,695,681	1,615,386	2,080,295	37
38	SECONDARY CUSTOMER	C3	580-581, 583-584, 587-588, 590, 593-595, 598	1,339,569	585,579	753,990	38
39	STREETLIGHTING	C4	580-581, 583-585, 588-590, 593-594, 596, 598	518,634	216,132	302,502	39
40	AREA LIGHTING	C5	580-581, 583-585, 588-590, 593-594, 598	179,239	97,715	81,523	40
41	METERS	C6	580-581, 586, 588, 597-598	4,564,823	2,035,000	2,529,822	41
42	LOAD MANAGEMENT	C9		0	0	0	42
43							43
44	TOTAL DISTRIBUTION	OXD		17,553,489	7,972,703	9,580,786	44
45							45
46							46
47	CUSTOMER ACCOUNTING EXPENSES						47
48	METER READING	C7	901-902	5,857,762	2,589,979	3,267,783	48
49	OTHER	C8	901, 903-905	10,170,737	4,445,454	5,725,283	49
50							50
51	TOTAL CUSTOMER ACCOUNTS	OXC		16,028,499	7,035,433	8,993,066	51
52							52
53							53
54							54
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1											1
2	<u>CUSTOMER SERVICE & INFORMATION EXPENSE</u>										2
3	CONSERVATION & PROMOTIONAL REBATES	C1	908	DIRECTLY ASSIGNED TO JURISDICTION	9,485,000		0		9,485,000		3
4	OTHER	C1	907-910		2,985,633		1,315,049		1,670,584		4
5	TOTAL CUSTOMER SERV & INFORMATION EXP	OXI			12,470,633		1,315,049		11,155,584		5
6											6
7											7
8	<u>SALES EXPENSES</u>										8
9	OFF-PEAK DEVELOPMENT	C1	912	DIRECTLY ASSIGNED TO JURISDICTION	274,978		(0)		274,979		9
10	OTHER	C1	912-913, 916		308,479		135,872		172,606		10
11											11
12	TOTAL SALES EXPENSES				583,457		135,872		447,585		12
13											13
14											14
15	<u>ADMINISTRATIVE & GENERAL EXPENSES</u>										15
16	SALARIES, SUPPLIES, PENSIONS & BENEFITS										16
17	PRODUCTION	OXPD			8,891,759		3,772,627		5,119,132		17
18	TRANSMISSION	D2			4,229,715		1,657,845		2,571,870		18
19	DISTRIBUTION	OXD			6,549,060		2,974,549		3,574,511		19
20	CUSTOMER ACCOUNTS	OXC			5,210,136		2,286,899		2,923,237		20
21	CUSTOMER SERVICE & INFO	C1			1,210,478		533,166		677,312		21
22											22
23	TOTAL SALARIES, SUPPLIES, PENSIONS, AND BENEFITS		920-922, 926		26,091,148		11,225,086		14,866,062		23
24											24
25	LOAD MANAGEMENT EXPENSES	C9			0		0		0		25
26											26
27	OUTSIDE SERVICES	NEPIS	923		1,083,910		409,910		674,000		27
28											28
29	PROPERTY INSURANCE	NEPIS	924		4,230,959		1,600,052		2,630,907		29
30											30
31	INJURIES & DAMAGES	NEPIS	925		4,536,918		1,715,759		2,821,160		31
32											32
33	REGULATORY COMMISSION EXPENSE	R10	928	DIRECTLY ASSIGNED TO JURISDICTION	3,151,280		502,550		2,648,730		33
34											34
35	GENERAL ADVERTISING	C1	930.1		0		0		0		35
36											36
37	MISCELLANEOUS, RENTS, MAINTENANCE	P90	930.2, 931, 935		4,799,643		2,080,843		2,718,800		37
38											38
39	TOTAL ADMINISTRATIVE & GENERAL EXP				43,893,859		17,534,200		26,359,659		39
40											40
41											41
42	CHARITABLE CONTRIBUTIONS	C1	426.1	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		42
43											43
44							0				44
45											45
46	TOTAL O & M EXPENSES				321,339,391		134,534,600		186,804,791		46
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50											50
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
16											16
1	DEPRECIATION EXPENSE										1
2	PRODUCTION										2
3	BASE DEMAND	E1			15,980,135		7,011,106		8,969,029		3
4	PEAK DEMAND	D1			10,730,060		4,236,756		6,493,304		4
5	BASE ENERGY	E2			12,347,461		5,554,017		6,793,444		5
6											6
7	TOTAL PRODUCTION				39,057,657		16,801,880		22,255,777		7
8											8
9											9
10	TRANSMISSION	D2			8,706,848		3,412,666		5,294,181		10
11	TRANSMISSION (Direct FERC)	Direct FERC			4,176,849		0		4,176,849		11
12	TOTAL TRANSMISSION				12,883,697		3,412,666		9,471,030		12
13											13
14											14
15	DISTRIBUTION	P60			18,610,423		8,550,713		10,059,710		15
16											16
17											17
18	GENERAL	P90			4,236,745		1,836,804		2,399,941		18
19											19
20											20
21	INTANGIBLE	P90			4,617,449		2,001,855		2,615,594		21
22											22
23											23
24	TOTAL DEPRECIATION EXPENSE		403		79,405,970		32,603,918		46,802,053		24
25											25
26											26
27											27
28											28
29											29
30											30
31	BIG STONE EXPENSE OFFSETS	P10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		31
32											32
33											33
34	SPIRITWOOD AMORTIZATION	P10	406	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		34
35											35
36											36
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	GENERAL TAXES	NEPIS EXD		16,557,620	7,102,692	9,454,928	1
2	GENERAL TAXES (Direct FERC)	Direct FERC		2,136,276	0	2,136,276	2
3	TOTAL GENERAL TAXES		408.1	18,693,896	7,102,692	11,591,204	3
4							4
5	NET OPERATING INCOME BEFORE TAX (NOIBT)			131,190,623	44,724,906	86,465,717	5
6							6
7	<u>INVESTMENT TAX CREDIT</u>						7
8	AMORTIZE PRIOR YEARS CREDIT	EPIS		(6,628,472)	(2,939,568)	(3,688,904)	8
9	DEBITS UTILIZED	EPIS		0	0	0	9
10							10
11	TOTAL INVESTMENT TAX CREDIT		411.4	(6,628,472)	(2,939,568)	(3,688,904)	11
12							12
13	<u>DEFERRED INCOME TAXES</u>						13
14	ITEMS SOUTH DAKOTA FLOWS THROUGH						14
15	FEDERAL	NPMNR		0	0	0	15
16	MINNESOTA	NPISM		0	0	0	16
17	NORTH DAKOTA	NPISN		(31,934)	(31,507)	(427)	17
18							18
19	SUBTOTAL			(31,934)	(31,507)	(427)	19
20							20
21	<u>ALL OTHER</u>						21
22							22
23	FEDERAL- transfer from Current Income Taxes - NOL			(6,470,322)	(483,913)	(5,986,409)	23
24	FEDERAL (NEPIS)	NEPIS		12,091,374	4,572,681	7,518,693	24
25	FEDERAL			1,125,275	4,088,768	(2,963,493)	25
26							26
27	MINNESOTA- transfer from Current Income Taxes - NOL			(425,430)	0	(425,430)	27
28	MINNESOTA (NPISM)	NPISM		3,008,510	0	3,008,510	28
29	MINNESOTA			2,353,601	0	2,353,601	29
30							30
31	NORTH DAKOTA- transfer from Current Income Taxes - NOL			(104,822)	(104,822)	0	31
32	NORTH DAKOTA (NPISN)	NPISN		1,122,373	1,107,370	15,003	32
33	NORTH DAKOTA			(1,237,709)	1,002,548	(2,240,257)	33
34							34
35	SUBTOTAL			2,241,167	5,091,316	(2,850,148)	35
36							36
37	TOTAL DEFERRED INCOME TAXES		410.1-410.2, 411.1-411.2	2,209,233	5,059,809	(2,850,575)	37
38							38
39							39
40	<u>CURRENT INCOME TAXES</u>						40
41	FEDERAL- transfer to Deferred Income Taxes - NOL			6,470,322	483,913	5,986,409	41
42	FEDERAL CURRENT INCOME TAX			629,434	(483,913)	1,113,346	42
43	FEDERAL INCOME TAXES			7,099,756	0	7,099,755	43
44							44
45	MINNESOTA- transfer to Deferred Income Taxes - NOL			0	0	0	45
46	MINNESOTA CURRENT INCOME TAX			92,965	0	92,965	46
47	MINNESOTA INCOME TAXES			92,965	0	92,965	47
48							48
49	NORTH DAKOTA- transfer to Deferred Income Taxes - NOL			104,822	104,822	0	49
50	NORTH DAKOTA CURRENT INCOME TAX			84,151	(104,822)	188,973	50
51	NORTH DAKOTA INCOME TAXES			188,973	(0)	188,973	51
52							52
53	TOTAL CURRENT INCOME TAXES		409.1	7,381,694	0	7,381,694	53
54							54
55	TOTAL INCOME TAXES			2,962,455	2,120,241	842,214	55
56							56
57							57
58	NET OPERATING INCOME			128,228,167	42,604,665	85,623,502	58
59							59
60	AFDC	CWIPLT		6,315,997	0	6,315,997	60
61	AFDC - MN Only	CWIPLT		0	0	0	61
62	AFDC - SD Only	CWIPLT		0	0	0	62
63	Total AFDC	CWIPLT	419.1	6,315,997	0	6,315,997	63
64							64
65	TOTAL AVAILABLE FOR RETURN			134,544,164	42,604,665	91,939,499	65
66							66
67							67
68	RATE OF RETURN ON RATE BASE			7.16%	6.54%	7.49%	68
69							69
70							70
71							71
72							72
73							73
74							74

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	DEVELOPMENT OF FEDERAL INCOME TAX EXPENSE								1
2									2
3	NET OPERATING INCOME BEFORE TAX (NOIBT)		131,190,623		44,724,906		86,465,717		3
4	LESS: INTEREST COST	CALCULATED BY JURISDICTION	40,945,395		14,205,888		26,739,507		4
5									5
6	NET INCOME BEFORE TAX		90,245,227		30,519,018		59,726,210		6
7									7
8	FEDERAL SCHEDULE M ADJUSTMENTS:								8
9	ADDITIONAL TAX DEPRECIATION	NEPIS	75,740,068		28,643,159		47,096,909		9
10	OTHER SCHEDULE M ITEMS	NEPIS	11,330,739		4,285,026		7,045,713		10
11	DIRECTLY ASSIGNED SCHEDULE M ITEMS	NEPIS	0		0		0		11
12	ACCRUED VACATION PAY	NEPIS	0		0		0		12
13	CHARGES - OPERATING RESERVES	NEPIS	0		0		0		13
14	PROVISIONS - OPERATING RESERVES	NEPIS	0		0		0		14
15	UNBILLED REVENUES	NEPIS	0		0		0		15
16	PREFERRED DIVIDENDS PAID CREDIT	NEPIS	0		0		0		16
17	OTHER SCHEDULE M ITEMS	NEPIS	0		0		0		17
18									18
19	SUBTOTAL FEDERAL SCHEDULE M ADJUSTMENTS		87,070,807		32,928,185		54,142,622		19
20									20
21	FEDERAL ADJUSTED INCOME BEFORE INCOME TAXES		3,174,420		(2,409,168)		5,583,588		21
22									22
23	LESS:								23
24	MINNESOTA STATE INCOME TAXES	PER MINNESOTA STATE TAX CALCULATION	92,965		0		92,965		24
25	NORTH DAKOTA STATE INCOME TAXES	PER NORTH DAKOTA STATE TAX CALCULATION	84,151		(104,822)		188,973		25
26									26
27	FEDERAL TAXABLE INCOME		2,997,304		(2,304,346)		5,301,650		27
28	FEDERAL TAX RATE		21.00%		21.00%		21.00%		28
29									29
30	FEDERAL INCOME TAX BEFORE CREDITS		629,434		(483,913)		1,113,346		30
31	INVESTMENT TAX CREDIT - DEBITS UTILIZED	EPIS	0		0		0		31
32	FEDERAL INCOME TAXES before transfer to Deferred due to NOL		629,434		(483,913)		1,113,346		32
33	Less Current Federal Income Taxes Transferred to Deferred Income Taxes due to NOL		6,470,322		483,913		5,986,409		33
34	FEDERAL INCOME TAXES		7,099,756		0		7,099,755		34
35									35
36									36
37									37
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39									39
40									40
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LINE NO	ITEM	ALLOC	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER	LINE NO
1	DEVELOPMENT OF MINNESOTA STATE INCOME TAX EXPENSE							1
2								2
3	FEDERAL ADJUSTED INCOME BEFORE INCOME TAXES		948,625		0		948,625	3
4								4
5	<u>MINNESOTA ADJUSTMENTS TO FEDERAL SCHEDULE M:</u>							5
6	PAYSOB ADJUSTMENT	NEPIS	0		0		0	6
7	CHANGE IN EXCESS TAX DEPRECIATION - MN	NEPIS	0		0		0	7
8	CHANGE IN ACBS - ORDINARY LOSS	NEPIS	0		0		0	8
9	PREFERRED DIVIDENDS PAID CREDIT	NEPIS	0		0		0	9
10	MISCELLANEOUS ADJUSTMENTS TO FED SCHEDULE M	NEPIS	0		0		0	10
11								11
12	TOTAL MINNESOTA ADJUSTMENTS TO FED SCHEDULE M		0		0		0	12
13								13
14	MINNESOTA TAXABLE INCOME		948,625		0		948,625	14
15	MINNESOTA TAX RATE		9.80%		0.00%		9.80%	15
16								16
17	MINNESOTA INCOME TAX prior to transfer to Deferred Income Tax due to NOL		92,965		0		92,965	17
18	Minnesota Current Income Tax transfer to Deferred Income Tax due to NOL		0		0		0	18
19	MINNESOTA INCOME TAX		92,965		0		92,965	19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27	DEVELOPMENT OF NORTH DAKOTA STATE INCOME TAX EXPENSE							27
28								28
29	FEDERAL ADJUSTED INCOME BEFORE INCOME TAXES		5,357,858		(2,409,168)		7,767,025	29
30								30
31	<u>NORTH DAKOTA ADJUSTMENTS TO FEDERAL SCHEDULE M:</u>							31
32	CHANGE IN EXCESS TAX DEPRECIATION - ND	NEPIS	(2,209)		(1,671)		(539)	32
33	CHANGE IN ACBS - ORDINARY LOSS - ND	NEPIS	0		0		0	33
34	CHANGE IN INCOME FROM ADR PROPERTY - ND	NEPIS	0		0		0	34
35	MISCELLANEOUS ADJUSTMENTS TO FED SCHEDULE M	NEPIS	0		0		0	35
36								36
37	TOTAL NORTH DAKOTA ADJUSTMENTS TO FED SCHEDULE M		(2,209)		(1,671)		(539)	37
38								38
39	SUBTOTAL		5,355,648		(2,410,839)		7,766,487	39
40	DEDUCTION OF FEDERAL INCOME TAXES		3,353,190		0		3,353,190	40
41								41
42	NORTH DAKOTA TAXABLE INCOME		2,002,459		(2,460,839)		4,463,297	42
43	NORTH DAKOTA TAX RATE		4.31%		4.31%		4.31%	43
44								44
45	NORTH DAKOTA INCOME TAX prior to transfer to Deferred Income Tax due to NOL		84,151		(104,822)		188,973	45
46	North Dakota Current Income Tax transfer to Deferred Income Tax due to NOL		104,822		104,822		-	46
47	NORTH DAKOTA INCOME TAX		188,973		(0)		188,973	47
48								48
49								49
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ALLOCATION FACTORS

LINE NO	ITEM	FACTOR	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	MWH CONSUMPTION AT GENERATORS - PARTIAL	E1	5,645,126		2,476,736		3,168,390		1
2	PERCENTAGE		100.000000%		43.873883%		56.126117%		2
3									3
4	MWH CONSUMPTION AT GENERATORS - TOTAL	E2	6,171,457		2,775,986		3,395,471		4
5	PERCENTAGE		100.000000%		44.981047%		55.018953%		5
6									6
7	GENERATION DEMAND FACTOR	D1	719,976		284,282		435,694		7
8	PERCENTAGE		100.000000%		39.484927%		60.515073%		8
9									9
10	TRANSMISSION DEMAND FACTOR	D2	725,298		284,282		441,016		10
11	PERCENTAGE		100.000000%		39.195200%		60.804800%		11
12									12
13	DISTRIBUTION - PRIMARY DEMAND FACTOR	D3	851,393		396,080		455,313		13
14	PERCENTAGE		100.000000%		46.521407%		53.478593%		14
15									15
16	DISTRIBUTION - SECONDARY DEMAND FACTOR	D4	1,119,241		545,068		574,173		16
17	PERCENTAGE		100.000000%		48.699789%		51.300211%		17
18									18
19	CUSTOMER OR METER FACTORS								19
20	TOTAL RETAIL CUSTOMERS	C1	135,411		59,643		75,768		20
21	PERCENTAGE		100.000000%		44.045905%		55.954095%		21
22									22
23	RETAIL SERVICE LOCATIONS	C2	136,449		59,642		76,807		23
24	PERCENTAGE		100.000000%		43.710104%		56.289896%		24
25									25
26	SECONDARY SERVICE LOCATIONS	C3	136,414		59,632		76,782		26
27	PERCENTAGE		100.000000%		43.713988%		56.286012%		27
28									28
29	STREET LIGHTING FACTOR	C4	13,235,267		5,515,574		7,719,693		29
30	PERCENTAGE		100.000000%		41.673311%		58.326689%		30
31									31
32	AREA LIGHTING FACTOR	C5	9,628,628		5,249,227		4,379,401		32
33	PERCENTAGE		100.000000%		54.516874%		45.483126%		33
34									34
35	METER FACTOR	C6	57,578,353		25,668,459		31,909,894		35
36	PERCENTAGE		100.000000%		44.580051%		55.419949%		36
37									37
38	METER READING FACTOR	C7	206,170		91,157		115,013		38
39	PERCENTAGE		100.000000%		44.214483%		55.785517%		39
40									40
41	SYSTEM SERVICE LOCATIONS	C8	136,457		59,643		76,814		41
42	PERCENTAGE		100.000000%		43.708274%		56.291726%		42
43									43
44	LOAD MANAGEMENT FACTOR	C9	41,469		18,119		23,350		44
45	PERCENTAGE		100.000000%		43.692879%		56.307121%		45
46									46
47									47
48									48
49									49
50									50
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60									60

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LINE NO	ITEM	ALLOCATION FACTORS FACTOR	TOTAL COMPANY	NORTH DAKOTA	OTHER	LINE NO
1	GROSS PLANT IN SERVICE					1
7	PRODUCTION PLANT	P10	1,469,629,785	632,119,838	837,509,947	2
8	PERCENTAGE		100.000000%	43.012182%	56.987818%	3
9						4
10	DISTRIBUTION PLANT	P60	717,695,528	329,751,161	387,944,367	5
11	PERCENTAGE		100.000000%	45.945829%	54.054171%	6
12						7
13	GENERAL PLANT	P90	122,942,613	53,300,696	69,641,917	8
14	PERCENTAGE		100.000000%	43.354127%	56.645873%	9
15						10
16						11
17	ELECTRIC PLANT IN SERVICE	EPIS	3,177,112,921	1,249,259,538	1,927,853,383	12
18	PERCENTAGE		100.000000%	39.320590%	60.679410%	13
19						14
20	NET ELECTRIC PLANT IN SERVICE	NEPIS	2,084,139,321	788,173,764	1,295,965,558	15
21	PERCENTAGE		100.000000%	37.817710%	62.182290%	16
22						17
23	NET ELECTRIC PLANT IN SERVICE Excluding Direct Assignment	NEPIS EXD	1,837,371,138	788,173,764	1,049,197,375	18
24	PERCENTAGE		100.000000%	42.896819%	57.103181%	19
25						20
26	OPERATION AND MAINTENANCE EXPENSE					21
27	PRODUCTION EXPENSE (EXCL ENERGY)	OXPD	25,997,402	11,030,269	14,967,133	22
28	PERCENTAGE		100.000000%	42.428352%	57.571648%	23
29						24
30	DISTRIBUTION EXPENSE	OXD	17,553,489	7,972,703	9,580,786	25
31	PERCENTAGE		100.000000%	45.419479%	54.580521%	26
32						27
33	CUSTOMER ACCOUNTS EXPENSE	OXC	16,028,499	7,035,433	8,993,066	28
34	PERCENTAGE		100.000000%	43.893273%	56.106727%	29
35						30
36	CUSTOMER SERVICE & INFORMATION EXPENSE	OXI	2,985,633	1,315,049	1,670,584	31
37	PERCENTAGE		100.000000%	44.045905%	55.954095%	32
38						33
39	OTHER DEFERRED INCOME TAX FACTOR					34
40	MINNESOTA	NPISM	919,398,576	0	919,398,576	35
41	PERCENTAGE		100.000000%	0.000000%	100.000000%	36
42						37
43	NORTH DAKOTA	NPISN	1,042,277,136	788,173,764	254,103,372	38
44	PERCENTAGE		100.000000%	98.663270%	1.336730%	39
45						40
46	EXCLUDING SOUTH DAKOTA	NPMNR	1,901,204,175	788,173,764	1,113,030,411	41
47	PERCENTAGE		100.000000%	41.456555%	58.543445%	42
48						43
49	LONG-TERM CWIP RATIO (W/AFDC)	CWIPLT	0	0	0	44
50	PERCENTAGE		100.000000%	0.000000%	100.000000%	45
51						46
52	REVENUE	R10	487,865,956	205,989,209	281,876,746	47
53	PERCENTAGE		100.000000%	42.222501%	57.777499%	48
54						49
55	LABOR AND RELATED EXPENSE	LRE	141,787,949	58,734,953	83,052,996	50
56	PERCENTAGE		100.000000%	41.424503%	58.575497%	51
57						52
58	TOTAL O & M EXPENSE	OX				53
59	PERCENTAGE					54
60						55
61						56
62						57
63						58
64						59
65						60
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LINE NO	ITEM	AMOUNT		AMOUNT AS		COST OF CAPITAL		RATE OF RETURN		LINE NO
				A PERCENT OF TOTAL						
1	CAPITAL STRUCTURE - RATE OF RETURN									1
2										2
3										3
4	LONG-TERM DEBT	902,118,455		46.50%		4.68%		2.18%		4
5										5
6	PREFERRED STOCK	0		0.00%		0.00%		0.00%		6
7										7
8	COMMON EQUITY	1,037,715,500		53.50%		9.77%		5.23%		8
9										9
10										10
11	TOTAL	1,939,833,955		100.00%				7.41%		11
12										12
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LINE NO	ITEM	ALLOCATION	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	CASH WORKING CAPITAL CALCULATION - REVENUE LEAD DAYS								1
2									2
3	REVENUES								3
4	COMPUTER MAINTAINED BILLINGS		419,666,277		180,150,768		239,515,509		4
5	MANUALLY MAINTAINED BILLINGS		75,445,067		32,386,416		43,058,650		5
6	COST OF ENERGY REVENUES	R10	(6,094,976)		(6,094,976)		0		6
7	SALES FOR RESALE		6,947,794		3,125,191		3,822,604		7
8	RENT FROM ELECTRIC PROPERTY		435,931		164,859		271,072		8
9	MISCELLANEOUS		1,395,880		527,890		867,990		9
10	ITA DEFICIENCY PAYMENTS		848,757		320,980		527,777		10
11	WHEELING		425,279		0		425,279		11
12	LOAD CONTROL AND DISPATCH		19,546,874		8,384,987		11,161,887		12
13	RENT FROM ELECTRIC PROPERTY - BIG STONE		0		0		0		13
14	RENT FROM ELECTRIC PROPERTY - COYOTE		0		0		0		14
15	PROFIT ON MATERIALS AND SUPPLIES		0		0		0		15
16	RUBBER GOODS TESTING		0		0		0		16
17	RESIDENTIAL CONSERVATION SERVICES		0		0		0		17
18									18
19	TOTAL REVENUES		518,616,884		218,966,115		299,650,768		19
20									20
21									21
22	REVENUE LEAD DAYS FROM SERVICE TO COLLECTION								22
23	COMPUTER MAINTAINED BILLINGS		N/A		39.8		N/A		23
24	MANUALLY MAINTAINED BILLINGS		N/A		26.7		N/A		24
25	COST OF ENERGY REVENUES		N/A		126.8		N/A		25
26	SALES FOR RESALE		N/A		19.9		N/A		26
27	RENT FROM ELECTRIC PROPERTY		N/A		-63.3		N/A		27
28	MISCELLANEOUS		N/A		40.4		N/A		28
29	ITA DEFICIENCY PAYMENTS		N/A		27.5		N/A		29
30	WHEELING		N/A		39.3		N/A		30
31	LOAD CONTROL AND DISPATCH		N/A		28.8		N/A		31
32	RENT FROM ELECTRIC PROPERTY - BIG STONE		N/A		34.6		N/A		32
33	RENT FROM ELECTRIC PROPERTY - COYOTE		N/A		34.6		N/A		33
34	PROFIT ON MATERIALS AND SUPPLIES		N/A		34.6		N/A		34
35	RUBBER GOODS TESTING		N/A		34.6		N/A		35
36	RESIDENTIAL CONSERVATION SERVICES		N/A		34.6		N/A		36
37									37
38									38
39	REVENUE DOLLAR DAYS (REVENUES X REVENUE LEAD DAYS)								39
40	COMPUTER MAINTAINED BILLINGS		16,702,717,825		7,170,000,558		9,532,717,267		40
41	MANUALLY MAINTAINED BILLINGS		2,014,383,276		864,717,309		1,149,665,967		41
42	COST OF ENERGY REVENUES		(772,842,957)		(772,842,957)		0		42
43	SALES FOR RESALE		137,913,720		62,035,036		75,878,684		43
44	RENT FROM ELECTRIC PROPERTY		(27,581,376)		(10,430,645)		(17,150,731)		44
45	MISCELLANEOUS		56,337,728		21,305,639		35,032,090		45
46	ITA DEFICIENCY PAYMENTS		23,340,818		8,826,963		14,513,855		46
47	WHEELING		16,700,704		0		16,700,704		47
48	LOAD CONTROL AND DISPATCH		562,949,971		241,487,628		321,462,343		48
49	RENT FROM ELECTRIC PROPERTY - BIG STONE		0		0		0		49
50	RENT FROM ELECTRIC PROPERTY - COYOTE		0		0		0		50
51	PROFIT ON MATERIALS AND SUPPLIES		0		0		0		51
52	RUBBER GOODS TESTING		0		0		0		52
53	RESIDENTIAL CONSERVATION SERVICES		0		0		0		53
54									54
55	TOTAL DOLLAR DAYS		18,713,919,710		7,585,099,531		11,128,820,179		55
56									56
57									57
58	AVG REVENUE LEAD DAYS (TOTAL REV DOLLAR DAYS / TOTAL REV)		36.1		34.6		37.1		58
59									59
60									60

OTTER TAIL POWER COMPANY
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LINE NO	ITEM	OPERATING EXPENSE	EXPENSE PER DAY 365 DAYS PER YEAR	EXPENSE LAG DAYS	EXCESS REVENUE LEAD DAYS OF 37.2 OVER EXPENSE LAG DAYS	NET REVENUE LAG DOLLARS	LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF						1
2	LEAD-LAG FACTORS-MINNESOTA JURISDICTION						2
3	FUEL - COAL	E2	23,731,084	65,017	19.1	1,176,152	3
4							4
5	FUEL - OIL	E1	4,853,219	13,296	8.9	376,424	5
6							6
7	PURCHASED POWER		42,840,818	117,372	32.8	519,958	7
8							8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE	32,845,103	89,987	10.5	2,404,441	9
10							10
11	ALL OTHER O&M EXPENSE		49,980,917	136,934	12.5	3,383,640	11
12							12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)		7,695,304	21,083	297.2	(5,480,798)	13
14							14
15	COAL CONVERSION TAXES		44,987	123	35.6	198	15
16							16
17	FEDERAL INCOME TAXES		179,689	492	0.0	18,313	17
18							18
19	STATE INCOME TAXES		92,965	255	0.0	9,475	19
20							20
21	INCREMENTAL FEDERAL INCOME TAXES		0	0	0.0	0	21
22							22
23	INCREMENTAL STATE INCOME TAXES		0	0	0.0	0	23
24							24
25	BANK BALANCES	NEPIS				0	25
26							26
27	SPECIAL DEPOSITS	NEPIS				889,545	27
28							28
29	WORKING FUNDS	NEPIS				5,157	29
30							30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE	(2,711,868)	(7,430)	0.0	0	31
32							32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE	(4,383,660)	(12,010)	0.0	0	33
34							34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	0	0	0.0	0	35
36							36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	0	0	61.2	0	37
38							38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10	0	0	0.0	0	39
40							40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10	0	0	36.9	0	41
42							42
43							43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - MINNESOTA					3,302,507	44
45							45
46							46
47							47
48							48
49							49
50							50
51							51
52							52
53							53
54							54
55							55
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OTTER TAIL POWER COMPANY
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NORTH DAKOTA

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LINE NO	ITEM	OPERATING EXPENSE	EXPENSE PER DAY 365 DAYS PER YEAR	EXPENSE LAG DAYS	EXCESS REVENUE LEAD DAYS OF 34.6 OVER EXPENSE LAG DAYS	NET REVENUE LAG DOLLARS	LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF						1
2	LEAD-LAG FACTORS-NORTH DAKOTA JURISDICTION						2
3	FUEL - COAL	E2	23,301,382	63,839	19.1	988,872	3
4							4
5	FUEL - OIL	E1	4,561,691	12,498	8.9	321,318	5
6							6
7	PURCHASED POWER		42,027,450	115,144	32.8	210,713	7
8							8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE	28,896,139	79,168	10.5	1,909,520	9
10							10
11	ALL OTHER O&M EXPENSE		35,747,938	97,940	12.5	2,165,444	11
12							12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)		7,061,411	19,346	297.2	(5,060,853)	13
14							14
15	COAL CONVERSION TAXES		41,281	113	35.6	(112)	15
16							16
17	FEDERAL INCOME TAXES		0	0	0.0	0	17
18							18
19	STATE INCOME TAXES		(0)	(0)	0.0	0	19
20							20
21	INCREMENTAL FEDERAL INCOME TAXES		0	0	0.0	0	21
22							22
23	INCREMENTAL STATE INCOME TAXES		0	0	0.0	0	23
24							24
25	BANK BALANCES	NEPIS				0	25
26							26
27	SPECIAL DEPOSITS	NEPIS				816,270	27
28							28
29	WORKING FUNDS	NEPIS				4,732	29
30							30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE	(2,385,820)	(6,536)	0.0	0	31
32							32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE	(3,856,613)	(10,566)	0.0	0	33
34							34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10 ASSIGN TO JURIS	0	0	0.0	0	35
36							36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10 ASSIGN TO JURIS	(303,808)	(832)	61.2	(50,965)	37
38							38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10	(72)	(0)	13.8	(3)	39
40							40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10	0	0	0.0	0	41
42							42
43	TOTAL CASH WORKING CAPITAL REQUIREMENT - NORTH DAKOTA					1,304,937	43
44							44
45							45
46							46
47							47
48							48
49							49
50							50
51							51
52							52
53							53
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CLASS COST OF SERVICE STUDY
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LINE NO	ITEM	OPERATING EXPENSE	EXPENSE PER DAY 365 DAYS PER YEAR	EXPENSE LAG DAYS	EXCESS REVENUE LEAD DAYS OF 37.1 OVER EXPENSE LAG DAYS	NET REVENUE LAG DOLLARS	LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF						1
2	LEAD-LAG FACTORS-SOUTH DAKOTA JURISDICTION						2
3	FUEL - COAL	E2	4,740,714	12,988	19.1	233,659	3
4							4
5	FUEL - OIL	E1	975,772	2,673	8.9	75,415	5
6							6
7	PURCHASED POWER		8,559,385	23,450	32.8	101,540	7
8							8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE	6,719,682	18,410	10.5	490,077	9
10							10
11	ALL OTHER O&M EXPENSE		8,823,871	24,175	12.5	594,946	11
12							12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)		1,638,954	4,490	297.2	(1,167,755)	13
14							14
15	COAL CONVERSION TAXES		9,581	26	35.6	40	15
16							16
17	FEDERAL INCOME TAXES		(1,478,443)	(4,051)	0.0	0	17
18							18
19	STATE INCOME TAXES		0	0	0.0	0	19
20							20
21	INCREMENTAL FEDERAL INCOME TAXES		0	0	0.0	0	21
22							22
23	INCREMENTAL STATE INCOME TAXES		0	0	0.0	0	23
24							24
25	BANK BALANCES	NEPIS				0	25
26							26
27	SPECIAL DEPOSITS	NEPIS				189,456	27
28							28
29	WORKING FUNDS	NEPIS				1,098	29
30							30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE	(554,813)	(1,520)	0.0	0	31
32							32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE	(896,840)	(2,457)	0.0	0	33
34							34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	0	0	0.0	0	35
36							36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	0	0	61.2	0	37
38							38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10	0	0	0.0	0	39
40							40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10	0	0	0.0	0	41
42							42
43							43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - SOUTH DAKOTA					518,477	44
45							45
46							46
47							47
48							48
49							49
50							50
51							51
52							52
53							53
54							54
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56							56
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OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
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NORTH DAKOTA

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LINE NO	ITEM	OPERATING EXPENSE	EXPENSE PER DAY 365 DAYS PER YEAR	EXPENSE LAG DAYS	EXCESS REVENUE LEAD DAYS OF 30.4 OVER EXPENSE LAG DAYS	NET REVENUE LAG DOLLARS	LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF						1
2	LEAD-LAG FACTORS-FERC JURISDICTION						2
3	FUEL - COAL	E2	29,488	81	19.1	11.3	3
4							4
5	FUEL - OIL	E1	6,599	18	8.9	21.5	5
6							6
7	PURCHASED POWER		53,338	146	32.8	-2.4	7
8						(346)	8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE	1,295,228	3,549	10.5	19.9	9
10						70,688	10
11	ALL OTHER O&M EXPENSE		1,349,574	3,697	12.5	17.9	11
12						66,222	12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)		65,717	180	297.2	-266.8	13
14						(48,030)	14
15	COAL CONVERSION TAXES		384	1	35.6	-5.2	15
16						(5)	16
17	FEDERAL INCOME TAXES		3,353,190	9,187	0.0	30.4	17
18						279,279	18
19	STATE INCOME TAXES		190,213	521	0.0	30.4	19
20						15,842	20
21	INCREMENTAL FEDERAL INCOME TAXES		0	0	0.0	30.4	21
22						0	22
23	INCREMENTAL STATE INCOME TAXES		0	0	0.0	30.4	23
24						0	24
25	BANK BALANCES	NEPIS				0	25
26							26
27	SPECIAL DEPOSITS	NEPIS				263,161	27
28							28
29	WORKING FUNDS	NEPIS				1,526	29
30							30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE	(106,941)	(293)	0.0	0	31
32							32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE	(172,867)	(474)	0.0	0	33
34							34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	0	0	0.0	0	35
36							36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	0	0	61.2	0	37
38							38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10	0	0	0.0	0	39
40							40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10	0	0	0.0	0	41
42							42
43							43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - FERC					649,637	44
45							45
46							46
47							47
48							48
49							49
50							50
51							51
52							52
53							53
54							54
55							55
56							56
57							57
58							58
59							59
60							60

NORTH DAKOTA

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OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget REGULATORY YEAR 2024 - Simple Average

LINE NO	ITEM	OPERATING EXPENSE	EXPENSE PER DAY 365 DAYS PER YEAR	EXPENSE LAG DAYS	EXCESS REVENUE LEAD DAYS OF 36.1 OVER EXPENSE LAG DAYS	NET REVENUE LAG DOLLARS	LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF						1
2	LEAD-LAG FACTORS - TOTAL CO.						2
3	FUEL - COAL	E2				2,399,595	3
4							4
5	FUEL - OIL	E1				773,546	5
6							6
7	PURCHASED POWER					831,865	7
8							8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE				4,874,726	9
10							10
11	ALL OTHER O&M EXPENSE					6,210,251	11
12							12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)					(11,757,435)	13
14							14
15	COAL CONVERSION TAXES					121	15
16							16
17	FEDERAL INCOME TAXES					297,593	17
18							18
19	STATE INCOME TAXES					25,317	19
20							20
21	INCREMENTAL FEDERAL INCOME TAXES					0	21
22							22
23	INCREMENTAL STATE INCOME TAXES					0	23
24							24
25	BANK BALANCES	NEPIS				0	25
26							26
27	SPECIAL DEPOSITS	NEPIS				2,158,433	27
28							28
29	WORKING FUNDS	NEPIS				12,513	29
30							30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE				0	31
32							32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE				0	33
34							34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	ASSIGN TO JURIS			0	35
36							36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	ASSIGN TO JURIS			(50,965)	37
38							38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10				(3)	39
40							40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10				0	41
42							42
43							43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - TOTAL COMPANY					5,775,557	44
45							45
46							46
47							47
48							48
49							49
50							50
51							51
52							52
53							53
54							54
55							55
56							56
57							57
58							58
59							59
60							60

Otter Tail Power Company
Functionalization
Regulatory Year 2024

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Line No.	Description	Accounts 101	Simple Average 2024		Accounts 106	Simple Average 2024		Accounts 114	Simple Average 2024		Line No.
1	Production:		(1)			(1)			(1)		1
2	Steam	310 - 317	571,495,169		310 - 316	0		310 - 317	1,588,255		2
3	Wind	341 - 347	657,818,354		344 - 347	0		344 - 347	0		3
4	Hydro	330 - 335	13,285,684		330 - 335	0		330 - 335	0		4
5	Solar		62,522,146			0					5
6	Other IC	340 - 347	224,720,179		340 - 347	0		340 - 347	0		6
7											7
8	Transmission	350 - 358	824,652,331		350 - 358	0		350 - 358	58,287		8
9											9
10	Distribution:										10
11	Land	360	1,497,656		360	0		360	0		11
12	Station Equipment	362	140,726,088		362	0		362	586		12
13	Poles, Towers & Fixtures	364	88,713,769		364	0					13
14	Overhead Conductors & Devices	365	62,678,781		365	0					14
15	Underground Conduit	366	0		366	0					15
16	Underground Conductors & Devices	367	130,042,166		367	0					16
17	Line Transformers	368	130,954,946		368	0					17
18	Services	369	14,188,329		369	0					18
19	Underground Services	369.1	50,453,703		369.1	0					19
20	Meters	370	28,397,520		370	0					20
21	Smart Meters	370.05	36,169,600			0					21
22	Load Management Switches	370.1	8,899,439		370.1	0					22
23	Interruption Monitors	370.2	0		370.2	0					23
24	Installation on Customers' Premises	371.0	0		371.0	0					24
25	EV Charging	371.1	1,771,302			0					25
26	All Other Private Lighting	371.2	10,003,929		371.2	0					26
27	Streetlighting & Signal Systems	373	14,969,064		373	0					27
28			719,466,292			0					28
29	General:										29
30	Land	389	1,163,225		389	0					30
31	Structures & Improvements	390	30,082,306		390	0					31
32	General Office Buildings	390.1	6,672,208		390.1	0					32
33	Fleet Service Center Building	390.2	896,880		390.2	0					33
34		390.25	2,154,593			0					34
35	Central Stores Buildings	390.3	5,414,880		390.3	0					35
36	Office Furniture	391	603,912		391	0					36
37	Office Equipment	391.1	327,896		391.1	0					37
38	Duplicating Equipment	391.2	772,361		391.2	0					38
39	Engineering Computers	391.3	0		391.3	0					39
40	Business Computers	391.4	0		391.4	0					40
41	Computer Systems	391.5	4,156,850		391.5	0					41
42	Computer Related Equipment	391.6	3,281,758		391.6	0					42
43	Transportation Equipment	392 & 392.1	43,084,688		392	0					43
44	Stores Equipment	393	0		393	0					44
45	Tools, Shop & Garage Equipment	394	6,840,127		394	0					45
46	Central Stores Tools	394.1				0					46
47	AMR Equipment	394.2	401,984		394.2	0		101 (Above)	3,196,902,767.25		47
48	Laboratory Equipment	395			395	0		101.7 Intangible (1)	42,134,377.00		48
49	Power-Operated Equipment	396	1,750,019		396	0		Agrees to FERC T/B; GL 865A Report	3,239,037,144.25		49
50	Communication Equipment & Communications Towers	397 & 397.4	7,117,723		397	0					50
51	Radio Tele-Communication Equipment	397.1	1,060,758		397.1	0		106 (Above)	0.00		51
52	Microwave Equipment	397.2	6,994,464		397.2	0		114 (Above); Agrees to FERC T/B	1,647,128.00		52
53	Radio Load Control Equipment	397.3	165,980		397.3	0		PHFU (1)			53
54	Miscellaneous Equipment	398	0		398	0		Total Plant in Service (F/S)	3,240,684,272.25		54
			122,942,613			0		(1) Actual Year Work Paper A-1	3,240,684,272.00		
								Agrees to Actual Year Work Paper A-1		(0.25)	

			2024		Functionalization		Page 2 of 6	
Description		Accounts	Operating Statement Amounts					
Line #			Regulatory Year 2024					
1	Steam Power Generation:		(2)					
2	Supervision and Engineering	401 - 500	2,158,400					
3	Fuel	401 - 501	51,977,346					
4	Steam Expense	401 - 502	5,403,987					
5	Electrical Expense	401 - 505	1,975,891					
6	Miscellaneous Expense	401 - 506	4,956,569					
7	Rent	401 - 507		401 =	66,472,193.39			
8	Allowances	401 - 509						
9								
10	Steam Power Maintenance:							
11	Supervision and Engineering	402 - 510	606,686					
12	Structures	402 - 511	967,805					
13	Boiler	402 - 512	5,404,699					
14	Electric	402 - 513	972,464					
15	Miscellaneous	402 - 514	1,209,743	402 =	9,161,397.51			
16								
17	Hydro:							
18	Supervision and Engineering	401 - 535	11,290					
19	Electric Expense	401 - 537 & 538	30,770					
20	Miscellaneous Expense	401 - 539	13,173	401 =	55,233.00			
21	Rents	401 - 540						
22	Supervision & Engineering	402 - 541	22					
23	Structures	402 - 542	7,294					
24	Reservoirs - Dams	402 - 543	341,324					
25	Electric	402 - 544	3,006					
26	Miscellaneous Expense	402 - 545	6,468	402 =	358,114.00			
27								
28	IC:							
29	Supervision and Engineering	401 - 546	121,216					
30	Supervision and Engineering-Wind	401 - 546(W)	1,487,738					
31	Fuel	401 - 547	10,397,281					
32	Generation Expense	401 - 548	471,033					
33	Generation Expense-Wind	401 - 548(W)	1,361,579					
34	Miscellaneous Expense	401 - 549	1,426,052					
35	Miscellaneous Expense-Wind	401 - 549(W)	4,165,532					
36	Rents	401 - 550	-	401 =	21,279,055.00			
37	Rents-Wind	401 - 550(W)	1,848,624					
38	Supervision and Engineering	402 - 551	30,637					
39	Supervision and Engineering-Wind	402 - 551(W)	170,196					
40	Structures	402 - 552	84,795	402 =	4,538,545.00			
41	Generating and Electric	402 - 553	1,033,581					
42	Generating and Electric-Wind	402 - 553(W)	1,157,939					
43	Miscellaneous Expense	402 - 554	267,415					
44	Miscellaneous Expense-Wind	402 - 554(W)	1,793,982	Production 401 =	87,806,481.39			
45				Production 402 =	14,058,056.51			
46	Other Power Supply Expenses:							
47	System Control and Dispatch	401 - 556	485,549					
48	Other Expenses	401 - 557	26,453	401 =	512,002.00			
49								
50	Transmission Expenses:							
51	Supervision and Engineering	401 - 560	231,636					
52	Load Dispatching	401 - 561	4,161,282					
53	Station Expense	401 - 562	342,727					
54	Overhead Lines	401 - 563	794,989					
55	Transmission of Electricity by Others	401 - 565	23,131,177					
56	Miscellaneous Expense	401 - 566	927,529					
57	Rents	401 - 567	36,260	401 =	30,385,410.76			
58	Supervision and Engineering	402 - 568	310,515					
59	Computer Hardware, Software, etc	402 - 569	969,859					
60	Station Equipment	402 - 570	1,525,157					
61	Overhead System	402 - 571	1,877,768					
62	Underground Lines	402 - 572	130					
63	Maintenance of Miscellaneous Plant	402 - 573	-					
64	Day-Ahead & Real-Time and Transmission Market Expense	401 - 575	759,810					
65	Computer Software	402 - 576	260,227	402 =	4,943,655.53			
66								
67	Distribution Expense:							
68	Operation, Supervision & Engineering	401 - 580	408,414					
69	Load Dispatching	401 - 581	195,497					
70	Station Expenses	401 - 582	292,870					
71	Line Expenses	401 - 583	255,629					
72	Underground Line Expenses	401 - 584	2,380,523					
73	Strengthening & Signal System	401 - 585						
74								
75	Not Used	401 - 586.01						
76	Not Used	401 - 586.02						
77	Not Used	401 - 586.03						
78	Not Used	401 - 586.04						
79	Not Used	401 - 586.05						
80	Not Used	401 - 586.06						
81	Not Used	401 - 586.07						
82	Meter Expenses:	401 - 586	2,109,573					
83	Other Distribution Expenses	401 - 587	1,401					
84	Miscellaneous Distribution Expenses	401 - 588	3,792,991					
85	Rents	401 - 589	233,543	401 =	9,670,442.78			
86	Maintenance, Supervision & Engineering	402 - 590	982,657					
87	Maintenance of Station Equipment	402 - 592	744,378					
88	Maintenance of Overhead Lines	402 - 593	4,154,764					
89	Maintenance of Underground Lines	402 - 594	805,694					
90	Maintenance of Line Transformers	402 - 595	236,669					
91	Maintenance of Strengthening & Signal	402 - 596	176,602					
92	Maintenance of Meters:	402 - 597	597,884					
93	Not Used	402 - 597.01						
94	Not Used	402 - 597.02						
95	Not Used	402 - 597.03						
96	Maintenance of Property in A/C 371	402 - 598	184,398	402 =	7,883,045.56			

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Line #	Description	Accounts	(3) Statement Amounts	2024 Functionalization		Page 3 of 6	Line #
			Regulatory Year 2024				
1	Customer Accounting:						1
2	Supervision	401 - 901	23,039				2
3	Meter Reading Expenses	401 - 902	5,849,342				3
4	Customer Records & Collection Expense	401 - 903	7,768,248				4
5	Uncollectible Accounts	401 - 904	1,200,621				5
6	Miscellaneous Expenses	401 - 905	1,187,249	401 =	16,028,499.40		6
7							7
8	Customer Service and Information Expense:						8
9	Supervision	401 - 907	765,449				9
10							10
11	Customer Assistance Expenses	401 - 908	1,892,860				11
12	Not Used	401 - 908.2					12
13	Not Used	401 - 908.3					13
14	Not Used	401 - 908.4					14
15	Not Used	401 - 908.11					15
16	Not Used	401 - 908.12					16
17	Not Used	401 - 908.13					17
18	Conservation Investment Program - SD	401 - 908.16	485,000				18
19	Conservation Investment Program - ND	401 - 908.17	0				19
20	Conservation Investment Program - MN	401 - 908.18	9,000,000				20
21	Not Used	401 - 908.22					21
22	Not Used	401 - 908.23					22
23	Info & Instr Advertising Expense	401 - 909	209,751				23
24	Miscellaneous Expenses	401 - 910	117,574	401 =	12,470,633.78		24
25							25
26	Sales Expenses:						26
27	Supervisory Labor and Expenses	401 - 911	12,190				27
28	Minnesota Economic Development	401 - 912	274,979				28
29	North Dakota Economic Development	401 - 912	5,943				29
30	South Dakota Economic Development	401 - 912					30
31	Not Used	401 - 912.04					31
32	Expenses - Sales & Demonstrations	401 - 912					32
33	Not Used	401 - 912.10					33
34	Not Used	401 - 912.11 & 12					34
35	Not Used	401 - 912.13					35
36	Not Used	401 - 912.14					36
37	Not Used	401 - 912.20					37
38	Not Used	401 - 912.21 & 22					38
39	Not Used	401 - 912.23					39
40	Not Used	401 - 912.24					40
41	Not Used	401 - 912.30					41
42	Not Used	401 - 912.32					42
43	Not Used	401 - 912.33					43
44	Not Used	401 - 912.34					44
45	Advertising	401 - 913	1,348				45
46	Miscellaneous Sales Expense	401 - 916	296,288				46
47	Not Used	401 - 916.02					47
48	Not Used	401 - 916.03					48
49	Not Used	401 - 916.04					49
50	Not Used	401 - 916.08					50
51	Not Used	401 - 916.10					51
52	Not Used	401 - 916.11					52
53	Not Used	401 - 916.12					53
54	Not Used	401 - 916.13					54
55	Not Used	401 - 916.20					55
56	Not Used	401 - 916.21					56
57	Not Used	401 - 916.22					57
58	Not Used	401 - 916.23					58
59	Not Used	401 - 916.30					59
60	Not Used	401 - 916.31					60
61	Not Used	401 - 916.32					61
62	Not Used	401 - 916.33		401 =	590,748.00		62
63							63
64	Operating Expenses - Admin & General:						64
65	Salaries, Office Supplies & Expenses	401 - 920	20,291,006				65
66	Various Admin & General Expenses	401 - 921	12,108,238				66
67	Capitalized Admin & General Expenses	401 - 922	(2,720,136)				67
68	Outside Services Employed	401 - 923	1,083,910				68
69	Property Insurance	401 - 924	2,729,000				69
70	Property Insurance-Wind	401 - 924(W)	1,501,959				70
71	Injuries & Damages	401 - 925	4,536,918				71
72	Employee Pensions & Benefits	401 - 926	1,079,188				72
73	Regulatory Commission Expenses	401 - 928	3,151,279				73
74	Miscellaneous General Expenses	401 - 930	3,520,649	A/C 930.01 Included in This Account			74
75	Informational Advertising	401 - 930.01					75
76	Rents	401 - 931	562,704	401 =	47,844,715.00		76
77	Maintenance Expenses	402 - 935	1,810,327	A/C 935.06 Included in This Account			77
78	Radio Load Control Equipment	402 - 935.06					78

Check Totals	Amounts
Total 401 =	205,308,933.11
Total 402 =	28,695,084.59
Plus 555 (2)	90,662,127
Total	324,666,144.70
Gl. Total (2)	324,666,145.00
Difference	(0.30)

(2) FDW Transactions - 2011 located in Misc W/P file
(3) FDW Transactions - 2011 located in Misc W/P file

Line #	Factors						2024	Functionalization	Page 4 of 6	Line #
1	Base/Peak Split	Peak	Base							1
2	2024 Excluding Wind - (3)	24.03%	75.97%	100.00%	(3) Current Year Work Paper C-1, Page 1.					2
3	2024 Wind - (4)	31.49%	68.51%	100.00%	(4) Current Year Work Paper C-1_a, Page 1.					3
4										4
5										5
6	Distribution Rate Base:	Primary	Secondary	Primary	Secondary	Street	Area			6
7	(3)	Demand	Demand	Customer	Customer	Lights	Lights	Meters	Load	7
28									Management	28
29	Ending Balances									29
30	Land	1,497,656								30
31	Station Equipment	140,726,674								31
32	Poles, Towers & Fixtures	53,111,404		28,722,762	0	4,417,399	2,462,203			32
33	Overhead Conductors & Devices	36,618,097	18,726,676	1,772,760	1,654,124	2,438,389	1,468,735			33
34	Underground Conduit	0	0	0	0	0	0			34
35	Underground Conductors & Devices	22,850,922	2,693,847	88,663,816	11,481,631	2,716,000	1,635,950			35
36	Line Transformers	0	82,044,955	0	48,909,996	0	0			36
37	Services	0	11,596,627	0	2,591,703	0	0			37
38	Underground Services	0	27,952,158	0	22,501,544	0	0			38
39	Meters							28,397,520		39
40	Smart Meters							36,169,600		40
41	Load Management Switches								8,899,439	41
42	Interruption Monitors				0					42
43	Installation on Customers' Premises									43
44	EV Charging		1,447,748		323,554		10,003,929			44
45	All Other Private Lighting									45
46	Streetlighting & Signal Systems					14,969,064				46
47										47
48	Total Ending Balances	254,804,753	144,462,010	119,159,338	87,462,552	24,540,852	15,570,818	64,567,120	8,899,439	48
49										49
50		Primary	Secondary	Primary	Secondary	Street	Area		Load	50
51	Distribution Expenses	Demand	Demand	Customer	Customer	Lights	Lights	Meters	Management	51
52	Operation, Supervision & Engineering	54,423	40,602	96,890	40,146	3,382	2,023	170,949	0	52
53	Load Dispatching	22,817	19,567	48,377	19,347	1,889	1,119	82,382	0	53
54	Station Expenses	292,870								54
55	Line Expenses	77,351	96,867	26,289	45,823	5,910	3,389			55
56	Underground Line Expenses	301,376	404,184	1,169,369	448,197	35,821	21,576			56
57	Streetlighting & Signal System					0				57
58	Meter Expenses:							2,109,573	0	58
59	Other Distribution Expenses				1,401					59
60	Miscellaneous Distribution Expenses	505,430	377,080	899,826	372,843	31,406	18,788	1,587,619	0	60
61	Rents	139,818		75,614		11,629	6,482			61
62	Maintenance, Supervision & Engineering	497,564	167,994	186,469	55,673	57,942	17,015			62
63	Maintenance of Station Equipment	744,378								63
64	Maintenance of Overhead Lines	2,251,497	760,874	765,195	106,537	172,026	98,635			64
65	Maintenance of Underground Lines	102,002	136,797	395,776	151,693	12,124	7,303			65
66	Maintenance of Line Transformers		148,276		88,393					66
67	Maintenance of Streetlighting & Signal					176,602				67
68	Maintenance of Meters:							597,884	0	68
69	Maintenance of Property in A/C 371	85,057	28,718	31,876	9,517	9,905	2,909	16,416	0	69
70	Rounding	309.00	(13.00)	(191.00)	(12.00)	(26.00)	(15.00)	(53.00)		70
71	Total Distribution Expenses	5,074,892	2,180,947	3,695,490	1,339,557	518,608	179,224	4,564,770	0	71
72										72
73										73
74										74
75		Production	Transmission	Distribution	Customer	Customer				75
76	Labor Ratios: 2024 (1)	34.08%	16.21%	25.10%	19.97%	Service	4.64%	1.000000		76
77										77

(1) C-2, Page 1 of 2

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Line #			Amount	2024	Functionalization	Page 6 of 6	Line #
1	Customer Accounting Expenses						1
2	Meter Reading		5,857,762				2
3	Other		10,170,737				3
4							4
5	Total Customer Accounts		16,028,499				5
6							6
7	Customer Service & Info Expense - MN		9,000,000				7
8	- ND		0				8
9	- SD		485,000				9
10	- Other		2,985,634				10
11							11
12	Total Customer Serv & Information Exp		12,470,634				12
13							13
14	Sales Expenses - MN		274,979				14
15	- ND		5,943				15
16	- SD		0				16
17	- Other		309,826				17
18							18
19	Total Sales Expenses		590,748				19
20							20
21	Administrative & General Expenses						21
22	Salaries, Supplies, Pensions & Benefits						22
23	Production		10,482,304				23
24	Transmission		4,986,321				24
25	Distribution		7,720,546				25
26	Customer Accounts		6,142,118				26
27	Customer Service & Info		1,427,007				27
28							28
29	Total A&G Salaries, Supplies, Pensions & Benefits		30,758,296				29
30							30
31	Administrative & General Expenses						31
32	Load Management		0				32
33	Outside Services (A/C 923)		1,083,910				33
34	Property Insurance (A/C 924)		4,230,959				34
35	Injuries & Damages (A/C 925)		4,536,918				35
36							36
37	General Advertising (A/C 930.1)		0				37
38	Misc, Rents, Maintenance		5,893,680				38

Line		(A) Total Company 2024 Unadjusted Year	(B) 2024 Regulatory Adjustments					(G) Changes in Allocations Due to Effect of Test Year Adjustments	(H) OTP Total Company 2024 Regulatory Year	(I) ND Allocation	(J) OTP ND 2024 Regulatory Year
			(C) GIPs	(D) Hoot Lake Solar	(E) Transmission Recovery	(F) Electric Vehicles	(F) Total Adjustments				
1	Plant in Service										
2	A/C 101 & 106 - Direct MN	\$0					-		\$0	0.0%	\$0
3	A/C 101 & 106 - Direct ND	\$0					-		\$0	100.0%	\$0
4	A/C 101 & 106 - Direct SD	\$0					-		\$0	0.0%	\$0
5	Subtotal A/C 101 & 106 - Direct Assign	\$0					-		\$0		\$0
6	Production Plant										
7	A/C 101 & 106 - Base Demand (E1)	\$662,476,008		(46,949,461)			(46,949,461)		\$615,526,547	43.9%	\$270,055,397
8	A/C 101 & 106 - Peak Demand (D1)	\$416,694,169		(14,850,540)			(14,850,540)		\$401,843,629	39.5%	\$158,667,664
9	A/C 101 & 106 - Base Energy (E2)	\$450,671,354					-		\$450,671,354	45.0%	\$202,716,694
10	Subtotal A/C 101 & 106	\$1,529,841,532	-	(61,800,001)	-	-	(61,800,001)		\$1,468,041,531		\$631,439,754
11											
12	A/C 114 - Base Demand (E1)	\$1,206,597					-		\$1,206,597	43.9%	\$529,381
13	A/C 114 - Peak Demand (D1)	\$381,658					-		\$381,658	39.5%	\$150,697
14	A/C 114 - Base Energy (E1)	\$0					-		\$0	43.9%	\$0
15	Subtotal A/C 114	\$1,588,255					-		\$1,588,255		\$680,078
16											
17	Total Production Plant	\$1,531,429,786	-	(61,800,001)	-	-	-		\$1,469,629,785		\$632,119,833
18											
19	Transmission Plant										
20	A/C 101 & 106 (D2)	\$824,652,331	(49,208,600)		(224,871,194)		(274,079,794)		\$550,572,537	39.2%	\$215,798,007
21	A/C 101 & 106 (Direct FERC)	\$0	49,208,600		224,871,194		274,079,794		\$274,079,794	0.0%	\$0
22	A/C 114 (D2)	\$58,287					-		\$58,287	39.2%	\$22,846
23	Total Transmission Plant	\$824,710,618					-		\$824,710,618		\$215,820,853
24											
25	Distribution Plant										
26	Primary Demand (D3)	\$254,804,754					-		\$254,804,754	46.5%	\$118,538,757
27	Secondary Demand (D4)	\$144,462,009				(1,447,787)	(1,447,787)		\$143,014,222	48.7%	\$69,647,624
28	Primary Customer (C2)	\$119,159,338					-		\$119,159,338	43.7%	\$52,084,671
29	Secondary Customer (C3)	\$87,462,550				(323,563)	(323,563)		\$87,138,987	43.7%	\$38,091,926
30	Streetlighting (C4)	\$24,540,852					-		\$24,540,852	41.7%	\$10,226,985
31	Area Lighting (C5)	\$15,570,817					-		\$15,570,817	54.5%	\$8,488,723
32	Meters (C6)	\$64,567,120					-		\$64,567,120	44.6%	\$28,784,055
33	Load Management (C9)	\$8,899,439					-		\$8,899,439	43.7%	\$3,888,421
34	Total Distribution Plant	\$719,466,879	\$0	\$0	\$0	(\$1,771,350)	(1,771,350)		\$717,695,529		\$329,751,163
35											
36	General Plant										
37	Production (P10)	\$41,841,785					-		\$41,841,785	43.0%	\$17,997,064
38	Transmission (D2)	\$19,903,693					-		\$19,903,693	39.2%	\$7,801,292
39	Distribution (P60)	\$30,817,789					-		\$30,817,789	45.9%	\$14,159,489
40	Customer Accounts (OXC)	\$24,517,242					-		\$24,517,242	43.9%	\$10,761,420
41	Customer Service & Info (OXI)	\$5,696,124					-		\$5,696,124	44.0%	\$2,508,909
42	Load Management (C9)	\$165,980					-		\$165,980	43.7%	\$72,521
43	Total General Plant	\$122,942,613					-		\$122,942,613		\$53,300,695
44											
45	Intangible Plant (P90)	\$42,134,377					-		\$42,134,377	43.4%	\$18,266,993
46											
47	Total Plant in Service	\$3,240,684,274	-	(61,800,001)	-	(1,771,350)	(63,571,351)		\$3,177,112,923		\$1,249,259,536
48											
49	Accumulated Depreciation										
50	Production Plant										
51	Base Demand (E1)	(\$277,632,671)		1,009,234			1,009,234		(\$276,623,437)	43.9%	(\$121,365,443)
52	Peak Demand (D1)	(\$153,150,608)		319,230			319,230		(\$152,831,378)	39.5%	(\$60,345,358)
53	Base Energy (E2)	(\$142,138,944)					-		(\$142,138,944)	45.0%	(\$63,935,585)
54	Total Production Plant	(\$572,922,222)	-	1,328,464	-	-	1,328,464		(\$571,593,758)		(\$245,646,386)
55											
56	Transmission Plant (D2)	(\$184,915,987)	3,093,402		22,087,142		25,180,544		(\$159,735,443)	39.2%	(\$62,608,627)
57	Transmission Plant - Direct FERC		(3,093,402)		(22,087,142)		(25,180,544)		(\$25,180,544)	0.0%	\$0
58	Total Transmission Plant	(\$184,915,987)					-		(\$184,915,987)		(\$62,608,627)
59											
60	Distribution Plant (P60)	(\$268,634,254)				92,846	92,846		(\$268,541,408)	45.9%	(\$123,383,576)
61											
62	General Plant (P90)	(\$50,534,998)					-		(\$50,534,998)	43.4%	(\$21,909,009)
63											
64	Intangible Plant (P90)	(\$17,387,448)					-		(\$17,387,448)	43.4%	(\$7,538,177)
65											
66	Total Accumulated Depreciation	(\$1,094,394,909)	-	1,328,464	-	92,846	1,421,310		(\$1,092,973,599)		(\$461,085,774)
67											
68	Total Net Plant in Service	\$2,146,289,364	-	(60,471,537)	-	(1,678,504)	(62,150,041)		\$2,084,139,323		\$788,173,762

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
		2024 Regulatory Adjustments								
Line	Total Company 2024 Unadjusted Year	GIPs	Hoot Lake Solar	Transmission Recovery	Electric Vehicles	Total Adjustments	Changes in Allocations Due to Effect of Test Year Adjustments	OTP Total Company 2024 Regulatory Year	ND Allocation	OTP ND 2024 Regulatory Year
69						-				
70	Plant Held for Future Use					-				
71	Production Plant (P10)	\$0				-		\$0	43.0%	\$0
72	Transmission Plant (D2)	\$9,038				-		\$9,038	39.2%	\$3,542
73	Distribution Plant (P60)	\$3,000				-		\$3,000	45.9%	\$1,378
74	General Plant (P90)	\$0				-		\$0	43.4%	\$0
75	Intangible Plant (P90)	\$0				-		\$0	43.4%	\$0
76	Total Plant Held for Future Use	\$12,038				-		\$12,038		\$4,921
77						-				
78	Unamortized Holding Company Expense					-				
79	Unamortized Holding Company Expense - MN	\$0				-		\$0	0.0%	\$0
80	Unamortized Holding Company Expense - ND	\$0				-		\$0	100.0%	\$0
81	Unamortized Holding Company Expense - SD	\$0				-		\$0	0.0%	\$0
82	Unamortized Holding Company Expense - FERC	\$0				-		\$0	0.0%	\$0
83	Total Unamortized Holding Company Expense					-		\$0		\$0
84						-				
85	CIP Tracker Balance					-				
86	CIP Tracker - MN	\$0				-		\$0	0.0%	\$0
87	CIP Tracker - ND	\$0				-		\$0	100.0%	\$0
88	CIP Tracker - SD	\$0				-		\$0	0.0%	\$0
89	CIP Tracker - FERC	\$0				-		\$0	0.0%	\$0
90	Total CIP Tracker Balance	\$0				-		\$0		\$0
91						-				
92	Const Work-in-Progress - Direct Assigned					-				
93	Production Plant - Direct MN	\$0				-		\$0	0.0%	\$0
94	Production Plant - Direct ND	\$0				-		\$0	100.0%	\$0
95	Production Plant - Direct SD	\$0				-		\$0	0.0%	\$0
96	Production Plant - Direct FERC	\$0				-		\$0	0.0%	\$0
97	Transmission Plant - Direct MN	\$0				-		\$0	0.0%	\$0
98	Transmission Plant - Direct ND	\$0				-		\$0	100.0%	\$0
99	Transmission Plant - Direct SD	\$0				-		\$0	0.0%	\$0
100	Transmission Plant - Direct FERC	\$0				-		\$0	0.0%	\$0
101	Distribution Plant - Direct MN	\$0				-		\$0	0.0%	\$0
102	Distribution Plant - Direct ND	\$0				-		\$0	100.0%	\$0
103	Distribution Plant - Direct SD	\$0				-		\$0	0.0%	\$0
104	Distribution Plant - Direct FERC	\$0				-		\$0	0.0%	\$0
105	General Plant - Direct MN	\$0				-		\$0	0.0%	\$0
106	General Plant - Direct ND	\$0				-		\$0	100.0%	\$0
107	General Plant - Direct SD	\$0				-		\$0	0.0%	\$0
108	General Plant - Direct FERC	\$0				-		\$0	0.0%	\$0
109	Intangible Plant - Direct MN	\$0				-		\$0	0.0%	\$0
110	Intangible Plant - Direct ND	\$0				-		\$0	100.0%	\$0
111	Intangible Plant - Direct SD	\$0				-		\$0	0.0%	\$0
112	Intangible Plant - Direct FERC	\$0				-		\$0	0.0%	\$0
113	Total CWIP - Major Projects - Direct Assigned	\$0				-		\$0		\$0
114						-				
115	Const Work-in-Progress - Short-Term	\$0				-				
116	Production Plant (P10)	\$0				-		\$0	43.0%	\$0
117	Transmission Plant (D2)	\$359,000				-		\$359,000	39.2%	\$140,711
118	Distribution Plant (P60)	\$1,086,337				-		\$1,086,337	45.9%	\$499,127
119	General Plant (P90)	\$325,581				-		\$325,581	43.3541%	\$141,153
120	Intangible Plant (P90)	\$0				-		\$0	43.4%	\$0
121	Total CWIP - Short-Term	\$1,770,919				-		\$1,770,919		\$780,990
122						-				
123	Const Work-in-Progress - Long Term					-				
124	Production Plant (AFUDC Projects P10)	\$0				-		\$0	43.0%	\$0
125	Production Plant (Rider Projects)	\$0				-		\$0	0.0%	\$0
126	Transmission Plant (AFUDC Projects)	\$0				-		\$0	0.0%	\$0
127	Transmission Plant (Rider Projects)	\$0				-		\$0	0.0%	\$0
128	Distribution Plant (P60)	\$0				-		\$0	45.9%	\$0
129	General Plant (P90)	\$0				-		\$0	43.4%	\$0
130	Intangible Plant (P90)	\$0				-		\$0	43.4%	\$0
131	Total CWIP - Long Term AFUDC Projects	\$0				-		\$0	0.0%	\$0
132	Total CWIP - Long Term Rider Projects	\$0				-		\$0	0.0%	\$0
133						-				
134	Total Construction Work-in-Progress	\$1,770,919				-		\$1,770,919		\$780,990

Line		(A) Total Company 2024 Unadjusted Year	2024 Regulatory Adjustments					(G) Changes in Allocations Due to Effect of Test Year Adjustments	(H) OTP Total Company 2024 Regulatory Year	(I) ND Allocation	(J) OTP ND 2024 Regulatory Year
			(B) GIPs	(C) Hoot Lake Solar	(D) Transmission Recovery	(E) Electric Vehicles	(F) Total Adjustments				
135							-				
136	Materials & Supplies						-				
137	Production (P10)	\$8,651,753					-		\$8,651,753	43.0%	\$3,721,307
138	Transmission (D2)	\$9,116,226					-		\$9,116,226	39.2%	\$3,573,123
139	Distribution (P60)	\$16,199,114					-		\$16,199,114	45.9%	\$7,442,817
140	Total Materials and Supplies	\$33,967,093					-		\$33,967,093		\$14,737,248
141							-				
142	Fuel Stocks						-				
143	Coal Stocks (E1)	\$8,165,846					-		\$8,165,846	43.9%	\$3,582,674
144	Fuel Oil Stocks (D1)	\$2,310,865					-		\$2,310,865	39.5%	\$912,443
145	Total Fuel Stocks	\$10,476,711					-		\$10,476,711		\$4,495,117
146							-				
147	Prepayments (NEPIS)	\$49,187,427					-		\$49,187,427	37.8%	\$18,601,559
148							-				
149	Customer Advances & Deposits						-				
150	Customer Advances & Deposits (NEPIS)	(\$1,876,522)					-		(\$1,876,522)	37.8%	(\$709,657)
151	Customer Deposits (Direct MN)						-		\$0	100.0%	\$0
152							-				
153	Cash Working Capital	\$3,093,533					-		\$3,093,533		\$1,304,936
154							-				
155	Accumulated Deferred Income Taxes						-				
156	Items SD Flows Through						-				
157	Federal (NPMNR)	(\$27,894)					-		(\$27,894)	41.5%	(\$11,564)
158	Minnesota (NPISM)	\$0					-		\$0	0.0%	\$0
159	North Dakota (NPISN)	\$0					-		\$0	98.7%	\$0
160	Subtotal	(\$27,894)					-		(\$27,894)		(\$11,564)
161	All Other						-				
162	Federal (NEPIS EXDA)	(\$321,552,409)	3,321,955	6,140,298	17,599,664		27,061,917		(\$294,490,492)	42.9%	(\$126,327,052)
163	Federal (Direct FERC)	\$0	(3,321,955)		(17,599,664)		(20,921,619)		(\$20,921,619)	0.0%	\$0
164	Minnesota (NPISM)	\$0					-		\$0	0.0%	\$0
165	North Dakota (NPISN)	(\$50,073,352)					-		(\$50,073,352)	98.7%	(\$49,404,006)
166	Subtotal	(\$371,625,761)	\$0	\$6,140,298	\$0	\$0	6,140,298	-	(\$365,485,463)		(\$175,731,058)
167							-				
168	Total Accumulated Deferred Income Taxes	(\$371,653,655)	\$0	\$6,140,298	\$0	\$0	6,140,298	-	(\$365,513,357)		(\$175,742,622)
169							-				
170	Unamortized Rate Case Expenses						-				
171	Minnesota	\$0					-		\$0	0.0%	\$0
172	North Dakota	\$0					-		\$0	100.0%	\$0
173	South Dakota	\$0					-		\$0	0.0%	\$0
174	FERC	\$0					-		\$0	0.0%	\$0
175	Total Unamortized Rate Case Expenses	\$0					-		\$0		\$0
176							-				
177	Total Average Rate Base	\$1,871,266,909	-	(54,331,239)	-	(1,678,504)	(56,009,743)	-	\$1,815,257,166		\$651,646,255

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
		2024 Regulatory Adjustments									
Line		Total Company 2024 Unadjusted Year	Advertising Expenses	Fuel Expense - Hoot Lake Solar	Non-Employee Director Restricted Stock	Economic Development Costs	Employee Recognition and Gifts	ESSRP	Electric Vehicles	GIPs	Hoot Lake Solar
1	Operating Revenues										
2	Sales of Electricity - Minnesota (Direct MN/R10)	\$237,847,135									
3	Sales of Electricity - North Dakota (Direct ND/R10)	\$203,210,040		1,313,314							
4	Sales of Electricity - South Dakota (Direct SD/R10)	\$44,029,611									
5	Sales of Electricity - FERC (Direct FERC/R10)	\$0									
6	Total Retail Sales	\$485,086,787	\$0	\$1,313,314	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7											
8	Other Operating Revenues										
9	Other Sales for Resale										
10	Municipalities (Direct FERC)	\$0									
11	Non-Asset Wholesale Transactions (D2)	\$0									
12	All Other Transactions	\$0									
13	Base Demand (E1)	\$0									
14	Peak Demand (D1)	\$0									
15	Base Energy (E2)	\$6,947,794									
16	Peak Energy (D1)	\$0									
17											
18	Total Other Sales for Resale	\$6,947,794	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
19											
20	Other Electric Revenues										
21	Late Fees - Minnesota (Direct MN/C1)	\$395,253									
22	Late Fees - North Dakota (Direct ND/C1)	\$316,187									
23	Late Fees - South Dakota (Direct SD/C1)	\$98,441									
24	Subtotal Late Fees	\$809,881	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25	Connection Fees - Minnesota (Direct MN/C1)	\$171,798									
26	Connection Fees - North Dakota (Direct ND/C1)	\$136,812									
27	Connection Fees - South Dakota (Direct SD/C1)	\$31,922									
28	Subtotal Connection Fees	\$340,532	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
29	Rent from Electric Property (NEPIS)	\$435,931									
30	Rent from Electric Property - Big Stone (NEPIS)	\$1,395,880									
31	Rent from Electric Property - Coyote (NEPIS)	\$0									
32	Other Miscellaneous Electric Revenue (NEPIS)	\$0									
33	Other Miscellaneous Electric Revenue (Direct MN/C1)	\$0									
34	Other Miscellaneous Electric Revenue (Direct ND/C1)	\$0									
35	Other Miscellaneous Electric Revenue (Direct SD/C1)	\$0									
36	Subtotal Other Miscellaneous Electric Revenue	\$1,831,811	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
37	Integrated Transmission Deficiency Payments (NEPIS)	\$848,757									
38	Miscellaneous Services (NEPIS)	\$0									
39	Wheeling - All Jurisdictions (NEPIS)	\$425,279									
40	Load Control & Dispatching, MAPP & MISO (NEPIS EXDA)	\$51,559,871								(3,935,218)	
41	Load Control & Dispatching, MAPP & MISO (Direct FERC)									3,935,218	
42	Subtotal Load Control & Dispatching, MAPP & MISO	\$52,833,907	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
43	Loan Pool Interest - Minnesota (Direct MN/C1)	\$0									
44	Loan Pool Interest - North Dakota (Direct ND/C1)	\$0									
45	Loan Pool Interest - South Dakota (Direct SD/C1)	\$0									
46	Subtotal Loan Pool Interest	\$0									
47	Total Other Electric Revenues	\$55,816,131	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
48											
49	Total Other Operating Revenues	\$62,763,925	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
50											
51	Total Operating Revenues	\$547,850,712	\$0	\$1,313,314	\$0	\$0	\$0	\$0	\$0	\$0	\$0
52											
53	Operating Expenses										
54	Production Expenses										
55	Production Expenses Excl Purchased Power										
56	Base Demand (E1)	\$15,513,031									
57	Peak Demand (D1)	\$8,562,412									
58	Base Energy (E2)	\$67,526,672									
59	Peak Energy (D1)	\$10,397,281									
60	Base Demand (Direct MN)	\$0									
61	Peak Demand (Direct MN)	\$377,143									
62	Total Excluding Purchased Power	\$102,376,539	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
63											
64	Purchased Power										
65	Base Demand (E1)	\$1,921,959									
66	Peak Demand (D1)	\$0									
67	Base Energy (E2)	\$88,740,168		2,818,864							
68	Peak Energy (D1)	\$0									
69	Total Purchased Power	\$90,662,127	\$0	\$2,818,864	\$0	\$0	\$0	\$0	\$0	\$0	\$0
70	Total Production Expenses	\$193,038,666	\$0	\$2,818,864	\$0	\$0	\$0	\$0	\$0	\$0	\$0
71											
72	Transmission Expenses (D2)	\$35,329,066									
73	Transmission Exoenses (Direct MN)	\$0									

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
			2024 Regulatory Adjustments								
Line		Total Company 2024 Unadjusted Year	Advertising Expenses	Fuel Expense - Hoot Lake Solar	Non-Employee Director Restricted Stock	Economic Development Costs	Employee Recognition and Gifts	ESSRP	Electric Vehicles	GIPs	Hoot Lake Solar
74	Transmission Expenses (Direct FERC)	\$0									
75	Total Transmission Expenses	\$35,329,066	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
76											
77	Distribution Expenses										
78	Primary Demand (D3)	\$5,074,895									
79	Secondary Demand (D4)	\$2,180,947									
80	Primary Customer (C2)	\$3,695,488									
81	Secondary Customer (C3)	\$1,339,557									
82	Streetlighting (C4)	\$518,608									
83	Area Lighting (C5)	\$179,224									
84	Meters (C6)	\$4,564,769									
85	Load Management (C9)	\$0									
86	Total Distribution	\$17,553,488	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
87											
88	Customer Accounting Expenses										
89	Meter Reading (C7)	\$5,857,762									
90	Other (C8)	\$10,170,737									
91	Total Customer Accounts	\$16,028,499	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
92											
93	Customer Service & Info Expenses										
94	Conservation & DSM Rebates - MN (Direct MN/E2)	\$9,000,000									
95	Conservation & DSM Rebates - ND (Direct ND/E2)	\$0									
96	Conservation & DSM Rebates - SD (Direct SD/E2)	\$485,000									
97	Other (C1)	\$2,985,633									
98	Total Customer Serv & Infomation Exp	\$12,470,633	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
99											
100	Sales Expenses										
101	Off-Peak Development - MN (Direct MN/C1)	\$274,979									
102	Off-Peak Development - ND (Direct ND/C1)	\$5,943				(5,943)					
103	Off-Peak Development - SD (Direct SD/C1)	\$0									
104	Other (C1)	\$309,826	(1,348)								
105	Total Sales Expenses	\$590,748	(\$1,348)	\$0	\$0	(\$5,943)	\$0	\$0	\$0	\$0	\$0
106											
107	Administrative & General Expenses										
108	Salaries, Supplies, Pensions & Benefits										
109	Production (OXPD)	\$10,482,304			-208,215		(76,811)	(48,555)			
110	Transmission (D2)	\$4,986,321			-99,046		(36,538)	(23,097)			
111	Distribution (OXD)	\$7,720,546			-153,357		(56,574)	(35,762)			
112	Customer Accounts (OXC)	\$6,142,118			-122,004		(45,007)	(28,451)			
113	Customer Service & Info (C1)	\$1,427,007			-28,345		(10,457)	(6,610)			
114	Total A&G Salaries, Supp, Pensions & Benefits	\$30,758,296	\$0	\$0	(\$610,968)	\$0	(\$225,387)	(\$142,474)	\$0	\$0	\$0
115											
116	Load Management (C9)	\$0									
117	Outside Services (A/C 923) (NEPIS)	\$1,083,910									
118	Property Insurance (A/C 924) (NEPIS)	\$4,230,959									
119	Injuries & Damages (A/C 925) (NEPIS)	\$4,536,918									
120	Regulatory Commission Exp (A/C 928) - MN (Direct MN/R10)	\$1,518,965									
121	Regulatory Commission Exp (A/C 928) - ND (Direct ND/R10)	\$502,550									
122	Regulatory Commission Exp (A/C 928) - SD (Direct SD/R10)	\$113,656									
123	Regulatory Commission Exp (A/C 928) - FERC (Direct FERC/R10)	\$1,016,109									
124	Total Regulatory Commission Expense	\$3,151,280	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
125	General Advertising (A/C 930.1) (C1)	\$857,770	(857,770)								
126	Misc, Rents, Maintenance (P90)	\$5,035,910									
127	Total Administrative & General Expense	\$49,655,043	(\$857,770)	\$0	(\$610,968)	\$0	(\$225,387)	(\$142,474)	\$0	\$0	\$0
128											
129	Charitable Contributions (& Cust Dep Int)										
130	Minnesota Only (Direct MN/C1)	\$0									
131	North Dakota Only (Direct ND/C1)	\$0									
132	South Dakota Only (Direct SD/C1)	\$0									
133	Total Charitable Contributions (& Cust Dep Int)	\$0									
134											
135	Total O & M Expenses	\$324,666,143	(\$859,118)	\$2,818,864	(\$610,968)	(\$5,943)	(\$225,387)	(\$142,474)	\$0	\$0	\$0
136											
137	Depreciation Expense										
138	Production										
139	Base Demand (E1)	\$17,195,516									(1,215,381)
140	Peak Demand (D1)	\$11,114,496									(384,436)
141	Base Energy (E2)	\$12,347,461									
142	Total Production	\$40,657,474	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$1,599,817)
143	Transmission (D2)	\$12,883,697									
144	Transmission (Direct FERC)	\$0								(795,654)	
145	Total Transmission	\$12,883,697	\$0	\$0	\$0	\$0	\$0	\$0	\$0	795,654	\$0
146	Distribution (P60)	\$18,780,269							(169,846)		

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
		2024 Regulatory Adjustments									
Line		Total Company 2024 Unadjusted Year	Advertising Expenses	Fuel Expense - Hoot Lake Solar	Non-Employee Director Restricted Stock	Economic Development Costs	Employee Recognition and Gifts	ESSRP	Electric Vehicles	GIPs	Hoot Lake Solar
147	General (P90)	\$4,236,745									
148	Intangible (P90)	\$4,617,449									
149	Total Depreciation Expense	\$81,175,634	\$0	\$0	\$0	\$0	\$0	\$0	(\$169,846)	\$0	(\$1,599,817)
150											
151	Big Stone Expense Offsets										
152	Minnesota (Direct MN)	\$0									
153	North Dakota (Direct ND)	\$0									
154	South Dakota (Direct SD)	\$0									
155	FERC (Direct FERC)	\$0									
156	Total Big Stone Expense Offsets	\$0									
157											
158	General Taxes (NEPIS EXDA)	\$18,693,896									
159	General Taxes (Direct FERC)	\$0									
160	Total General Taxes	\$18,693,896	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
161											
162	Total Operating Expense Before Tax	680,852,877	(\$860,466)	\$5,637,728	(\$610,968)	(\$11,886)	(\$225,387)	(\$142,474)	(\$169,846)	\$0	(\$1,599,817)
163											
164	Net Operating Income Before Tax	\$123,315,039	\$859,118	(\$1,505,550)	\$610,968	\$5,943	\$225,387	\$142,474	\$169,846	\$0	\$1,599,817
165											
166	Wind Investment Tax Credit & Production Tax Credit										
167	Amortization of Prior Year Credit (EPIS)	(\$741,779)									
168	Production Tax Credits (E2)	(\$17,026,882)									
169	Investment Tax Credits (EPIS)	(\$710,811)									710,811
170	Debits Utilized (EPIS)										
171	Total Wind Investment Tax Credit & Production Tax Credit	(\$18,479,472)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$710,811
172											
173	Deferred Income Taxes										
174	Items SD Flows Through	\$0									
175	Federal (NPMNR)	\$0									
176	Minnesota (NPISM)	\$0									
177	North Dakota (NPISN)	(\$31,934)									
178	Subtotal	(\$31,934)									
179	All Other										
180	Transfer of federal current income taxes due to NOL	\$0									
181	Federal (NEPIS)	\$12,091,374									
182	Federal (NEPIS)	\$12,091,374	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
183	Transfer of Minnesota current income taxes due to NOL	\$0									
184	Minnesota (NPISM)	\$3,663,420									
185	Minnesota (NPISM)	\$3,663,420	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
186	Transfer of North Dakota current income taxes due to NOL	\$0									
187	North Dakota (NPISN)	\$1,122,373									
188	North Dakota (NPISN)	\$1,122,373	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
189	Subtotal	\$16,877,167									
190	Total Deferred Income Taxes	\$16,845,233	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
191											
192	Current Income Taxes										
193	Federal Current Income Tax Transfer due to NOL	\$0									
194	Federal Current Income Tax	\$897,726									
195	Federal Income Taxes	\$897,726	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
196	Minnesota Income Tax Transfer due to NOL	\$0									
197	Minnesota Income Tax	\$198,272									
198	Minnesota Income Taxes (Direct MN)	\$198,272	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
199	North Dakota Income Tax Transfer due to NOL	\$0									
200	North Dakota Income Tax	(\$104,822)									
201	North Dakota Income Taxes (Direct ND)	(\$104,822)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
202	Subtotal State Income Taxes	\$93,450									
203	Total Current Income Taxes	\$991,176	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
204											
205	Total Income Taxes	(\$643,063)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$710,811
206											
207	Net Operating Income	\$123,958,102	\$859,118	(\$1,505,550)	\$610,968	\$5,943	\$225,387	\$142,474	\$169,846	\$0	\$889,006
208											
212	Total Allowance for Funds Used During Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
213											
214	Total Available for Return	\$123,958,102	\$859,118	(\$1,505,550)	\$610,968	\$5,943	\$225,387	\$142,474	\$169,846	\$0	\$889,006

		(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
Line		Incentive Compensation	Investor Relations	Long-Term Incentive	PTC GAAP Provision	Rider CWIP Projects	Transmission Recovery	Total Test Year Adjustments	OTP Total Company 2024 Regulatory Year	ND Allocation	OTP ND 2024 Regulatory Year
1	Operating Revenues										
2	Sales of Electricity - Minnesota (Direct MN/R10)							-	\$237,847,135	0.00%	\$0
3	Sales of Electricity - North Dakota (Direct ND/R10)	-		-	4,186,187	(2,720,332)		2,779,169	\$205,989,209	100.00%	\$205,989,209
4	Sales of Electricity - South Dakota (Direct SD/R10)	-	-	-	-	-		-	\$44,029,611	0.00%	\$0
5	Sales of Electricity - FERC (Direct FERC/R10)	-	-	-	-	-		-	\$0	0.00%	\$0
6	Total Retail Sales	\$0	\$0	\$0	\$4,186,187	(\$2,720,332)	\$0	\$2,779,169	\$487,865,956		\$205,989,209
7											
8	Other Operating Revenues										
9	Other Sales for Resale										
10	Municipalities (Direct FERC)	-	-	-	-	-		-	\$0	0.00%	\$0
11	Non-Asset Wholesale Transactions (D2)	-	-	-	-	-		-	\$0	39.20%	\$0
12	All Other Transactions	-	-	-	-	-		-	\$0		\$0
13	Base Demand (E1)	-	-	-	-	-		-	\$0	43.87%	\$0
14	Peak Demand (D1)	-	-	-	-	-		-	\$0	39.48%	\$0
15	Base Energy (E2)	-	-	-	-	-		-	\$6,947,794	44.98%	\$3,125,191
16	Peak Energy (D1)	-	-	-	-	-		-	\$0	39.20%	\$0
17											
18	Total Other Sales for Resale	\$0	\$0	\$0	\$0	\$0	\$0		\$6,947,794		\$3,125,191
19											
20	Other Electric Revenues										
21	Late Fees - Minnesota (Direct MN/C1)	-	-	-	-	-		-	\$395,253	0.00%	\$0
22	Late Fees - North Dakota (Direct ND/C1)	-	-	-	-	-		-	\$316,187	100.00%	\$316,187
23	Late Fees - South Dakota (Direct SD/C1)	-	-	-	-	-		-	\$98,441	0.00%	\$0
24	Subtotal Late Fees	\$0	\$0	\$0	\$0	\$0	\$0		\$809,881		\$316,187
25	Connection Fees - Minnesota (Direct MN/C1)	-	-	-	-	-		-	\$171,798	0.00%	\$0
26	Connection Fees - North Dakota (Direct ND/C1)	-	-	-	-	-		-	\$136,812	100.00%	\$136,812
27	Connection Fees - South Dakota (Direct SD/C1)	-	-	-	-	-		-	\$31,922	0.00%	\$0
28	Subtotal Connection Fees	\$0	\$0	\$0	\$0	\$0	\$0		\$340,532		\$136,812
29	Rent from Electric Property (NEPIS)	-	-	-	-	-		-	\$435,931	37.82%	\$164,859
30	Rent from Electric Property - Big Stone (NEPIS)	-	-	-	-	-		-	\$1,395,880	37.82%	\$527,890
31	Rent from Electric Property - Coyote (NEPIS)	-	-	-	-	-		-	\$0	37.82%	\$0
32	Other Miscellaneous Electric Revenue (NEPIS)	-	-	-	-	-		-	\$0	37.82%	\$0
33	Other Miscellaneous Electric Revenue (Direct MN/C1)	-	-	-	-	-		-	\$0	0.00%	\$0
34	Other Miscellaneous Electric Revenue (Direct ND/C1)	-	-	-	-	-		-	\$0	100.00%	\$0
35	Other Miscellaneous Electric Revenue (Direct SD/C1)	-	-	-	-	-		-	\$0	0.00%	\$0
36	Subtotal Other Miscellaneous Electric Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,831,811		\$692,749
37	Integrated Transmission Deficiency Payments (NEPIS)	-	-	-	-	-		-	\$848,757	37.82%	\$320,980
38	Miscellaneous Services (NEPIS)	-	-	-	-	-		-	\$0	0.00%	\$0
39	Wheeling - All Jurisdictions (NEPIS)	-	-	-	-	-		-	\$425,279	0.00%	\$0
40	Load Control & Dispatching, MAPP & MISO (NEPIS EXDA)	-	-	-	-	-	(28,077,778)	(32,012,996)	\$19,546,875	42.90%	\$8,384,988
41	Load Control & Dispatching, MAPP & MISO (Direct FERC)	-	-	-	-	-	28,077,778	32,012,996	\$32,012,996	0.00%	\$0
42	Subtotal Load Control & Dispatching, MAPP & MISO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$52,833,907		\$8,705,968
43	Loan Pool Interest - Minnesota (Direct MN/C1)	-	-	-	-	-		-	\$0	0.00%	\$0
44	Loan Pool Interest - North Dakota (Direct ND/C1)	-	-	-	-	-		-	\$0	100.00%	\$0
45	Loan Pool Interest - South Dakota (Direct SD/C1)	-	-	-	-	-		-	\$0	0.00%	\$0
46	Subtotal Loan Pool Interest	-	-	-	-	-		-	\$0		\$0
47	Total Other Electric Revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$55,816,131		\$9,851,716
48											
49	Total Other Operating Revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$62,763,925		\$12,976,907
50											
51	Total Operating Revenues	\$0	\$0	\$0	\$4,186,187	(\$2,720,332)	\$0	\$2,779,169	\$550,629,881		\$218,966,116
52											
53	Operating Expenses										
54	Production Expenses										
55	Production Expenses Excl Purchased Power										
56	Base Demand (E1)	-						-	\$15,513,031	43.87%	\$6,806,169
57	Peak Demand (D1)	-						-	\$8,562,412	39.48%	\$3,380,862
58	Base Energy (E2)	-						-	\$67,526,672	44.98%	\$30,374,206
59	Peak Energy (D1)	-						-	\$10,397,281	39.48%	\$4,105,359
60	Base Demand (Direct MN)	-						-	\$0	0.00%	\$0
61	Peak Demand (Direct MN)	-						-	\$377,143	0.00%	\$0
62	Total Excluding Purchased Power	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$102,376,539		\$44,666,594
63											
64	Purchased Power										
65	Base Demand (E1)	-						-	\$1,921,959	43.87%	\$843,238
66	Peak Demand (D1)	-						-	\$0	39.48%	\$0
67	Base Energy (E2)	-						2,818,864	\$91,559,032	44.98%	\$41,184,214
68	Peak Energy (D1)	-						-	\$0	39.48%	\$0
69	Total Purchased Power	\$0	\$0	\$0	\$0	\$0	\$0	\$2,818,864	\$93,480,991		\$42,027,449
70	Total Production Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$2,818,864	\$195,857,530		\$86,694,043
71											
72	Transmission Expenses (D2)	-						-	\$35,329,066	39.20%	\$13,847,298
73	Transmission Exoenses (Direct MN)	-						-	\$0	0.00%	\$0

	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
Line	Incentive Compensation	Investor Relations	Long-Term Incentive	PTC GAAP Provision	Rider CWIP Projects	Transmission Recovery	Total Test Year Adjustments	OTP Total Company 2024 Regulatory Year	ND Allocation	OTP ND 2024 Regulatory Year
74	Transmission Expenses (Direct FERC)									
75	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$35,329,066	0.00%	\$13,847,298
76	Total Transmission Expenses									
77	Distribution Expenses									
78							-	\$5,074,895	46.52%	\$2,360,913
79							-	\$2,180,947	48.70%	\$1,062,117
80							-	\$3,695,488	43.71%	\$1,615,302
81							-	\$1,339,557	43.71%	\$585,574
82							-	\$518,608	41.67%	\$216,121
83							-	\$179,224	54.52%	\$97,707
84							-	\$4,564,769	44.58%	\$2,034,976
85							-	\$0	43.69%	\$0
86	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,553,488		\$7,972,703
87	Total Distribution									
88	Customer Accounting Expenses									
89							-	\$5,857,762	44.21%	\$2,589,979
90							-	\$10,170,737	43.71%	\$4,445,453
91	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,028,499		\$7,035,432
92	Total Customer Accounts									
93	Customer Service & Info Expenses									
94							-	\$9,000,000	0.00%	\$0
95							-	\$0	100.00%	\$0
96							-	\$485,000	0.00%	\$0
97							-	\$2,985,633	44.05%	\$1,315,049
98	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,470,633		\$1,315,049
99	Total Customer Serv & Info Expense									
100	Sales Expenses									
101							-	\$274,979	0.00%	\$0
102							(5,943)	\$0	100.00%	\$0
103							-	\$0	0.00%	\$0
104							(1,348)	\$308,478	44.05%	\$135,872
105	\$0	\$0	\$0	\$0	\$0	\$0	(\$7,291)	\$583,457		\$135,872
106	Total Sales Expenses									
107	Administrative & General Expenses									
108	<i>Salaries, Supplies, Pensions & Benefits</i>									
109	(289,483)		(967,481)				(1,590,545)	\$8,891,759	42.43%	\$3,772,627
110	(137,704)		(460,221)				(756,605)	\$4,229,715	39.20%	\$1,657,845
111	(213,213)		(712,580)				(1,171,486)	\$6,549,060	45.42%	\$2,974,549
112	(169,623)		(566,897)				(931,982)	\$5,210,136	43.89%	\$2,286,899
113	(39,409)		(131,708)				(216,529)	\$1,210,478	44.05%	\$533,166
114	(\$849,431)	\$0	(\$2,838,887)	\$0	\$0	\$0	(\$4,667,147)	\$26,091,148		\$11,225,086
115	Total A&G Salaries, Supp, Pensions & Benefits									
116							-	\$0	43.69%	\$0
117							-	\$1,083,910	37.82%	\$409,910
118							-	\$4,230,959	37.82%	\$1,600,052
119							-	\$4,536,918	37.82%	\$1,715,759
120							-	\$1,518,965	0.00%	\$0
121							-	\$502,550	100.00%	\$502,550
122							-	\$113,656	0.00%	\$0
123							-	\$1,016,109	0.00%	\$0
124	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,151,280		\$502,550
125	<i>Total Regulatory Commission Expense</i>									
126							(857,770)	\$0	44.05%	\$0
127		(236,267)					(236,267)	\$4,799,643	43.35%	\$2,080,843
128	(\$849,431)	(\$236,267)	(\$2,838,887)	\$0	\$0	\$0	(\$5,761,184)	\$43,893,859		\$17,534,200
129	Total Administrative & General Expense									
130	Charitable Contributions (& Cust Dep Int)									
131	-	-	-	-	-	-	-	\$0	0.00%	\$0
132	-	-	-	-	-	-	-	\$0	100.00%	\$0
133	-	-	-	-	-	-	-	\$0	0.00%	\$0
134	-	-	-	-	-	-	-	\$0	0.00%	\$0
135	(\$849,431)	(\$236,267)	(\$2,838,887)	\$0	\$0	\$0	(\$2,949,611)	\$321,716,532		\$134,534,598
136	Total O & M Expenses									
137	Depreciation Expense									
138	<i>Production</i>									
139							(1,215,381)	\$15,980,135	43.87%	\$7,011,105
140							(384,436)	\$10,730,060	39.48%	\$4,236,757
141							-	\$12,347,461	44.98%	\$5,554,018
142	\$0	\$0	\$0	\$0	\$0	\$0	(1,599,817)	\$39,057,657	39.20%	\$16,801,880
143							(3,381,195)	\$8,706,848	39.20%	\$3,412,666
144	-	-	-	-	-	-	3,381,195	\$4,176,849	0.00%	\$0
145	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,863,697		\$3,412,666
146	-	-	-	-	-	-	(169,846)	\$18,610,423	45.95%	\$8,550,713

		(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)
Line		Incentive Compensation	Investor Relations	Long-Term Incentive	PTC GAAP Provision	Rider CWIP Projects	Transmission Recovery	Total Test Year Adjustments	OTP Total Company 2024 Regulatory Year	ND Allocation	OTP ND 2024 Regulatory Year
147	General (P90)	-	-	-	-	-	-	-	\$4,236,745	43.35%	\$1,836,804
148	Intangible (P90)	-	-	-	-	-	-	-	\$4,617,449	43.35%	\$2,001,855
149	Total Depreciation Expense	\$0	\$0	\$0	\$0	\$0	\$0	(1,769,663)	\$79,405,971		\$32,603,918
150											
151	Big Stone Expense Offsets										
152	Minnesota (Direct MN)	-	-	-	-	-	-	-	\$0	0.00%	\$0
153	North Dakota (Direct ND)	-	-	-	-	-	-	-	\$0	100.00%	\$0
154	South Dakota (Direct SD)	-	-	-	-	-	-	-	\$0	0.00%	\$0
155	FERC (Direct FERC)	-	-	-	-	-	-	-	\$0	0.00%	\$0
156	Total Big Stone Expense Offsets	-	-	-	-	-	-	-	\$0		\$0
157											
158	General Taxes (NEPIS EXDA)	-	-	-	-	-	(2,136,276)	(2,136,276)	\$16,557,620	42.90%	\$7,102,692
159	General Taxes (Direct FERC)	-	-	-	-	-	2,136,276	2,136,276	\$2,136,276	0.00%	\$0
160	Total General Taxes	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,693,896		\$7,102,692
161											
162	Total Operating Expense Before Tax	(\$849,431)	(\$236,267)	(\$2,838,887)	\$0	\$0	\$0	(\$1,907,701)	678,945,175		251,534,996
163											
164	Net Operating Income Before Tax	\$849,431	\$236,267	\$2,838,887	\$4,186,187	(\$2,720,332)	\$0	\$7,498,443	\$130,813,482		\$44,724,907
165											
166	Wind Investment Tax Credit & Production Tax Credit										
167	Amortization of Prior Year Credit (EPIS)							-	(\$741,779)	39.32%	(\$291,672)
168	Production Tax Credits (E2)				11,140,189			11,140,189	(\$5,886,693)	44.98%	(\$2,647,896)
169	Investment Tax Credits (EPIS)							710,811	\$0	39.35%	\$0
170	Debits Utilized (EPIS)								\$0	39.35%	\$0
171	Total Wind Investment Tax Credit & Production Tax Credit	\$0	\$0	\$0	\$11,140,189	\$0	\$0	\$11,851,000	(\$6,628,472)		(\$2,939,568)
172											
173	Deferred Income Taxes										
174	Items SD Flows Through							-			
175	Federal (NPMNR)							-	\$0	41.53%	\$0
176	Minnesota (NPISM)	-	-	-	-	-	-	-	\$0	98.66%	\$0
177	North Dakota (NPISN)	-	-	-	-	-	-	-	(\$31,934)	98.66%	(\$31,507)
178	Subtotal	-	-	-	-	-	-	-	(\$31,934)		(\$31,507)
179	All Other										
180	Transfer of federal current income taxes due to NOL	-	-	-	-	-		897,726	\$897,726		(\$483,912)
181	Federal (NEPIS)	-	-	-	-	-		-	\$12,091,374	37.82%	\$4,572,681
182	Federal (NEPIS)	\$0	\$0	\$0	\$0	\$0	\$0	\$897,726	\$12,989,100		\$4,088,769
183	Transfer of Minnesota current income taxes due to NOL	-	-	-	-	-		198,272	\$198,272		\$0
184	Minnesota (NPISM)	-	-	-	-	-		-	\$3,663,420	0.00%	\$0
185	Minnesota (NPISM)	\$0	\$0	\$0	\$0	\$0	\$0	\$198,272	\$3,861,692		\$0
186	Transfer of North Dakota current income taxes due to NOL	-	-	-	-	-		(104,822)	(\$104,822)		(\$104,822)
187	North Dakota (NPISN)	-	-	-	-	-		-	\$1,122,373	98.6633%	\$1,107,370
188	North Dakota (NPISN)	\$0	\$0	\$0	\$0	\$0	\$0	(\$104,822)	\$1,017,551		\$1,002,548
189	Subtotal	-	-	-	-	-		-	\$17,868,343		\$5,091,317
190	Total Deferred Income Taxes	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,836,409		\$5,059,809
191											
192	Current Income Taxes										
193	Federal Current Income Tax Transfer due to NOL	-	-	-	-	-		(897,726)	(\$897,726)	0.00%	\$0
194	Federal Current Income Tax	-	-	-	-	-		-	\$897,726	0.00%	\$0
195	Federal Income Taxes	\$0	\$0	\$0	\$0	\$0	\$0	(\$897,726)	\$0		\$0
196	Minnesota Income Tax Transfer due to NOL	-	-	-	-	-		(198,272)	(\$198,272)		\$0
197	Minnesota Income Tax	-	-	-	-	-		-	\$198,272		\$0
198	Minnesota Income Taxes (Direct MN)	\$0	\$0	\$0	\$0	\$0	\$0	(\$198,272)	\$0		\$0
199	North Dakota Income Tax Transfer due to NOL	-	-	-	-	-		-	\$0	0.00%	\$0
200	North Dakota Income Tax	-	-	-	-	-		104,822	\$0	100.00%	\$0
201	North Dakota Income Taxes (Direct ND)	\$0	\$0	\$0	\$0	\$0	\$0	\$104,822	\$0		\$0
202	Subtotal State Income Taxes	-	-	-	-	-		-	\$0		\$0
203	Total Current Income Taxes	\$0	\$0	\$0	\$0	\$0	\$0	(\$897,726)	\$0		\$0
204											
205	Total Income Taxes	\$0	\$0	\$0	\$11,140,189	\$0	\$0	\$10,953,274	\$11,207,937		\$2,120,240
206											
207	Net Operating Income	\$849,431	\$236,267	\$2,838,887	(\$6,954,002)	(\$2,720,332)	\$0	(\$3,454,831)	\$119,605,545		\$42,604,667
208											
212	Total Allowance for Funds Used During Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$0
213											
214	Total Available for Return	\$849,431	\$236,267	\$2,838,887	(\$6,954,002)	(\$2,720,332)	\$0	(\$3,454,831)	\$119,605,545		\$42,604,666

Otter Tail Power Company 13MA Plant Balance Unadjusted Projected Fiscal Year 2024																	
(A)		(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(D)	(E)	(F)	(G)	(H)	(I)	
Line No.	FERC Acct #	Plant Acct #	Description	December 2023	January 2024	February 2024	March 2024	April 2024	May 2024	June 2024	July 2024	August 2024	September 2024	October 2024	November 2024	December 2024	Simple Average
1			INTANGIBLE PLANT														
2			TOTAL INTANGIBLE PLANT (Fercs 101 & 106, Accts 302-303)	40,068,309	40,068,309	40,068,309	40,339,756	40,339,756	40,339,756	40,339,756	41,988,662	41,988,662	41,988,662	41,988,662	41,988,662	44,200,445	42,134,377
3			PRODUCTION PLANT														
4			STEAM GENERATION PLANT														
5			Total Steam Generation (Fercs 101, 105 & 106, Accts 310-317)	597,403,618	597,403,719	596,989,969	597,403,719	597,406,945	597,059,886	597,531,903	597,256,673	597,469,275	597,873,004	598,766,793	598,785,168	545,586,720	571,495,169
6			Total Steam Big Stone AQCS (Accts 310-317)	-	-	-	-	-	-	-	-	-	-	-	-	-	0
7			Total Steam Production Plant (Ferc 114, Accts 310-317)	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255
8			Total Steam Production Plant	\$598,991,872	\$598,991,973	\$598,578,223	\$598,991,973	\$598,995,200	\$598,648,141	\$599,120,158	\$598,844,927	\$599,057,530	\$599,461,258	\$600,355,047	\$600,373,423	\$547,174,974	573,083,423
9	101		HYDRO GENERATION PLANT														
10			Total Hydro Generation Plant	12,804,282	12,804,282	12,804,282	12,804,282	12,839,282	12,849,164	12,849,164	12,879,164	13,107,029	13,284,895	13,284,895	13,613,087	13,767,085	13,285,684
11			OTHER GENERATION														
12			Total Internal Combustion	195,793,943	195,793,943	196,207,693	196,207,693	196,207,693	196,621,443	196,666,684	197,001,708	197,415,458	197,771,531	197,771,531	198,236,701	253,646,414	224,720,179
13			SOLAR GENERATION														
14			Total Solar Generation	62,497,146	62,497,146	62,497,146	62,509,646	62,509,646	62,509,646	62,527,146	62,527,146	62,522,146	62,534,646	62,534,646	62,534,646	62,547,146	62,522,146
15			WIND GENERATION	271,095,372	271,095,372	271,095,372	271,521,622	271,556,622	271,980,253	272,033,994	272,403,018	273,044,634	273,591,072	273,591,072	274,384,435	329,960,646	273,591,072
16			Total Wind Generation	629,041,095	629,041,095	629,041,095	629,299,197	629,299,197	629,299,197	629,557,299	629,557,299	629,557,299	629,815,401	629,815,401	683,942,511	686,595,613	657,818,354
17			Total Other Production	887,332,185	887,332,185	887,745,935	888,016,536	888,016,536	888,430,296	888,746,129	889,081,153	889,494,903	890,121,578	890,121,578	944,713,859	1,002,789,174	945,060,679
18			TOTAL PRODUCTION PLANT	\$1,499,128,339	\$1,499,128,440	\$1,499,128,440	\$1,499,812,792	\$1,499,851,019	\$1,499,927,591	\$1,500,715,450	\$1,500,805,244	\$1,501,659,463	\$1,502,867,731	\$1,503,761,520	\$1,558,700,369	\$1,563,731,233	\$1,531,429,786
19			Less A/C 114	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255	1,588,255
20			A/C 101 & 106	1,497,540,084	1,497,540,186	1,497,540,186	1,498,224,537	1,498,262,764	1,498,339,336	1,499,127,196	1,499,216,990	1,500,071,208	1,501,279,476	1,502,173,265	1,557,112,114	1,562,142,979	1,529,841,532
21			TRANSMISSION PLANT														
22			Total Transmission (Fercs 101, 105 & 106 Accts 350-358)	809,250,916	809,250,916	809,250,916	809,408,296	809,408,296	809,408,296	809,435,205	809,731,629	809,731,629	809,758,538	810,514,232	810,514,232	840,053,746	824,652,331
23			Plant Held for Future Use	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038
24			Total Big Stone Plant Acquisition Adjustment (Ferc 114, Accts 350-358)	58,287	58,287	58,287	58,287	58,287	58,287	58,287	58,287	58,287	58,287	58,287	58,287	58,287	58,287
25			Total Transmission Plant	809,318,241	809,318,241	809,318,241	809,475,621	809,475,621	809,475,621	809,502,530	809,789,954	809,789,954	809,825,863	810,581,557	810,581,557	840,121,071	824,719,656
26			DISTRIBUTION PLANT														
27	101 & 106	360	Land and Land Rights (Fercs 101 & 106, Acct 360)	1,497,656	1,497,656	1,497,656	1,497,656	1,497,656	1,497,656	1,497,656	1,497,656	1,497,656	1,497,656	1,497,656	1,497,656	1,497,656	1,497,656
28	401 & 106	362	Station Equipment (Fercs 101 & 106, Acct 362)	137,419,887	137,427,938	137,427,938	137,593,004	137,633,259	137,733,896	138,764,835	138,865,472	138,966,109	141,526,729	141,579,060	141,579,060	144,032,287	140,726,087
29	401 & 106	364	Poles, Towers, Fixtures (Fercs 101 & 106, Acct 364)	88,467,883	88,467,883	88,467,883	88,467,883	88,467,883	88,467,883	88,467,883	88,467,883	88,467,883	88,467,883	88,467,883	88,467,883	88,959,655	88,713,769
30	401 & 106	365	Overhead Conductor (Fercs 101 & 106, Acct 365)	62,519,303	62,519,303	62,519,303	62,519,303	62,519,303	62,622,822	62,622,822	62,622,822	62,752,221	62,752,221	62,838,260	62,838,260	62,838,260	62,678,781
31	101	366	Underground Conduit (Acct 366)	-	-	-	-	-	-	-	-	-	-	-	-	-	0
32	401 & 106	367	Underground Conductors (Fercs 101 & 106, Acct 367)	126,765,776	126,765,776	126,765,776	126,765,776	126,765,776	126,765,776	126,765,776	126,765,776	126,765,776	126,765,776	126,765,776	126,765,776	133,318,555	130,042,166
33	401 & 106	368	Line Transformers (Fercs 101 & 106, Acct 368)	122,661,872	122,661,872	122,661,872	122,708,304	122,708,304	122,708,304	122,754,848	122,819,483	122,866,026	123,516,814	123,516,814	139,248,020	130,954,946	122,708,304
34	101 & 106	369	Services (Fercs 101 & 106, Acct 369)	14,188,329	14,188,329	14,188,329	14,188,329	14,188,329	14,188,329	14,188,329	14,188,329	14,188,329	14,188,329	14,188,329	14,188,329	14,188,329	14,188,329
35	401 & 106	369.1	Underground Services (Fercs 101 & 106, Acct 369.1)	50,453,703	50,453,703	50,453,703	50,453,703	50,453,703	50,453,703	50,453,703	50,453,703	50,453,703	50,453,703	50,453,703	50,453,703	50,453,703	50,453,703
36	401 & 106	370	Meters (Fercs 101 & 106, Acct 370)	28,313,661	28,313,661	28,313,661	28,313,661	28,313,661	28,313,661	28,313,661	28,313,661	28,313,661	28,313,661	28,313,661	28,313,661	28,481,379	28,397,520
37	370.05		Smart Meters (Acct 370.05)	23,308,032	23,308,032	23,308,032	29,008,440	29,008,440	29,008,440	34,773,341	34,773,341	34,773,341	44,927,513	44,927,513	49,031,169	36,169,600	36,169,600
38	101 & 106	370.1	Load Management Switches (Fercs 101 & 106, Acct 370.1)	8,899,439	8,899,439	8,899,439	8,899,439	8,899,439	8,899,439	8,899,439	8,899,439	8,899,439	8,899,439	8,899,439	8,899,439	8,899,439	8,899,439
39	101	370.2	Interruption Monitors (Acct 370.2)	-	-	-	-	-	-	-	-	-	-	-	-	-	0
40	101	371	Installs Customer Premise (Acct 371)	-	-	-	-	-	-	-	-	-	-	-	-	-	0
41	101	371.1	EV Charging	1,646,302	1,646,302	1,646,302	1,646,302	1,646,302	1,646,302	1,646,302	1,687,968	1,729,635	1,771,302	1,812,968	1,854,635	1,896,302	1,771,302
42	101 & 106	371.2	All Other Private Lighting (Fercs 101 & 106, Acct 371.2)	10,003,929	10,003,929	10,003,929	10,003,929	10,003,929	10,003,929	10,003,929	10,003,929	10,003,929	10,003,929	10,003,929	10,003,929	10,003,929	10,003,929
43	101 & 106	373	Street Lighting (Fercs 101 & 106, Acct 373)	14,644,762	14,644,762	14,644,762	15,027,438	15,027,438	15,027,438	15,115,000	15,115,000	15,115,000	15,202,561	15,202,561	15,202,561	15,293,266	14,969,064
44			DISTRIBUTION PLANT	\$690,790,535	\$690,798,585	\$690,798,585	\$697,093,168	\$697,133,423	\$697,337,579	\$704,267,524	\$704,409,827	\$704,746,165	\$717,636,728	\$718,467,552	\$718,509,219	\$748,142,049	719,466,292
45			Plant Held for Future Use	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
46	114	362	Big Stone Plant Acquisition Adjustment	586	586	586	586	586	586	586	586	586	586	586	586	586	586
47			Total Distribution Plant	\$690,794,121	\$690,802,171	\$690,802,171	\$697,096,754	\$697,137,009	\$697,341,165	\$704,271,110	\$704,413,413	\$704,749,751	\$717,640,314	\$718,471,138	\$718,512,805	\$748,145,635	719,469,878
48			GENERAL PLANT														
49			Land	1,163,225	1,163,225	1,163,225	1,163,225	1,163,225	1,163,225	1,163,225	1,163,225	1,163,225	1,163,225	1,163,225	1,163,225	1,163,225	1,163,225
50	101 & 106	390	Structures & Improvements	27,231,010	27,231,010	27,231,010	27,231,010	27,231,010	27,245,979	27,260,947	27,290,294	27,290,294	27,442,925	28,141,668	28,198,667	32,933,601	30,082,305
51	101 & 106	390.1	General Office Buildings	6,451,486	6,451,486	6,451,486	6,451,486	6,451,486	6,451,486	6,451,486	6,451,486	6,451,486	6,451,486	6,451,486	6,451,486	6,892,930	6,672,208
52	101	390.2	Fleet Service Center Building	896,880	896,880	896,880	896,880	896,880	896,880	896,880	896,880	896,880	896,880	896,880	896,880	896,880	896,880
53	101	390.25	Central Stores Buildings	2,154,593	2,154,593	2,154,593	2,154,593	2,154,593	2,154,593	2,154,593	2,154,593	2,154,593	2,154,593	2,154,593	2,154,593	2,154,593	2,154,593
54	101 & 106	391	Office Furniture	5,414,880	5,414,880	5,414,880	5,414,880	5,414,880	5,414,880	5,414,880	5,414,880	5,414,880	5,414,880	5,414,880	5,414,880	5,414,880	5,414,880
55	101 & 106	391.1	Office Equipment	603,912	603,912	603,912	603,912	603,912	603,912	603,912	603,912	603,912	603,912	603,912	603,912	603,912	603,912
56	101 & 106	391.2	Duplicating														

**Otter Tail Power Company
Accumulated Depreciation - Production
Unadjusted Projected Fiscal Year 2024**

(A)

(B)

Line No.	Simple Average Reserve Balances	Total
1	Total Production FERC 108	572,922,222
2		
3	Plus: Hydro Licensing	0
4	Total Production-Related Accumulated Depr	572,922,222
5	Less: Wind	207,471,820
6		
8	Total Demand	365,450,402
9		
10		
11		(2)
12	Base Demand	277,632,671
13		
14	Peak Demand	153,150,608
15		
16	Base Energy	142,138,944
17		
18	Total Production	572,922,222

	Peak	Base
2024 Excluding Wind	24.03%	75.97%
2024 Wind	31.49%	68.51%

Otter Tail Power Company
Accumulated Depreciation
Unadjusted Projected Fiscal Year 2024

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	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(D)	(E)	(F)	(G)	(H)	(I)	
Line No.		PERC	Acct	2023 December	2024 January	February	March	April	May	June	July	August	September	October	November	December	Simple Average
1	Ending Accumulated Depreciation:																
2	Steam	108	1785	311,182,730	312,425,795	313,668,893	314,911,991	316,150,231	317,355,559	318,556,589	319,795,344	320,905,515	322,136,451	323,195,926	324,256,804	324,837,519	
3	Steam(For BS Acq Adjustment)	115	1799	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	\$ 1,588,255	
4	Minus Hydro License			\$ 91,595	\$ 96,264	\$ 100,933	\$ 105,601	\$ 110,270	\$ 114,939	\$ 119,608	\$ 124,276	\$ 128,945	\$ 133,614	\$ 138,282	\$ 142,951	\$ 147,620	
5	Hydro	108	1785	6,171,390	6,186,074	6,200,758	6,215,442	6,230,126	6,244,771	6,259,537	6,274,302	6,287,001	6,299,844	6,314,853	6,314,040	6,329,124	
6	Other - Internal Combustion	108	1785	35,284,745.24	35,775,556.15	36,266,366.56	36,757,176.97	37,249,029.27	37,740,881.57	38,232,734	38,720,601	39,043,348	39,536,942	40,031,578	40,527,111	41,022,643	
7	Other - Solar	108		528,556	661,874	795,192	928,510	1,061,828	1,195,146	1,328,464	1,461,782	1,595,100	1,728,418	1,861,736	1,995,054	2,128,372	
8	Other - Wind	108	1785	198,794,186	200,285,249.2	201,776,312.4	203,100,477.3	204,592,132	206,083,786.7	207,408,543.2	208,900,789.4	210,393,035.7	211,718,383.7	213,211,221.6	214,740,059.4	216,149,453.1	
9	Total Production			\$ 553,641,458	\$ 557,019,067	\$ 560,396,709	\$ 563,607,454	\$ 566,981,871	\$ 570,323,338	\$ 573,493,729	\$ 576,865,350	\$ 579,941,200	\$ 583,141,908	\$ 586,341,852	\$ 589,528,275	\$ 592,202,986	572,922,222
10				\$ 354,847,272													
11	Transmission	108	1785	178,638,431	179,711,601	180,784,772	181,857,298	182,930,644	184,003,990	185,076,689	186,142,917	187,216,661	188,289,758	189,356,269	190,431,054	191,076,970	
12	Transmission	115	1799	\$ 58,287	\$ 58,287	\$ 58,287	\$ 58,287	\$ 58,287	\$ 58,287	\$ 58,287	\$ 58,287	\$ 58,287	\$ 58,287	\$ 58,287	\$ 58,287	\$ 58,287	
13	Total Transmission			\$ 178,696,718	\$ 179,769,889	\$ 180,843,059	\$ 181,915,585	\$ 182,988,931	\$ 184,062,277	\$ 185,134,976	\$ 186,201,204	\$ 187,274,948	\$ 188,348,046	\$ 189,414,557	\$ 190,489,341	\$ 191,135,257	184,915,988
14																	
15	Distribution	108	1785	262,093,281	263,582,412	265,073,505	266,308,772	267,833,646	269,326,735	270,553,415	\$ 272,105,405	\$ 273,624,467	\$ 274,526,317	\$ 276,036,323	\$ 277,694,991	\$ 275,174,056	
16	Distribution	115	1799	\$ 586	\$ 586	\$ 586	\$ 586	\$ 586	\$ 586	\$ 586	\$ 586	\$ 586	\$ 586	\$ 586	\$ 586	\$ 586	
17	Total Distribution			\$ 262,093,867	\$ 263,582,998	\$ 265,074,091	\$ 266,309,358	\$ 267,834,232	\$ 269,327,321	\$ 270,554,001	\$ 272,105,991	\$ 273,625,053	\$ 274,526,903	\$ 276,036,909	\$ 277,695,577	\$ 275,174,642	268,634,254
18																	
19	General Plant (excluding transportation)	108	1785	\$ 27,296,893	\$ 27,631,076	\$ 27,943,733	\$ 28,277,724	\$ 28,611,715	\$ 28,921,785	\$ 29,232,571	\$ 29,537,613	\$ 29,873,570	\$ 30,147,936	\$ 30,202,169	\$ 30,516,482	\$ 27,250,217	
20	Transportation (including airplane)	108	1785	\$ 22,064,985	\$ 22,266,287	\$ 22,467,589	\$ 22,668,892	\$ 22,869,883	\$ 23,070,154	\$ 23,270,425	\$ 23,470,697	\$ 23,668,810	\$ 23,866,924	\$ 24,065,037	\$ 24,262,473	\$ 24,457,902	
21	Total General Plant	108	1785	\$ 49,361,878	\$ 49,897,363	\$ 50,411,322	\$ 50,946,616	\$ 51,481,598	\$ 51,991,940	\$ 52,502,996	\$ 53,008,309	\$ 53,542,380	\$ 54,014,860	\$ 54,267,206	\$ 54,778,954	\$ 51,708,119	50,534,999
22																	
23	Intangibles - Hydro License	111	1790	\$ 91,595	\$ 96,264	\$ 100,933	\$ 105,601	\$ 110,270	\$ 114,939	\$ 119,608	\$ 124,276	\$ 128,945	\$ 133,614	\$ 138,282	\$ 142,951	\$ 147,620	119,608
24	Intangibles - Software	111	1790	\$ 15,107,144	\$ 15,487,526	\$ 15,867,645	\$ 16,247,764	\$ 16,627,883	\$ 17,008,001	\$ 17,388,120	\$ 17,768,239	\$ 18,148,358	\$ 18,528,476	\$ 18,908,595	\$ 19,288,714	\$ 19,667,752	17,387,448
25	Total Intangibles	111	1790	\$ 15,198,739	\$ 15,583,790	\$ 15,968,578	\$ 16,353,365	\$ 16,738,153	\$ 17,122,940	\$ 17,507,728	\$ 17,892,515	\$ 18,277,302	\$ 18,662,090	\$ 19,046,877	\$ 19,431,665	\$ 19,815,372	17,507,056
26																	
27	Total			\$ 1,058,992,660	\$ 1,065,853,107	\$ 1,072,693,760	\$ 1,079,132,377	\$ 1,086,024,784	\$ 1,092,827,816	\$ 1,099,193,429	\$ 1,106,073,369	\$ 1,112,660,884	\$ 1,118,693,806	\$ 1,125,107,401	\$ 1,131,923,812	\$ 1,130,036,375	1,094,514,517

Otter Tail Power Company
13-MA CWIP
Unadjusted Projected Fiscal Year 2024

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	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	
Line No.		2023 December	2024 January	February	March	April	May	June	July	August	September	October	November	December	13-Month Average	Simple Average
1	Short Term Projects:															
2	Production															
3	Balance	(1)	-	18,507	18,507	-	-	322	-	18,507	18,507	-	-	322	-	5,744
4																
5	Transmission															
6	Balance	(1)	359,000	346,233	368,327	341,503	392,665	836,902	359,000	346,233	368,327	341,503	392,665	836,902	359,000	434,482
7																
8	Distribution															
9	Balance	(1)	1,086,337	541,345	569,674	611,273	729,695	794,226	1,086,337	541,345	569,674	611,273	729,695	794,226	1,086,337	750,111
10																
11	General															
12	Balance	(1)	325,581	237,946	237,946	237,946	237,946	277,033	325,581	237,946	237,946	237,946	237,946	277,033	325,581	264,183
13																
14	Intangible															
15	Balance	(1)	-	-	-	-	7,773	771,589	-	-	-	-	7,773	771,589	-	119,902
16																
17	Total Short Term Projects:															
18	Balance		1,770,919	1,144,032	1,194,455	1,190,722	1,368,079	2,680,073	1,770,919	1,144,032	1,194,455	1,190,722	1,368,079	2,680,073	1,770,919	1,574,421
19																1,770,919
20																
21	Long Term Projects															
22	Production															
23	Balance	(1)	61,089,672	62,922,362	64,810,033	66,754,334	68,756,964	70,819,673	72,944,263	75,132,591	77,386,568	79,708,166	82,099,410	84,562,393	87,099,265	73,391,207
24																
25	Transmission															
26	Balance	(1)	28,565,166	29,422,121	30,304,785	31,213,929	32,150,346	33,114,857	34,108,303	35,131,552	36,185,498	37,271,063	38,389,195	39,540,871	40,727,097	34,317,291
27																
28	Distribution															
29	Balance	(1)	29,369,997	28,953,297	29,821,895	30,716,552	31,638,049	32,587,190	33,564,806	34,571,750	35,608,903	36,677,170	37,777,485	38,910,810	40,078,134	33,867,388
30																
31	General															
32	Balance	(1)	10,342,797	9,436,225	9,530,587	9,625,893	9,722,152	9,819,374	9,917,567	10,016,743	10,116,910	10,218,079	10,320,260	10,423,463	10,527,698	10,001,365
33																
34	Intangible															
35	Balance	(1)	6,646,321	6,712,784	6,779,912	6,847,711	6,916,188	6,985,350	7,055,204	7,125,756	7,197,013	7,268,983	7,341,673	7,415,090	7,489,241	7,060,094
36																
37	Total Long Term Projects:															
38	Actual Balance		136,013,953	137,446,789	141,247,213	145,158,419	149,183,699	153,326,444	157,590,143	161,978,391	166,494,893	171,143,461	175,928,024	180,852,626	185,921,434	158,637,345
39																160,967,693
40	Total Adjusted CWIP Balance	(2),(3)	137,784,872	138,590,821	142,441,667	146,349,141	150,551,778	156,006,517	159,361,061	163,122,423	167,689,348	172,334,183	177,296,103	183,532,699	187,692,353	162,738,612

Otter Tail Power Company
Material & Supplies
Unadjusted Projected Fiscal Year 2024

	(A)	(B)	(C)	(D)	(E)	(F)	(H)
Line No.				(1) Production	(2) Transmission	(3) Distribution	Total
1	December	End	2023	8,678,324	8,337,165	16,199,114	33,214,603
2	January	End	2024	8,625,181	9,199,336	16,199,114	34,023,631
3	February	End	2024	8,625,181	9,591,696	16,199,114	34,415,992
4	March	End	2024	8,625,181	9,519,147	16,199,114	34,343,443
5	April	End	2024	8,625,181	9,530,843	16,199,114	34,355,138
6	May	End	2024	8,625,181	10,782,432	16,199,114	35,606,727
7	June	End	2024	8,625,181	5,628,127	16,199,114	30,452,422
8	July	End	2024	8,625,181	6,326,263	16,199,114	31,150,558
9	August	End	2024	8,625,181	7,299,622	16,199,114	32,123,917
10	September	End	2024	8,625,181	7,319,874	16,199,114	32,144,169
11	October	End	2024	8,625,181	7,109,476	16,199,114	31,933,771
12	November	End	2024	8,625,181	8,608,660	16,199,114	33,432,955
13	December	End	2024	8,625,181	9,895,287	16,199,114	34,719,582
14	Total			112,180,500	109,147,928	210,588,480	431,916,907
15	'Simple Average			8,651,753	9,116,226	16,199,114	33,967,093

Otter Tail Power Company
Prepayments
Unadjusted Projected Fiscal Year 2024

(A)			(B)	(C)	(D)	(E)
Line			Prepaid Insurance & Interest Total FERC 1650	Post Retirement Benefits other than Pension (FAS 106)	Post Employment Benefits	FAS 87 Pension Plan
			(1)	(1)	(1)	(1)
1	December	2023	3,575,802	(46,278,434)	(1,504,693)	91,904,839
2	January	2024	5,550,440	(45,650,955)	(1,520,495)	91,522,964
3	February	2024	5,016,802	(45,023,476)	(1,536,298)	91,141,089
4	March	2024	4,483,190	(44,395,997)	(1,552,101)	90,759,214
5	April	2024	8,594,130	(43,768,518)	(1,567,903)	90,377,339
6	May	2024	7,984,311	(43,141,039)	(1,583,706)	89,995,464
7	June	2024	7,375,084	(42,513,560)	(1,599,508)	89,613,589
8	July	2024	6,802,711	(41,886,081)	(1,615,309)	89,231,714
9	August	2024	6,194,067	(41,258,602)	(1,631,111)	88,849,839
10	September	2024	5,585,946	(40,631,123)	(1,646,913)	88,467,964
11	October	2024	5,014,494	(40,003,644)	(1,662,714)	88,086,089
12	November	2024	4,406,185	(39,376,165)	(1,678,516)	87,704,214
13	December	2024	3,798,007	(38,748,686)	(1,694,318)	87,322,339
14	Total		74,381,171	(552,676,285)	(20,793,585)	1,164,976,657
15	Simple Average		3,686,905	(42,513,560)	(1,599,505)	89,613,589
16						
17	Total Prepayments in Rate Base		\$49,187,428			

Otter Tail Power Company
Accumulated Deferred Income Tax
Unadjusted Projected Fiscal Year 2024

Line No.	(A)	(B)	(C)	(D)
1	Accumulated Deferred Income Taxes	12/31/2023	12/31/2024	Average
2	Items SD Flows Through			
3	Federal	(27,894)	(27,894)	(27,894)
4	Minnesota			0
5	North Dakota			0
6	Subtotal	(27,894)	(27,894)	(27,894)
7				
8	All Other			
9	Federal (above the line including Wind)	(314,145,933)	(328,958,878)	(321,552,406)
10	Minnesota (above the line)			0
11	North Dakota (above the line including Wind)	(51,064,996)	(49,081,707)	(50,073,352)
12	Subtotal	(365,210,929)	(378,040,585)	(371,625,757)
13	Total Accumulated Deferred Income Taxes	(365,238,823)	(378,068,479)	(371,653,651)

Otter Tail Power Company
Customer Advances (Prepaid Electric Revenue)
Unadjusted Projected Fiscal Year 2024

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
FERC Account 253.0												
Line No.	YEAR	MONTH	CO	BU	CC	ACCT	SUB	ACTY	PROJ	FERC1	FERC2	YTD-BAL
1	2023	12	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
2	2024	1	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
3	2024	2	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
4	2024	3	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
5	2024	4	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
6	2024	5	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
7	2024	6	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
8	2024	7	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
9	2024	8	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
10	2024	9	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
11	2024	10	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
12	2024	11	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
13	2024	12	100	30	0000	2590	3000	0000	000000	25300	00000	(1,876,522)
14												
15												
	13-Month Average											(1,876,522)
	Simple Average											(1,876,522)

Otter Tail Power Company
Fuel Stocks
Budget 12 Months Ending December 31, 2024

	(A)	(B)	(C)	(D)	(E)	(F)
Line No.				Coal Stocks	Oil & Other** Stocks	Total
1	December	End	2023	8,165,846	2,323,365	10,489,211
2	January	End	2024	8,165,846	2,298,365	10,464,211
3	February	End	2024	8,165,846	2,298,365	10,464,211
4	March	End	2024	8,165,846	2,298,365	10,464,211
5	April	End	2024	8,165,846	2,298,365	10,464,211
6	May	End	2024	8,165,846	2,298,365	10,464,211
7	June	End	2024	8,165,846	2,298,365	10,464,211
8	July	End	2024	8,165,846	2,298,365	10,464,211
9	August	End	2024	8,165,846	2,298,365	10,464,211
10	September	End	2024	8,165,846	2,298,365	10,464,211
11	October	End	2024	8,165,846	2,298,365	10,464,211
12	November	End	2024	8,165,846	2,298,365	10,464,211
13	December	End	2024	8,165,846	2,298,365	10,464,211
14	Total			106,155,998	29,903,745	136,059,743
15	Simple Average			8,165,846	2,310,865	10,476,711

**Propane, Tire Derived Fuel, Renewable Resource Fuel and Natural Gas

Otter Tail Power Company
Cash Working Capital - Cost of Energy Adjustment Revenues
Unadjusted Projected Fiscal Year 2024

(A) (B) (C)

Line No.	Year	State	Sum of COE Adj	
1	2024	MN	(\$2,791,352)	(1) (3)
2	2024	ND	(\$6,094,976)	(1) (3)
3	2024	SD	(\$1,152,893)	(1) (3)
4			(\$10,039,221)	
5		FERC		(2) (3)
6		Total	(\$10,039,221)	

**Otter Tail Power Company
Coal & Oil Expense
Unadjusted Projected Fiscal Year 2024**

(A) (B) (C)

Line No.			
1		Lignite/Subitumious Consumed	Oil/Nat Gas/TDF Consumed
2			
3	Total	50,694,925	1,107,743
4		(1) (5)	(2) (5)
5			
6	Total Oil, Natural Gas and Lignite		51,802,668
7			
8			
9	Reconciliation:		
10	A/C 5010.0002 Noncontractual Sales (3)		0
11	A/C 5010.1000 Lignite (3)		24,085,267
12	A/C 5010.2000 Subbituminous (3)		26,609,658
13	A/C 5010.3000 TDF (3)		0
14	A/C 5010.5000 Fuel Oil (3)		1,107,743
15	A/C 5010.6000 RRM (3)		0
16	A/C 5010.7000 Natural Gas (3)		0
17	Total		51,802,668
18			
19	FERC Financial Statement		
20	Production Fuel		(4)
21			
22			0
23	Difference from FERC F/S		51,802,668
24	Difference from above		0

**Otter Tail Power Company
Coal Conversion Tax
Unadjusted Projected Fiscal Year 2024**

(A) (B) (C)

Line No.		Amount	Percentage
1	Property Taxes	\$18,701,744 (1)	100.0000%
2			
3	Coal Conversion Taxes	108,687 (2)	0.5812% (3)
4			
5	All Other	<u>\$18,593,057</u>	<u>99.4188%</u> (3)
6			

**Otter Tail Power Company
Cash Balances
Unadjusted Projected Fiscal Year 2024**

(A)

(B)

Line No.	Minimum Bank Balances:	Amount
1	Dec '23	0
2	Jan	0
3	Feb	0
4	Mar	0
5	Apr	0
6	May	0
7	Jun	0
8	Jul	0
9	Aug	0
10	Sep	0
11	Oct	0
12	Nov	0
13	Dec	0
14		
15	Total	0
16		
17	Average	0
18		
19		
20	<u>Compensating Balances:</u>	None
21		
22	<u>Minimum Average Daily Bank Balances:</u>	0
23		
24		
25	Total Cash Balances:	0
26		

**Otter Tail Power Company
Cash Balances
Unadjusted Projected Fiscal Year 2024**

(A)

(B)

Line No.	Minimum Daily Bank Balances:	Amount
1	December 2023	0
2	January	0
3	February	0
4	March	0
5	April	0
6	May	0
7	June	0
8	July	0
9	August	0
10	September	0
11	October	0
12	November	0
13	December	0
14		
15	Total	0
16		
17	Average	0 (1)

(1) UI is set up so the line of credit automatically funds the account when needed, and sweeps to pay down the line of credit if OTP has excess dollars at the end of the day. If the line of credit swing line is paid in full, any excess funds will be swept to the short-term investment accounts.

**Otter Tail Power Company
Minimum Bank Balances
Unadjusted Projected Fiscal Year 2024**

(A)

(B)

(C)

(D)

Minimum Bank Balances				
Line No.	Customer Service Centers	Bank	Town	Minimum Balance
1	Fergus Falls			(1)
2	Devils Lake			
3	Morris	Riverwood Bank	Morris	
4	Oakes	Starion Financial	Oakes	
5		Sargent County Bank	Forman	
6		Bremer Bank	Lisbon	
7	Rugby	Merchants Bank	Rugby	
8		First Security Bank	Canby	
9	Bemidji	First National Bank	Bemidji	
10	Crookston	Bremer Bank	Crookston	
11	Garrison	Garrison State Bank	Garrison	
12	Milbank	First Bank & Trust	Milbank	
13				
14	Other Accounts:			
	US Bank Petty Cash	US Bank	Fergus Falls	
15	Manitoba Hydro Acct	US Bank	Manitoba	
16				
17	Total			\$ -

**Otter Tail Power Company
Working Funds
Unadjusted Projected Fiscal Year 2024**

(A) (B) (C) (D)

Line No.	Working Funds (Accounts 135.0, 135.1, 135.2, 135.3, 135.4/1075.0000)			Monthly Balances
1	December	End	2023	12,513
2	January	End	2024	12,513
3	February	End	2024	12,513
4	March	End	2024	12,513
5	April	End	2024	12,513
6	May	End	2024	12,513
7	June	End	2024	12,513
8	July	End	2024	12,513
9	August	End	2024	12,513
10	September	End	2024	12,513
11	October	End	2024	12,513
12	November	End	2024	12,513
13	December	End	2024	12,513
14	Total			162,669
15	Average			12,513

**Otter Tail Power Company
Special Deposits
Unadjusted Projected Fiscal Year 2024**

(A) (B) (C) (D)

Line No.	Special Deposits (Accounts 132.0, 134.0/1050.0000)			Monthly Balances
1	December	End	2023	2,158,433
2	January	End	2024	2,158,433
3	February	End	2024	2,158,433
4	March	End	2024	2,158,433
5	April	End	2024	2,158,433
6	May	End	2024	2,158,433
7	June	End	2024	2,158,433
8	July	End	2024	2,158,433
9	August	End	2024	2,158,433
10	September	End	2024	2,158,433
11	October	End	2024	2,158,433
12	November	End	2024	2,158,433
13	December	End	2024	2,158,433
14	Total			28,059,629
15	Average			2,158,433

**Otter Tail Power Company
Tax Collections Available
Unadjusted Projected Fiscal Year 2024**

	(A)	(B)
Line No.		
1	Employee FICA Withholding	5,759,442 (1)(3)
2		
3	Employee Federal Withholding	9,309,980 (1)(4)
4		
5	Employee State Withholding - Minnesota	2,203,698 (1)(4)
6		
7	Employee State Withholding - North Dakota	303,808 (1)(4)
8		
9		
10	<u>Customer Sales Tax:</u>	
11	Minnesota	11,519,413 (2)
12	North Dakota	72 (2)
13	South Dakota	2,399,944 (2)
14		
15	Total Sales Tax	13,919,429
16		
17		
18	Franchise Taxes	301,604 (2)

**Otter Tail Power Company
Retail Revenue
Unadjusted Projected Fiscal Year 2024**

(A)

(B)

Line No.		
1		North Dakota 203,210,040
2		
3		
4		
5	(2) 2024 Base revenue-ND	112,931,461
6	Plus: Fuel Revenue	71,477,189
7	Plus: COE Receiveable	(6,094,976)
8	Plus: Generation Rider	3,595,685
9	Plus: Grid Modernization	3,982,851
10	Plus: Renewable Rider	9,269,062
11	Plus: Transmission Rider	8,048,768
12		
13	NORTH DAKOTA REVENUE FOR COSS	203,210,040

Otter Tail Power Company
Sales For Resale
Unadjusted Projected Fiscal Year 2024

(B)

(C)

Line No.	Total Sales For Resale:	Detail	Totals
1	Requirements Service to Municipals (1)		
2	Asset Based Wholesale Sales (2)	6,947,794	
3	Total Sales For Resale		6,947,794

Otter Tail Power Company
Other Electric Revenues
Unadjusted Projected Fiscal Year 2024

	(A)	(B)	(C)
Line No.	Late Charges (450)		
1	MN	395,253	
2	ND	316,187	
3	SD	98,441	
4	Total Late Charges		809,881
5			
6	Connection Fees (452.1)		
7	MN	171,798	
8	ND	136,812	
9	SD	31,922	
10	Total Connection Fees		340,532
11			
12	Rent From Electric Property (includes Hoot Lake)	435,931	
13	Rent From Electric Property - Big Stone		
14	Rent From Electric Property - Coyote		
15	Total Rent		435,931
16			
17	Other Misc. Electric Revenue	1,395,880	1,395,880
18			
19	Integrated Transmission Deficiency Payments (456.3)	848,757	848,757
20			
21	Wheeling (all FERC)	425,279	425,279
22			
23	MISO Tariff Revenue	51,559,869	
24	MAPP Transmission service charge (456.4)		
25	MISO Tariff Revenue Schedule 24		
26	Load Control & Dispatch (456.6)		
27	Total Load Control & Dispatch, MISO & MAPP		51,559,869
28			
29	Miscellaneous Services (452.0)		
30			
31	Sub-Total Other Electric Revenues		55,816,129
32			
33	Interest income from loan pools & economic development		
34	MN		
35	ND		
36	SD		
37	Total interest income		0
38			
39	Gain on sale of emission allowances (a/c 411.8)		
40			
41	Total Other Electric Revenues		55,816,129

Otter Tail Power Company
Purchased Power
Unadjusted Projected Fiscal Year 2024

		(B)	(C)	(D)	(E)	(F)
Line No.	Type of Power:	Total Purchased Power	Demand Charges	Energy Charges	Base Demand	Base Energy
1	Participation Power:					
2	Shared Customers & NSE	6,791,996 (1)	1,949,333 (1)	4,842,663 (1)	1,949,333	4,842,663
3						
4	All Other	83,870,131	(27,374)	83,897,505	(27,374)	83,897,505
5						
6	Total Purchased Power	90,662,127 (3)	1,921,959.03 (2)	88,740,168 (2)	1,921,959 (4)	88,740,168 (4)
7						

**Otter Tail Power Company
Regulatory Commission Expense
Unadjusted Projected Fiscal Year 2024**

	(A)	(B)	(C)	(D)	(E)	(F)
Line No.		MN	ND	SD	FERC	Total
1						
2	Rate Case Amort					0
3						
4	All Other	1,518,965	502,550	113,656	1,016,109	3,151,280
5	In O&M Budget	0				
6						
7	Total	1,518,965	502,550	113,656	1,016,109	3,151,280

**Otter Tail Power Company
GIPS Removal
Unadjusted Projected Fiscal Year 2024**

	(A)	(B)
Line No.		
1	Plant Cost	\$ 49,208,600
2	Accumulated Depreciation	(3,093,402)
3	ADIT	\$ (3,321,955)
4	2021 FSA Revenues	3,935,218
5	Depreciation Expense (Yr 6)	795,654

**Otter Tail Power Company
Depreciation Expense-Production
Unadjusted Projected Fiscal Year 2024**

(A)

(B)

Line No.		Total
1	Production	40,657,474
2		
3	Plus: Hydro Licensing	-
4		
5	Total Production	40,657,474
6		
7	Less: Wind Production	18,022,860
8		
9	Total Production, Excluding Wind	22,634,614
10		
11	Base Demand 75.97% (6)	17,195,516
12		
13	Peak Demand - Non Wind 24.03% (6)	5,439,098
14	Peak Demand - Wind 31.49% (7)	5,675,399
15		11,114,496
16	Base Energy - Wind 68.51% (7)	12,347,461
17		
18		
19	Total Production	40,657,474

Otter Tail Power Company
Depreciation and Amortization Expense
Unadjusted Projected Fiscal Year 2024

(A)

(B)

Line No.	Depreciation Expense 12 Mo Ended 12/31/2024	Total
1	Steam (Excluding Un Tr & Ortonville)	14,873,571
2	Hydro	178,060
3	I.C. & Other	4,831,773
4	Wind	18,022,860
5	Solar	2,751,210
6	Total Production	40,657,474
7		
8	Transmission	12,883,697
9	Distribution	18,780,269
10		
11	General (Excluding Transp 392,390.2 & WHSE, 390.3, 393, 394.1 & CAP A&G)	4,035,417
12	Gain on Wahpeton Office	(5,576)
13	Airplane	206,904
14	(Gain) or Loss on Vehicles	
15	Total General	4,236,745
16		
17	Subtotal	76,558,185
18		
19	Intangible	
20	Computer Software	4,561,425
21	Hydro Licensing	56,024
22		4,617,449
23		
24	Total Depreciation	81,175,634

Otter Tail Power Company
Electric Vehicle Charger Direct assign to MN
Unadjusted Projected Fiscal Year 2024

(A)		(B)
Line No.		
1	Plant Cost	\$ 1,771,350
2	Accumulated Depreciation	(92,846)
3	CWIP	-
4	ADIT	
5	Depreciation Expense	169,846
6	O&M Expense	-
7	Property Tax	0

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Otter Tail Power Company
Hoot Lake Plant Solar
Unadjusted Projected Fiscal Year 2024

	(A)	(B)
Line No.		
1	Plant Cost	\$ 61,800,001
2	Accumulated Depreciation	(1,328,464)
3	CWIP	-
4	ADIT	(6,140,298)
5	Depreciation Expense	1,599,817
		Already Direct Assigned in the COSS
6	O&M Expense	
7	Property Tax	-
8	Investment Tax Credits	710,811

Otter Tail Power
Schedule M-1
(Separate Return Basis)
2024 YE Accrual

Line No.	Ref No.	(A) Item	(B) Federal	(C) MN	(D) ND
1	(11)	Net Income Per Books - OTP only	86,677,925	86,677,925	86,677,925
2	(12)	Income Tax - A/C (409.1) 5410.1001 - 1004	(1,089,960)	(1,089,960)	(1,089,960)
3	(12)	Income Tax - A/C (409.2) 5410.2001 - 2004	843,804	843,804	843,804
4	(12)	Income Tax - A/C (410.1 & 411.1) 5410.4101 & 5410.4111	1,185,925	1,185,925	1,185,925
5	(12)	Income Tax - A/C (410.2 & 411.2) 5410.4102 & 5410.4112	603,399	603,399	603,399
6	(12)	Income Tax - A/C (411.4) 5410.4114	(1,452,590)	(1,452,590)	(1,452,590)
7	(12)	Income Tax - A/C (411.5) 5410.4115	(6,418)	(6,418)	(6,418)
8		Net Income Before Tax (Consolidated)	86,762,085	86,762,085	86,762,085
9		Net Income Before Tax (OTP)	86,762,085	86,762,085	86,762,085
10	(2)	(Utility NIBT)	0	<== proofcheck	86,762,085
12		Permanent:			
13	(2)	P-00100 AFUDC (Equity)	(3,753,209)	(3,753,209)	(3,753,209)
14	(2)	P-00110 Meal Allowances - 50% Disallowance	150,000	150,000	150,000
15	(2)	P-00120 ESOP Deduction	(1,240,148)	(1,240,148)	(1,240,148)
16	(1)(2)	P-00130 Penalties - Added back on Schedule M		0	0
17	(1)(2)	P-00140 Lobbying Expense (Non-Deductible)	300,000	300,000	300,000
18	(1)(2)	P-00150 Restricted Stock Incentive - (Tax Deduction for Dividends)	(7,596)	(7,596)	(7,596)
19		P-00160 None		0	0
20		P-00170 Non-Qual Retire Savings (Below the Line)	5,196	5,196	5,196
21	(1)(2)	P-00172 Employee Stock Purchase Plan	144,000	144,000	144,000
22	(12)	P-00240 Income from ACRS & MACRS Property	1,406,530	1,407,914	1,406,530
23	(1)(2)	P-00250 Parking Lot Expenses	77,203	77,203	77,203
25		Property Related Temporary:			
26	(2)	M-00130 Highway Reimbursements - Reversing			
27	(2)(5)	M-00140 Removal Costs	2,567,426	2,567,426	2,567,426
28	(2)	M-00160 Interest Capitalized on Construction (Taxable)	2,709,598	2,709,598	2,709,598
29	(2)	M-00180 Capitalized Overheads Reversing	343,934	343,934	343,934
30	(2)	M-00150 AFUDC on Debt Originating	(544,806)	(544,806)	(544,806)
31	(5)(12)	M-00800 Tax Depreciation	(161,193,446)	(161,032,203)	(161,197,864)
32	(5)(2)	M-00800 Book Depreciation	79,314,630	79,315,318	79,314,630
34		Other:			
35	(2)(5)	M-00220 Accrued Vacation Pay			
36	(1)(2)	M-00230 Amortization of Loss on Reacquired Debt (Below the Line)	24,648	24,648	24,648
37	(2)	M-00250 Pensions Provision (FAS 87 & 88)	(4,582,500)	(4,582,500)	(4,582,500)
38	(2)	M-00271 Conservation Improvement Program - MN & SD - Net (Below the Line)	(2,245,500)	(2,245,500)	(2,245,500)
39	(2)	M-00290 Supplemental Pension Reserve	(1,138,505)	(1,138,505)	(1,138,505)
40	(2)	M-00300 Post Retirement Benefit	(7,529,748)	(7,529,748)	(7,529,748)
41	(2)	M-00310 Post Employment Benefits (FAS 112)	189,625	189,625	189,625
42		M-00335 Rate Rider Mechanisms	5,688,688	5,688,688	5,688,688
43		M-00363 Deferred HLP Cost Recovery	(349,572)	(349,572)	(349,572)
44	(2)(3)	M-00410 MN rate case deferred expense (2021)	377,088	377,088	377,088
45	(1)(2)	M-00550 Non-Qual. Retire Savings (Below the Line)	(72,000)	(72,000)	(72,000)
46			(89,358,464)	(89,195,149)	(89,362,882)
47		Taxable Income Before Deduction for State Taxes	(2,596,379)	(2,433,064)	(2,600,797)
48		Less: MN Estimated & Extension Tax Paid for Current Year	0	N/A	N/A
49		ND Estimated & Extension Tax Paid for Current Year	0	N/A	N/A
50		Add'l State Taxes Paid/(Recv'd) for Prior Years	0	N/A	N/A
51	(14)	Taxable Income	(2,596,379)	(2,433,064)	(2,600,797)
52	(15)(16)	Apportionment Factors	100%	48.2980%	38.1042%
53		Apportioned Income	(2,596,379)	(1,175,121)	(991,013)
54		ND State Tax Formula Base Adj (-\$50,000 per statute-2010)			
55			(2,596,379)	(1,175,121)	(991,013)
56	(13)	Tax Rate	21.00%	9.80%	4.31%
57		Income Tax Liability Before Tax Credits	(545,240)	(115,162)	(42,713)
58					
59	(8)	Less: Federal and North Dakota Wind Energy Tax Credits	0	N/A	0
60	(1)(2)	M-00890 Research & Development Tax Credit (OTP only)			N/A
61	"(2)(6)(7)	M-00640 MN Minimum Fee (\$9,340 per statute)		10,810	
62	(2)	M-00760 ND State Tax Formula Base (\$1,302.50 per statute)			1,240
63	(2)	M-00750 Other Credits - Education Donations			
64		Otter Tail Power Tax Liability (Separate Return)	(545,240)	(104,352)	(41,473)
65		Adjustment to reflect zero tax liability due to NOL's	0	0	0
66	(2)	Total Current Tax Liability	(545,240)	(104,352)	(41,473)
67					
68		Grand Total Tax Liability (OTP only)		(691,064)	
69					

**Otter Tail Power Company
Advertising Expense
Unadjusted Projected Fiscal Year 2024**

	(A)	(B)
Line No.	Adjustment to remove advertising expense:	
1	Advertising expenses	
2	Account 913	1,348
3	(Sales Expense)	
4		
5	General advertising expenses	
6	Account 930.1	857,770
7	(Administrative & General Expense)	
8		
9	Total	859,118
10		
11	Amount excluded in 930.1 above that should be	
12	included with 930.2	0

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Page 1 of 1

**Otter Tail Power Company
Federal Production Tax Credits Generated
Unadjusted Projected Fiscal Year 2024**

Langdon Repower	454,674
Merricourt Wind Farm	16,017,913
	16,472,587

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Page 1 of 1

Otter Tail Power Company
Wind Investment Tax Credit
Unadjusted Projected Fiscal Year 2024

	Yearly Amortization
Langdon	(12,588)
Ashtabula	395,340
Luverne	359,028
Total	741,780

Otter Tail Power Company
Base and Peak Demand Split Data
Unadjusted Projected Fiscal Year 2024

	(A)	(B)	(C)	(D)	(E)	(F)
Line No.		Plant Capacity - KW			Estimated Cost of New Capacity	
		Steam/Hydro	Other	Total	Base Load	Peaking
1						
2						
3	2022 Actual	408,700 (2)	343,700 (2)	752,400	\$4,200 (1)	\$604
4						
5	2023 Forecast	408,700	343,700	752,400	\$4,284 (1)	\$622
6						
7	2024 Forecast	408,700	343,700	752,400	\$4,370 (1)	\$641
8						
9						
10	Calculation of Base Demand and Peaking Demand Factors				These values can be escalated at - 2%	These values can be escalated at - 3%
11						
12	Total Current Cost (TCC) = (A X D) + (B X E)					
13						
14	Peaking Demand Factor (PDF) = (C X E) / TCC					
15						
16	Base Demand Factor (BDF) = 1 - PDF					
17						
18	2022 Actual					
19		TCC =	\$1,924,134,800		Actual Average Investment for 2022	
20		PDF =	23.62% (3)		Forecast January 2023 Expenses	
21		BDF =	76.38% (3)			
22	2023 Forecast					
23		TCC =	\$1,964,693,444		Forecasted Average Investment for 2023	
24		PDF =	23.82% (3)		Forecast January 2025 Expenses	
25		BDF =	76.18% (3)			
26	2024 Forecast					
27		TCC =	\$2,006,125,539		Forecasted Average Investment for 2024	
28		PDF =	24.03% (3)		Forecast January 2025 Expenses	
29		BDF =	75.97% (3)			

Otter Tail Power Company
Base Energy and Peak Demand Split Data
Unadjusted Projected Fiscal Year 2024

UCAP Values:	Summer	Fall	Winter	Spring	Percentage	MW	
Ashtabula	16.00%	31.50%	52.30%	20.00%	29.95%	48	
Langdon	15.80%	28.90%	55.80%	24.90%	31.35%	40.5	
Luverne	19.80%	31.70%	56.20%	21.20%	32.23%	49.5	
Ash III	17.90%	26.10%	55.10%	19.70%	29.70%	62.4	
Merricourt (OTP)	21.60%	24.80%	47.80%	35.90%	32.53%	150	
					155.75%	350.4	
Weighted Average:							
Ashtabula					29.95%	13.70%	4.10%
Langdon					31.35%	11.56%	3.62%
Luverne					32.23%	14.13%	4.55%
					29.70%	17.81%	5.29%
Merricourt (OTP)					32.53%	42.81%	13.92%
					155.75%	100.00%	31.49%
Wind							
Base Energy					68.51%		
Peak Demand					31.49%		

**Otter Tail Power Company
Labor Ratios
Unadjusted Projected Fiscal Year 2024**

(A)

(C)

Line No.	Function Labor	Portion of Total
1	Production (2)	34.08%
2		
3	Transmission	16.21%
4		
5	Distribution	25.10%
6		
7	Customer Accounts	19.97%
8		
9	Customer Service & Information, & Sales (1)	4.64%
10		
11		
12		
13	Subtotal	100.00%
14		

Allocation Factors
North Dakota Classes
Unadjusted Projected Fiscal Year 2016

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
Line No.	Allocators	Total	Minnesota	North Dakota	South Dakota	FERC	Class Total	Residential	Farms	General Service	Large General Service
1	D1	719,976	359,481	284,282	75,454	759	284,282	108,197	4,618	81,472	85,574
2	D2	725,298	359,481	284,282	75,454	6,081	284,282	108,197	4,618	81,472	85,574
3	D3	851,393	350,326	396,080	99,333	5,654	396,080	90,117	10,061	84,988	86,012
4	D4	1,119,241	449,500	545,068	124,673	0	545,068	123,926	18,447	120,927	67,581
5	E1	5,645,126	2,635,019	2,476,736	529,788	3,583	2,476,736	457,278	30,568	487,815	1,475,999
6	E2	6,171,457	2,827,178	2,775,986	564,780	3,513	2,775,986	557,429	31,568	438,740	1,442,993
7	C1	135,411	63,698	59,643	12,070	0	59,643	46,014	1,023	11,545	260
8	C2	136,449	64,616	59,642	12,191	0	59,642	46,018	1,023	11,548	261
9	C3	136,414	64,597	59,632	12,185	0	59,632	46,018	1,023	11,541	258
10	C4	13,235,267	6,555,122	5,515,574	1,164,571	0	5,515,574	0	0	0	0
11	C5	9,628,628	3,604,745	5,249,227	774,656	0	5,249,227	0	0	0	0
12	C6	57,578,353	26,612,168	25,668,459	5,297,726	0	25,668,459	7,855,936	520,335	9,292,360	561,276
13	C7	206,170	96,557	91,157	18,456	0	91,157	47,286	1,054	32,495	724
14	C8	136,457	64,623	59,643	12,191	0	59,643	46,018	1,023	11,548	262
15	C9	41,469	19,366	18,119	3,984	0	18,119	3,882	18	34	1

Line No.	Allocators	Irrigation	Outdoor Lighting	OPA	Controlled Service Deferred Load	Controlled Service Interrupt	Controlled Service Off Peak				
16	D1	0	1,299	3,122	0	0	0				
17	D2	0	1,299	3,122	0	0	0				
18	D3	1,626	4,726	3,245	35,597	79,708	0				
19	D4	2,654	4,403	5,138	80,740	121,252	0				
20	E1	0	1,982	22,242	542	0	310				
21	E2	1,384	12,691	19,950	33,559	222,168	15,504				
22	C1	30	126	590	14	40	1				
23	C2	30	122	590	14	35	1				
24	C3	30	122	590	14	35	1				
25	C4	0	5,515,574	0	0	0	0				
26	C5	0	5,249,227	0	0	0	0				
27	C6	43,040	73,114	260,568	2,574,614	4,048,696	438,520				
28	C7	104	452	1,785	3,105	3,959	193				
29	C8	30	122	590	14	35	1				
30	C9	21	1	0	6,130	7,902	130				

Otter Tail Power Company
Effective Tax Rates
Unadjusted Projected Fiscal Year 2024

	(A)	(B)	(C)	(D)	(E)	(F)																																																		
Line No.																																																								
1	<table><tr><td>Tax Rates:</td><td>(1)</td></tr><tr><td>Federal</td><td>21.00%</td></tr><tr><td>Minnesota</td><td>9.80%</td></tr><tr><td>North Dakota</td><td>4.31%</td></tr></table>		Tax Rates:	(1)	Federal	21.00%	Minnesota	9.80%	North Dakota	4.31%	<table><tr><td>SD Special Hearing Fund Assessment Rate:</td><td>(2)</td><td>0.0015</td></tr></table>				SD Special Hearing Fund Assessment Rate:	(2)	0.0015																																							
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8	<table><tr><td>Income</td><td></td><td>1,000</td><td></td><td>1,000</td></tr><tr><td>ND / Federal Income Tax</td><td></td><td>43.1</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>956.9</td><td></td><td>1,000</td></tr><tr><td>Federal Tax Rate</td><td></td><td>21.00%</td><td></td><td>4.31%</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Total Tax</td><td></td><td>200.9</td><td></td><td>43.1</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Effective Tax Rates - ND</td><td>24.405%</td><td>20.095%</td><td></td><td>4.31%</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>		Income		1,000		1,000	ND / Federal Income Tax		43.1										956.9		1,000	Federal Tax Rate		21.00%		4.31%						Total Tax		200.9		43.1						Effective Tax Rates - ND	24.405%	20.095%		4.31%									
Income		1,000		1,000																																																				
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Otter Tail Power Company
Embedded Cost of Debt Capital
Unadjusted Proposed Fiscal Year 2024

		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)
Line No.	Description	Rate of Interest	Principal Amounts Outstanding												Average Monthly Balances	Interest Cost		
			December	January	February	March	April	May	June	July	August	September	October	November	December			
	Debentures	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)			
1	6.370% Debenture -Unsecured Series C 2027 Senior Notes - 6.37% - 09-01-27		42,000,000	42,000,000	42,000,000	42,000,000	42,000,000	42,000,000	42,000,000	42,000,000	42,000,000	42,000,000	42,000,000	42,000,000	42,000,000	42,000,000	2,675,400	
2	6.470% Debenture -Unsecured Series D 2037 Senior Notes - 6.47% - 08-31-37		50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	3,235,000	
3	6.300% LTD #3 - FORECAST PURPOSES ONLY		0	0	120,000,000	120,000,000	120,000,000	120,000,000	120,000,000	120,000,000	120,000,000	120,000,000	120,000,000	120,000,000	120,000,000	120,000,000	6,930,000	
4	4.680% Unsecured Series A 2029 4.68% - 2-27-29		60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	60,000,000	2,808,000	
5	3.070% Unsecured Series A 2029 Senior Note - 3.07% - 10-10-2029		10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	259,000	
6	3.220% Unsecured Series A 2030 Senior Note - 3.22% - 02-25-2030		10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	322,000	
7	2.740% Unsecured Series A 2031 Senior Note - 2.74% - 11-29-2031		40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	1,096,000	
8	4.070% Unsecured Series A 2048 4.07% - 02-07-48		100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	4,070,000	
9	3.220% Unsecured Series B 2030 Senior Note - 3.22% - 08-20-2030		40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	1,096,000	
10	3.520% Unsecured Series B 2039 Senior Note - 3.52% - 10-10-2039		26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	915,200	
11	5.470% Unsecured Series B 2044 5.47% - 2-27-44		90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	4,923,000	
12	3.690% Unsecured Series B 2051 Senior Note - 3.69% - 11-29-2051		100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	3,690,000	
13	3.620% Unsecured Series C 2040 Senior Note - 3.62% - 02-25-2040		10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	362,000	
14	3.820% Unsecured Series C 2049 Senior Note - 3.82% - 10-10-2049		64,000,000	64,000,000	64,000,000	64,000,000	64,000,000	64,000,000	64,000,000	64,000,000	64,000,000	64,000,000	64,000,000	64,000,000	64,000,000	64,000,000	2,444,800	
15	3.770% Unsecured Series C 2052 Senior Note - 3.77% - 05-20-2052		90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	90,000,000	3,393,000	
16	3.920% Unsecured Series D 2050 Senior Note - 3.92% - 02-25-2050		15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	588,000	
17																		
18																		
19	Total Series Bonds		\$747,000,000	\$747,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$848,538,462	\$38,807,400	
20																		
21	Loss/Gain on Reacquired Debt	(4)														(4,261,882)	411,810	
22																		
23	Total Long-Term Debt Capital		\$747,000,000	\$747,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$867,000,000	\$844,276,580	\$39,219,210	
24																		
25																		
26	NOTE: As new bond issuances are added in UI, this workpaper needs to be updated to pull that data related to the bond issuance.															Weighted Long-Term Cost of Debt		4.65%
27																		
28																		
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Otter Tail Power Company
Common Equity
Average Thirteen Monthly Balances
Unadjusted Proposed Fiscal Year Ending December 31, 2024

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
Principal Amounts Outstanding															Average 13 Month Balances
Line No.	Title	December	January	February	March	April	May	June	July	August	September	October	November	December	
1	Contributed Capital	676,989,466	676,989,466	676,989,466	676,989,466	676,989,466	676,989,466	777,689,466	777,689,466	777,689,466	777,689,466	777,689,466	777,689,466	777,689,466	
2															
3	Retained Earnings	293,355,399	303,696,141	311,730,002	299,324,635	304,352,591	309,526,905	298,110,193	306,796,156	315,042,741	304,695,604	310,267,471	318,386,651	309,253,958	
4	Total Electric Common Equity	970,344,865	980,685,607	988,719,467	976,314,101	981,342,057	986,516,371	1,075,799,658	1,084,485,621	1,092,732,206	1,082,385,070	1,087,956,937	1,096,076,116	1,086,943,424	1,037,715,500

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Page 1 of 1

Otter Tail Power Company
Adjustment to Cap Management Performance Incentives and Corporate Bonuses at 50%
Unadjusted Projected Fiscal Year 2024

Line No.	(A)	(B) Labor Ratios	(C) Management Incentives	(D) Corporate Bonuses	(E) Total Adjustment
	Administrative & General Expenses				
	Salaries, Supplies, Pensions & Benefits	(1)			
1	Production	34.08%	(94,697)	(194,789)	(289,486)
2	Transmission	16.21%	(45,042)	(92,650)	(137,693)
3	Distribution	25.10%	(69,745)	(143,462)	(213,207)
4	Customer Accounts	19.97%	(55,490)	(114,141)	(169,631)
5	Customer Service & Info	4.64%	(12,893)	(26,521)	(39,414)
6		100.00%	(277,868)	(571,563)	(849,431)

	2024 Budget	25% Capallowed	
Management Incentives estimate in 2024 Budget	1,539,906	1,262,038	277,868
Corporate Bonus estimate in 2024 Budget	<u>1,211,609</u>	640,046	571,563
	2,751,515		

Otter Tail Power Company
Adjustment for Economic Development Expenses
Unadjusted Projected Fiscal Year 2024

	(A)	(B)	(C)
Line No.		(1) Amount	ND 100.00%
1			
2	Economic Development - ND	5,943	(5,943)
3			

ND - 06
Page 1 of 2

Otter Tail Power Company
ND Retail/Non-Retail Transmission Adjustment
Unadjusted Projected Fiscal Year 2024

	Dec 2024	13 MA	(10) Retail %	Retail Share 13 MA	Non-Retail Portion COSS Adjustment 13 MA	Simple Average	Retail Share Simple Average	Non-Retail Portion COSS Adjustment Simple Avg
RATE BASE:								
Plant In-Service:								
1 Fargo CAPX			75.74%	-	-	78,184,054	59,216,602	(18,967,452)
2 Bemidji CAPX			93.16%	-	-	16,331,255	15,214,687	(1,116,568)
3 Cass Lake			35.83%	-	-	7,039,948	2,522,484	(4,517,464)
4 Rugby			54.42%	-	-	394,399	214,648	(179,751)
5 Casselton-Buffalo			52.49%	-	-	13,784,657	7,235,942	(6,548,815)
6 Brookings CAPX			32.78%	-	-	26,291,942	8,619,297	(17,672,655)
7 BSAT-BSS-Brookings			2.95%	-	-	72,996,966	2,145,761	(70,847,205)
8 BSAT-BSS-Ellendale			2.88%	-	-	108,131,136	3,109,851	(105,021,285)
9 Total Plant In-Service - ADJUSTMENT	-	-		-	-	323,154,357	98,283,163	(224,871,194)
Accumulated Depreciation:								
12 Fargo CAPX			75.74%	-	-	(10,160,246)	(7,695,370)	2,464,876
13 Bemidji CAPX			93.16%	-	-	(3,605,027)	(3,358,551)	246,476
14 Cass Lake			35.83%	-	-	(1,342,105)	(480,890)	861,215
15 Rugby			54.42%	-	-	(80,121)	(43,605)	36,516
16 Casselton-Buffalo			52.49%	-	-	(1,989,714)	(1,044,441)	945,273
17 Brookings CAPX			32.78%	-	-	(4,089,962)	(1,340,812)	2,749,150
18 BSAT-BSS-Brookings			2.95%	-	-	(7,810,987)	(230,034)	7,580,953
19 BSAT-BSS-Ellendale			2.88%	-	-	(7,415,966)	(213,283)	7,202,683
20 Total Accumulated Depreciation - ADJUSTMENT	-	-		-	-	(36,494,128)	(14,406,986)	22,087,142
CWIP:				(10)			(10)	
23 Fargo CAPX			75.74%	-	-	-	-	-
24 Bemidji CAPX			93.16%	-	-	-	-	-
25 Cass Lake			35.83%	-	-	-	-	-
26 Rugby			54.42%	-	-	-	-	-
27 Casselton-Buffalo			52.49%	-	-	-	-	-
28 Brookings CAPX			32.78%	-	-	-	-	-
29 BSAT-BSS-Brookings			2.95%	-	-	-	-	-
30 BSAT-BSS-Ellendale			2.88%	-	-	-	-	-
31 BSAT-BSS-Alexandria			2.88%	-	-	1,548,361	44,531	(1,503,830)
32 BSAT-JETX			2.88%	-	-	4,289,540	123,367	(4,166,173)
33 Total CWIP - ADJUSTMENT	-	-		-	-	5,837,901	167,898	(5,670,003)
ADIT:								
36 Fargo CAPX			75.74%	-	-	(6,659,469)	(5,043,882)	1,615,587
37 Bemidji CAPX			93.16%	-	-	(1,219,735)	(1,136,341)	83,393
38 Cass Lake			35.83%	-	-	(982,354)	(208,663)	373,691
39 Rugby			54.42%	-	-	(32,781)	(17,840)	14,940
40 Casselton-Buffalo			52.49%	-	-	(1,135,674)	(596,138)	539,536
41 Brookings CAPX			32.78%	-	-	(2,192,677)	(718,825)	1,473,852
42 BSAT-BSS-Brookings			2.95%	-	-	(6,056,775)	(178,372)	5,878,403
43 BSAT-BSS-Ellendale			2.88%	-	-	(7,845,910)	(225,648)	7,620,262
44 Total ADIT - ADJUSTMENT	-	-		-	-	(25,725,374)	(8,125,710)	17,599,664

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Otter Tail Power Company
ND Transmission Recovery Adjustment
Budget Year 2024

Prepared by:
Reviewed by:

	12 ME	(9) Retail %	Retail Share	Non-Retail Portion COSS Adjustment
NOI:				
Operating Costs:				
1 Fargo CAPX	-	75.74%	-	-
2 Bemidji CAPX	-	93.16%	-	-
3 Cass Lake	-	35.83%	-	-
4 Rugby	-	54.42%	-	-
5 Casselton-Buffalo	-	52.49%	-	-
6 Brookings CAPX	-	32.78%	-	-
7 BSAT-BSS-Brookings	-	2.95%	-	-
8 BSAT-BSS-Ellendale	-	2.88%	-	-
9 Total Operating Costs - ADJUSTMENT	-		-	-
Book Depreciation				
12 Fargo CAPX	1,145,370	75.74%	867,503	(277,867)
13 Bemidji CAPX	294,488	93.16%	274,354	(20,134)
14 Cass Lake	109,610	35.83%	39,274	(70,336)
15 Rugby	6,063	54.42%	3,300	(2,763)
16 Casselton-Buffalo	217,645	52.49%	114,246	(103,399)
17 Brookings CAPX	392,312	32.78%	128,612	(263,700)
18 BSAT-BSS-Brookings	1,107,820	2.95%	32,625	(1,075,195)
19 BSAT-BSS-Ellendale	1,614,226	2.88%	46,425	(1,567,801)
20 Total Book Depreciation - ADJUSTMENT	4,887,534		1,506,339	(3,381,195)
Property Tax:				
23 Fargo CAPX	742,749	75.74%	562,558	(180,191)
24 Bemidji CAPX	155,147	93.16%	144,540	(10,607)
25 Cass Lake	66,880	35.83%	23,964	(42,916)
26 Rugby	3,747	54.42%	2,039	(1,708)
27 Casselton-Buffalo	130,954	52.49%	68,741	(62,214)
28 Brookings CAPX	249,773	32.78%	81,883	(167,890)
29 BSAT-BSS-Brookings	693,471	2.95%	20,423	(673,048)
30 BSAT-BSS-Ellendale	1,027,246	2.88%	29,544	(997,702)
31 Total Property Tax - ADJUSTMENT	3,069,966		933,690	(2,136,276)
Schedule 26 Revenue:				
34 Total Schedule 26 Revenue				
35 Fargo CAPX	9,415,415	75.74%	7,131,235	(2,284,180)
36 Bemidji CAPX	1,929,252	93.16%	1,797,349	(131,903)
37 Cass Lake	832,730	35.83%	298,375	(534,355)
38 Rugby	6,156	54.42%	3,350	(2,806)
39 Casselton-Buffalo	1,689,024	52.49%	886,602	(802,422)
40 Total Schedule 26 Revenue allocated - ADJUSTMENT	13,872,577		10,116,913	(3,755,664)
Schedule 26 True-up:				
43 Total Schedule 26 True-up	-		-	-
44 Fargo CAPX	-	75.74%	-	-
45 Bemidji CAPX	-	93.16%	-	-
46 Cass Lake	-	35.83%	-	-
47 Rugby	-	54.42%	-	-
48 Casselton-Buffalo	-	52.49%	-	-
49 Total Schedule 26 True-up allocated - ADJUSTMENT	-		-	-
Schedule 26a Revenue:				
52 Total Schedule 26a Revenue				
53 Brookings CAPX	3,204,137	32.78%	1,050,412	(2,153,725)
54 BSAT-BSS-Brookings	8,845,581	2.95%	260,502	(8,585,079)
55 BSAT-BSS-Ellendale	13,308,704	2.88%	382,758	(12,925,946)
56 BSS-Alexandria	184,566	0.00%	-	(184,566)
57 JETX	472,799	0.00%	-	(472,799)
58 Total Schedule 26a Revenue - ADJUSTMENT	26,015,787		1,693,673	(24,322,114)
Total Schedule 26 and 26A				(28,077,778)
Schedule 26a True-up:				
63 Total Schedule 26a True-up Revenue	-		-	-
64 Brookings CAPX	-	32.78%	-	-
65 BSAT-BSS-Brookings	-	2.95%	-	-
66 BSAT-BSS-Ellendale	-	2.88%	-	-
67 Total Schedule 26 True-up - ADJUSTMENT	-		-	-

Otter Tail Power Company
Adjustment for Disallowed 100% of Non-Employee Director Restricted Stock Grants
Unadjusted Projected Fiscal Year 2024

Line No.			
1	Non-Employee Director Restricted Stock Grants allocated to OTP	\$	(610,968)
2			
3			
4	<u>Labor Ration Breakdown</u>	<u>Labor Ratios (2)</u>	
5	Production	34.08%	\$ (208,218)
6	Transmission	16.21%	\$ (99,038)
7	Distribution	25.10%	\$ (153,353)
8	Customer Accounts	19.97%	\$ (122,010)
9	Customer Service & Information, & Sales	4.64%	\$ (28,349)
10			
11	Total Adjustment	\$	(610,968)
12			
13			

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**Otter Tail Power Company
Rider CWIP Adjustment
Unadjusted Projected Fiscal Year 2024**

SUMMARY		ND Rider Revenue to Remove
Renewable CWIP:		
1	Ash III Repower	435,680
2	Ashtabula Repower	461,917
3	Luverne Repower	1,231,946
4		2,129,543
5		
6		
7	TCR CWIP:	
8	Cooperstown - Relocate 41.6kV	24,240
9	Donaldson CB-235 Life Extension	17,395
10	Fertile-Twin Valley Extenda-Life	12,883
11	Gackle Rural Loop	50,384
12	Michigan-Mapes Rebuild	28,489
13	Oslo 115kV 5-Breaker Bus and Lake A	146,147
14	Pickert - McVillie Rebuild	7,604
15	Wabek-Parshall Rebuild	4,279
16		291,420
17		
18	Grid Mod AMI	132,868
19	DRMS	166,501
20		299,369
21		
22		
23	Total CWIP - ADJUSTMENT	2,720,332

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Otter Tail Power Company
Avoided Purchase Power Costs Due to HL Solar
Unadjusted Projected Fiscal Year 2024

	(A)	(B)
	Amount	
1	Fuel Revenues to cover additional fuel below	1,313,314
2	Purchase Power Costs Avoided	2,818,864

Otter Tail Power Company
GAAP Provision due to PTC normalization
Unadjusted Projected Fiscal Year 2024

	ND Rider Revenues to Remove
<i>Renewable Rider:</i>	
GAAP Provision due to PTC normalization	
Revenue Addback	4,186,187
PTC Balance in ND Wind Rider	(4,877,724)
Merricourt PTC's generated in 2024	(16,017,913)
Adjustment for 2024 Test Year	11,140,189

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget INTERIM YEAR 2024 - Simple Average

LINE NO	ITEM	ALLOC	REFERENCE	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	RATE BASE		Page 2-1 Line 32	1,882,413,790	653,303,927	1,229,109,863	1
2							2
3	TOTAL AVAILABLE FOR RETURN		Page 7-1 Line 43	109,454,980	22,366,952	87,088,029	3
4							4
5	RATE OF RETURN EARNED			5.81%	3.42%	7.09%	5
6							6
7	RATE OF RETURN REQUESTED		Page 17-1 Line 11		7.41%		7
8							8
9	OPERATING INCOME REQUIRED				48,409,821		9
10							10
11	TOTAL AVAILABLE FOR RETURN				22,366,952		11
12							12
13	OPERATING INCOME DEFECIENCY				26,042,869		13
14							14
15	INCREMENTAL TAXES	GRCF = 1.322837			8,407,603		15
16							16
17	REVENUE INCREASE REQUIRED				34,450,473		17
18							18
19	PERCENTAGE INCREASE				18.83%		19
20							20
21							21
22							22
23							23
24							24
25	RETURN ON EQUITY				2.32%		25
26							26
27							27
28							28
29							29
30							30
31							31
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OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget INTERIM YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	REFERENCE	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	ELECTRIC PLANT IN SERVICE		Page 3-1 Line 52	3,238,912,922	1,249,259,538	1,989,653,384	1
2							2
3	ACCUMULATED DEPRECIATION		Page 4-12 Line 22	(1,094,302,064)	(461,085,774)	(633,216,290)	3
4							4
5	NET PLANT EXCLUDING BIG STONE PLANT CAPITALIZED ITEMS			2,144,610,858	788,173,764	1,356,437,095	5
6							6
7	NET CAPITALIZED ITEMS - BIG STONE PLANT		Page 4-1 Line 28	0	0	0	7
8							8
9	NET ELECTRIC PLANT IN SERVICE			2,144,610,858	788,173,764	1,356,437,095	9
10							10
11	PLANT HELD FOR FUTURE USE		Page 4-1 Line 47	12,038	4,921	7,117	11
12							12
13	CONSTRUCTION WORK IN PROGRESS		Page 5-1 Line 31	1,770,919	780,990	989,928	13
14							14
15	MATERIALS AND SUPPLIES		Page 5-1 Line 39	33,967,093	14,737,248	19,229,845	15
16							16
17	FUEL STOCKS		Page 5-1 Line 46	10,476,711	4,495,117	5,981,594	17
18							18
19	PREPAYMENTS		Page 5-1 Line 49	49,187,428	18,601,559	30,585,869	19
20							20
21	CUSTOMER ADVANCES		Page 5-1 Line 51	(1,876,522)	(709,657)	(1,166,864)	21
22							22
23	CASH WORKING CAPITAL		Page 5-1 Line 53	6,169,802	1,414,534	4,755,268	23
24							24
25	ACCUMULATED DEFERRED INCOME TAXES		Page 6-1 Line 16	(361,904,537)	(174,194,548)	(187,709,989)	25
26							26
27	UNAMORTIZED BALANCE - SPIRITWOOD		Page 6-1 Line 19	0	0	0	27
28							28
29	UNAMORTIZED RATE CASE EXPENSE		Page 6-1 Line 22	0	0	0	29
30							30
31							31
32	TOTAL AVERAGE RATE BASE			1,882,413,790	653,303,927	1,229,109,863	32
33							33
34							34
35							35
36							36
37							37
38							38
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OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget INTERIM YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	PLANT IN SERVICE						1
2	A/C 101 & 106 - Direct MN	Direct MN		61,800,001	0	61,800,001	2
3	A/C 101 & 106 - Direct ND	Direct ND		0	0	0	3
4	A/C 101 & 106 - Direct SD	Direct SD		0	0	0	4
5	Subtotal A/C 101 & 106 - Direct Assigned			61,800,001	0	61,800,001	5
6							6
7	PRODUCTION PLANT						7
8	A/C 101 & 106 - BASE DEMAND	E1		615,526,547	270,055,400	345,471,147	8
9	PEAK DEMAND	D1		401,843,629	158,667,665	243,175,964	9
10	BASE ENERGY	E2		450,671,354	202,716,696	247,954,659	10
11							11
12	SUBTOTAL A/C 101 & 106			1,529,841,532	631,439,760	898,401,772	12
13							13
14	A/C 114 - BASE DEMAND	E1		1,206,597	529,381	677,216	14
15	PEAK DEMAND	D1		381,658	150,697	230,960	15
16	BASE ENERGY	E1		0	0	0	16
17							17
18	SUBTOTAL A/C 114			1,588,255	680,078	908,176	18
19							19
20	TOTAL PRODUCTION PLANT	P10	310-317, 330-335, 340-347	1,531,429,786	632,119,838	899,309,948	20
21							21
22	TRANSMISSION PLANT						22
23	A/C 101 & 106	D2		550,572,537	215,798,006	334,774,531	23
24	A/C 101 & 106 (Direct FERC)	Direct FERC		274,079,794	0	274,079,794	24
25	A/C 114	D2		58,287	22,846	35,441	25
26							26
27	TOTAL TRANSMISSION PLANT		350-350.1, 353-356, 358	824,710,618	215,820,852	608,889,767	27
28							28
29							29
30	DISTRIBUTION PLANT						30
31	PRIMARY DEMAND	D3	360, 362, 364-365, 367	254,804,754	118,538,756	136,265,998	31
32	SECONDARY DEMAND	D4	365, 367-369.1	143,014,220	69,647,623	73,366,597	32
33	PRIMARY CUSTOMER	C2	364-365, 367	119,159,338	52,084,671	67,074,667	33
34	SECONDARY CUSTOMER	C3	365, 367-369.1, 370.2	87,138,987	38,091,927	49,047,061	34
35	STREETLIGHTING	C4	364-365, 367, 373	24,540,852	10,226,986	14,313,866	35
36	AREA LIGHTING	C5	364-365, 367, 371.2	15,570,818	8,488,723	7,082,095	36
37	METERS	C6	370	64,567,120	28,784,055	35,783,065	37
38	LOAD MANAGEMENT	C9	370.1	8,899,439	3,888,421	5,011,018	38
39							39
40	TOTAL DISTRIBUTION PLANT	P60		717,695,528	329,751,161	387,944,367	40
41							41
42							42
43	GENERAL PLANT						43
44	PRODUCTION	P10		41,841,785	17,997,065	23,844,720	44
45	TRANSMISSION	D2		19,903,693	7,801,292	12,102,401	45
46	DISTRIBUTION	P60		30,817,789	14,159,489	16,658,300	46
47	CUSTOMER ACCOUNTS	OXC		24,517,241	10,761,420	13,755,822	47
48	CUSTOMER SERVICE & INFO	OXI		5,696,124	2,508,909	3,187,215	48
49	LOAD MANAGEMENT	C9	397.3	165,980	72,521	93,459	49
50							50
51	TOTAL GENERAL PLANT	P90	389-398, 390.1-390.3, 391.1-391.6, 394.2, 397.1-397.2	122,942,613	53,300,696	69,641,917	51
52							52
53							53
54	INTANGIBLE PLANT	P90	302-303	42,134,377	18,266,991	23,867,386	54
55							55
56	TOTAL PLANT IN SERVICE	EPIS		3,238,912,922	1,249,259,538	1,989,653,384	56
57							57
58							58
59							59
60							60
61							61
62							62
63							63
64							64
65							65
66							66

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget INTERIM YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	ACCUMULATED DEPRECIATION										1
2	PRODUCTION PLANT										2
3	BASE DEMAND	E1	108, 115		(276,623,436)		(121,365,444)		(155,257,992)		3
4	PEAK DEMAND	D1	108, 115		(152,831,378)		(60,345,358)		(92,486,019)		4
5	BASE ENERGY	E2	108		(142,138,944)		(63,935,586)		(78,203,358)		5
6	Direct MN										6
7	TOTAL PRODUCTION PLANT				(572,922,222)		(245,646,388)		(327,275,834)		7
8											8
9											9
10	TRANSMISSION PLANT		108, 115		(159,735,443)		(62,608,626)		(97,126,817)		10
11	TRANSMISSION PLANT (Direct FERC)	Direct FERC			(25,180,544)		0		(25,180,544)		11
12	TOTAL TRANSMISSION PLANT				(184,915,987)		(62,608,626)		(122,307,361)		12
13											13
14											14
15	DISTRIBUTION PLANT	P60	108, 115		(268,541,408)		(123,383,576)		(145,157,832)		15
16											16
17											17
18	GENERAL PLANT	P90	108		(50,534,999)		(21,909,007)		(28,625,991)		18
19											19
20											20
21	INTANGIBLE PLANT	P90	108		(17,387,448)		(7,538,176)		(9,849,272)		21
22											22
23											23
24	TOTAL ACCUMULATED DEPRECIATION				(1,094,302,064)		(461,085,774)		(633,216,290)		24
25											25
26											26
27	NET PLANT EXCLUDING BSP CAPITALIZED ITEMS				2,144,610,858		788,173,764		1,356,437,095		27
28											28
29											29
30	BSP CAPITALIZED ITEMS	P10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		30
31											31
32	TOTAL NET PLANT IN SERVICE	NEPIS			2,144,610,858		788,173,764		1,356,437,095		32
33											33
34											34
35											35
36											36
37											37
38											38
39											39
40											40
41											41
42	PLANT HELD FOR FUTURE USE										42
43	PRODUCTION PLANT	P10			0		0		0		43
44	TRANSMISSION PLANT	D2			9,038		3,542		5,496		44
45	DISTRIBUTION PLANT	P60			3,000		1,378		1,622		45
46	GENERAL PLANT	P90			0		0		0		46
47	INTANGIBLE PLANT	P90			0		0		0		47
48											48
49	TOTAL PLANT HELD FOR FUTURE USE		105		12,038		4,921		7,117		49
50											50
51											51
52											52
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58											58
59											59
60											60
61											61
62											62

NORTH DAKOTA

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget INTERIM YEAR 2024 - Simple Average

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	CONST WORK-IN-PROGRESS - Direct Assigned						1
2	PRODUCTION PLANT - Direct MN	P10	Directly Assigned to Jurisdiction	0	0	0	2
3	PRODUCTION PLANT - Direct ND	P10	Directly Assigned to Jurisdiction	0	0	0	3
4	PRODUCTION PLANT - Direct SD	P10	Directly Assigned to Jurisdiction	0	0	0	4
5	PRODUCTION PLANT - Direct FERC	Direct FERC	Directly Assigned to FERC	0	0	0	5
6	TRANSMISSION PLANT - Direct MN	D2	Directly Assigned to Jurisdiction	0	0	0	6
7	TRANSMISSION PLANT - Direct ND	D2	Directly Assigned to Jurisdiction	0	0	0	7
8	TRANSMISSION PLANT - Direct SD	D2	Directly Assigned to Jurisdiction	0	0	0	8
9	TRANSMISSION PLANT - Direct FERC	Direct FERC	Directly Assigned to FERC	0	0	0	9
10	DISTRIBUTION PLANT - Direct MN	P60	Directly Assigned to Jurisdiction	0	0	0	10
11	DISTRIBUTION PLANT - Direct ND	P60	Directly Assigned to Jurisdiction	0	0	0	11
12	DISTRIBUTION PLANT - Direct SD	P60	Directly Assigned to Jurisdiction	0	0	0	12
13	DISTRIBUTION PLANT - Direct FERC	Direct FERC	Directly Assigned to FERC	0	0	0	13
14	GENERAL PLANT - Direct MN	P90	Directly Assigned to Jurisdiction	0	0	0	14
15	GENERAL PLANT - Direct ND	P90	Directly Assigned to Jurisdiction	0	0	0	15
16	GENERAL PLANT - Direct SD	P90	Directly Assigned to Jurisdiction	0	0	0	16
17	GENERAL PLANT - Direct FERC	Direct FERC	Directly Assigned to FERC	0	0	0	17
18	INTANGIBLE PLANT - Direct MN	P90	Directly Assigned to Jurisdiction	0	0	0	18
19	INTANGIBLE PLANT - Direct ND	P90	Directly Assigned to Jurisdiction	0	0	0	19
20	INTANGIBLE PLANT - Direct SD	P90	Directly Assigned to Jurisdiction	0	0	0	20
21	INTANGIBLE PLANT - Direct FERC	Direct FERC	Directly Assigned to FERC	0	0	0	21
22	TOTAL CWIP - Direct Assigned		ALLOWED ONLY IN MN & FERC	0	0	0	22
23							23
24	CONST WORK-IN-PROGRESS - SHORT-TERM						24
25	PRODUCTION PLANT	P10		0	0	0	25
26	TRANSMISSION PLANT	D2		359,000	140,711	218,289	26
27	DISTRIBUTION PLANT	P60		1,086,337	499,127	587,211	27
28	GENERAL PLANT	P90		325,581	141,153	184,428	28
29	INTANGIBLE PLANT	P90		0	0	0	29
30							30
31	TOTAL CWIP - SHORT-TERM		ALLOWED ONLY IN MN, ND & FERC	1,770,919	780,990	989,928	31
32							32
33	CONST WORK-IN-PROGRESS - LONG TERM						33
34	PRODUCTION PLANT (AFUDC Projects)	P10		0	0	0	34
35	PRODUCTION PLANT (Rider Projects)	P10		0	0	0	35
36	TRANSMISSION PLANT (AFUDC Projects)	D2		0	0	0	36
37	TRANSMISSION PLANT (Rider Projects)	D2		0	0	0	37
38	DISTRIBUTION PLANT	P60		0	0	0	38
39	GENERAL PLANT	P90		0	0	0	39
40	INTANGIBLE PLANT	P90		0	0	0	40
41							41
42	TOTAL CWIP - LONG TERM - AFUDC Projects		ALLOWED ONLY IN MN & FERC	0	0	0	42
43	TOTAL CWIP - LONG TERM - Rider Projects			0	0	0	43
44							44
45							45
46							46
47	TOTAL CONSTRUCTION WORK-IN-PROGRESS		107	1,770,919	780,990	989,928	47
48							48
49	MATERIALS & SUPPLIES						49
50	PRODUCTION	P10		8,651,753	3,721,308	4,930,445	50
51	TRANSMISSION	D2		9,116,226	3,573,123	5,543,103	51
52	DISTRIBUTION	P60		16,199,114	7,442,817	8,756,297	52
53	TOTAL MATERIALS AND SUPPLIES		154, 158.1	33,967,093	14,737,248	19,229,845	53
54							54
55	FUEL STOCKS						55
56	COAL STOCKS	E1		8,165,846	3,582,674	4,583,172	56
57	FUEL OIL STOCKS	D1		2,310,865	912,443	1,398,422	57
58	TOTAL FUEL STOCKS		1510	10,476,711	4,495,117	5,981,594	58
59							59
60	PREPAYMENTS	NEPIS	128, 228.3	49,187,428	18,601,559	30,585,869	60
61	CUSTOMER ADVANCES	NEPIS	235, 253	(1,876,522)	(709,657)	(1,166,864)	61
62	CASH WORKING CAPITAL	OX		6,169,802	1,414,534	4,755,268	62
63							63
64							64
65							65
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NORTH DAKOTA

OTTER TAIL POWER COMPANY
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	ACCUMULATED DEFERRED INCOME TAXES										1
2	ITEMS SD FLOWS THROUGH										2
3	FEDERAL	NPMNR			(27,894)		(11,564)		(16,330)		3
4	MINNESOTA	NPISM			0		0		0		4
5	NORTH DAKOTA	NPISN			0		0		0		5
6											6
7	SUBTOTAL				(27,894)		(11,564)		(16,330)		7
8											8
9	ALL OTHER										9
10	FEDERAL	NEPIS EXDA			(290,881,672)		(124,778,978)		(166,102,694)		10
11	FEDERAL (Direct FERC)	Direct FERC			(20,921,619)		0		(20,921,619)		11
12	MINNESOTA	NPISM			0		0		0		12
13	NORTH DAKOTA	NPISN			(50,073,352)		(49,404,006)		(669,346)		13
14											14
15	SUBTOTAL				(361,876,643)		(174,182,984)		(187,693,659)		15
16											16
17	TOTAL ACCUMULATED DEFERRED INCOME TAXES		190, 255, 281-283		(361,904,537)		(174,194,548)		(187,709,989)		17
18											18
19											19
20	UNAMORTIZED BALANCE - SPIRITWOOD PLANT	P10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		20
21											21
22											22
23	UNAMORTIZED RATE CASE EXPENSES	R10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		23
24											24
25											25
26											26
27											27
28	TOTAL AVERAGE RATE BASE				1,882,413,790		653,303,927		1,229,109,863		28
29											29
30											30
31											31
32											32
33											33
34											34
35											35
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LINE NO	ITEM	ALLOC			TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	OPERATING REVENUES										1
2	SALES OF ELECTRICITY				464,851,197		182,974,451		281,876,746		2
3	OTHER OPERATING REVENUE				62,763,923		12,976,906		49,787,018		3
4											4
5	TOTAL OPERATING REVENUE				527,615,121		195,951,357		331,663,764		5
6											6
7											7
8	OPERATING EXPENSES										8
9	PRODUCTION EXPENSES				198,996,942		88,199,805		110,797,136		9
10	TRANSMISSION EXPENSES				35,939,490		14,086,555		21,852,935		10
11	DISTRIBUTION EXPENSES				18,488,356		8,393,231		10,095,125		11
12	CUSTOMER ACCOUNTING EXPENSES				16,621,213		7,295,595		9,325,619		12
13	CUSTOMER SERVICE AND INFORMATION EXPENSES				12,622,058		1,331,017		11,291,041		13
14	SALES EXPENSES				583,457		135,872		447,585		14
15	ADMINISTRATIVE AND GENERAL EXPENSES				46,494,180		18,860,630		27,633,549		15
16	CHARITABLE CONTRIBUTIONS				0		0		0		16
17	DEPRECIATION EXPENSE				79,405,970		32,603,918		46,802,053		17
18	AMORTIZATION OF BIG STONE PLANT CAPITALIZED COSTS				0		0		0		18
19	SPIRITWOOD AMORTIZATION				0		0		0		19
20	GENERAL TAXES				18,693,896		7,102,692		11,591,204		20
21											21
22	TOTAL OPERATING EXPENSES				427,845,562		178,009,315		249,836,247		22
23											23
24							0				24
25	NET OPERATING INCOME BEFORE INCOME TAXES				99,769,559		17,942,042		81,827,517		25
26											26
27											27
28	INCOME TAX EXPENSE										28
29	INVESTMENT TAX CREDIT				(6,628,472)		(2,939,568)		(3,688,904)		29
30	DEFERRED INCOME TAXES				2,209,233		(1,485,341)		3,694,575		30
31	INCOME TAXES				1,049,814		(0)		1,049,815		31
32											32
33	TOTAL INCOME TAX EXPENSE				(3,369,425)		(4,424,910)		1,055,485		33
34											34
35											35
36											36
37	NET OPERATING INCOME				103,138,983		22,366,952		80,772,032		37
38											38
39											39
40	Allowance for Funds Used During Construction				6,315,997		0		6,315,997		40
41	Allowance for Funds Used During Construction - MN Only				0		0		0		41
42	Allowance for Funds Used During Construction - SD Only				0		0		0		42
43	TOTAL ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION				6,315,997		0		6,315,997		43
44											44
45							0				45
46	TOTAL AVAILABLE FOR RETURN				109,454,980		22,366,952		87,088,029		46
47											47
48											48
49											49
50											50
51	AVERAGE CENTS PER KWH										51
52											52
53											53
54											54
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	OPERATING REVENUES										1
2											2
3	SALES OF ELECTRICITY	R10	440, 442, 444-445	108, 115	464,851,197		182,974,451		281,876,746		3
4											4
5	OTHER OPERATING REVENUES										5
6	SALES FOR RESALE										6
7	MUNICIPALITIES & OFF SYSTEM SALES			DIRECTLY ASSIGNED TO FERC JURISDICTION	0		0		0		7
8	NON-ASSOCIATED UTILITIES, CO-OPS & OPA										8
9	BUY SELL TRANSACTIONS	D2			0		0		0		9
10	ALL OTHER TRANSACTIONS										10
11	BASE DEMAND	E1			0		0		0		11
12	PEAK DEMAND	D1			0		0		0		12
13	BASE ENERGY	E2			6,947,794		3,125,191		3,822,604		13
14	PEAK ENERGY	D1			0		0		0		14
15											15
16	TOTAL ALL OTHER TRANSACTIONS				6,947,794		3,125,191		3,822,604		16
17											17
18	TOTAL SALES FOR RESALE				6,947,794		3,125,191		3,822,604		18
19											19
20	OTHER ELECTRIC REVENUES										20
21	LATE FEES	C1	450	DIRECTLY ASSIGNED TO JURISDICTION	809,880		316,187		493,694		21
22	CONNECTION FEES	C1	451	DIRECTLY ASSIGNED TO JURISDICTION	340,532		136,812		203,720		22
23	RENT FROM ELECTRIC PROPERTY	NEPIS	454		435,931		164,859		271,072		23
24	RENT FROM ELECTRIC PROPERTY - BIG STONE	NEPIS	454		0		0		0		24
25	RENT FROM ELECTRIC PROPERTY - COVOTE	NEPIS	454		0		0		0		25
26	OTHER MISC ELECTRIC REVENUE	NEPIS	456		1,395,880		527,990		867,990		26
27	OTHER MISC ELECTRIC REVENUE - MN	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		27
28	OTHER MISC ELECTRIC REVENUE - ND	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		28
29	OTHER MISC ELECTRIC REVENUE - SD	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		29
30	ITA DEFICIENCY PAYMENTS	NEPIS	456		848,757		320,980		527,777		30
31		NEPIS			0		0		0		31
32	MISCELLANEOUS SERVICES	NEPIS			0		0		0		32
33	WHEELING	NEPIS	456	DIRECTLY ASSIGNED TO FERC JURISDICTION	425,279		0		425,279		33
34	LOAD CONTROL AND DISPATCH	NEPIS EXDA	456		19,546,873		8,384,987		11,161,887		34
35	LOAD CONTROL AND DISPATCH (Direct FERC)	Direct FERC	456	DIRECTLY ASSIGNED TO FERC JURISDICTION	32,012,996		0		32,012,996		35
36	RESIDENTIAL CONSERVATION SERVICES	C1	456	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		36
37											37
38	TOTAL OTHER ELECTRIC REVENUES				55,816,129		9,851,715		45,964,414		38
39											39
40	TOTAL OTHER OPERATING REVENUES				62,763,923		12,976,906		49,787,018		40
41											41
42											42
43	TOTAL OPERATING REVENUES						0				43
44					527,615,121		195,951,357		331,663,764		44
45											45
46											46
47											47
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64											64

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LINE NO	ITEM	ALLOC	FERC ACCOUNTS	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	OPERATING EXPENSES						1
2	PRODUCTION EXPENSES						2
3	PROD EXPENSES EXCLUDING PURCHASED POWER						3
4	BASE DEMAND	E1	500, 502, 505-507, 509-511, 535, 537-543, 546, 548-554, 556-557	18,184,557	7,978,271	10,206,286	4
5	PEAK DEMAND	D1	500, 502, 506-507, 509-511, 535, 537-543, 546, 548-554, 556-557	9,407,440	3,714,521	5,692,919	5
6	BASE ENERGY	E2	501, 512-514, 544-546, 548-554	67,526,672	30,374,204	37,152,468	6
7	PEAK ENERGY	D1	547	10,397,281	4,105,359	6,291,922	7
8	BASE DEMAND (Direct MN)			0	0	0	8
9	PEAK DEMAND (Direct MN)			0	0	0	9
10							10
11	TOTAL EXCLUDING PURCHASED POWER			105,515,951	46,172,356	59,343,595	11
12					0		12
13	PURCHASED POWER				0		13
14	BUY SELL TRANSACTIONS	D2		0	0	0	14
15	ALL OTHER TRANSACTIONS				0		15
16	BASE DEMAND	E1	555	1,921,959	843,238	1,078,721	16
17	PEAK DEMAND	D1		0	0	0	17
18	BASE ENERGY	E2	555	91,559,032	41,184,212	50,374,820	18
19	PEAK ENERGY	D1		0	0	0	19
20							20
21	TOTAL ALL OTHER TRANSACTIONS			93,480,991	42,027,450	51,453,541	21
22							22
23	TOTAL PURCHASED POWER			93,480,991	42,027,450	51,453,541	23
24							24
25	TOTAL PRODUCTION EXPENSES			198,996,942	88,199,805	110,797,136	25
26							26
27							27
28	TRANSMISSION EXPENSES	D2	560, 561.1-561.2, 561.4-561.6, 562-563, 565-568, 569.1-569.3, 570-573	35,939,490	14,086,555	21,852,935	28
29	TRANSMISSION EXPENSES (Direct MN)			0	0	0	29
30	TRANSMISSION EXPENSES (Direct FERC)	Direct FERC		0	0	0	30
31	TOTAL TRANSMISSION EXPENSES			35,939,490	14,086,555	21,852,935	31
32							32
33	DISTRIBUTION EXPENSES						33
34	PRIMARY DEMAND	D3	580-584, 588-590, 592-594, 598	5,199,469	2,418,866	2,780,603	34
35	SECONDARY DEMAND	D4	580-581, 583-584, 588, 590, 593-595, 598	2,273,887	1,107,378	1,166,509	35
36	PRIMARY CUSTOMER	C2	580-581, 583-584, 588-590, 593-594, 598	3,917,270	1,712,243	2,205,027	36
37	SECONDARY CUSTOMER	C3	580-581, 583-584, 587-588, 590, 593-595, 598	1,431,452	625,745	805,707	37
38	STREETLIGHTING	C4	580-581, 583-585, 588-590, 593-594, 596, 598	526,349	219,347	307,002	38
39	AREA LIGHTING	C5	580-581, 583-584, 588-590, 593-594, 598	183,855	100,232	83,623	39
40	METERS	C6	580-581, 586, 588, 597-598	4,956,073	2,209,420	2,746,653	40
41	LOAD MANAGEMENT	C9		0	0	0	41
42							42
43	TOTAL DISTRIBUTION	OXD		18,488,356	8,393,231	10,095,125	43
44							44
45							45
46	CUSTOMER ACCOUNTING EXPENSES						46
47	METER READING	C7	901-902	6,074,375	2,685,754	3,388,622	47
48	OTHER	C8	901, 903-905	10,546,838	4,609,841	5,936,997	48
49							49
50	TOTAL CUSTOMER ACCOUNTS	OXC		16,621,213	7,295,595	9,325,619	50
51							51
52							52
53							53
54							54
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56							56
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	CUSTOMER SERVICE & INFORMATION EXPENSE										1
2	CONSERVATION & PROMOTIONAL REBATES	C1	908	DIRECTLY ASSIGNED TO JURISDICTION	9,600,172		0		9,600,172		2
3	OTHER	C1	907-910		3,021,886		1,331,017		1,690,869		3
4											4
5	TOTAL CUSTOMER SERV & INFORMATION EXP	OXI			12,622,058		1,331,017		11,291,041		5
6											6
7											7
8	SALES EXPENSES										8
9	OFF-PEAK DEVELOPMENT	C1	912	DIRECTLY ASSIGNED TO JURISDICTION	274,978		(0)		274,979		9
10	OTHER	C1	912-913, 916		308,479		135,872		172,606		10
11											11
12	TOTAL SALES EXPENSES				583,457		135,872		447,585		12
13											13
14											14
15	ADMINISTRATIVE & GENERAL EXPENSES										15
16	SALARIES, SUPPLIES, PENSIONS & BENEFITS										16
17	PRODUCTION	OXPD			9,655,454		4,101,147		5,554,308		17
18	TRANSMISSION	D2			4,592,997		1,800,234		2,792,763		18
19	DISTRIBUTION	OXD			7,111,546		3,228,456		3,883,089		19
20	CUSTOMER ACCOUNTS	OXC			5,657,624		2,483,317		3,174,308		20
21	CUSTOMER SERVICE & INFO	C1			1,314,444		578,959		735,485		21
22											22
23	TOTAL SALARIES, SUPPLIES, PENSIONS, AND BENEFITS		920-922, 926		28,332,065		12,192,113		16,139,953		23
24											24
25	LOAD MANAGEMENT EXPENSES	C9			0		0		0		25
26											26
27	OUTSIDE SERVICES	NEPIS	923		1,083,910		409,910		674,000		27
28											28
29	PROPERTY INSURANCE	NEPIS	924		4,230,959		1,600,052		2,630,907		29
30											30
31	INJURIES & DAMAGES	NEPIS	925		4,536,918		1,715,759		2,821,160		31
32											32
33	REGULATORY COMMISSION EXPENSE	R10	928	DIRECTLY ASSIGNED TO JURISDICTION	3,510,684		861,954		2,648,730		33
34											34
35	GENERAL ADVERTISING	C1	930.1		0		0		0		35
36											36
37	MISCELLANEOUS, RENTS, MAINTENANCE	P90	930.2, 931, 935		4,799,643		2,080,843		2,718,800		37
38											38
39	TOTAL ADMINISTRATIVE & GENERAL EXP				46,494,180		18,860,630		27,633,549		39
40											40
41											41
42	CHARITABLE CONTRIBUTIONS	C1	426.1	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		42
43											43
44							0				44
45											45
46	TOTAL O & M EXPENSES				329,745,696		138,302,705		191,442,991		46
47											47
48											48
49											49
50											50
51											51
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS		TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	DEPRECIATION EXPENSE										1
2	PRODUCTION										2
3	BASE DEMAND	E1			15,980,135		7,011,106		8,969,029		3
4	PEAK DEMAND	D1			10,730,060		4,236,756		6,493,304		4
5	BASE ENERGY	E2			12,347,461		5,554,017		6,793,444		5
6											6
7	TOTAL PRODUCTION				39,057,657		16,801,880		22,255,777		7
8											8
9											9
10	TRANSMISSION	D2			8,706,848		3,412,666		5,294,181		10
11	TRANSMISSION (Direct FERC)	Direct FERC			4,176,849		0		4,176,849		11
12	TOTAL TRANSMISSION				12,883,697		3,412,666		9,471,030		12
13											13
14											14
15	DISTRIBUTION	P60			18,610,423		8,550,713		10,059,710		15
16											16
17											17
18	GENERAL	P90			4,236,745		1,836,804		2,399,941		18
19											19
20											20
21	INTANGIBLE	P90			4,617,449		2,001,855		2,615,594		21
22											22
23	TOTAL DEPRECIATION EXPENSE		403		79,405,970		32,603,918		46,802,053		23
24											24
25											25
26											26
27											27
28											28
29											29
30											30
31	BIG STONE EXPENSE OFFSETS	P10		DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		31
32											32
33											33
34	SPIRITWOOD AMORTIZATION	P10	406	DIRECTLY ASSIGNED TO JURISDICTION	0		0		0		34
35											35
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OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
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LINE NO	ITEM	ALLOC	FERC ACCOUNTS	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	GENERAL TAXES	NEPIS EXD		16,557,620	7,102,692	9,454,928	1
2	GENERAL TAXES (Direct FERC)	Direct FERC		2,136,276	0	2,136,276	2
3	TOTAL GENERAL TAXES		408.1	18,693,896	7,102,692	11,591,204	3
4							4
5	NET OPERATING INCOME BEFORE TAX (NOIBT)			99,769,559	17,942,042	81,827,517	5
6							6
7	INVESTMENT TAX CREDIT						7
8	AMORTIZE PRIOR YEARS CREDIT	EPIS		(6,628,472)	(2,939,568)	(3,688,904)	8
9	DEBITS UTILIZED	EPIS		0	0	0	9
10							10
11	TOTAL INVESTMENT TAX CREDIT		411.4	(6,628,472)	(2,939,568)	(3,688,904)	11
12							12
13	DEFERRED INCOME TAXES						13
14	ITEMS SOUTH DAKOTA FLOWS THROUGH						14
15	FEDERAL	NPMNR		0	0	0	15
16	MINNESOTA	NPISM		0	0	0	16
17	NORTH DAKOTA	NPISN		(31,934)	(31,507)	(427)	17
18							18
19	SUBTOTAL			(31,934)	(31,507)	(427)	19
20							20
21	ALL OTHER						21
22							22
23	FEDERAL- transfer from Current Income Taxes - NOL			(6,814,513)	(5,873,164)	(941,349)	23
24	FEDERAL (NEPIS)	NEPIS		12,091,374	4,572,681	7,518,693	24
25	FEDERAL			1,125,275	(1,300,483)	2,425,758	25
26							26
27	MINNESOTA- transfer from Current Income Taxes - NOL			(425,430)	0	(425,430)	27
28	MINNESOTA (NPISM)	NPISM		3,008,510	0	3,008,510	28
29	MINNESOTA			2,353,601	0	2,353,601	29
30							30
31	NORTH DAKOTA- transfer from Current Income Taxes - NOL			(1,260,721)	(1,260,721)	0	31
32	NORTH DAKOTA (NPISN)	NPISN		1,122,373	1,107,370	15,003	32
33	NORTH DAKOTA			(1,237,709)	(153,351)	(1,084,358)	33
34							34
35	SUBTOTAL			2,241,167	(1,453,834)	3,695,002	35
36							36
37	TOTAL DEFERRED INCOME TAXES		410.1-410.2, 411.1-411.2	2,209,233	(1,485,341)	3,694,575	37
38							38
39							39
40	CURRENT INCOME TAXES						40
41	FEDERAL- transfer to Deferred Income Taxes - NOL			6,814,513	5,873,164	941,349	41
42	FEDERAL CURRENT INCOME TAX			(5,664,282)	(5,873,164)	208,882	42
43	FEDERAL INCOME TAXES			1,150,231	(0)	1,150,231	43
44							44
45	MINNESOTA- transfer to Deferred Income Taxes - NOL			0	0	0	45
46	MINNESOTA CURRENT INCOME TAX			(288,937)	0	(288,937)	46
47	MINNESOTA INCOME TAXES			(288,937)	0	(288,937)	47
48							48
49	NORTH DAKOTA- transfer to Deferred Income Taxes - NOL			1,260,721	1,260,721	0	49
50	NORTH DAKOTA CURRENT INCOME TAX			(1,072,200)	(1,260,721)	188,521	50
51	NORTH DAKOTA INCOME TAXES			188,521	(0)	188,521	51
52							52
53	TOTAL CURRENT INCOME TAXES		409.1	1,049,814	(0)	1,049,815	53
54							54
55	TOTAL INCOME TAXES			(3,369,425)	(4,424,910)	1,055,485	55
56							56
57							57
58	NET OPERATING INCOME			103,138,983	22,366,952	80,772,032	58
59							59
60	AFDC	CWIPLT		6,315,997	0	6,315,997	60
61	AFDC - MN Only	CWIPLT		0	0	0	61
62	AFDC - SD Only	CWIPLT		0	0	0	62
63	Total AFDC	CWIPLT	419.1	6,315,997	0	6,315,997	63
64							64
65	TOTAL AVAILABLE FOR RETURN			109,454,980	22,366,952	87,088,029	65
66							66
67							67
68	RATE OF RETURN ON RATE BASE			5.81%	3.42%	7.09%	68
69							69
70							70
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LINE NO	ITEM	ALLOC	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	DEVELOPMENT OF FEDERAL INCOME TAX EXPENSE								1
2									2
3	NET OPERATING INCOME BEFORE TAX (NOIBT)		99,769,559		17,942,042		81,827,517		3
4	LESS: INTEREST COST		41,032,662		14,242,026		26,790,637		4
5									5
6	NET INCOME BEFORE TAX		58,736,897		3,700,016		55,036,881		6
7									7
8	<u>FEDERAL SCHEDULE M ADJUSTMENTS:</u>								8
9	ADDITIONAL TAX DEPRECIATION	NEPIS	75,740,068		28,643,159		47,096,909		9
10	OTHER SCHEDULE M ITEMS	NEPIS	11,330,739		4,285,026		7,045,713		10
11	DIRECTLY ASSIGNED SCHEDULE M ITEMS	NEPIS	0		0		0		11
12	ACCRUED VACATION PAY	NEPIS	0		0		0		12
13	CHARGES - OPERATING RESERVES	NEPIS	0		0		0		13
14	PROVISIONS - OPERATING RESERVES	NEPIS	0		0		0		14
15	UNBILLED REVENUES	NEPIS	0		0		0		15
16	PREFERRED DIVIDENDS PAID CREDIT	NEPIS	0		0		0		16
17	OTHER SCHEDULE M ITEMS	NEPIS	0		0		0		17
18									18
19	SUBTOTAL FEDERAL SCHEDULE M ADJUSTMENTS		87,070,807		32,928,185		54,142,622		19
20									20
21	FEDERAL ADJUSTED INCOME BEFORE INCOME TAXES		(28,333,910)		(29,228,169)		894,259		21
22									22
23	<u>LESS:</u>								23
24	MINNESOTA STATE INCOME TAXES	PER MINNESOTA STATE TAX CALCULATION	(288,937)		0		(288,937)		24
25	NORTH DAKOTA STATE INCOME TAXES	PER NORTH DAKOTA STATE TAX CALCULATION	(1,072,200)		(1,260,721)		188,521		25
26									26
27	FEDERAL TAXABLE INCOME		(26,972,773)		(27,967,448)		994,675		27
28	FEDERAL TAX RATE		21.00%		21.00%		21.00%		28
29									29
30	FEDERAL INCOME TAX BEFORE CREDITS		(5,664,282)		(5,873,164)		208,882		30
31	INVESTMENT TAX CREDIT - DEBITS UTILIZED	EPIS	0		0		0		31
32	FEDERAL INCOME TAXES before transfer to Deferred due to NOL		(5,664,282)		(5,873,164)		208,882		32
33	Less Current Federal Income Taxes Transferred to Deferred Income Taxes due to NOL		6,814,513		5,873,164		941,349		33
34	FEDERAL INCOME TAXES		1,150,231		(0)		1,150,231		34
35									35
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LINE NO	ITEM	ALLOC	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	DEVELOPMENT OF MINNESOTA STATE INCOME TAX EXPENSE					1
2						2
3	FEDERAL ADJUSTED INCOME BEFORE INCOME TAXES		(2,948,341)	0	(2,948,341)	3
4	MINNESOTA ADJUSTMENTS TO FEDERAL SCHEDULE M:					4
5	PAYSP ADJUSTMENT	NEPIS	0	0	0	5
6	CHANGE IN EXCESS TAX DEPRECIATION - MN	NEPIS	0	0	0	6
7	CHANGE IN ACRS - ORDINARY LOSS	NEPIS	0	0	0	7
8	PREFERRED DIVIDENDS PAID CREDIT	NEPIS	0	0	0	8
9	MISCELLANEOUS ADJUSTMENTS TO FED SCHEDULE M	NEPIS	0	0	0	9
10						10
11	TOTAL MINNESOTA ADJUSTMENTS TO FED SCHEDULE M		0	0	0	11
12						12
13	MINNESOTA TAXABLE INCOME		(2,948,341)	0	(2,948,341)	13
14	MINNESOTA TAX RATE		9.80%	0.00%	9.80%	14
15						15
16	MINNESOTA INCOME TAX prior to transfer to Deferred Income Tax due to NOL		(288,937)	0	(288,937)	16
17	Minnesota Current Income Tax transfer to Deferred Income Tax due to NOL		0	0	0	17
18	MINNESOTA INCOME TAX		(288,937)	0	(288,937)	18
19						19
20						20
21						21
22						22
23						23
24						24
25						25
26	DEVELOPMENT OF NORTH DAKOTA STATE INCOME TAX EXPENSE					26
27						27
28	FEDERAL ADJUSTED INCOME BEFORE INCOME TAXES		(21,474,293)	(29,228,169)	7,753,876	28
29						29
30	NORTH DAKOTA ADJUSTMENTS TO FEDERAL SCHEDULE M:					30
31	CHANGE IN EXCESS TAX DEPRECIATION - ND	NEPIS	(2,209)	(1,671)	(539)	31
32	CHANGE IN ACRS - ORDINARY LOSS - ND	NEPIS	0	0	0	32
33	CHANGE IN INCOME FROM ADR PROPERTY - ND	NEPIS	0	0	0	33
34	MISCELLANEOUS ADJUSTMENTS TO FED SCHEDULE M	NEPIS	0	0	0	34
35						35
36	TOTAL NORTH DAKOTA ADJUSTMENTS TO FED SCHEDULE M		(2,209)	(1,671)	(539)	36
37						37
38	SUBTOTAL		(21,476,502)	(29,229,840)	7,753,338	38
39	DEDUCTION OF FEDERAL INCOME TAXES		3,350,523	0	3,350,523	39
40						40
41	NORTH DAKOTA TAXABLE INCOME		(24,827,025)	(29,279,840)	4,452,814	41
42	NORTH DAKOTA TAX RATE		4.31%	4.31%	4.31%	42
43						43
44	NORTH DAKOTA INCOME TAX prior to transfer to Deferred Income Tax due to NOL		(1,072,200)	(1,260,721)	188,521	44
45	North Dakota Current Income Tax transfer to Deferred Income Tax due to NOL		1,260,721	1,260,721	-	45
46	NORTH DAKOTA INCOME TAX		188,521	(0)	188,521	46
47						47
48						48
49						49
50						50
51						51
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NORTH DAKOTA

OTTER TAIL POWER COMPANY
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ALLOCATION FACTORS

LINE NO	ITEM	FACTOR	TOTAL COMPANY		NORTH DAKOTA		ALL OTHER		LINE NO
1	MWH CONSUMPTION AT GENERATORS - PARTIAL	E1	5,645,126		2,476,736		3,168,390		1
2	PERCENTAGE		100.000000%		43.873883%		56.126117%		2
3									3
4	MWH CONSUMPTION AT GENERATORS - TOTAL	E2	6,171,457		2,775,986		3,395,471		4
5	PERCENTAGE		100.000000%		44.981047%		55.018953%		5
6									6
7	GENERATION DEMAND FACTOR	D1	719,976		284,282		435,694		7
8	PERCENTAGE		100.000000%		39.484927%		60.515073%		8
9									9
10	TRANSMISSION DEMAND FACTOR	D2	725,298		284,282		441,016		10
11	PERCENTAGE		100.000000%		39.195200%		60.804800%		11
12									12
13	DISTRIBUTION - PRIMARY DEMAND FACTOR	D3	851,393		396,080		455,313		13
14	PERCENTAGE		100.000000%		46.521407%		53.478593%		14
15									15
16	DISTRIBUTION - SECONDARY DEMAND FACTOR	D4	1,119,241		545,068		574,173		16
17	PERCENTAGE		100.000000%		48.699789%		51.300211%		17
18									18
19	CUSTOMER OR METER FACTORS								19
20	TOTAL RETAIL CUSTOMERS	C1	135,411		59,643		75,768		20
21	PERCENTAGE		100.000000%		44.045905%		55.954095%		21
22									22
23	RETAIL SERVICE LOCATIONS	C2	136,449		59,642		76,807		23
24	PERCENTAGE		100.000000%		43.710104%		56.289896%		24
25									25
26	SECONDARY SERVICE LOCATIONS	C3	136,414		59,632		76,782		26
27	PERCENTAGE		100.000000%		43.713988%		56.286012%		27
28									28
29	STREET LIGHTING FACTOR	C4	13,235,267		5,515,574		7,719,693		29
30	PERCENTAGE		100.000000%		41.673311%		58.326689%		30
31									31
32	AREA LIGHTING FACTOR	C5	9,628,628		5,249,227		4,379,401		32
33	PERCENTAGE		100.000000%		54.516874%		45.483126%		33
34									34
35	METER FACTOR	C6	57,578,353		25,668,459		31,909,894		35
36	PERCENTAGE		100.000000%		44.580051%		55.419949%		36
37									37
38	METER READING FACTOR	C7	206,170		91,157		115,013		38
39	PERCENTAGE		100.000000%		44.214483%		55.785517%		39
40									40
41	SYSTEM SERVICE LOCATIONS	C8	136,457		59,643		76,814		41
42	PERCENTAGE		100.000000%		43.708274%		56.291726%		42
43									43
44	LOAD MANAGEMENT FACTOR	C9	41,469		18,119		23,350		44
45	PERCENTAGE		100.000000%		43.692879%		56.307121%		45
46									46
47									47
48									48
49									49
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LINE NO	ITEM	ALLOCATION FACTORS FACTOR	TOTAL COMPANY		NORTH DAKOTA		OTHER		LINE NO
1	GROSS PLANT IN SERVICE								1
7	PRODUCTION PLANT	P10	1,469,629,785		632,119,838		837,509,947		2
8	PERCENTAGE		100.000000%		43.012182%		56.987818%		3
9									4
10	DISTRIBUTION PLANT	P60	717,695,528		329,751,161		387,944,367		5
11	PERCENTAGE		100.000000%		45.945829%		54.054171%		6
12									7
13	GENERAL PLANT	P90	122,942,613		53,300,696		69,641,917		8
14	PERCENTAGE		100.000000%		43.354127%		56.645873%		9
15									10
16									11
17	ELECTRIC PLANT IN SERVICE	EPIS	3,177,112,921		1,249,259,538		1,927,853,383		12
18	PERCENTAGE		100.000000%		39.320590%		60.679410%		13
19									14
20	NET ELECTRIC PLANT IN SERVICE	NEPIS	2,084,139,321		788,173,764		1,295,965,558		15
21	PERCENTAGE		100.000000%		37.817710%		62.182290%		16
22									17
23	NET ELECTRIC PLANT IN SERVICE Excluding Direct Assignment	NEPIS EXD	1,837,371,213		788,173,764		1,049,197,450		18
24	PERCENTAGE		100.000000%		42.896817%		57.103183%		19
25									20
23	OPERATION AND MAINTENANCE EXPENSE								18
24	PRODUCTION EXPENSE (EXCL ENERGY)	OXPD	29,513,956		12,536,030		16,977,926		19
26	PERCENTAGE		100.000000%		42.474923%		57.525077%		20
27									21
28	DISTRIBUTION EXPENSE	OXD	18,488,356		8,393,231		10,095,125		22
29	PERCENTAGE		100.000000%		45.397391%		54.602609%		23
30									24
31	CUSTOMER ACCOUNTS EXPENSE	OXC	16,621,213		7,295,595		9,325,619		25
32	PERCENTAGE		100.000000%		43.893273%		56.106727%		26
33									27
34	CUSTOMER SERVICE & INFORMATION EXPENSE	OXI	3,021,886		1,331,017		1,690,869		28
35	PERCENTAGE		100.000000%		44.045905%		55.954095%		29
36									30
37	OTHER DEFERRED INCOME TAX FACTOR								31
38	MINNESOTA	NPISM	919,398,576		0		919,398,576		32
39	PERCENTAGE		100.000000%		0.000000%		100.000000%		33
40									34
41	NORTH DAKOTA	NPISN	1,042,277,136		788,173,764		254,103,372		35
42	PERCENTAGE		100.000000%		98.663270%		1.336730%		36
43									37
44	EXCLUDING SOUTH DAKOTA	NPMNR	1,901,204,175		788,173,764		1,113,030,411		38
45	PERCENTAGE		100.000000%		41.456555%		58.543445%		39
46									40
47	LONG-TERM CWIP RATIO (WIAFDC)	CWIPLT	0		0		0		41
48	PERCENTAGE		100.000000%		0.000000%		100.000000%		42
49									43
50	REVENUE	R10	464,851,197		182,974,451		281,876,746		44
51	PERCENTAGE		100.000000%		39.361940%		60.638060%		45
52									46
53	LABOR AND RELATED EXPENSE	LRE	150,079,082		62,503,058		87,576,023		47
54	PERCENTAGE		100.000000%		41.646749%		58.353251%		48
55									49
56	TOTAL O & M EXPENSE	OX							50
57	PERCENTAGE								51
58									52
59									53
60									54
61									55
62									56
63									57
64									58
65									59
66									60

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LINE NO	ITEM	AMOUNT		AMOUNT AS		COST OF CAPITAL		RATE OF RETURN		LINE NO
				A PERCENT OF TOTAL						
1	CAPITAL STRUCTURE - RATE OF RETURN									1
2										2
3										3
4	LONG-TERM DEBT	902,156,552		46.50%		4.68%		2.18%		4
5										5
6	PREFERRED STOCK	0		0.000%		0.00%		0.00%		6
7										7
8	COMMON EQUITY	1,037,781,192		53.50%		9.77%		5.23%		8
9										9
10	TOTAL	1,939,937,744		100.00%				7.41%		10
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12										12
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39										39
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41										41
42										42
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59										59
60										60

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget INTERIM YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM	ALLOCATION	TOTAL COMPANY	NORTH DAKOTA	ALL OTHER	LINE NO
1	CASH WORKING CAPITAL CALCULATION - REVENUE LEAD DAYS					1
2						2
3	REVENUES					3
4	COMPUTER MAINTAINED BILLINGS		400,158,508	160,642,998	239,515,509	4
5	MANUALLY MAINTAINED BILLINGS		71,938,078	28,879,427	43,058,650	5
6	COST OF ENERGY REVENUES		(6,094,976)	(6,094,976)	0	6
7	SALES FOR RESALE		6,947,794	3,125,191	3,822,604	7
8	RENT FROM ELECTRIC PROPERTY		435,931	164,859	271,072	8
9	MISCELLANEOUS		1,395,880	527,890	867,990	9
10	ITA DEFICIENCY PAYMENTS		848,757	320,980	527,777	10
11	WHEELING		425,279	0	425,279	11
12	LOAD CONTROL AND DISPATCH		19,546,873	8,384,987	11,161,887	12
13	RENT FROM ELECTRIC PROPERTY - BIG STONE		0	0	0	13
14	RENT FROM ELECTRIC PROPERTY - COYOTE		0	0	0	14
15	PROFIT ON MATERIALS AND SUPPLIES		0	0	0	15
16	RUBBER GOODS TESTING		0	0	0	16
17	RESIDENTIAL CONSERVATION SERVICES		0	0	0	17
18						18
19	TOTAL REVENUES		495,602,125	195,951,357	299,650,768	19
20						20
21	REVENUE LEAD DAYS FROM SERVICE TO COLLECTION					21
22						22
23	COMPUTER MAINTAINED BILLINGS		N/A	39.8	N/A	23
24	MANUALLY MAINTAINED BILLINGS		N/A	26.7	N/A	24
25	COST OF ENERGY REVENUES		N/A	126.8	N/A	25
26	SALES FOR RESALE		N/A	19.9	N/A	26
27	RENT FROM ELECTRIC PROPERTY		N/A	-63.3	N/A	27
28	MISCELLANEOUS		N/A	40.4	N/A	28
29	ITA DEFICIENCY PAYMENTS		N/A	27.5	N/A	29
30	WHEELING		N/A	39.3	N/A	30
31	LOAD CONTROL AND DISPATCH		N/A	28.8	N/A	31
32	RENT FROM ELECTRIC PROPERTY - BIG STONE		N/A	34.3	N/A	32
33	RENT FROM ELECTRIC PROPERTY - COYOTE		N/A	34.3	N/A	33
34	PROFIT ON MATERIALS AND SUPPLIES		N/A	34.3	N/A	34
35	RUBBER GOODS TESTING		N/A	34.3	N/A	35
36	RESIDENTIAL CONSERVATION SERVICES		N/A	34.3	N/A	36
37						37
38						38
39	REVENUE DOLLAR DAYS (REVENUES X REVENUE LEAD DAYS)					39
40						40
41	COMPUTER MAINTAINED BILLINGS		15,926,308,607	6,393,591,340	9,532,717,267	41
42	MANUALLY MAINTAINED BILLINGS		1,920,746,674	771,080,707	1,149,665,967	42
43	COST OF ENERGY REVENUES		(772,842,957)	(772,842,957)	0	43
44	SALES FOR RESALE		137,913,720	62,035,036	75,878,684	44
45	RENT FROM ELECTRIC PROPERTY		(27,581,376)	(10,430,645)	(17,150,731)	45
46	MISCELLANEOUS		56,337,728	21,305,639	35,032,090	46
47	ITA DEFICIENCY PAYMENTS		23,340,818	8,826,963	14,513,855	47
48	WHEELING		16,700,704	0	16,700,704	48
49	LOAD CONTROL AND DISPATCH		562,949,957	241,487,612	321,462,345	49
50	RENT FROM ELECTRIC PROPERTY - BIG STONE		0	0	0	50
51	RENT FROM ELECTRIC PROPERTY - COYOTE		0	0	0	51
52	PROFIT ON MATERIALS AND SUPPLIES		0	0	0	52
53	RUBBER GOODS TESTING		0	0	0	53
54	RESIDENTIAL CONSERVATION SERVICES		0	0	0	54
55	TOTAL DOLLAR DAYS		17,843,873,875	6,715,053,694	11,128,820,181	55
56						56
57	AVG REVENUE LEAD DAYS (TOTAL REV DOLLAR DAYS / TOTAL REV)		36.0	34.3	37.1	57
58						58
59						59
60						60

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
North Dakota Budget INTERIM YEAR 2024 - Simple Average

NORTH DAKOTA

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LINE NO	ITEM		OPERATING EXPENSE		EXPENSE PER DAY 365 DAYS PER YEAR		EXPENSE LAG DAYS		EXCESS REVENUE LEAD DAYS OF 37.2 OVER EXPENSE LAG DAYS		NET REVENUE LAG DOLLARS		LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF												1
2	LEAD-LAG FACTORS-MINNESOTA JURISDICTION												2
3	FUEL - COAL	E2	23,731,084		65,017		19.1		18.1		1,176,152		3
4													4
5	FUEL - OIL	E1	4,853,219		13,296		8.9		28.3		376,424		5
6													6
7	PURCHASED POWER		42,840,818		117,372		32.8		4.4		519,958		7
8													8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE	32,771,619		89,785		10.5		26.7		2,399,062		9
10													10
11	ALL OTHER O&M EXPENSE		53,909,514		147,697		12.5		24.7		3,649,600		11
12													12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)		7,695,304		21,083		297.2		-260.0		(5,480,797)		13
14													14
15	COAL CONVERSION TAXES		44,987		123		35.6		1.6		198		15
16													16
17	FEDERAL INCOME TAXES		(558,475)		(1,530)		0.0		37.2		0		17
18													18
19	STATE INCOME TAXES		(288,937)		(792)		0.0		37.2		0		19
20													20
21	INCREMENTAL FEDERAL INCOME TAXES		0		0		0.0		37.2		0		21
22													22
23	INCREMENTAL STATE INCOME TAXES		0		0		0.0		37.2		0		23
24													24
25	BANK BALANCES	NEPIS									0		25
26													26
27	SPECIAL DEPOSITS	NEPIS									889,545		27
28													28
29	WORKING FUNDS	NEPIS									5,157		29
30													30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE	(2,705,801)		(7,413)		0.0				0		31
32													32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE	(4,373,852)		(11,983)		0.0				0		33
34													34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	0		0		0.0				0		35
36													36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	0		0		61.2				0		37
38													38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10	0		0		0.0				0		39
40													40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10	0		0		36.9				0		41
42													42
43													43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - MINNESOTA										3,535,300		44
45													45
46													46
47													47
48													48
49													49
50													50
51													51
52													52
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54													54
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56													56
57													57
58													58
59													59
60													60

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
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LINE NO	ITEM		OPERATING EXPENSE		EXPENSE PER DAY 365 DAYS PER YEAR		EXPENSE LAG DAYS		EXCESS REVENUE LEAD DAYS OF 34.3 OVER EXPENSE LAG DAYS		NET REVENUE LAG DOLLARS		LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF												1
2	LEAD-LAG FACTORS-NORTH DAKOTA JURISDICTION												2
3	FUEL - COAL	E2	23,301,382		63,839		19.1		15.2		969,721		3
4													4
5	FUEL - OIL	E1	4,561,691		12,498		8.9		25.4		317,569		5
6													6
7	PURCHASED POWER		42,027,450		115,144		32.8		1.5		176,170		7
8													8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE	29,051,169		79,592		10.5		23.8		1,895,887		9
10													10
11	ALL OTHER O&M EXPENSE		39,361,013		107,838		12.5		21.8		2,351,955		11
12													12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)		7,061,411		19,346		297.2		-261.9		(5,066,657)		13
14													14
15	COAL CONVERSION TAXES		41,281		113		35.6		-1.3		(146)		15
16													16
17	FEDERAL INCOME TAXES		(0)		(0)		0.0		34.3		0		17
18													18
19	STATE INCOME TAXES		(0)		(0)		0.0		34.3		0		19
20													20
21	INCREMENTAL FEDERAL INCOME TAXES		0		0		0.0		34.3		0		21
22													22
23	INCREMENTAL STATE INCOME TAXES		0		0		0.0		34.3		0		23
24													24
25	BANK BALANCES	NEPIS									0		25
26													26
27	SPECIAL DEPOSITS	NEPIS									816,270		27
28													28
29	WORKING FUNDS	NEPIS									4,732		29
30													30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE	(2,398,620)		(6,572)		0.0				0		31
32													32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE	(3,877,304)		(10,623)		0.0				0		33
34													34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10 ASSIGN TO JURIS	0		0		0.0				0		35
36													36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10 ASSIGN TO JURIS	(303,808)		(832)		61.2				(50,965)		37
38													38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10	(72)		(0)		13.8				(3)		39
40													40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10	0		0		0.0				0		41
42													42
43													43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - NORTH DAKOTA										1,414,534		44
45													45
46													46
47													47
48													48
49													49
50													50
51													51
52													52
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57													57
58													58
59													59
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OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
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LINE NO	ITEM		OPERATING EXPENSE		EXPENSE PER DAY 365 DAYS PER YEAR		EXPENSE LAG DAYS		EXCESS REVENUE LEAD DAYS OF 37.1 OVER EXPENSE LAG DAYS	NET REVENUE LAG DOLLARS		LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF											1
2	LEAD-LAG FACTORS-SOUTH DAKOTA JURISDICTION											2
3	FUEL - COAL	E2	4,740,714		12,988		19.1		18.0	233,659		3
4												4
5	FUEL - OIL	E1	975,772		2,673		8.9		28.2	75,415		5
6												6
7	PURCHASED POWER		8,559,385		23,450		32.8		4.3	101,540		7
8												8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE	6,703,725		18,366		10.5		26.6	488,913		9
10												10
11	ALL OTHER O&M EXPENSE		9,610,079		26,329		12.5		24.6	647,956		11
12												12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)		1,638,954		4,490		297.2		-260.1	(1,167,755)		13
14												14
15	COAL CONVERSION TAXES		9,581		26		35.6		1.5	40		15
16												16
17	FEDERAL INCOME TAXES		(1,642,078)		(4,499)		0.0		37.1	0		17
18												18
19	STATE INCOME TAXES		0		0		0.0		37.1	0		19
20												20
21	INCREMENTAL FEDERAL INCOME TAXES		0		0		0.0		37.1	0		21
22												22
23	INCREMENTAL STATE INCOME TAXES		0		0		0.0		37.1	0		23
24												24
25	BANK BALANCES	NEPIS								0		25
26												26
27	SPECIAL DEPOSITS	NEPIS								189,456		27
28												28
29	WORKING FUNDS	NEPIS								1,098		29
30												30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE	(553,495)		(1,516)		0.0			0		31
32												32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE	(894,710)		(2,451)		0.0			0		33
34												34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	0		0		0.0			0		35
36												36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	0		0		61.2			0		37
38												38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10	0		0		0.0			0		39
40												40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10	0		0		0.0			0		41
42												42
43												43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - SOUTH DAKOTA									570,323		44
45												45
46												46
47												47
48												48
49												49
50												50
51												51
52												52
53												53
54												54
55												55
56												56
57												57
58												58
59												59
60												60

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
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LINE NO	ITEM		OPERATING EXPENSE	EXPENSE PER DAY 365 DAYS PER YEAR	EXPENSE LAG DAYS	EXCESS REVENUE LEAD DAYS OF 30.4 OVER EXPENSE LAG DAYS	NET REVENUE LAG DOLLARS	LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF							1
2	LEAD-LAG FACTORS-FERC JURISDICTION							2
3	FUEL - COAL	E2	29,488	81	19.1	11.3	912	3
4								4
5	FUEL - OIL	E1	6,599	18	8.9	21.5	389	5
6								6
7	PURCHASED POWER		53,338	146	32.8	-2.4	(346)	7
8								8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE	1,229,639	3,369	10.5	19.9	67,108	9
10								10
11	ALL OTHER O&M EXPENSE		1,427,999	3,912	12.5	17.9	70,070	11
12								12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)		65,718	180	297.2	-266.8	(48,031)	13
14								14
15	COAL CONVERSION TAXES		384	1	35.6	-5.2	(5)	15
16								16
17	FEDERAL INCOME TAXES		3,350,523	9,180	0.0	30.4	279,057	17
18								18
19	STATE INCOME TAXES		189,761	520	0.0	30.4	15,805	19
20								20
21	INCREMENTAL FEDERAL INCOME TAXES		0	0	0.0	30.4	0	21
22								22
23	INCREMENTAL STATE INCOME TAXES		0	0	0.0	30.4	0	23
24								24
25	BANK BALANCES	NEPIS					0	25
26								26
27	SPECIAL DEPOSITS	NEPIS					263,161	27
28								28
29	WORKING FUNDS	NEPIS					1,526	29
30								30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE	(101,526)	(278)	0.0		0	31
32								32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE	(164,113)	(450)	0.0		0	33
34								34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	0	0	0.0		0	35
36								36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	0	0	61.2		0	37
38								38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10	0	0	0.0		0	39
40								40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10	0	0	0.0		0	41
42								42
43								43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - FERC						649,645	44
45								45
46								46
47								47
48								48
49								49
50								50
51								51
52								52
53								53
54								54
55								55
56								56
57								57
58								58
59								59
60								60

OTTER TAIL POWER COMPANY
CLASS COST OF SERVICE STUDY
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LINE NO	ITEM		OPERATING EXPENSE		EXPENSE PER DAY 365 DAYS PER YEAR		EXPENSE LAG DAYS		EXCESS REVENUE LEAD DAYS OF 36.0 OVER EXPENSE LAG DAYS		NET REVENUE LAG DOLLARS		LINE NO
1	CASH WORKING CAPITAL CALCULATION BY THE APPLICATION OF												1
2	LEAD-LAG FACTORS - TOTAL CO.												2
3	FUEL - COAL	E2									2,380,444		3
4													4
5	FUEL - OIL	E1									769,797		5
6													6
7	PURCHASED POWER										797,322		7
8													8
9	LABOR AND ASSOCIATED PAYROLL EXPENSE	LRE									4,850,970		9
10													10
11	ALL OTHER O&M EXPENSE										6,719,582		11
12													12
13	PROPERTY TAXES (EXCL COAL CONVERSION TAXES)										(11,763,239)		13
14													14
15	COAL CONVERSION TAXES										87		15
16													16
17	FEDERAL INCOME TAXES										279,057		17
18													18
19	STATE INCOME TAXES										15,805		19
20													20
21	INCREMENTAL FEDERAL INCOME TAXES										0		21
22													22
23	INCREMENTAL STATE INCOME TAXES										0		23
24													24
25	BANK BALANCES	NEPIS									0		25
26													26
27	SPECIAL DEPOSITS	NEPIS									2,158,433		27
28													28
29	WORKING FUNDS	NEPIS									12,513		29
30													30
31	TAX COLLECTIONS AVAIL - FICA WITHHOLDING	LRE									0		31
32													32
33	TAX COLLECTIONS AVAIL - FEDERAL WITHHOLDING	LRE									0		33
34													34
35	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- MN	R10	ASSIGN TO JURIS								0		35
36													36
37	TAX COLLECTIONS AVAIL - STATE WITHHOLDING- ND	R10	ASSIGN TO JURIS								(50,965)		37
38													38
39	TAX COLLECTIONS AVAILABLE - STATE SALES TAX	R10									(3)		39
40													40
41	TAX COLLECTIONS AVAILABLE - FRANCHISE TAXES	R10									0		41
42													42
43													43
44	TOTAL CASH WORKING CAPITAL REQUIREMENT - TOTAL COMPANY										6,169,802		44
45													45
46													46
47													47
48													48
49													49
50													50
51													51
52													52
53													53
54													54
55													55
56													56
57													57
58													58
59													59
60													60

OTTER TAIL POWER COMPANY
Interim Adjustment for Incentives Comp Settlement adjustment from ND Rate Case No. PU-17-398

INT-01
ND Share

	(A)	(B)	(C)	(D)	
Line					
No.	Description from JCOSS INPUT SUMMARY	Total Utility	Allocator	Allocator %	ND share
	Administrative and General Expense				
	<u>Salaries, Supplies, Pensions & Benefits</u>				
1	Production	(132,288)	OXPD	42.442380%	(56,146)
2	Transmission	(62,928)	D2	39.195200%	(24,665)
3	Distribution	(97,435)	OXD	45.397390%	(44,233)
4	Customer Accounts	(77,515)	OXC	43.893270%	(34,024)
5	Customer Service & Information	(18,009)	C1	44.045910%	(7,932)
	Total A&G Salaries, Supplies, Pensions & Benefits	<u>(388,175)</u>			<u>(167,000)</u>
6	Total	<u>(388,175)</u>			<u>(167,000)</u>
7	Operating Income Impact	388,175			167,000
8	Income Tax Impact: SD Tax Rate is 24.40%				<u>40,756</u>
9	Net Operating Income Impact				126,244

OTTER TAIL POWER COMPANY
ADJUSTMENT FOR ADDING BACK LANGDON REPOWER FOR INTERIMS

INT-02
ND Share

	(A)	(B)	(C)	(D)
Line No. Description	Total Utility	Allocator	Allocator %	ND
1 Add Back in Langdon Renewable Rider Revenues	1,273,884	N/A	Directly Assigned	1,273,884
2 Total				<u>1,273,884</u>
3 Operating Income Impact				(1,273,884)
4 Income Tax Impact: ND Tax Rate is	24.40%			<u>(310,890)</u>
5 Net Operating Income Impact				<u><u>(962,994)</u></u>

Otter Tail Power Company
Proration of Accumulated Deferred Income Tax for Interim Year
Unadjusted Projected Fiscal Year 2024

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	(A)	(B)	(C)	(D)
Line No.		12/31/23	12/31/24	Simple Average
1	Accumulated Deferred Income Taxes			
2	Non-Prorated:			
3	Federal (above the line including Wind)	(314,143,869)	(328,958,993)	(321,551,431)
4				
5	Prorated:			
6	Federal (above the line including Wind)	(314,143,869)	(321,741,362)	(317,942,615)
7				
8	Adjustment to ADIT			3,608,816

ALLETE

NYSE-ALE

RECENT PRICE

60.26

P/E RATIO

16.3

(Trailing: 18.9)

Median: 19.0

RELATIVE P/E RATIO

0.99

DIV'D YLD

4.5%

VALUE LINE

TIMELINESS

3

Raised 5/26/23

SAFETY

2

New 10/1/04

TECHNICAL

2

Lowered 6/9/23

BETA

.90

(1.00 = Market)

18-Month Target Price Range

Low-High

Midpoint (% to Mid)

\$53-\$89

\$71 (20%)

2026-28 PROJECTIONS

Price

Gain

Ann'l Total Return

High

Low

70

(+65%)

(+15%)

17%

8%

Institutional Decisions

2Q2022

3Q2022

4Q2022

To Buy

172

134

153

To Sell

103

130

131

Hld's(000)

44326

44590

43870

Percent shares traded

15

10

5

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

2021

2022

2023

2024

26-28

27.33

24.57

21.57

25.34

24.75

24.40

24.60

24.77

30.27

27.01

27.78

29.10

23.99

22.44

26.68

28.04

29.30

29.65

Revenues per sh

31.15

4.42

4.23

3.57

4.35

4.91

5.01

5.35

5.68

6.79

7.08

6.59

7.37

7.24

7.52

7.54

7.70

8.45

8.75

"Cash Flow" per sh

9.50

3.08

2.82

1.89

2.19

2.65

2.58

2.63

2.90

3.38

3.14

3.13

3.38

3.33

3.35

3.23

3.38

3.70

4.05

Earnings per sh ^A

5.00

1.64

1.72

1.76

1.76

1.78

1.84

1.90

1.96

2.02

2.08

2.14

2.24

2.35

2.47

2.52

2.60

2.71

2.79

Div'd Decl'd per sh ^B + [†]

3.00

6.82

9.24

9.05

6.95

6.38

10.30

7.93

12.48

5.84

5.35

4.08

6.07

11.55

13.78

8.90

3.64

5.95

5.95

Cap'l Spending per sh

7.25

24.11

25.37

26.41

27.26

28.78

30.48

32.44

35.06

37.07

38.17

40.47

41.86

43.17

44.04

45.36

47.06

49.10

51.25

Book Value per sh ^C

54.00

30.80

32.60

35.20

35.80

37.50

39.40

41.40

45.90

49.10

49.60

51.10

51.50

51.70

52.10

53.20

56.01

58.00

59.00

Common Shs Outst'g ^D

61.00

14.8

13.9

16.1

16.0

14.7

15.9

18.6

17.2

15.1

18.6

23.0

22.2

24.7

18.3

20.6

18.1

**Bold figures are
Value Line
estimates**

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(A) Diluted EPS. Excl. nonrec. gains (loss): '15, (46c); '17, '25; '19, 26c; '19 EPS don't sum due to rounding. Next earnings report due early Aug. (B) Div'd historically paid in early Mar.,	June, Sept. and Dec. ■ Div'd reinvest. plan avail. † Shareholder inv. plan avail. (C) Incl. deferred charges. In '22: \$9.60/sh. (D) In mill.	on com. eq. in '18: 9.25%; earned on avg. com. eq., '21: 7.2%. Regul. Climate: Avg. (F) Summer peak in '21.
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Company's Financial Strength	A
Stock's Price Stability	90
Price Growth Persistence	35
Earnings Predictability	90

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ALLIANT ENERGY

NDQ-LNT

RECENT PRICE

50.97

P/E RATIO

17.9

(Trailing: 19.5)

(Median: 21.0)

RELATIVE P/E RATIO

1.09

DIV'D YLD

3.6%

VALUE LINE

TIMELINESS

4

Lowered 3/24/23

SAFETY

2

Raised 9/28/07

TECHNICAL

3

Raised 6/2/23

BETA

.85

(1.00 = Market)

18-Month Target Price Range

Low-High

Midpoint (% to Mid)

\$46-\$77

\$62 (20%)

2026-28 PROJECTIONS

High

Price

Gain

Ann'l Total

Low

80

(+55%)

Return

60

(+20%)

15%

8%

Institutional Decisions

to Buy

202022

3Q2022

4Q2022

to Sell

314

278

329

Hld's(000)

188290

192005

192231

Percent

24

shares

16

traded

8

2-for-1

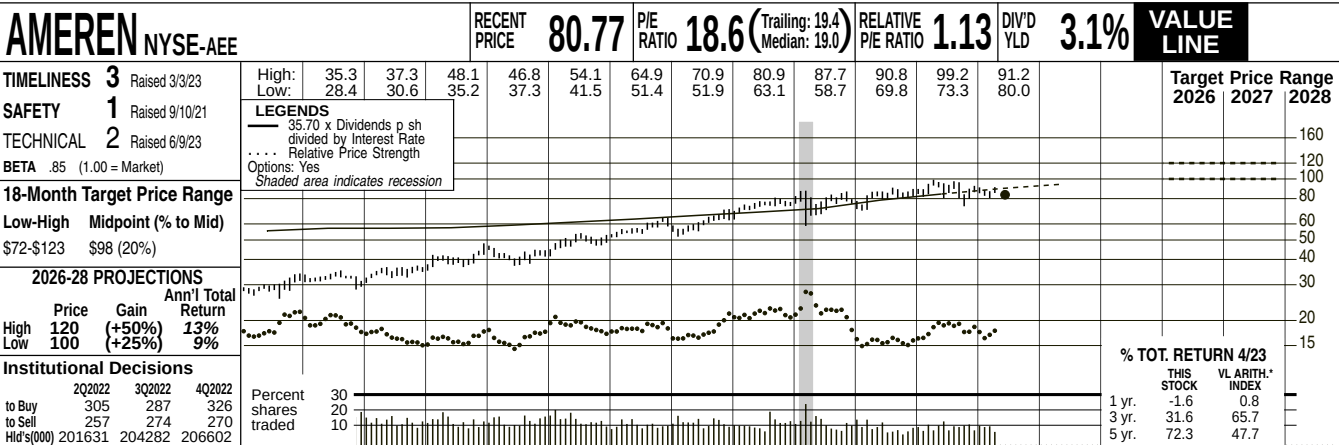
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(A) Diluted EPS. Excl. nonrecurring losses: '11, 1¢; '12, 8¢. '20 & '21 EPS don't sum due to rounding. Net earnings report due early Aug. (B) Dividends historically paid in mid-Feb.,	May, Aug., and Nov. ■ Dividend reinvestment plan avail. † Shareholder investment plan avail. (C) Incl. deferred charges. In '21: \$1,980 mil. \$7.91/sh. (D) In millions, adj. for split. (E) Rate	base: Orig. cost. Rates all'd on com. eq. in IA in '20: various; in WI in '22: 10%; earned on avg. com. eq., '21: 11.3%. Regulatory Climate: Wisconsin, Above Average; Iowa, Average.

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Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	70
Earnings Predictability	95

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2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	© VALUE LINE PUB. LLC	26-28
36.23	36.92	29.87	31.77	31.04	28.14	24.06	24.95	25.13	25.04	25.46	25.73	24.00	22.87	24.81	30.37	28.09	29.00	Revenues per sh	31.20
6.76	6.44	6.06	6.33	5.87	5.87	5.25	5.77	6.08	6.59	6.80	7.64	7.83	8.08	8.89	9.04	9.50	10.05	"Cash Flow" per sh	12.20
2.98	2.88	2.78	2.77	2.47	2.41	2.10	2.40	2.38	2.68	2.77	3.32	3.35	3.50	3.84	4.14	4.35	4.75	Earnings per sh ^A	5.50
2.54	2.54	1.54	1.54	1.56	1.60	1.60	1.61	1.66	1.72	1.78	1.85	1.92	2.00	2.20	2.36	2.52	2.65	Div'd Decl'd per sh ^B	3.30
6.96	9.75	7.51	4.66	4.50	5.49	5.87	7.66	8.12	8.78	9.05	9.56	9.92	13.02	13.67	12.79	12.90	12.55	Cap'l Spending per sh	13.00
32.41	32.80	33.08	32.15	32.64	27.27	26.97	27.67	28.63	29.27	29.61	31.21	32.73	35.29	37.64	40.11	40.20	42.90	Book Value per sh ^C	55.00
208.30	212.30	237.40	240.40	242.60	242.63	242.63	242.63	242.63	242.63	242.63	244.50	246.20	253.30	257.70	262.00	267.00	269.00	Common Shs Outst'g ^D	285.00
17.4	14.2	9.3	9.7	11.9	13.4	16.5	16.7	17.5	18.3	20.6	18.3	22.1	22.2	21.4	21.5	Bold figures are Value/Line estimates		Avg Ann'l P/E Ratio	20.0
.92	.85	.62	.62	.75	.85	.93	.88	.88	.96	1.04	.99	1.18	1.14	1.16	1.25			Relative P/E Ratio	1.10
4.9%	6.2%	6.0%	5.8%	5.3%	5.0%	4.6%	4.0%	4.0%	3.5%	3.1%	3.0%	2.6%	2.6%	2.7%	2.7%			Avg Ann'l Div'd Yield	3.0%
CAPITAL STRUCTURE as of 3/31/23						5838.0	6053.0	6098.0	6076.0	6177.0	6291.0	5910.0	5794.0	6394.0	7957.0	8100	8400	Revenues (\$mill)	8400
Total Debt \$15095 mill. Due in 5 Yrs \$2789 mill.						518.0	593.0	585.0	659.0	683.0	821.0	834.0	877.0	995.0	1079.0	1190	1275	Net Profit (\$mill)	1570
LT Debt \$13685 mill. LT Interest \$450 mill.						37.5%	38.9%	38.3%	36.7%	38.2%	22.4%	17.9%	15.0%	13.6%	12.0%	12.0%	12.0%	Income Tax Rate	12.0%
(LT interest earned: 3.8%)						7.1%	5.7%	5.1%	4.1%	5.6%	6.9%	5.8%	5.5%	6.0%	5.0%	6.0%	5.0%	AFUDC % to Net Profit	4.0%
Pension Assets-12/21 \$5745 mill.						45.2%	47.2%	49.3%	47.7%	49.2%	50.3%	52.1%	55.0%	56.1%	56.6%	55.5%	53.5%	Long-Term Debt Ratio	51.0%
Oblig \$5457 mill.						53.7%	51.7%	49.7%	51.3%	49.8%	48.8%	47.1%	44.3%	43.3%	44.0%	44.0%	46.0%	Common Equity Ratio	48.5%
Pfd Stock \$129 mill. Pfd Div'd \$5 mill.						12190	12975	13968	13840	14420	15632	17116	20158	22391	24193	24950	25750	Total Capital (\$mill)	29500
807,595 sh. \$3.50 to \$5.50 cum. (no par), \$100 stated val., redeem. \$102.176-\$110/sh.; 487,508 sh. 4.00% to 5.16%, \$100 par, redeem. \$100-\$104.30/sh.						16205	17424	18799	20113	21466	22810	24376	26807	29261	31262	33050	35000	Net Plant (\$mill)	38400
Common Stock 262,609,472 shs.						5.6%	5.8%	5.7%	6.0%	6.0%	6.4%	6.0%	5.3%	5.3%	4.5%	5.0%	5.0%	Return on Total Cap'l	6.0%
as of 4/28/23						7.7%	8.7%	8.3%	9.1%	9.3%	10.6%	10.2%	9.7%	10.1%	10.3%	11.0%	11.0%	Return on Shr. Equity	10.0%
MARKET CAP: \$21.2 billion (Large Cap)						7.8%	8.7%	8.3%	9.2%	9.4%	10.7%	10.3%	9.7%	10.2%	10.4%	11.0%	11.0%	Return on Com Equity ^E	10.0%
ELECTRIC OPERATING STATISTICS						1.9%	2.9%	2.5%	3.3%	3.4%	4.8%	4.4%	4.2%	4.4%	4.4%	5.0%	5.0%	Retained to Com Eq	4.0%
						76%	67%	70%	64%	64%	56%	57%	57%	57%	57%	57%	57%	57%	56%

	2019	2020	2021
% Change Retail Sales (KWH)	-3.5	-5.6	+2.1
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	NA	NA	NA

Fixed Charge Cov. (%)	307	291	325
ANNUAL RATES	Past	Past	Est'd '20-'22
of change (per sh)	10 Yrs.	5 Yrs.	to '26-'28
Revenues	-2.5%	-1.0%	4.0%
"Cash Flow"	3.5%	5.5%	5.5%
Earnings	3.5%	7.0%	6.5%
Dividends	3.0%	4.0%	6.5%
Book Value	1.5%	4.5%	6.5%

Calendar	QUARTERLY REVENUES (\$ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2020	1440	1398	1628	1328	5794
2021	1566	1472	1811	1545	6394
2022	1879	1726	2306	2046	7957
2023	2062	1700	2280	2058	8100
2024	2100	1770	2350	2180	8400

Calendar	EARNINGS PER SHARE ^A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2020	.59	.98	1.47	.46	3.50
2021	.91	.80	1.65	.48	3.84
2022	.97	.80	1.74	.63	4.14
2023	1.00	.80	1.90	.65	4.35
2024	1.05	.85	2.20	.65	4.75

Calendar	QUARTERLY DIVIDENDS PAID ^B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2019	.475	.475	.475	.495	1.92
2020	.495	.495	.495	.515	2.00
2021	.55	.55	.55	.55	2.20
2022	.59	.59	.59	.59	2.36
2023	.63				

BUSINESS: Ameren Corporation is a holding company formed through the merger of Union Electric and CIPSCO. Has 1.2 million electric and 127,000 gas customers in Missouri; 1.2 million electric and 813,000 gas customers in Illinois. Discontinued nonregulated power-generation operation in '13. Electric revenue breakdown: residential, 49%; commercial, 34%; industrial, 8%; other, 9%. Gen-

Ameren Corporation's first-quarter 2023 results demonstrate its ability to deliver solid financial performance despite challenging weather conditions. Earnings per share of \$1.00 rose from \$0.97 in the year-ago period. The growth was primarily driven by increased infrastructure investments across all business segments and lower operations and maintenance costs. Reduced retail sales partially offset this, due to unseasonably warm weather. Ameren remains on track to achieve its 2023 earnings target range of \$4.25 to \$4.45 per share. To maintain credit ratings and a healthy balance sheet, it plans to issue \$300 million of common equity by the end of the year, equal to approximately 3.2 million shares.

Progress is being made on regulatory matters. There was a constructive settlement of the Ameren Missouri Electric rate review in April. The agreement calls for a \$140 million annual revenue increase subject to the approval of the Missouri Public Service Commission (MPSC). This will mean residential customer rates have increased by about 2%, compounded annually since April 2017. The regulatory frame-

erating sources: coal, 73%; nuclear, 11%; hydro & other, 9%; purchased, 7%. Fuel costs: 25% of revenues. Has approximately 9,250 employees. Chairman: Warner L. Baxter. President & CEO: Martin J. Lyons, Jr. Inc.: Missouri. Address: One Ameren Plaza, 1901 Chouteau Ave., P.O. Box 66149, St. Louis, MO 63166-6149. Tel.: 314-621-3222. Internet: www.ameren.com.

work, effective through 2028, permits Ameren Missouri to make significant infrastructure investments. Two notable solar projects, the Huck Finn Solar Project in Missouri and the Boomtown Solar Project in Illinois, were approved by the MPSC in February and April, adding to Ameren's renewable energy portfolio. The Huck Finn project will be the company's largest solar project to date, capable of powering about 40,000 homes.

There is plenty of opportunity to grow the business through further investment. Ameren reportedly has a robust investment pipeline of \$48 billion over the next decade. The updated five-year growth plan predicts a 6% to 8% compound annual earnings growth rate from 2023 through 2027. This is expected to be driven by robust yearly base rate growth of 8.4%.

Ameren's stock may interest conservative investors. The strategy remains customer-centric with a focus on disciplined cost management as Ameren continues its transformation towards providing more sustainable and cleaner energy.

Kevin Downing June 9, 2023

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	85
Earnings Predictability	100

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(A) Diluted EPS. Excl. nonrec. gain (losses): '10, (\$2.19); '11, (32¢); '12, (\$6.42); '17, (63¢). gain (loss) from discontinued ops.: '13, (92¢); '15, 21¢. Next earnings report due early-

August. (B) Div'ds paid late Mar., June, Sept., & Dec. ■ Div'd reinvest. plan avail. (C) Incl. intang. In '21: \$6.60/sh. (D) In mill. (E) Rate base: Orig. cost depr. Rate allowed on com.

eq. in MO in '22: elec. & gas, none specified; in IL: electric, varies; in '21: gas, 9.67%; earned on avg. com. eq., '21: 10.6%. Regulatory Climate: MO, Average; IL, Below Average.

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AMERICAN ELEC. PWR. NDQ-AEP										RECENT PRICE	82.25	P/E RATIO	15.9 (Trailing: 21.3; Median: 17.0)	RELATIVE P/E RATIO	0.97	DIV'D YLD	4.0%	VALUE LINE		
TIMELINESS	3	Raised 4/28/23	High: 45.4	51.6	63.2	65.4	71.3	78.1	81.1	96.2	105.0	91.5	105.6	98.3				Target Price	Range	
SAFETY	1	Raised 3/17/17	Low: 37.0	41.8	45.8	52.3	56.8	61.8	62.7	72.3	65.1	74.8	80.3	81.3				2026	2027	
TECHNICAL	3	Raised 5/26/23	LEGENDS																	2028
BETA	.75	(1.00 = Market)	29.40 x Dividends p.sh divided by Interest Rate																	
			Relative Price Strength																	
			Options: Yes																	
			Shaded area indicates recession																	
18-Month Target Price Range																				
Low-High																				
Midpoint (% to Mid)																				
\$75-\$123																				
\$99 (20%)																				
2026-28 PROJECTIONS																				
Price																				
Gain																				
Ann'l Total																				
Return																				
High																				
Low																				
Institutional Decisions																				
2Q2022																				
3Q2022																				
4Q2022																				
to Buy																				
to Sell																				
Hld's(000)																				
385400																				
384675																				
390225																				
Percent																				
shares																				
traded																				
24																				
16																				
8																				
			</																	

AVISTA CORP. NYSE-AVA

RECENT PRICE36.90

P/E RATIO16.0

(Trailing: 19.8)

(Median: 19.0)

RELATIVE P/E RATIO0.92

DIV'D YLD5.0%

VALUE LINE

TIMELINESS4

Lowered 7/21/23

SAFETY2

Raised 5/7/10

TECHNICAL1

Raised 6/2/23

BETA.90

(1.00 = Market)

18-Month Target Price Range

Low-High (Midpoint (% to Mid))

\$34-\$57\$46 (25%)

2026-28 PROJECTIONS

Price

7050

Gain

(+90%)(+35%)

Ann'l Total Return

20%12%

Institutional Decisions

3Q20224Q20221Q2023

to Buy138153122

to Sell114125134

Hld's(000)612586634967752

Percent shares traded

18126

200720082009201020112012201320142015201620172018201920202021202220232024

26.8030.7727.5827.2927.7325.8626.9423.6623.8322.4722.0821.2720.0319.0920.1322.8223.25

2.933.984.453.623.783.704.364.364.925.304.875.016.065.165.344.90

.721.361.581.651.721.321.851.841.892.151.952.072.971.902.102.122.30

.60.69.811.001.101.161.221.271.321.371.431.491.551.621.691.761.84

4.044.093.863.644.204.615.055.476.466.306.466.595.846.156.036.50

17.2718.3019.1719.7120.3021.0621.6123.8424.5325.6926.4126.9928.5729.3130.1431.1532.95

52.9154.4954.8457.1258.4259.8160.0862.2462.3164.1965.4965.6967.1869.2471.5074.9577.00

30.915.011.412.714.119.314.617.317.618.823.424.515.021.220.220.0

1.64.90.76.81.881.23.82.91.89.991.181.32.801.091.091.16

2.7%3.4%4.5%4.8%4.5%4.6%4.5%4.0%4.0%3.4%3.1%2.9%3.5%4.0%4.0%4.2%

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26-28

Revenues per sh

24.10

"Cash Flow" per sh

6.60

Earnings per sh

3.00

Div'd Decl'd per sh

2.15

Cap'l Spending per sh

6.80

Book Value per sh

37.25

Common Shs Outst'g

85.00

Avg Ann'l P/E Ratio

20.0

Relative P/E Ratio

1.10

Avg Ann'l Div'd Yield

3.6%

CAPITAL STRUCTURE as of 3/31/23

200720082009201020112012201320142015201620172018201920202021202220232024

26.8030.7727.5827.2927.7325.8626.9423.6623.8322.4722.0821.2720.0319.0920.1322.8223.25

2.933.984.453.623.783.704.364.364.925.304.875.016.065.165.344.90

.721.361.581.651.721.321.851.841.892.151.952.072.971.902.102.122.30

.60.69.811.001.101.161.221.271.321.371.431.491.551.621.691.761.84

4.044.093.863.644.204.615.055.476.466.306.466.595.846.156.036.50

17.2718.3019.1719.7120.3021.0621.6123.8424.5325.6926.4126.9928.5729.3130.1431.1532.95

52.9154.4954.8457.1258.4259.8160.0862.2462.3164.1965.4965.6967.1869.2471.5074.9577.00

30.915.011.412.714.119.314.617.317.618.823.424.515.021.220.220.0

1.64.90.76.81.881.23.82.91.89.991.181.32.801.091.091.16

2.7%3.4%4.5%4.8%4.5%4.6%4.5%4.0%4.0%3.4%3.1%2.9%3.5%4.0%4.0%4.2%

20202021202220232024

1618.51472.61484.81442.51445.91396.91345.61321.91438.91710.217901840

111.1114.2118.1137.2126.1136.4197.0129.5147.3155.2175190

36.0%37.6%36.3%36.3%36.5%16.0%13.8%5.2%7.5%15.0%15.0%15.0%

8.8%11.1%10.1%8.1%7.9%7.7%5.5%8.5%7.5%2.4%5.0%5.0%

51.4%51.0%50.0%51.2%47.2%50.5%49.4%50.4%47.5%50.4%50.5%50.5%

48.6%49.0%50.0%48.8%52.8%49.5%50.6%49.6%52.5%49.6%49.5%49.5%

2669.73027.33060.33379.03273.23580.33834.64089.84104.74709.751005300

3202.43620.03898.64147.54398.84648.94797.04991.65225.55444.757005950

5.4%4.9%5.1%5.3%5.0%4.8%6.2%4.2%4.7%4.6%5.0%5.0%

8.6%7.7%7.7%8.3%7.3%7.7%10.2%6.4%6.8%6.6%7.5%7.5%

8.6%7.7%7.7%8.3%7.3%7.7%10.2%6.4%6.8%6.6%7.5%7.5%

2.9%2.4%2.3%3.0%1.9%2.2%4.9%.9%1.4%1.1%2.0%2.0%

66%69%70%64%73%72%52%85%80%83%80%78%

Revenues (\$mill)

2050

Net Profit (\$mill)

255

Income Tax Rate

15.0%

AFUDC % to Net Profit

5.0%

Long-Term Debt Ratio

49.5%

Common Equity Ratio

50.5%

Total Capital (\$mill)

6000

Net Plant (\$mill)

6400

Return on Total Cap'l

5.0%

Return on Shr. Equity

7.5%

Return on Com Equity

7.5%

Retained to Com Eq

2.0%

All Div'ds to Net Prof

72%

Common Stock 75,763,513 shs.

as of 4/30/23

MARKET CAP: \$2.8 billion (Mid Cap)

ELECTRIC OPERATING STATISTICS

202020212022

% Change Retail Sales (KWH)

-2.4+4.3+3.1

Avg. Indust. Use (MWH)

NA

NA

NA

Avg. Indust. Revs. per KWH (¢)

6.386.416.62

Capacity at Peak (Mw)

NA

NA

NA

Peak Load, Summer (Mw)

172118891810

Annual Load Factor (%)

NA

NA

NA

% Change Customers (yr-end)

+1.8+1.4-1.0

Fixed Charge Cov. (%)

222216175

ANNUAL RATES

Past 10 Yrs.

Past 5 Yrs.

Est'd '20-'22 to '26-'28

Revenues

-2.5%

-2.0%

2.5%

"Cash Flow"

3.0%

-0.5%

3.5%

Earnings

2.5%

0.5%

6.5%

Dividends

4.5%

4.0%

4.0%

Book Value

4.0%

3.5%

3.5%

QUARTERLY REVENUES (\$ mill.)

Cal-endar

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2020390.2278.6272.6380.51321.9

2021412.9298.2296.0431.81438.9

2022462.7378.6359.4509.51710.2

2023474.6370355590.41790

20244903803706001840

EARNINGS PER SHARE

Cal-endar

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2020.72.26.07.851.90

2021.98.20.20.712.10

2022.99.16d.081.052.12

2023.73.20.201.172.30

2024.75.23.221.252.45

QUARTERLY DIVIDENDS PAID

Cal-endar

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2019.3875.3875.3875.38751.55

2020.405.405.405.4051.62

2021.4225.4225.4225.42251.69

2022.44.44.44.441.76

2023.46.46

Business: Avista Corporation (formerly The Washington Water Power Company) supplies electricity & gas in eastern Washington & northern Idaho. Supplies electricity to part of Alaska & gas to part of Oregon. Customers: 411,000 electric, 377,000 gas. Acq'd Alaska Electric Light and Power 7/14. Sold Ecova energy-management sub. 6/14. Electric rev. breakdown: residential, 38%; commercial, 30%; industrial, 10%; wholesale, 17%; other, 5%. Generating sources: gas & coal, 31%; hydro, 31%; purch., 38%. Fuel costs: 35% of revs. '22 reported depr. rate (Avista Utilities): 3.6%. Has 1,767 employees. Chairman: Scott L. Morris. Pres. & CEO: Dennis Vermillion. Inc.: WA. Address: 1411 E. Mission Ave., Spokane, WA 99202-2600. Tel.: 509-489-0500. Internet: www.avistacorp.com.

Regardless of the first-quarter showing, Avista remains on target to reach earnings of \$2.30 a share this year. Earnings in the March period missed our expectations by a wide margin, which is not all that uncommon for utilities. Still, this situation can be fully explained. Rate cases in Washington and Idaho dating back to 2021 came with customer tax credits. These credits will be fully returned by the end of the third quarter this year. After that, the utility margin will improve, but income tax is spread throughout the year as a percentage of pretax income based on the estimated annual effective tax rate. This will alter the shape of quarterly earnings in 2023. Management has said that 35% of annual utility earnings will be recognized in the first quarter. After that, the distribution will be 5% in the second quarter, 10% in the third quarter, and 50% in the fourth quarter. All told, the provided earnings spread remains at \$2.27 to \$2.47 per share, and our figure slants toward the low end of this range. Furthermore, this seems like a good time to reiterate to our subscribers to not focus on sequential showings, as opposed to the annual earnings for utilities. Earnings next year are apt to grow by roughly 5% to 7%. This is a touch slower than what we are looking for in 2023, but in line with what leadership is looking for from an annual perspective. Further rate plan approvals may well be in the cards, particularly in Idaho, and the expected larger revenue base will be a welcome sight. In that vein, our \$2.45-a-share target looks doable. Clean energy goals continue to be executed upon. A contract for new wind generation in Montana was a nice step forward. Add that to hydro pacts and 70% of Avista's peak generating capability will be produced from non-emitting resources by 2026. Factoring in some additional spending on these fronts, our capital expenditure figure for 2023 is now hovering around the \$500 million line. This untimely selection has a yield that is more than a full percentage point above the average utility within our coverage. Longer term, appreciation potential is only about average from the stock's recent price points.

Erik M. Manning

July 21, 2023

DUKE ENERGY NYSE-DUK				RECENT PRICE	99.09	P/E RATIO	17.5	(Trailing: 18.6 Median: 18.0)	RELATIVE P/E RATIO	1.04	DIV'D YLD	4.1%	VALUE LINE							
TIMELINESS 3	Raised 2/24/23	High: 71.1	75.5	87.3	90.0	87.8	91.8	91.4	97.4	103.8	108.4	116.3	106.4			Target Price	Range			
SAFETY 2	New 6/1/07	Low: 59.6	64.2	67.1	65.5	70.2	76.1	72.0	82.5	62.1	85.6	83.8	91.4			2026	2027	2028		
TECHNICAL 3	Raised 4/28/23	LEGENDS ----- 25.60 x Dividends p sh Relative Price Strength 1-for-3 Rev split 7/12 Options: Yes Shaded area indicates recession																200		
BETA .85	(1.00 = Market)																	160		
18-Month Target Price Range																				100
Low-High Midpoint (% to Mid)																				80
\$82-\$136 \$109 (10%)																				60
2026-28 PROJECTIONS																				40
Price Gain Ann'l Total																				20
High Low 135 100 (+35%) 11% 4%																				
Institutional Decisions																% TOT. RETURN 4/23				
2Q2022 3Q2022 4Q2022																THIS STOCK VL ARITH. INDEX				
to Buy 877 868 947																1 yr. -6.7 0.8				
to Sell 688 675 673																3 yr. 31.8 65.7				
Hld's(000) 491735 491683 499614																5 yr. 50.2 47.7				
2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	© VALUE LINE PUB. LLC 26-28		
30.24	31.15	29.18	32.22	32.63	27.88	34.84	33.84	34.10	32.49	33.66	33.73	34.21	31.04	32.64	37.36	37.35	37.65	Revenues per sh	39.60	
8.11	7.34	7.58	8.49	8.68	6.80	8.56	9.11	9.40	9.20	10.01	11.05	12.12	12.04	12.60	12.91	13.30	13.55	"Cash Flow" per sh	14.60	
3.60	3.03	3.39	4.02	4.14	3.71	3.98	4.13	4.10	3.71	4.22	4.72	5.06	5.12	5.24	5.27	5.65	6.00	Earnings per sh ^A	7.00	
2.58	2.70	2.82	2.91	2.97	3.03	3.09	3.15	3.24	3.36	3.49	3.64	3.75	3.82	3.90	3.98	4.06	4.14	Div'd Decl'd per sh ^B	4.30	
7.43	10.35	9.85	10.84	9.80	7.81	7.83	7.62	9.83	11.29	11.50	12.91	15.17	12.88	12.63	14.76	16.75	17.60	Cap'l Spending per sh	16.75	
50.40	49.51	49.85	50.84	51.14	58.04	58.54	57.81	57.74	58.62	59.63	60.27	61.20	59.82	61.55	61.51	64.50	66.25	Book Value per sh ^C	70.00	
420.62	423.96	436.29	442.96	445.29	704.00	706.00	707.00	688.00	700.00	700.00	727.00	733.00	769.00	769.00	770.00	770.00	770.00	Common Shs Outst'g ^D	770.00	
16.1	17.3	13.3	12.7	13.8	17.5	17.4	17.9	18.2	21.3	19.9	17.0	17.7	17.1	18.9	19.6	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	17.0	
.85	1.04	.89	.81	.87	1.11	.98	.94	.92	1.12	1.00	.92	.94	.88	1.02	1.14			Relative P/E Ratio	.95	
4.4%	5.2%	6.2%	5.7%	5.2%	4.7%	4.4%	4.3%	4.3%	4.3%	4.2%	4.5%	4.2%	4.4%	3.9%	3.9%			Avg Ann'l Div'd Yield	3.9%	
CAPITAL STRUCTURE as of 12/31/22				24598	23925	23459	22743	23565	24521	25079	23868	25097	28768	28750	29500	29500	29500	29500	Revenues (\$mill)	31500
Total Debt \$75170 mill. Due in 5 Yrs \$19536 mill.				2813.0	2934.0	2854.0	2560.0	2963.0	3339.0	3747.0	3878.0	4133.0	4104.1	4350	4620	4620	4620	4620	Net Profit (\$mill)	5390
LT Debt \$67061 mill. LT Interest \$2206 mill.				32.6%	30.6%	32.2%	31.0%	30.4%	14.1%	12.7%	.3%	5.1%	7.4%	9.0%	9.0%	9.0%	9.0%	9.0%	Income Tax Rate	9.0%
Incl. \$915 mill. finance leases.				8.8%	7.2%	9.2%	11.7%	12.3%	11.4%	8.0%	6.9%	5.9%	8.0%	7.0%	7.0%	7.0%	7.0%	7.0%	AFUDC % to Net Profit	7.0%
(LT interest earned: 2.7x)				48.0%	47.7%	48.6%	52.6%	54.0%	53.8%	54.0%	53.7%	55.1%	56.5%	58.5%	58.5%	58.5%	58.5%	58.5%	Long-Term Debt Ratio	61.0%
Leases, Uncapitalized Annual rentals \$225 mill.				52.0%	52.3%	51.4%	47.4%	46.0%	46.2%	44.1%	44.4%	43.1%	42.0%	40.0%	40.0%	40.0%	40.0%	40.0%	Common Equity Ratio	37.5%
Pension Assets-12/21 \$9235 mill.				79482	78088	77222	86609	90774	94940	101807	103589	109744	115150	124525	124525	124525	124525	124525	Total Capital (\$mill)	144100
Oblig \$8207 mill.				69490	70046	75709	82520	86391	91694	102127	106782	111408	111748	124375	124375	124375	124375	124375	Net Plant (\$mill)	141100
Pfd Stock \$1962 mill. Pfd Div'd \$107 mill.				4.6%	4.8%	4.8%	4.0%	4.3%	4.6%	4.7%	4.8%	4.8%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	Return on Total Cap'l	4.5%
40 mill. shs. 5.75%, cum., \$25 liq. value,				6.8%	7.2%	7.2%	6.2%	7.1%	7.6%	8.0%	8.1%	8.4%	8.5%	9.0%	9.0%	9.0%	9.0%	9.0%	Return on Shr. Equity	9.0%
redeemable at \$25.50 prior to 6/15/24; 1 mill. shs.				6.8%	7.2%	7.2%	6.2%	7.1%	7.6%	8.3%	8.2%	8.5%	8.5%	9.0%	9.0%	9.0%	9.0%	9.0%	Return on Com Equity ^E	9.0%
4.875%, cum., \$1000 liq. value.				1.5%	1.7%	1.5%	.6%	1.2%	2.0%	2.4%	2.3%	1.9%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	Retained to Com Eq	3.0%
Common Stock 770,080,285 shs. as of 10/31/22				78%	76%	79%	91%	83%	74%	71%	73%	78%	76%	73%	73%	73%	73%	73%	All Div'ds to Net Prof	68%
MARKET CAP: \$76.2 billion (Large Cap)																				
ELECTRIC OPERATING STATISTICS				2020	2021	2022														
% Change Retail Sales (KWH)				-2.3	+2.0	NA														
Avg. Indust. Use (MWH)				NA	NA	NA														
Avg. Indust. Revs. per KWH (¢)				NA	NA	NA														
Capacity at Peak (Mw)				NA	NA	NA														
Peak Load, Summer (Mw)				NA	NA	NA														
Annual Load Factor (%)				NA	NA	NA														
% Change Customers (avg.)				NA	NA	NA														
Fixed Charge Cov. (%)				183	209	285														
ANNUAL RATES				Past 10 Yrs.	Past 5 Yrs.	Est'd '19-'21 to '25-'27														
of change (per sh)																				
Revenues				.5%	-.5%	2.5%														
"Cash Flow"				4.0%	5.0%	5.0%														
Earnings				3.0%	4.5%	5.0%														
Dividends				3.0%	3.5%	2.0%														
Book Value				2.0%	1.0%	2.5%														
Cal-endar	QUARTERLY REVENUES (\$ mill.)					Full Year														
	Mar.31	Jun.30	Sep.30	Dec.31																
2020	5949	5421	6721	5777		23868														
2021	6150	5758	6951	6238		25097														
2022	7132	6685	7968	6983		28768														
2023	7050	6750	7875	7075		28750														
2024	7450	6850	7950	7250		29500														
Cal-endar	EARNINGS PER SHARE ^A					Full Year														
	Mar.31	Jun.30	Sep.30	Dec.31																
2020	1.14	1.08	1.87	1.03		5.12														
2021	1.26	1.15	1.88	.94		5.24														
2022	1.30	1.14	1.78	1.11		5.27														
2023	1.30	1.15	2.00	1.20		5.65														
2024	1.35	1.30	2.05	1.30		6.00														
Cal-endar	QUARTERLY DIVIDENDS PAID ^B					Full Year														
	Mar.31	Jun.30	Sep.30	Dec.31																
2019	.9275	.9275	.945	.945		3.75														
2020	.945	.945	.965	.965		3.82														
2021	.965	.965	.985	.985		3.90														
2022	.985	.985	1.005	1.005		3.98														
2023	1.005																			

Business: Duke Energy Corporation is a holding company for utilities with 7.6 mill. elec. customers in NC, FL, IN, SC, OH, & KY, and 1.6 mill. gas customers in OH, KY, NC, SC, and TN. Owns independent power plants & has 25% stake in National Methanol in Saudi Arabia. Acq'd Progress Energy 7/12; Piedmont Natural Gas 10/16; discontinued most intl' ops. in '16. Elec. rev. breakdown:

residential, 45%; commercial, 28%; industrial, 13%; other, 14%. Generating sources: gas, 32%; nuclear, 30%; coal, 18%; other, 1%; purchased, 19%. Fuel costs: 28% of revs. '22 reported deprec. rate: 3.6%. Has 27,600 employees. Chairman, President & CEO: Lynn J. Good. Inc.: DE. Address: 550 South Tryon St., Charlotte, NC 28202-1803. Tel.: 704-382-3853. Internet: www.duke-energy.com.

We expect Duke Energy's earnings to advance nicely in 2023. The company should continue to benefit from rate relief and strong electric volume growth. The pending sale of the company's unregulated commercial renewables operations will also likely improve earnings prospects. Accordingly, our 2023 EPS target is at the midpoint of management's guidance of \$5.55-\$5.75. The macroeconomic environment, including rising interest rates and inflation should also improve over that interim and benefit the bottom line. The utility remains committed to its cost mitigation target of \$300 million in 2023, and expects 75% of the savings to be sustainable into the next few years. As such, we look for 2024 earnings of \$6.00 per share, near the company's growth target of between 5%-7%.

Duke Energy has a number of cases pending. In North Carolina, Duke Energy Carolinas is seeking to raise residential rates by 17.9% over three years, to improve the electricity grid and provide solar investments. In Kentucky, the utility requested a \$75.2 million (17.8%) hike. The company has made more than \$300 mil-

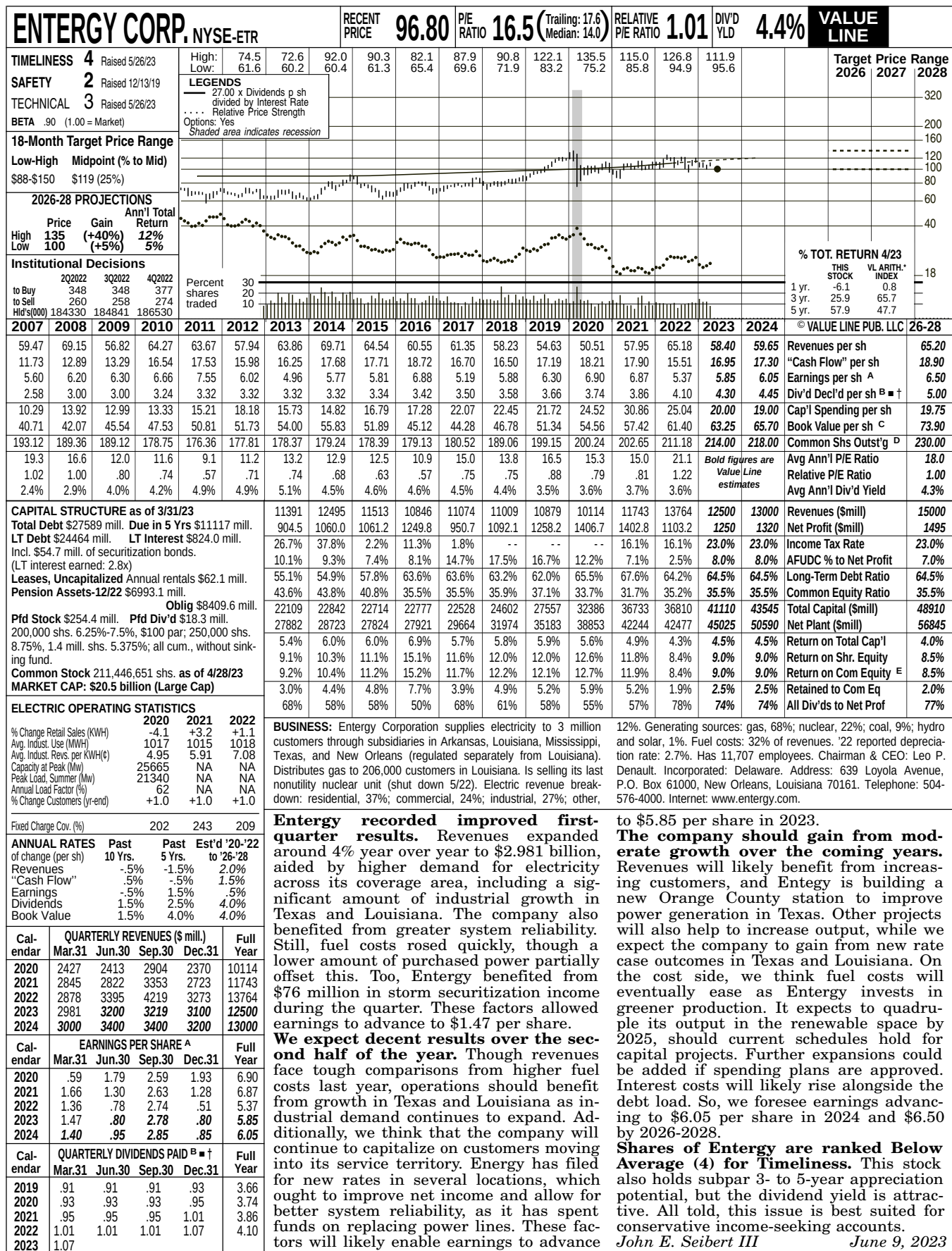
lion in investments in Kentucky to strengthen and improve the electricity grid, since the last rate case was approved in 2020.

The company remains focused on the development of clean and renewable energy projects and carbon reduction. The North Carolina Utilities Commission recently provided approval of 3,100 megawatts of solar and 1,600 megawatts of storage. That entity also supported planning for 2,000 megawatts of new natural gas, as part of an orderly transition out of coal by 2035. Duke Energy intends to reach 30,000 megawatts of renewable energy by 2035, and achieve net-zero carbon emissions by 2050 in its clean energy transition.

This stock has a dividend yield of 4.1%, compared to the utility average of about 3.7%. Duke has consistently proven to be one of the better managed utilities in the sector. The stock's price has outperformed its peer group over that past 5- and 10-year periods, and we see no reason why it shouldn't do the same over the next three to five years.

Zachary J. Hodgkinson

May 12, 2023



(A) Diluted EPS. GAAP starting in 2022. Excl. nonrec. losses: '12, \$1.26; '13, \$1.14; '14, \$6c; '15, \$6.99; '16, \$10.14; '17, \$2.91; '18, \$1.25; '21, \$1.33. Next earnings report due early Aug.

(B) Div'ds historically paid in early Mar., June, Sept., & Dec. ■ Div'd reinvestment plan avail. † Shareholder investment plan avail. (C) Incl. deferred charges. In '22: \$23.64/sh.

(D) In mill. (E) Rate base: Net original cost. Allowed ROE (blended): 9.71%; earned on avg. com. eq., '22: 8.5%. Regulatory Climate: Average.

to \$5.85 per share in 2023.

The company should gain from moderate growth over the coming years. Revenues will likely benefit from increasing customers, and Entergy is building a new Orange County station to improve power generation in Texas. Other projects will also help to increase output, while we expect the company to gain from new rate case outcomes in Texas and Louisiana. On the cost side, we think fuel costs will eventually ease as Entergy invests in greener production. It expects to quadruple its output in the renewable space by 2025, should current schedules hold for capital projects. Further expansions could be added if spending plans are approved. Interest costs will likely rise alongside the debt load. So, we foresee earnings advancing to \$6.05 per share in 2024 and \$6.50 by 2026-2028.

Shares of Entergy are ranked Below Average (4) for Timeliness. This stock also holds subpar 3- to 5-year appreciation potential, but the dividend yield is attractive. All told, this issue is best suited for conservative income-seeking accounts.

John E. Seibert III

June 9, 2023

Company's Financial Strength B++
Stock's Price Stability 90
Price Growth Persistence 45
Earnings Predictability 75

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EVERGY, INC. NYSE-EVRG

RECENT PRICE57.46

P/E RATIO15.7 (Trailing: 17.2 Median: NMF)

RELATIVE P/E RATIO0.96

DIV'D YLD4.4%

VALUE LINE

TIMELINESS3

SAFETY2

TECHNICAL3

BETA.90 (1.00 = Market)

18-Month Target Price Range

Low-HighMidpoint (% to Mid)

\$51-\$84\$68 (15%)

2026-28 PROJECTIONS

PriceGainAnn'l Total Return

High100(+75%)18%

Low70(+20%)9%

Institutional Decisions

2Q20223Q20224Q2022

to Buy304305358

to Sell252250268

Hld's(000)194242193700191450

Percent shares traded362412

High: 61.1 67.8 76.6 69.4 73.1 65.4

Low: 50.9 54.6 42.0 51.9 54.1 56.7

Target Price Range

202620272028

-----96

-----80

-----64

-----48

-----40

-----32

-----24

-----16

-----12

% TOT. RETURN 4/23

THIS STOCK VL ARITH. INDEX

1 yr.-5.00.8

3 yr.18.665.7

5 yr.47.7

Evergy, Inc. was formed through the merger of Great Plains Energy and Westar Energy in June of 2018. Great Plains Energy holders received .5981 of a share of Evergy for each of their shares, and Westar Energy holders received one share of Evergy for each of their shares. The merger was completed on June 4, 2018. Shares of Evergy began trading on the New York Stock Exchange one day later.

CAPITAL STRUCTURE as of 3/31/23

Total Debt \$10236.6 mill. Due in 5 Yrs \$4388.2 mill.

LT Debt \$10097.2 mill. LT Interest \$305.5 mill.

Incl. \$40.9 mill. finance leases.

(LT interest earned: 3.8x)

Leases, Uncapitalized Annual rentals \$18.8 mill.

Pension Assets-12/22 \$1714.7 mill.

Oblig \$2561.7 mill.

Pfd Stock None

Common Stock 229,680,947 shs.

MARKET CAP: \$13.2 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

202020202021

% Change Retail Sales (KWH)-3.9+3.1+6.7

Avg. Indust. Use (MWH)NA NA NA

Avg. Indust. Revs. per KWH (¢)7.146.94NA

Capacity at Peak (Mw)NA NA NA

Peak Load, Summer (Mw)NA NA NA

Annual Load Factor (%)NA NA NA

% Change Customers (yr-end)NA NA NA

Fixed Charge Cov. (%)286350NA

ANNUAL RATES

Past 10 Yrs.Past 5 Yrs.Est'd '20-'22 to '26-'28

Revenues--2.5%

"Cash Flow"--5.0%

Earnings--7.5%

Dividends--7.0%

Book Value--3.5%

Cal-endar

QUARTERLY REVENUES (\$ mill.)

Mar.31Jun.30Sep.30Dec.31Full Year

202011161184151710944913.4

202116111236161611225586.7

202212231446190912815859.1

202312971450170013535800

202412501500195013006000

Cal-endar

EARNINGS PER SHARE ^

Mar.31Jun.30Sep.30Dec.31Full Year

2020.31.591.60.222.72

2021.84.811.95.233.83

2022.53.841.86.033.26

2023.62.852.00.183.65

2024.60.852.10.303.85

Cal-endar

QUARTERLY DIVIDENDS PAID ^ ■

Mar.31Jun.30Sep.30Dec.31Full Year

2019.475.475.475.5051.93

2020.505.505.505.5352.05

2021.535.535.535.57252.18

2022.5725.5725.5725.61252.33

2023.6125

201320142015201620172018201920202021202220232024

20202021202220232024

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Revenues per sh27.40

"Cash Flow" per sh9.20

Earnings per sh ^4.85

Div'd Decl'd per sh ^ B3.05

Cap'l Spending per sh9.50

Book Value per sh ^ C47.50

Common Shs Outst'g ^ D230.00

Avg Ann'l P/E Ratio17.5

Relative P/E Ratio.95

Avg Ann'l Div'd Yield3.7%

Revenues (\$mill)6300

Net Profit (\$mill)1115

Income Tax Rate9.0%

AFUDC % to Net Profit5.0%

Long-Term Debt Ratio53.5%

Common Equity Ratio46.5%

Total Capital (\$mill)23400

Net Plant (\$mill)26300

Return on Total Cap'l6.0%

Return on Shr. Equity10.0%

Return on Com Equity ^ E10.0%

Retained to Com Eq3.5%

All Div'ds to Net Prof63%

BUSINESS: Evergy, Inc. was formed through the merger of Great Plains Energy and Westar Energy in June of 2018. Through its subsidiaries (now doing business under the Evergy name), provides electric service to 1.6 million customers in Kansas and Missouri, including the greater Kansas City area. Electric revenue breakdown: residential, 32%; commercial, 27%; industrial, 15%; wholesale, 13%; other, 13%. Generating sources: coal, 54%; nuclear, 17%; purchased, 29%. Fuel costs: 28% of revenues. '22 reported deprec. rate: 3%. Has 4,900 employees. Chairman: Mark A. Ruelle. President & CEO: David A. Campbell. COO: Kevin E. Bryant. Inc.: Missouri. Address: 1200 Main Street, Kansas City, Missouri 64105. Tel.: 816-556-2200. Internet: www.evergy.com.

Evergy's utilities in Kansas have filed general rate cases. The company's Kansas Central utility requested an increase of \$204 million, based on a return on equity of 10.25% and a common-equity ratio of 52%. Its Kansas Metro utility filed for a hike of \$14 million, based on a 10.25% return on equity and a 52% common-equity ratio. These are the first rate cases Evergy has filed with the Kansas Corporation Commission in five years. New tariffs are expected to take effect in December, and will be too late to have a significant impact on the bottom-line this year.

Our 2023 earnings projection is staying put at \$3.65 per share, which is the midpoint of Evergy's updated guidance range of \$3.55-\$3.75. We think rate relief in Kansas and investments in the company's transmission system will both remain key factors to profit growth over the next few years. Higher transmission margins due to ongoing investments, increased the bottom-line by \$0.02 a share in the March period. As a result of the aforementioned factors, we expect earnings to improve in 2024 to \$3.85 per share, within Evergy's annual goal of 6%-8%

growth from 2021 to 2025, based on the midpoint of managements original 2021 guidance of \$3.30.

Evergy recently completed its \$250 million acquisition of Persimmon Creek Wind Farm. The purchase will help boost the renewable energy business while eliminating coal-based energy sources, as well as provide an improved grid at low costs to customers. The acquisition is also expected to increase earnings by \$0.05 per share and assist the utility in reaching its goal of net-zero carbon emissions by 2045.

Evergy shares have continued to underperform of late. The stock is down more than 5% in value since our March report, and is now down nearly 20% over the past 12 months. Capital appreciation potential to 2026-2028 has improved due to the recent price decline, and return prospects over that interim are solid for a utility. The main attraction here remains the dividend. The yield of 4.4% sits well above the industry average. Evergy also holds a strong potential dividend growth rate of 7.0%.

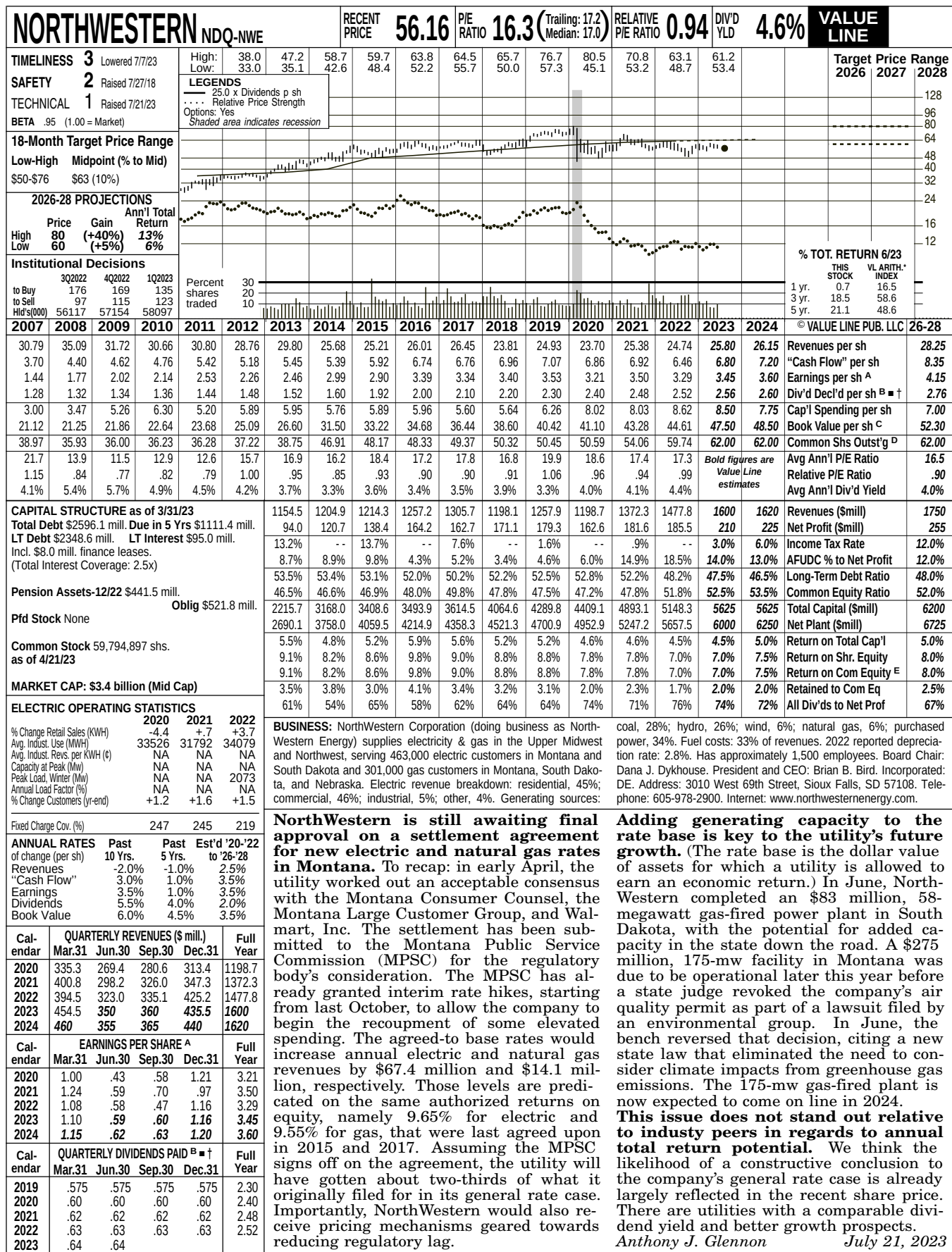
Zachary J. Hodgkinson

June 9, 2023

(A) Diluted earnings. Next earnings report due early Aug. (B) Dividends paid in mid-March, June, September, and December. ■ Dividend reinvestment plan available. (C) Incl. in-	tangibles. (D) In millions. (E) Rate base: Original cost depreciated. Rate allowed on common equity in Missouri in '18: none specified; in Kansas in '18: 9.3%; earned on average com-	mon equity, '22: 9.8%. Regulatory Climate: Average.

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IDACORP, INC. NYSE-IDA										RECENT PRICE	102.78		P/E RATIO	20.0 (Trailing: 19.4; Median: 20.0)		RELATIVE P/E RATIO	1.16		DIV'D YLD	3.2%		VALUE LINE					
TIMELINESS	2	Lowered 7/7/23	High: 45.7 54.7 70.1 70.5 83.4 100.0 102.4 114.0 113.6 113.8 118.9 113.0																			Target Price					
SAFETY	1	Raised 1/22/21	Low: 38.2 43.1 50.2 55.4 65.0 77.5 79.6 89.3 69.1 85.3 93.5 99.4																			2026	2027	2028			
TECHNICAL	3	Lowered 7/21/23	LEGENDS — 30.3 x Dividends p sh ... Relative Price Strength Options: Yes Shaded area indicates recession																								
BETA	.80	(1.00 = Market)																									
18-Month Target Price Range																											
Low-High																											
Midpoint (% to Mid)																											
\$88-\$143																											
\$116 (10%)																											
2026-28 PROJECTIONS																											
Price																											
Gain																											
Ann'l Total Return																											
High																											
Low																											
Institutional Decisions																											
3Q2022																											
4Q2022																											
1Q2023																											
to Buy																											
to Sell																											
Hld's(\$000)																											
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2023																											
2024																											
Revenues per sh																											
"Cash Flow" per sh																											
Earnings per sh ^A																											
Div'd Decl'd per sh ^B + [†]																											
Cap'l Spending per sh																											
Book Value per sh ^C																											
Common Shs Outst'g ^D																											
Avg Ann'l P/E Ratio																											
Relative P/E Ratio																											
Avg Ann'l Div'd Yield																											
CAPITAL STRUCTURE as of 3/31/23																											
Total Debt \$2608.1 mill. Due in 5 Yrs \$335.0 mill.																											
LT Debt \$2483.1 mill. LT Interest \$110.0 mill.																											
(Total Interest Coverage: 4.0x)																											
Pension Assets-12/22 \$839.7 mill.																											
Oblig \$953.8 mill.																											
Pfd Stock None																											
Common Stock 50,607,611 shs. as of 4/28/23																											
MARKET CAP: \$5.2 billion (Mid Cap)																											
ELECTRIC OPERATING STATISTICS																											
2020																											
2021																											
2022																											
% Change Retail Sales (KWH)																											
Avg. Indust. Use (MWH)																											
Avg. Indust. Revs. per KWH (¢)																											
Capacity at Peak (Mw)																											
Peak Load, Summer (Mw)																											
Annual Load Factor (%)																											
% Change Customers (yr-end)																											
Fixed Charge Cov. (%)																											
ANNUAL RATES																											
Past 10 Yrs.																											
Past 5 Yrs.																											
Est'd '20-'22																											
Revenues																											
"Cash Flow"																											
Earnings																											
Dividends																											
Book Value																											
QUARTERLY REVENUES(\$ mill.)																											
Mar.31																											
Jun.30																											
Sep.30																											
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EARNINGS PER SHARE ^A																											
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QUARTERLY DIVIDENDS PAID ^B + [†]																											
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Revenues (\$mill)																											
Net Profit (\$mill)																											
Income Tax Rate																											
AFUDC % to Net Profit																											
Long-Term Debt Ratio																											
Common Equity Ratio																											
Total Capital (\$mill)																											
Net Plant (\$mill)																											
Return on Total Cap'l																											
Return on Shr. Equity																											
Return on Com Equity ^E																											
Retained to Com Eq																											
All Div'ds to Net Prof																											
BUSINESS: IDACORP, Inc. is a holding company for Idaho Power Company, a regulated electric utility that serves 618,000 customers throughout a 24,000-square-mile area in southern Idaho and eastern Oregon (population: 1.4 million). Most of the company's revenues are derived from the Idaho portion of its service area. Revenue breakdown: residential, 38%; commercial, 27%; industrial, 22%; irrigation, 12%; other, 1%. Generating sources: hydro, 29%; coal, 20%; gas, 13%; purchased, 39%. Fuel costs: 40% of revenues. '22 reported depreciation rate: 3.0%. Has 2,077 employees. Chairman: Richard J. Dahl. President & CEO: Lisa Grow. Incorporated: Idaho. Address: 1221 W. Idaho St., Boise, Idaho 83702. Telephone: 208-388-2200. Internet: www.idacorpinc.com.																											
We think IDACORP will eke out a profit gain in 2023, which would mark its 16th consecutive year of annual earnings-per-share growth. The utility got off to a good start to the year due mainly to strong customer growth in its service area and higher electric rates from mechanistic pricing adjustments. The latter of which are tied to the recoupment of grid modernization and expansion work. In May, leadership affirmed its earnings outlook of \$4.95 to \$5.15 a share. The main headwind for full-year 2023 net profits will be the interest expense on a significantly rising debt load, which is growing to fund massive infrastructure projects and clean-energy initiatives. At a minimum, the pace of earnings gains will slow this year. That's certainly not a positive, but these sorts of projects are the lifeblood of utilities, as it's how they are able to grow their earnings over time. IDACORP will be able to recoup some of its invested capital in short order from the aforementioned formulaic pricing mechanisms. The company will also be seeking rate relief from its regulatory commissions in Idaho and Oregon over the coming months.																											
General rate cases (GRC) are in the works. IDACORP has not filed a GRC since 2011. Over the past decade, the population/customer growth has increased by 23%, and the investments made to meet capacity needs have been substantial. What's more, growth in the company's service area has been accelerating, so electric delivery rates will almost assuredly be going up early next year in the company's Idaho territory. The utility will likely be seeking an increase in the 10% neighborhood. The timing for Oregon's GRC filing has not been disclosed yet. IDACORP shares rank high for both Safety and Timeliness. This is an excellent electric utility that benefits from above-average population growth and a vibrant and growing local economy. This, coupled with the green-energy initiatives in its state territories, should lead to years of 5%-6% earnings gains, on average. The problem for utility investors is that premium companies often come with premium valuations. At the recent quote, IDA's total return potential is two percentage points below the peer-group median. Anthony J. Glennon July 21, 2023																											



(A) Diluted Eqs. Excl. nonrec. gains/(losses): '12, 40¢; '15, 27¢; '18, 52¢; '19, 45¢; '20, (15¢); '21, 10¢; '22, (4¢); '10-'23, (5¢). '20 EPS don't sum due to rounding. Next eqs. report

due July 26th. (B) Div'd paid in late Mar., June, Sept. & Dec. ⁺ Div'd reinvest. plan avail. [†] Shareholder invest. plan avail. (C) Incl. def'd charges. In '22: \$17.98/sh. (D) In mill. (E) Rate

base: Net orig. cost. Rate allowed on com. eq. in MT in '19 (elec.): 9.65%; in '17 (gas): 9.55%; in SD in '15: none specified; in NE in '07: 10.4%. Regulatory Climate: Below Average.

Company's Financial Strength B++
Stock's Price Stability 90
Price Growth Persistence 40
Earnings Predictability 90

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OGE ENERGY CORP. NYSE-OGE										RECENT PRICE	34.96	P/E RATIO	17.5 (Trailing: 16.6 Median: 18.0)	RELATIVE P/E RATIO	1.07	DIV'D YLD	4.7%	VALUE LINE				
TIMELINESS 4 Lowered 5/12/23	High: 30.1	40.0	39.3	36.5	34.2	37.4	41.8	45.8	46.4	38.6	42.9	40.4							Target Price	Range		
SAFETY 2 Lowered 12/18/15	Low: 25.1	27.7	32.8	24.2	23.4	32.6	29.6	38.0	23.0	29.2	33.3	34.2							2026	2027	2028	
TECHNICAL 3 Raised 5/19/23	LEGENDS — 25.00 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 7/13 Options: Yes Shaded area indicates recession																					160
BETA 1.00 (1.00 = Market)																					120	
18-Month Target Price Range																					100	
Low-High																					80	
Midpoint (% to Mid)																					60	
\$30-\$50																					50	
\$40 (15%)																					40	
2026-28 PROJECTIONS																					30	
Price																					20	
Gain																					15	
Ann'l Total Return																						
High																						
Low																						
50																						
35																						
(+45%)																						
(Nil)																						
13%																						
5%																						
Institutional Decisions																						
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136256																						
139192																						
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2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	© VALUE LINE PUB. LLC 26-28				
20.68	21.77	14.79	19.04	19.96	18.58	14.45	12.30	11.00	11.31	11.32	11.37	11.15	10.61	18.26	16.86	17.25	18.00	Revenues per sh		19.00		
2.39	2.40	2.69	3.01	3.31	3.69	3.46	3.40	3.23	3.31	3.34	3.74	4.02	4.03	4.44	4.56	4.60	4.65	"Cash Flow" per sh		6.25		
1.32	1.25	1.33	1.50	1.73	1.79	1.94	1.98	1.69	1.69	1.92	2.12	2.24	2.08	2.36	2.25	2.00	2.15	Earnings per sh ^A		3.15		
.68	.70	.71	.73	.76	.80	.85	.95	1.05	1.16	1.27	1.40	1.51	1.58	1.63	1.64	1.66	1.78	Div'd Decl'd per sh ^B		1.85		
3.04	4.01	4.37	4.36	6.48	5.85	4.99	2.86	2.74	3.31	4.13	2.87	3.18	3.25	3.89	5.25	4.75	4.75	Cap'l Spending per sh		4.75		
9.16	10.14	10.52	11.73	13.06	14.00	15.30	16.27	16.66	17.24	19.28	20.06	20.69	18.15	20.27	21.95	22.25	23.10	Book Value per sh ^C		26.00		
183.60	187.00	194.00	195.20	196.20	197.60	198.50	199.40	199.70	199.70	199.70	200.10	200.10	200.10	200.10	200.20	200.20	200.20	Common Shs Outst'g ^D		200.20		
13.8	12.4	10.8	13.3	14.4	15.2	17.7	18.3	17.7	17.7	18.3	16.5	19.0	16.2	14.3	17.2	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio		14.0		
.73	.75	.72	.85	.90	.97	.99	.96	.89	.93	.92	.89	1.01	.83	.77	1.00			Relative P/E Ratio		.80		
3.8%	4.5%	5.0%	3.7%	3.1%	2.9%	2.5%	2.6%	3.5%	3.9%	3.6%	4.0%	3.5%	4.7%	4.8%	4.5%			Avg Ann'l Div'd Yield		4.4%		
CAPITAL STRUCTURE as of 3/31/23						2867.7	2453.1	2196.9	2259.2	2261.1	2270.3	2231.6	2122.3	3653.7	3375.7	3450	3600	Revenues (\$mill)		3800		
Total Debt \$4994.1 mill. Due in 5 Yrs \$1731.5 mill.						387.6	395.8	337.6	338.2	384.3	425.5	449.6	415.9	472.5	452.5	410	430	Net Profit (\$mill)		630		
LT Debt \$3994.1 mill. LT Interest \$158.7 mill.						24.9%	30.4%	29.2%	30.5%	32.5%	14.5%	7.4%	13.2%	11.5%	12.0%	12.0%	12.0%	Income Tax Rate		12.0%		
(LT interest earned: 4.3x)						2.6%	1.7%	3.7%	6.4%	15.0%	8.3%	1.6%	1.6%	2.2%	2.0%	2.0%	2.0%	AFUDC % to Net Profit		2.0%		
Leases, Uncapitalized Annual rentals \$5.7 mill.						43.1%	45.9%	44.3%	41.1%	41.7%	42.0%	43.6%	49.0%	52.6%	49.8%	52.0%	52.0%	Long-Term Debt Ratio		50.0%		
Pension Assets-12/22 \$486.0 mill.						56.9%	54.1%	55.7%	58.9%	58.3%	58.0%	56.4%	51.0%	47.4%	52.4%	48.0%	48.0%	Common Equity Ratio		50.0%		
Oblig \$502.9 mill.						5337.2	5999.7	5971.6	5849.6	6600.7	6902.0	7334.7	7126.2	8552.7	8962.0	9400	9750	Total Capital (\$mill)		10400		
Pfd Stock None						6672.8	6979.9	7322.4	7696.2	8339.9	8643.8	9044.6	9374.6	9832.9	10546.8	10830	11000	Net Plant (\$mill)		12075		
Common Stock 200,287,364 shs.						8.6%	7.8%	6.9%	7.0%	7.0%	7.3%	7.1%	6.9%	6.4%	5.9%	6.5%	6.5%	Return on Total Cap'l		7.5%		
MARKET CAP: \$7.0 billion (Mid Cap)						12.8%	12.2%	10.2%	9.8%	10.0%	10.6%	10.9%	11.5%	11.6%	11.0%	12.0%	12.0%	Return on Shr. Equity		13.0%		
ELECTRIC OPERATING STATISTICS						12.8%	12.2%	10.2%	9.8%	10.0%	10.6%	10.9%	11.5%	11.6%	11.0%	12.0%	12.0%	Return on Com Equity ^E		13.0%		
2020 2021 2022						7.3%	6.5%	4.0%	3.3%	3.5%	3.8%	3.6%	2.8%	3.6%	3.0%	4.5%	4.5%	Retained to Com Eq		5.5%		
% Change Retail Sales (KWH)						43%	47%	61%	67%	64%	64%	67%	76%	69%	73%	81%	81%	All Div'ds to Net Prof		57%		
Avg. Indust. Use (MWH)																						
Avg. Indust. Revs. per KWH (¢)																						
Capacity at Peak (Mw)																						
Peak Load, Summer (Mw)																						
Annual Load Factor (%)																						
% Change Customers (yr-end)																						
Fixed Charge Cov. (%)						326	336	335														
ANNUAL RATES						Past 10 Yrs.	Past 5 Yrs.	Est'd '20-'22 to '26-'28														
of change (per sh)																						
Revenues						-3.0%	5.0%	5.5%														
"Cash Flow"						2.5%	5.0%	7.0%														
Earnings						3.0%	4.5%	6.5%														
Dividends						7.5%	6.5%	3.0%														
Book Value						4.0%	1.5%	5.5%														
QUARTERLY REVENUES (\$ mill.)						Mar.31	Jun.30	Sep.30	Dec.31	Full Year												
2020						431.3	503.5	702.1	485.4	2122.3												
2021						1630	577.4	864.4	581.3	3653.7												
2022						589.3	803.7	1270	711.9	3375.7												
2023						557.2	785	1280	827.8	3450												
2024						650	850	1300	800	3600												
EARNINGS PER SHARE ^A						Mar.31	Jun.30	Sep.30	Dec.31	Full Year												
2020						.23	.51	1.04	.30	2.08												
2021						.26	.56	1.26	.28	2.36												
2022						.33	.36	1.31	.25	2.25												
2023						.19	.44	1.16	.21	2.00												
2024						.35	.30	1.25	.25	2.15												
QUARTERLY DIVIDENDS PAID ^B						Mar.31	Jun.30	Sep.30	Dec.31	Full Year												
2019						.365	.365	.365	.388	1.48												
2020						.3875	.3875	.3875	.4025	1.57												
2021						.4025	.4025	.4025	.41	1.62												
2022						.41	.41	.41	.4141	1.64												
2023						.41	.41															
Business: OGE Energy Corp. is a holding company for Oklahoma Gas and Electric Company (OG&E), which supplies electricity to 879,000 customers in Oklahoma (84% of electric revenues) and western Arkansas (8%); wholesale is (8%). Owns 3% of Energy Transfer's limited partnership units. Electric revenue breakdown: residential, 44%; commercial, 25%; industrial, 11%; oilfield, 10%; other, 10%. Generating sources: gas, 25%; coal, 21%; wind, 6%; purchased, 48%. Fuel costs: 58% of revenues. '22 reported depreciation rate (utility): 2.6%. Has 2,200 employees. Chairman, President and Chief Executive Officer: Sean Trauschke. Incorporated: Oklahoma. Address: 321 North Harvey, P.O. Box 321, Oklahoma City, OK 73101-0321. Tel.: 405-553-3000. Internet: www.oge.com. Long-term. OGE is now a pure-play electric utility after completing its exit from the natural gas midstream arena, which should reduce business risk and attract investors. The Inflation Reduction Act will also help improve the challenging macroeconomic environment and provide assistance in the transition to providing affordable, clean energy. Our 2024 bottom-line projection is staying put, as we think profits will recover to \$2.15 a share. OGE shares have continued to struggle of late. Indeed, the stock has dropped more than 6% in value since our early March report, and is now down nearly 15% over the past six months. Too, this issue was recently downgraded one notch in our Timeliness Ranking System to 4 (Below Average). On a positive note, the dividend continues to be this issue's most notable feature. These shares boast a attractive quarterly dividend yield of 4.7%, which sits well above the industry average and the <i>Value Line</i> median. The utility also holds a solid dividend growth potential rate of 3.0%, which would maintain a generous payout ratio. <i>Zachary J. Hodgkinson</i> <i>June 9, 2023</i>																						

PORTLAND GENERAL

NYSE-POR

RECENT PRICE

46.25

P/E RATIO

17.1

(Trailing: 16.1
Median: 18.0)

RELATIVE P/E RATIO

0.99

DIV'D YLD

4.2%

VALUE LINE

TIMELINESS

3

Lowered 7/21/23

SAFETY

2

Raised 10/22/21

TECHNICAL

2

Lowered 7/21/23

BETA

.90

(1.00 = Market)

18-month Target Price Range

Low-High

Midpoint (% to Mid)

\$41-\$67

\$54 (15%)

2026-28 PROJECTIONS

Price

Gain

Ann'l Total Return

High

Low

80

55

(+75%)

(+20%)

18%

9%

Institutional Decisions

3Q2022

4Q2022

1Q2023

To Buy

To Sell

Hld's(000)

193

150

87350

207

157

98285

184

173

101190

Percent shares traded

21

14

7

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

2021

2022

2023

2024

27.87

27.89

23.99

23.67

24.06

23.89

23.18

24.29

21.38

21.62

22.54

22.30

23.75

23.96

26.80

29.65

28.85

30.15

5.21

4.71

4.07

4.82

4.96

5.15

4.93

6.08

5.37

5.78

6.16

6.65

6.97

7.83

7.25

7.41

7.85

7.85

2.33

1.39

1.31

1.66

1.95

1.87

1.77

2.18

2.04

2.16

2.29

2.37

2.39

2.75

2.72

2.74

2.70

3.00

.93

.97

1.01

1.04

1.06

1.08

1.10

1.12

1.18

1.26

1.34

1.43

1.52

1.59

1.70

1.79

1.88

1.98

7.28

6.12

9.25

5.97

3.98

4.01

8.40

12.87

6.73

6.57

5.77

6.67

6.78

8.76

7.11

8.58

13.65

10.00

21.05

21.64

20.50

21.14

22.07

22.87

23.30

24.43

25.43

26.35

27.11

28.07

28.99

29.18

30.28

31.13

33.25

34.80

62.53

62.58

75.21

75.32

75.36

75.56

78.09

78.23

88.79

88.95

89.11

89.27

89.39

89.54

89.41

89.28

97.00

99.50

11.9

16.3

14.4

12.0

12.4

14.0

16.9

15.3

17.7

19.1

20.0

18.4

22.3

16.6

17.7

18.2

Bold figures are Value Line estimates

18.5

.63

.98

.96

.76

.78

.89

.95

.81

.89

1.00

1.01

.99

1.19

.85

.96

1.06

1.05

3.3%

4.3%

5.4%

5.2%

4.4%

4.1%

3.7%

3.3%

3.3%

3.1%

2.9%

3.3%

2.8%

3.5%

3.5%

3.6%

3.5%

CAPITAL STRUCTURE as of 3/31/23

LT Debt \$3866 mill.

Due in 5 Yrs \$520 mill.

LT Debt \$3778 mill.

LT Interest \$146 mill.

Incl. \$293 mill. finance leases.

(Total Interest Coverage: 2.8x)

Leases, Uncapitalized Annual rentals \$4 mill.

Pension Assets-12/22 \$547 mill.

Oblig \$695 mill.

Pfd Stock None

Common Stock 96,621,298 shs.

as of 4/20/23

MARKET CAP: \$4.5 billion (Mid Cap)

ELECTRIC OPERATING STATISTICS

2020

2021

2022

% Change Retail Sales (KWH)

Avg. Indust. Use (MWH)

Avg. Indust. Revs. per KWH (¢)

Capacity at Peak (MW)

Peak Load, Summer (MW)

Annual Load Factor (%)

% Change Customers (yr-end)

+4

+5.1

+3.4

18472

20002

22097

4.99

5.22

5.23

NA

NA

NA

3771

4447

4255

NA

NA

NA

+1.5

+6

+1.1

Fixed Charge Cov. (%)

275

261

254

ANNUAL RATES

Past 10 Yrs.

Past 5 Yrs.

Est'd '20-'22 to '26-'28

Revenues

"Cash Flow"

Earnings

Dividends

Book Value

1.0%

4.0%

3.5%

4.0%

5.5%

4.5%

4.0%

5.0%

5.0%

5.0%

5.5%

4.0%

QUARTERLY REVENUES (\$ mill.)

Cal-endar

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2020

2021

2022

2023

2024

573

609

626

687

740

469

537

591

610

660

547

642

743

775

825

556

608

687

728

775

2145

2396

2647

2800

3000

EARNINGS PER SHARE ^

Cal-endar

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2020

2021

2022

2023

2024

.91

1.07

.67

.80

.85

.43

.36

.72

.65

.70

.84

.56

.75

.60

.75

.57

.73

.70

.65

.75

2.75

2.72

2.74

2.70

3.00

QUARTERLY DIVIDENDS PAID ^ B ^ †

Cal-endar

Mar.31

Jun.30

Sep.30

Dec.31

Full Year

2019

2020

2021

2022

2023

.3625

.385

.4075

.43

.4525

.3625

.385

.4075

.43

.4525

.385

.385

.4075

.43

.4525

.385

.4075

.43

.4525

1.50

1.56

1.68

1.77

1.77

BUSINESS:

Portland General Electric Company (PGE) provides electricity to 926,000 customers in 51 cities in a 4,000-square-mile area of Oregon, including Portland and Salem (population: 1.9 million). The company is in the process of decommissioning the Trojan nuclear plant, which it closed in 1993. Electric revenue breakdown: residential, 52%; commercial, 33%; industrial, 14%; other, 1%.

drive growth.

Oregon is targeting zero emissions from electric generation by 2040. As such, PGE is looking to add at least 375 to 500 megawatts of nonemitting annual power generation in the intermediate term, with significant battery storage capacity as well. Thus far, the company has agreed to partner with NextEra Energy (NEE) to construct a 311-mw wind energy facility. PGE will own two-thirds of the venture, and will have a 30-year contract with NEE to purchase the remaining generation. Project completion is targeted for December. The green light from regulators to pursue these types of investments should result in mid- to high-single-digit growth in the rate base (the dollar value of assets a utility is allowed to earn an economic return on) for many years. This, plus rising demand from a healthy tech-based local economy, should allow the company to achieve its long-term 5%-7% earnings and dividend growth targets. This issue's annual total return potential looks appealing relative to the electric utility industry's median of 10.4% for this measure.

Generating sources: gas, 32%; wind, 15%; coal, 4%; hydro, 7%; purchased, 41%. Fuel costs: 37% of revenues. '22 reported depreciation rate: 3.4%. Has 2,873 full-time employees. Chairman: Jack E. Davis. President and CEO: Maria M. Pope. Incorporated: Oregon. Address: 121 S.W. Salmon Street, Portland, OR 97204. Tel.: 503-464-8000. Internet: www.portlandgeneral.com.

Portland General Electric will likely post flat-to-down earnings this year, followed by a healthy gain in 2024. For full-year 2023, management reaffirmed its \$2.60 to \$2.75 per share bottom-line outlook. Weather extremes helped push 2022's electric usage up 3.4% in the company's territory, making for a difficult comparison this year. The level to which PGE is expanding its capital budget in regards to major investments in generating capacity and battery storage, however, is the more significant factor for this year's profits. Capital expenditures are expected to rise more than 70%, to \$1.33 billion. Financing costs will be a drag on the bottom line. Earnings ought to be on the mend in 2024, though. In February, PGE filed a general rate case with its Oregon regulatory body. The utility is seeking a 14% price hike, in part to recoup higher purchased power costs. Most of the request is to address reliability and resiliency work, capital investments, and rising operating and financing costs. We expect a constructive outcome, with new rates to take effect in January of 2024. Investments in "clean" energy should

Anthony J. Glennon

July 21, 2023

(A) Diluted earnings. Excl. nonrecurring gains/(losses): '13, (42¢); '17, (19¢); '20, (\$1.03); '22, (14¢). Next earnings report due July 28th.

(B) Dividends paid mid-Jan., Apr., July, and Oct. ■ Dividend reinvestment plan available. † Shareholder investment plan available.
(C) Incl. deferred charges. In '21: \$473 mill..

\$5.30/sh. (D) In mill.

(E) Rate base: Net original cost. Rate allowed on common equity in '22: 9.5%. Regulatory Climate: Average.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	45
Earnings Predictability	95

Anthony J. Glennon

July 21, 2023

	Company's Financial Strength	BBB

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	45
Earnings Predictability	95

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SOUTHERN COMPANY										NYSE-SO		RECENT PRICE	74.09	P/E RATIO	20.3	(Trailing: 21.6 Median: 17.0)		RELATIVE P/E RATIO	1.21	DIV'D YLD	3.8%	VALUE LINE						
TIMELINESS	4	Raised 5/12/23	High: 48.6 48.7 51.3 53.2 54.6 53.5 49.4 64.3 71.1 68.9 80.6 74.6																					Target Price	Range			
SAFETY	2	Lowered 2/21/14	Low: 41.8 40.0 40.3 41.4 46.0 46.7 42.4 43.3 42.0 56.7 60.7 58.8																					2026	2027	2028		
TECHNICAL	4	Raised 5/12/23	23.80 x Dividends p.sh divided by Interest Rate																									160
BETA	.90	(1.00 = Market)	 Relative Price Strength																								120	
			Options: Yes																								100	
			Shaded area indicates recession																								80	
18-Month Target Price Range																											60	
Low-High																											50	
Midpoint (% to Mid)																											40	
\$62-\$102																											30	
\$82 (10%)																											20	
2026-28 PROJECTIONS																											15	
Price Gain Ann'l Total																												
High Low																												
100 70																												
70 3%																												
Institutional Decisions																												
2Q2022 3Q2022 4Q2022																												
to Buy 774 781 911																												
to Sell 650 634 594																												
Hld's(000) 662355 675410 693302																												
Percent shares traded																												
18 12 6																												
2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024																			% TOT. RETURN 4/23									
																			THIS STOCK VL ARITH.*									
																			1 yr. 4.1 0.8									
																			3 yr. 46.7 65.7									
																			5 yr. 96.3 47.7									
			</																									

XCEL ENERGY										NDQ-XEL		RECENT PRICE	62.65	P/E RATIO	18.7	(Trailing: 19.4 Median: 20.0)	RELATIVE P/E RATIO	1.08	DIV'D YLD	3.4%	VALUE LINE			
TIMELINESS	3	Lowered 7/14/23	High: 29.9 31.8 37.6 38.3 45.4 52.2 54.1 66.1 76.4 72.9 77.7 73.0													Target Price	Range							
SAFETY	1	Raised 5/1/15	Low: 25.8 26.8 27.3 31.8 35.2 40.0 41.5 47.7 46.6 57.2 56.9 60.4													2026	2027	2028						
TECHNICAL	3	Lowered 7/7/23	LEGENDS 32.3 x Dividends p sh Relative Price Strength Options: Yes Shaded area indicates recession																					
BETA	.85	(1.00 = Market)																						
18-Month Target Price Range																								
Low-High Midpoint (% to Mid)																								
\$55-\$99 \$77 (25%)																								
2026-28 PROJECTIONS																								
	Price	Gain	Ann'l Total																					
High	95	(+50%)	Return																					
Low	75	(+20%)	14%																					
Institutional Decisions																								
3Q2022 4Q2022 1Q2023																								
to Buy 436 485 448																								
to Sell 340 362 377																								
Hld's(000) 424931 427005 433290																								
Percent shares traded																								
																</								

\n Advertisement\n

U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.6
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.60 (-0.28%)

ALLETE, Inc. (ALE)
NYSE - Nasdaq Real Time Price. Currency in USD

2W 10W 9M

Quote Lookup

57.43 +0.22 (+0.38%)
At close: 04:00PM EDT

57.43 0.00 (0.00%)
After hours: 04:15PM EDT

Currency in USD					\n Advertisement\n	
Earnings Estimate						
	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)		
No. of Analysts	6	6	7	7		
Avg. Estimate	0.8	0.69	3.68	4.05		
Low Estimate	0.74	0.59	3.61	3.87		
High Estimate	0.92	0.79	3.76	4.18		
Year Ago EPS	0.67	0.59	3.38	3.68	\n Advertisement\n	
Revenue Estimate						
	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)		
No. of Analysts	3	3	5	5		
Avg. Estimate	446.57M	453.47M	1.7B	1.71B		
Low Estimate	379M	395M	1.53B	1.57B		
High Estimate	564.9M	564.9M	1.82B	1.84B		
Year Ago Sales	373.1M	353.18M	1.57B	1.7B		
Sales Growth (year/est)	19.70%	28.40%	7.90%	1.00%		

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Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	0.63	0.74	1.15	1.18
EPS Actual	0.67	0.59	0.88	1.02
Difference	0.04	-0.15	-0.27	-0.16
Surprise %	6.30%	-20.30%	-23.50%	-13.60%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.8	0.69	3.68	4.05
7 Days Ago	0.8	0.69	3.68	4.05
30 Days Ago	0.8	0.7	3.72	4.08
60 Days Ago	0.85	0.78	3.73	4.08
90 Days Ago	0.74	0.65	3.74	4.08

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	1	1

Growth Estimates	ALE	Industry	Sector(s)	S&P 500
Current Qtr.	19.40%	N/A	N/A	N/A
Next Qtr.	16.90%	N/A	N/A	N/A
Current Year	8.90%	N/A	N/A	N/A
Next Year	10.10%	N/A	N/A	N/A
Next 5 Years (per annum)	8.10%	N/A	N/A	N/A
Past 5 Years (per annum)	0.33%	N/A	N/A	N/A

U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.6
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.60 (-0.28%)

Alliant Energy Corporation (LNT)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

2W10W9M

Quote Lookup

53.74-0.15 (-0.28%)

53.740.00 (0.00%)

At close: 04:00PM EDT

After hours: 04:12PM EDT

SummaryCompany InsightsChartConversationsStatisticsHistorical DataProfileFinancialsAnalysisOptionsHoldersSustainability

		Currency in USD		\n Advertisement\n	
Earnings Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	7	6	10	9	
Avg. Estimate	0.58	0.97	2.89	3.09	
Low Estimate	0.55	0.56	2.85	3.06	
High Estimate	0.64	1.12	2.9	3.15	
Year Ago EPS	0.63	0.93	2.8	2.89	\n Advertisement\n

Revenue Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	2	2	5	5	
Avg. Estimate	956.42M	1.05B	4.25B	4.5B	
Low Estimate	865.95M	870.68M	3.77B	3.66B	
High Estimate	1.05B	1.24B	4.61B	5.41B	
Year Ago Sales	943M	1.13B	4.21B	4.25B	
Sales Growth (year/est)	1.40%	-6.70%	1.20%	5.80%	

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Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	0.58	1.01	0.47	0.73
EPS Actual	0.63	0.93	0.47	0.65
Difference	0.05	-0.08	0	-0.08
Surprise %	8.60%	-7.90%	0.00%	-11.00%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.58	0.97	2.89	3.09
7 Days Ago	0.59	0.97	2.89	3.09
30 Days Ago	0.55	0.96	2.89	3.09
60 Days Ago	0.52	0.94	2.9	3.08
90 Days Ago	0.56	0.95	2.89	3.19

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	1	N/A	N/A	N/A
Up Last 30 Days	1	1	N/A	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	LNT	Industry	Sector(s)	S&P 500
Current Qtr.	-7.90%	N/A	N/A	N/A
Next Qtr.	4.30%	N/A	N/A	N/A
Current Year	3.20%	N/A	N/A	N/A
Next Year	6.90%	N/A	N/A	N/A
Next 5 Years (per annum)	7.00%	N/A	N/A	N/A
Past 5 Years (per annum)	7.13%	N/A	N/A	N/A

\n Advertisement\n

U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.7
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.50 (-0.28%)

Ameren Corporation (AEE)

NYSE - Nasdaq Real Time Price. Currency in USD

2W 10W 9M

Quote Lookup

85.67 -0.16 (-0.19%) 85.67 0.00 (0.00%)

At close: 04:00PM EDT After hours: 05:43PM EDT

Currency in USD					\n Advertisement\n	
Earnings Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)		
No. of Analysts	8	7	12	11		
Avg. Estimate	0.81	1.87	4.37	4.68		
Low Estimate	0.72	1.83	4.35	4.61		
High Estimate	0.88	1.91	4.39	4.74		
Year Ago EPS	0.8	1.74	4.14	4.37	\n Advertisement\n	
Revenue Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)		
No. of Analysts	3	3	7	7		
Avg. Estimate	1.68B	2.29B	7.92B	8.23B		
Low Estimate	1.5B	2.08B	6.71B	6.96B		
High Estimate	1.81B	2.5B	8.5B	8.89B		
Year Ago Sales	1.73B	1.89B	7.96B	7.92B		
Sales Growth (year/est)	-2.60%	21.00%	-0.50%	4.00%		

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Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	0.83	1.74	0.56	0.94
EPS Actual	0.8	1.74	0.63	1
Difference	-0.03	0	0.07	0.06
Surprise %	-3.60%	0.00%	12.50%	6.40%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.81	1.87	4.37	4.68
7 Days Ago	0.81	1.87	4.37	4.68
30 Days Ago	0.77	1.87	4.37	4.68
60 Days Ago	0.76	1.88	4.37	4.69
90 Days Ago	0.81	1.89	4.36	4.69

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	2	N/A	1	1
Up Last 30 Days	3	1	1	1
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	1	N/A

Growth Estimates	AEE	Industry	Sector(s)	S&P 500
Current Qtr.	1.30%	N/A	N/A	N/A
Next Qtr.	7.50%	N/A	N/A	N/A
Current Year	5.60%	N/A	N/A	N/A
Next Year	7.10%	N/A	N/A	N/A
Next 5 Years (per annum)	5.90%	N/A	N/A	N/A
Past 5 Years (per annum)	6.17%	N/A	N/A	N/A



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U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.6
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.60 (-0.28%)

American Electric Power Company, Inc.
(AEP)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

2W 10W 9M

Quote Lookup

84.74 -0.68 (-0.80%) 84.06 -0.68 (-0.80%)

At close: 04:00PM EDT

After hours: 05:22PM EDT

Dividend

AEP announced a cash dividend of 0.83 with an ex-date of Aug. 9, 2023

Summary Company Insights ☐ Chart Conversations Statistics Historical Data Profile Financials Analysis Options Holders Sustainability

		Currency in USD		\n Advertisement\n	
Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	11	11	19	19	
Avg. Estimate	1.78	1.24	5.27	5.6	
Low Estimate	1.63	1.11	5.19	5.41	
High Estimate	1.89	1.38	5.36	5.66	
Year Ago EPS	1.62	1.05	5.09	5.27	\n Advertisement\n

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	5	5	13	13	
Avg. Estimate	5.51B	5.12B	19.78B	20.42B	
Low Estimate	4.74B	4.8B	18.14B	18.78B	
High Estimate	6.21B	5.66B	21.73B	22.72B	
Year Ago Sales	4.75B	4.88B	19.64B	19.78B	

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Sales Growth (year/est)	15.90%	4.80%	0.70%	3.20%

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	1.56	0.99	1.11	1.12
EPS Actual	1.62	1.05	1.11	1.13
Difference	0.06	0.06	0	0.01
Surprise %	3.80%	6.10%	0.00%	0.90%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	1.78	1.24	5.27	5.6
7 Days Ago	1.79	1.21	5.27	5.61
30 Days Ago	1.71	1.18	5.27	5.62
60 Days Ago	1.73	1.18	5.28	5.62
90 Days Ago	1.73	1.18	5.28	5.62

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	8	10	1	2
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	2	1	1	1

Growth Estimates	AEP	Industry	Sector(s)	S&P 500
Current Qtr.	9.90%	N/A	N/A	N/A
Next Qtr.	18.10%	N/A	N/A	N/A
Current Year	3.50%	N/A	N/A	N/A
Next Year	6.30%	N/A	N/A	N/A
Next 5 Years (per annum)	5.20%	N/A	N/A	N/A
Past 5 Years (per annum)	5.01%	N/A	N/A	N/A

Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	0.17	0.13	0.78	1.16
EPS Actual	0.16	-0.08	1.05	0.73
Difference	-0.01	-0.21	0.27	-0.43
Surprise %	-5.90%	-161.50%	34.60%	-37.10%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.17	0.2	2.32	2.46
7 Days Ago	0.17	0.2	2.32	2.46
30 Days Ago	0.18	0.21	2.32	2.46
60 Days Ago	0.19	0.26	2.33	2.46
90 Days Ago	0.23	0.05	2.32	2.46

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	AVA	Industry	Sector(s)	S&P 500
Current Qtr.	6.30%	N/A	N/A	N/A
Next Qtr.	350.00%	N/A	N/A	N/A
Current Year	9.40%	N/A	N/A	N/A
Next Year	6.00%	N/A	N/A	N/A
Next 5 Years (per annum)	6.30%	N/A	N/A	N/A
Past 5 Years (per annum)	6.87%	N/A	N/A	N/A

\n Advertisement\n

S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	U.S. markets closed
4,588.96	35,559.53	14,346.02	2,003.18	81.74	
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	

\n Advertisement\n

CMS Energy Corporation (CMS)

NYSE - Nasdaq Real Time Price. Currency in USD

2W 10W 9M

Quote Lookup

61.07 +0.05 (+0.08%) 59.70 -1.37 (-2.24%)

At close: 04:01PM EDT

After hours: 05:59PM EDT

Dividend

CMS announced a cash dividend of 0.488 with an ex-date of Aug. 3, 2023

Summary Company Insights Chart Conversations Statistics Historical Data Profile Financials Analysis Options Holders Sustainability

Earnings Estimate					Currency in USD
	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	10	10	17	16	
Avg. Estimate	0.77	0.93	3.11	3.35	
Low Estimate	0.57	0.76	3.09	3.32	
High Estimate	0.93	1.15	3.12	3.41	
Year Ago EPS	0.56	0.6	2.89	3.11	

Revenue Estimate				
	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	4	4	11	11
Avg. Estimate	2.15B	2.51B	8.77B	9.06B
Low Estimate	2.08B	2.25B	8.55B	8.77B
High Estimate	2.22B	2.91B	8.93B	9.36B
Year Ago Sales	1.75B	2.28B	8.6B	8.77B

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Sales Growth (year/est)	22.80%	10.20%	2.00%	3.30%

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Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.55	0.39	0.76	0.7
EPS Actual	0.56	0.6	0.7	0.75
Difference	0.01	0.21	-0.06	0.05
Surprise %	1.80%	53.80%	-7.90%	7.10%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.77	0.93	3.11	3.35
7 Days Ago	0.76	0.95	3.1	3.35
30 Days Ago	0.77	0.97	3.1	3.35
60 Days Ago	0.8	0.98	3.1	3.35
90 Days Ago	0.77	0.88	3.1	3.34

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	1	1	N/A
Up Last 30 Days	3	6	1	2
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	1	N/A	1	N/A

Growth Estimates	CMS	Industry	Sector(s)	S&P 500
Current Qtr.	37.50%	N/A	N/A	N/A
Next Qtr.	55.00%	N/A	N/A	N/A
Current Year	7.60%	N/A	N/A	N/A
Next Year	7.70%	N/A	N/A	N/A
Next 5 Years (per annum)	7.80%	N/A	N/A	N/A
Past 5 Years (per annum)	2.86%	N/A	N/A	N/A

U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.6
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.60 (-0.28%)

Duke Energy Corporation (DUK)
NYSE - Nasdaq Real Time Price. Currency in USD

2W10W9M

Quote Lookup

93.62 +0.28 (+0.30%) 93.63 +0.01 (+0.01%)

At close: 04:05PM EDT After hours: 06:41PM EDT

Dividend
DUK announced a cash dividend of 1.025 with an ex-date of Aug. 17, 2023

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		Currency in USD		In AdvertisementIn	
Earnings Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	15	9	18	17	
Avg. Estimate	0.98	1.98	5.63	5.98	
Low Estimate	0.9	1.8	5.56	5.92	
High Estimate	1.39	2.1	5.68	6.07	
Year Ago EPS	1.14	1.78	5.27	5.63	In AdvertisementIn

Revenue Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	6	6	10	11	
Avg. Estimate	6.16B	8.12B	29.52B	30.17B	
Low Estimate	4.6B	7.04B	26.93B	27.94B	
High Estimate	6.8B	8.72B	30.82B	31.95B	
Year Ago Sales	6.68B	7.39B	28.77B	29.52B	
Sales Growth					

(year/est)	-7.90%	9.90%	2.60%	2.20%

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Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	1.07	1.84	1.07	1.26
EPS Actual	1.14	1.78	1.11	1.2
Difference	0.07	-0.06	0.04	-0.06
Surprise %	6.50%	-3.30%	3.70%	-4.80%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.98	1.98	5.63	5.98
7 Days Ago	1.02	1.98	5.63	5.98
30 Days Ago	1.17	1.93	5.63	5.98
60 Days Ago	1.19	1.94	5.64	5.99
90 Days Ago	1.19	1.91	5.63	5.99

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	1	N/A	N/A
Up Last 30 Days	N/A	5	1	1
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	4	N/A	1	1

Growth Estimates	DUK	Industry	Sector(s)	S&P 500
Current Qtr.	-14.00%	N/A	N/A	N/A
Next Qtr.	11.20%	N/A	N/A	N/A
Current Year	6.80%	N/A	N/A	N/A
Next Year	6.20%	N/A	N/A	N/A
Next 5 Years (per annum)	5.74%	N/A	N/A	N/A
Past 5 Years (per annum)	3.21%	N/A	N/A	N/A

U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.7
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.50 (-0.28%)

Entergy Corporation (ETR)

NYSE - Nasdaq Real Time Price. Currency in USD

2W10W9M

Quote Lookup

102.70

-0.57 (-0.55%)

102.70

0.00 (0.00%)

At close: 04:00PM EDT

After hours: 04:04PM EDT

Dividend

ETR announced a cash dividend of 1.07 with an ex-date of Aug. 10, 2023

- SummaryCompany InsightsChartConversationsStatisticsHistorical DataProfileFinancialsAnalysisOptionsHoldersSustainability

		Currency in USD		In AdvertisementIn	
Earnings Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	14	10	17	18	
Avg. Estimate	1.66	2.92	6.7	7.19	
Low Estimate	1.28	2.45	6.59	7.12	
High Estimate	1.99	3.25	6.77	7.23	
Year Ago EPS	1.78	2.84	6.42	6.7	In AdvertisementIn

Revenue Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	4	4	10	10	
Avg. Estimate	3.41B	4.21B	14B	14.46B	
Low Estimate	3.28B	3.94B	12.41B	13.03B	
High Estimate	3.54B	4.45B	15.53B	16.19B	
Year Ago Sales	3.4B	4.22B	13.76B	14B	
Sales Growth					

(year/est)	0.30%	-0.30%	1.70%	3.30%

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Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	1.4	2.66	0.51	1.42
EPS Actual	1.78	2.84	0.51	1.14
Difference	0.38	0.18	0	-0.28
Surprise %	27.10%	6.80%	0.00%	-19.70%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	1.66	2.92	6.7	7.19
7 Days Ago	1.67	2.91	6.7	7.19
30 Days Ago	1.71	2.87	6.69	7.19
60 Days Ago	1.71	2.85	6.7	7.18
90 Days Ago	1.7	2.86	6.69	7.19

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	1	1	N/A	N/A
Up Last 30 Days	2	5	2	1
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	2	N/A	N/A	N/A

Growth Estimates	ETR	Industry	Sector(s)	S&P 500
Current Qtr.	-6.70%	N/A	N/A	N/A
Next Qtr.	2.80%	N/A	N/A	N/A
Current Year	4.40%	N/A	N/A	N/A
Next Year	7.30%	N/A	N/A	N/A
Next 5 Years (per annum)	6.60%	N/A	N/A	N/A
Past 5 Years (per annum)	-2.24%	N/A	N/A	N/A

U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.7
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.50 (-0.28%)

Energy, Inc. (EVRG)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

2W10W9M

Quote Lookup

59.97-0.18 (-0.30%)59.970.00 (0.00%)

At close: 04:00PM EDTAfter hours: 05:00PM EDT

SummaryCompany InsightsChartConversationsStatisticsHistorical DataProfileFinancialsAnalysisOptionsHoldersSustainability

		Currency in USD		\n Advertisement\n	
Earnings Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	6	3	7	7	
Avg. Estimate	0.77	1.92	3.63	3.96	
Low Estimate	0.76	1.85	3.58	3.89	
High Estimate	0.8	1.98	3.68	4.01	
Year Ago EPS	0.86	2.01	3.71	3.63	\n Advertisement\n

		Currency in USD		\n Advertisement\n	
Revenue Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	1	1	5	5	
Avg. Estimate	1.45B	1.92B	5.61B	5.81B	
Low Estimate	1.45B	1.92B	5.16B	5.3B	
High Estimate	1.45B	1.92B	5.97B	6.18B	
Year Ago Sales	1.45B	1.91B	5.86B	5.61B	
Sales Growth (year/est)	0.40%	0.60%	-4.20%	3.40%	

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Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	0.83	1.88	0.26	0.58
EPS Actual	0.86	2.01	0.3	0.59
Difference	0.03	0.13	0.04	0.01
Surprise %	3.60%	6.90%	15.40%	1.70%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.77	1.92	3.63	3.96
7 Days Ago	0.78	1.92	3.64	3.96
30 Days Ago	0.83	1.97	3.64	3.96
60 Days Ago	0.85	1.97	3.65	3.98
90 Days Ago	0.83	1.96	3.64	3.96

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	EVRG	Industry	Sector(s)	S&P 500
Current Qtr.	-10.50%	N/A	N/A	N/A
Next Qtr.	-4.50%	N/A	N/A	N/A
Current Year	-2.20%	N/A	N/A	N/A
Next Year	9.10%	N/A	N/A	N/A
Next 5 Years (per annum)	2.67%	N/A	N/A	N/A
Past 5 Years (per annum)	11.63%	N/A	N/A	N/A

S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	U.S. markets closed
4,588.96	35,559.53	14,346.02	2,003.18	81.74	
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	

\n Advertisement\n

IDACORP, Inc. (IDA)

NYSE - NYSE Delayed Price. Currency in USD

2W10W9M

Quote Lookup

102.82

+0.36 (+0.35%)

102.82

0.00 (0.00%)

At close: 04:00PM EDT

After hours: 04:15PM EDT

Dividend

IDA announced a cash dividend of 0.79 with an ex-date of Aug. 1, 2023

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	Currency in USD				\n Advertisement\n
Earnings Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
No. of Analysts	3	3	5	5	
Avg. Estimate	1.33	1.94	5.09	5.4	
Low Estimate	1.18	1.84	5.05	5.33	
High Estimate	1.51	2.03	5.17	5.5	
Year Ago EPS	1.27	2.1	5.11	5.09	\n Advertisement\n

Revenue Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	2	2	3	3
Avg. Estimate	353.51M	461.21M	1.54B	1.59B
Low Estimate	334.9M	415.5M	1.49B	1.43B
High Estimate	372.12M	506.92M	1.62B	1.73B
Year Ago Sales	358.72M	518.01M	1.65B	1.54B

Sales Growth (year/est)	-1.50%	-11.00%	-6.50%	3.30%

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Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	1.31	2.02	0.82	0.92
EPS Actual	1.27	2.1	0.83	1.11
Difference	-0.04	0.08	0.01	0.19
Surprise %	-3.10%	4.00%	1.20%	20.70%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	1.33	1.94	5.09	5.4
7 Days Ago	1.33	1.94	5.09	5.4
30 Days Ago	1.33	1.94	5.09	5.4
60 Days Ago	1.24	1.99	5.08	5.4
90 Days Ago	1.38	1.99	5.08	5.39

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	IDA	Industry	Sector(s)	S&P 500
Current Qtr.	4.70%	N/A	N/A	N/A
Next Qtr.	-7.60%	N/A	N/A	N/A
Current Year	-0.40%	N/A	N/A	N/A
Next Year	6.10%	N/A	N/A	N/A
Next 5 Years (per annum)	3.70%	N/A	N/A	N/A
Past 5 Years (per annum)	4.85%	N/A	N/A	N/A

Advertisement

U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.6
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.60 (-0.28%)

NextEra Energy, Inc. (NEE)
NYSE - NYSE Delayed Price. Currency in USD

2W 10W 9M

Quote Lookup

73.30 +0.45 (+0.62%) 73.23 -0.07 (-0.10%)
At close: 04:00PM EDT After hours: 06:42PM EDT

Dividend
NEE announced a cash dividend of 0.468 with an ex-date of Aug. 29, 2023

Earnings Estimate		Current Qtr. (Sep 2023)		Next Qtr. (Dec 2023)		Current Year (2023)		Next Year (2024)	
No. of Analysts		10		9		18		18	
Avg. Estimate		0.88		0.55		3.12		3.4	
Low Estimate		0.8		0.48		3.09		3.35	
High Estimate		0.95		0.65		3.17		3.45	
Year Ago EPS		0.85		0.51		2.9		3.12	

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	7	6	13	12
Avg. Estimate	7.12B	5.79B	25.29B	26.96B
Low Estimate	6.59B	3.43B	18.46B	19.2B
High Estimate	7.52B	6.41B	27.61B	30.11B
Year Ago Sales	5.76B	6.16B	20.96B	25.29B
Sales Growth				

(year/est)	23.60%	-6.10%	20.70%	6.60%

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Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.8	0.49	0.72	0.82
EPS Actual	0.85	0.51	0.84	0.88
Difference	0.05	0.02	0.12	0.06
Surprise %	6.20%	4.10%	16.70%	7.30%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.88	0.55	3.12	3.4
7 Days Ago	0.89	0.57	3.11	3.41
30 Days Ago	0.9	0.58	3.11	3.41
60 Days Ago	0.92	0.57	3.11	3.4
90 Days Ago	0.97	0.58	3.1	3.39

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	1	2	4	1
Up Last 30 Days	1	3	5	2
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	5	5	3	2

Growth Estimates	NEE	Industry	Sector(s)	S&P 500
Current Qtr.	3.50%	N/A	N/A	N/A
Next Qtr.	7.80%	N/A	N/A	N/A
Current Year	7.60%	N/A	N/A	N/A
Next Year	9.00%	N/A	N/A	N/A
Next 5 Years (per annum)	8.80%	N/A	N/A	N/A
Past 5 Years (per annum)	10.33%	N/A	N/A	N/A

\n Advertisement\n

U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.6
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.60 (-0.28%)

NorthWestern Corporation (NWE)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

2W 10W 9M

Quote Lookup

56.47 -0.35 (-0.62%) 56.11 -0.36 (-0.64%)

At close: 04:00PM EDT After hours: 04:24PM EDT

Currency in USD					\n Advertisement\n	
Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)		
	No. of Analysts	6	6	8	8	
	Avg. Estimate	0.82	1.15	3.41	3.59	
	Low Estimate	0.59	0.95	3.29	3.42	
	High Estimate	1.01	1.33	3.48	3.75	
	Year Ago EPS	0.42	1.13	3.18	3.41	\n Advertisement\n
Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)		
	No. of Analysts	4	4	6	6	
	Avg. Estimate	386.19M	443M	1.59B	1.65B	
	Low Estimate	361.45M	434M	1.54B	1.58B	
	High Estimate	414M	461M	1.7B	1.8B	
	Year Ago Sales	335.1M	425.25M	1.48B	1.59B	
	Sales Growth (year/est)	15.20%	4.20%	7.90%	3.50%	

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Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.59	1.16	1.11	0.52
EPS Actual	0.42	1.13	1.05	0.35
Difference	-0.17	-0.03	-0.06	-0.17
Surprise %	-28.80%	-2.60%	-5.40%	-32.70%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.82	1.15	3.41	3.59
7 Days Ago	0.75	1.11	3.43	3.58
30 Days Ago	0.75	1.11	3.46	3.59
60 Days Ago	0.72	1.12	3.44	3.6
90 Days Ago	0.69	1.11	3.47	3.61

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	3	2	1	1
Up Last 30 Days	4	3	1	1
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	1	1	2	1

Growth Estimates	NWE	Industry	Sector(s)	S&P 500
Current Qtr.	95.20%	N/A	N/A	N/A
Next Qtr.	1.80%	N/A	N/A	N/A
Current Year	7.20%	N/A	N/A	N/A
Next Year	5.30%	N/A	N/A	N/A
Next 5 Years (per annum)	4.50%	N/A	N/A	N/A
Past 5 Years (per annum)	-3.33%	N/A	N/A	N/A

Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	0.41	1.18	-0.03	0.16
EPS Actual	0.36	1.31	0.25	0.19
Difference	-0.05	0.13	0.28	0.03
Surprise %	-12.20%	11.00%	933.30%	18.80%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.45	1.15	2	2.12
7 Days Ago	0.45	1.15	2	2.12
30 Days Ago	0.44	1.16	2	2.12
60 Days Ago	0.44	1.16	2.01	2.12
90 Days Ago	0.46	1.14	2.01	2.12

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	1	N/A	N/A	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	OGE	Industry	Sector(s)	S&P 500
Current Qtr.	25.00%	N/A	N/A	N/A
Next Qtr.	-12.20%	N/A	N/A	N/A
Current Year	-39.80%	N/A	N/A	N/A
Next Year	6.00%	N/A	N/A	N/A
Next 5 Years (per annum)	-12.34%	N/A	N/A	N/A
Past 5 Years (per annum)	4.03%	N/A	N/A	N/A

U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.6
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.60 (-0.28%)

Pinnacle West Capital Corporation (PNW)
NYSE - NYSE Delayed Price. Currency in USD

2W10W9M

Quote Lookup

82.82-0.11 (-0.14%)82.820.00 (0.00%)

At close: 04:03PM EDTAfter hours: 05:22PM EDT

Dividend

PNW announced a cash dividend of 0.865 with an ex-date of Jul. 31, 2023

- SummaryCompany InsightsChartConversationsStatisticsHistorical DataProfileFinancialsAnalysisOptionsHoldersSustainability

Earnings Estimate	Currency in USD				
	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
	No. of Analysts	10	7	12	12
	Avg. Estimate	1.19	3.03	4.19	4.89
	Low Estimate	1.07	2.65	4	4.29
	High Estimate	1.44	3.26	4.33	5.26
	Year Ago EPS	1.45	2.88	4.26	4.19

Revenue Estimate	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	4	4	8	8
Avg. Estimate	1.07B	1.81B	4.48B	4.67B
Low Estimate	1.03B	1.37B	3.98B	4.2B
High Estimate	1.1B	2.87B	4.95B	4.94B
Year Ago Sales	1.06B	1.31B	4.32B	4.48B
Sales Growth				

(year/est)	1.10%	37.90%	3.70%	4.00%

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Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	1.32	2.6	-0.18	0.04
EPS Actual	1.45	2.88	-0.21	-0.03
Difference	0.13	0.28	-0.03	-0.07
Surprise %	9.80%	10.80%	-16.70%	-175.00%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	1.19	3.03	4.19	4.89
7 Days Ago	1.23	3.03	4.18	4.85
30 Days Ago	1.34	2.9	4.15	4.82
60 Days Ago	1.33	2.83	4.06	4.7
90 Days Ago	1.26	2.75	4.06	4.74

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	1	2	2
Up Last 30 Days	N/A	4	4	4
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	1	N/A	N/A	N/A

Growth Estimates	PNW	Industry	Sector(s)	S&P 500
Current Qtr.	-17.90%	N/A	N/A	N/A
Next Qtr.	5.20%	N/A	N/A	N/A
Current Year	-1.60%	N/A	N/A	N/A
Next Year	16.70%	N/A	N/A	N/A
Next 5 Years (per annum)	6.10%	N/A	N/A	N/A
Past 5 Years (per annum)	32.26%	N/A	N/A	N/A

U.S. markets closed

S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.74	2,003.6
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.06 (-0.07%)	-5.60 (-0.28%)

Portland General Electric Company (POR)

NYSE - NYSE Delayed Price. Currency in USD

2W10W9M

Quote Lookup

47.67

+0.13 (+0.27%)

47.67

0.00 (0.00%)

At close: 04:00PM EDT

After hours: 04:15PM EDT

SummaryCompany InsightsChartConversationsStatisticsHistorical DataProfileFinancialsAnalysisOptionsHoldersSustainability

Currency in USD

\n Advertisement\n

Earnings Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	5	5	8	9
Avg. Estimate	0.75	0.66	2.67	3.05
Low Estimate	0.64	0.53	2.65	2.88
High Estimate	0.87	0.76	2.68	3.18
Year Ago EPS	0.65	0.69	2.74	2.67

\n Advertisement\n

Revenue Estimate	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	3	3	5	5
Avg. Estimate	769.5M	637.92M	2.72B	2.9B
Low Estimate	719.19M	448.57M	2.42B	2.61B
High Estimate	800.32M	737.18M	2.91B	3.14B
Year Ago Sales	636.6M	687M	2.65B	2.72B
Sales Growth (year/est)	20.90%	-7.10%	2.60%	6.80%

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Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	0.62	0.63	0.78	0.48
EPS Actual	0.65	0.69	0.8	0.39
Difference	0.03	0.06	0.02	-0.09
Surprise %	4.80%	9.50%	2.60%	-18.70%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.75	0.66	2.67	3.05
7 Days Ago	0.76	0.66	2.68	3.05
30 Days Ago	0.73	0.62	2.67	3.05
60 Days Ago	0.7	0.62	2.67	3.03
90 Days Ago	0.73	0.62	2.68	3.03

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	N/A	1	1
Up Last 30 Days	1	2	2	2
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A

Growth Estimates	POR	Industry	Sector(s)	S&P 500
Current Qtr.	15.40%	N/A	N/A	N/A
Next Qtr.	-4.30%	N/A	N/A	N/A
Current Year	-2.60%	N/A	N/A	N/A
Next Year	14.20%	N/A	N/A	N/A
Next 5 Years (per annum)	5.90%	N/A	N/A	N/A
Past 5 Years (per annum)	4.46%	N/A	N/A	N/A

\n Advertisement\n

U.S. markets closed					
S&P 500	Dow 30	Nasdaq	Russell 2000	Crude Oil	Gold
4,588.96	35,559.53	14,346.02	2,003.18	81.75	2,003.7
+6.73 (+0.15%)	+100.24 (+0.28%)	+29.37 (+0.21%)	+21.64 (+1.09%)	-0.05 (-0.06%)	-5.50 (-0.28%)

The Southern Company (SO)
NYSE - NYSE Delayed Price. Currency in USD

2W 10W 9M

Quote Lookup

72.34 -0.01 (-0.01%) 72.40 +0.06 (+0.08%)
At close: 04:04PM EDT After hours: 05:40PM EDT

Dividend
SO announced a cash dividend of 0.70 with an ex-date of Aug. 18, 2023

Earnings Estimate	Currency in USD				
	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)	
	No. of Analysts	14	10	17	17
	Avg. Estimate	0.75	1.43	3.6	4.02
	Low Estimate	0.7	1.29	3.53	3.96
	High Estimate	0.77	1.67	3.65	4.05
	Year Ago EPS	1.07	1.31	3.6	3.6

\n Advertisement\n

Revenue Estimate				
	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
No. of Analysts	6	6	12	11
Avg. Estimate	6.47B	8.41B	27.49B	28.83B
Low Estimate	4.78B	7.42B	22.74B	23.89B
High Estimate	7.39B	9.38B	31.19B	32.63B
Year Ago Sales	7.21B	8.38B	29.28B	27.49B

Sales Growth

(year/est)	-10.20%	0.40%	-6.10%	4.90%

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Earnings History	6/29/2022	9/29/2022	12/30/2022	3/30/2023
EPS Est.	0.84	1.33	0.24	0.71
EPS Actual	1.07	1.31	0.26	0.79
Difference	0.23	-0.02	0.02	0.08
Surprise %	27.40%	-1.50%	8.30%	11.30%

EPS Trend	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	0.75	1.43	3.6	4.02
7 Days Ago	0.76	1.44	3.6	4.02
30 Days Ago	0.78	1.46	3.6	4.03
60 Days Ago	0.87	1.44	3.61	4.02
90 Days Ago	0.89	1.4	3.61	4.02

EPS Revisions	Current Qtr. (Jun 2023)	Next Qtr. (Sep 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	1	2	N/A	N/A
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	3	2	N/A	1

Growth Estimates	SO	Industry	Sector(s)	S&P 500
Current Qtr.	-29.90%	N/A	N/A	N/A
Next Qtr.	9.20%	N/A	N/A	N/A
Current Year	N/A	N/A	N/A	N/A
Next Year	11.70%	N/A	N/A	N/A
Next 5 Years (per annum)	7.30%	N/A	N/A	N/A
Past 5 Years (per annum)	2.22%	N/A	N/A	N/A

Earnings History	9/29/2022	12/30/2022	3/30/2023	6/29/2023
EPS Est.	1.22	0.68	0.74	0.56
EPS Actual	1.18	0.69	0.76	0.52
Difference	-0.04	0.01	0.02	-0.04
Surprise %	-3.30%	1.50%	2.70%	-7.10%

EPS Trend	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Current Estimate	1.3	0.73	3.35	3.59
7 Days Ago	1.31	0.74	3.36	3.6
30 Days Ago	1.3	0.72	3.37	3.6
60 Days Ago	1.29	0.74	3.38	3.61
90 Days Ago	1.3	0.72	3.38	3.61

EPS Revisions	Current Qtr. (Sep 2023)	Next Qtr. (Dec 2023)	Current Year (2023)	Next Year (2024)
Up Last 7 Days	N/A	1	N/A	1
Up Last 30 Days	5	8	N/A	1
Down Last 7 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	1	N/A	1	1

Growth Estimates	XEL	Industry	Sector(s)	S&P 500
Current Qtr.	10.20%	N/A	N/A	N/A
Next Qtr.	5.80%	N/A	N/A	N/A
Current Year	5.70%	N/A	N/A	N/A
Next Year	7.20%	N/A	N/A	N/A
Next 5 Years (per annum)	6.15%	N/A	N/A	N/A
Past 5 Years (per annum)	6.69%	N/A	N/A	N/A

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Detailed Estimates	
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החברה מפרסמת את המידע הנ"ל כפי שהוא, ללא אחריות. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ.

Allele (ALE)

(Delayed Data from NYSE)

\$57.43 USD

+0.22 (0.38%)

החברה מפרסמת את המידע הנ"ל כפי שהוא, ללא אחריות. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ.

Updated Jul 31, 2023 04:10 PM ET

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After-market: IN \$57.43 IN +0.02 (0.03%) IN 6:50 PM ET

החברה מפרסמת את המידע הנ"ל כפי שהוא, ללא אחריות. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ.

Zacks Rank: ☐

3 3-Hold

החברה מפרסמת את המידע הנ"ל כפי שהוא, ללא אחריות. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ.

Style Scores: ☐

B Value | C Growth | C Momentum | C VGM

החברה מפרסמת את המידע הנ"ל כפי שהוא, ללא אחריות. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ.

Industry Rank: ☐

Top 41% (105 out of 251)

Industry: Utility - Electric Power

החברה מפרסמת את המידע הנ"ל כפי שהוא, ללא אחריות. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ. המידע אינו מהווה חלק מהצעת מכירה או קנייה של ני"מ.

Allele (ALE) Quote Overview » Allele (ALE) Detailed Earnings Estimates

Detailed Estimates

Estimates

Earnings Date	*BMO8/8/23
Current Quarter	0.78
EPS Last Quarter	1.02
Last EPS Surprise	-14.29%
ABR	3.60

Earnings ESP	2.56%
Current Year	3.63
Next Year	4.03
EPS (TTM)	3.18
P/E (F1)	15.76

*BMO = Before Market Open *AMC = After Market Close

Growth Estimates	ALE	IND	S&P
Current Qtr (06/2023)	16.42	-1.70	17.35
Next Qtr (09/2023)	8.47	10.64	15.19
Current Year (12/2023)	7.40	2.50	8.78
Next Year (12/2024)	11.02	5.60	16.69
Past 5 Years	0.80	3.50	9.00
Next 5 Years	8.10	6.00	NA
PE	15.76	11.10	21.39
PEG Ratio	1.95	1.85	NA

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Price and EPS Surprise Chart

[1 Month](#) [3 Months](#) [YTD](#)



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	Current Qtr (6/2023)	Next Qtr (9/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	0.78	0.64	3.63	4.03
7 Days Ago	0.78	0.64	3.63	4.03
30 Days Ago	0.79	0.64	3.63	4.03
60 Days Ago	0.87	0.63	3.69	4.00
90 Days Ago	0.72	0.63	3.72	4.02

	Current Qtr (6/2023)	Next Qtr (9/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	0.80	0.64	3.63	4.03
Zacks Consensus Estimate	0.78	0.64	3.63	4.03
Earnings ESP □	2.56%	0.00%	0.00%	0.00%

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Detailed Estimates	
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Alliant Energy (LNT)

(Delayed Data from NSDQ)

\$53.74 USD

-0.15 (-0.28%)

Updated Jul 31, 2023 04:10 PM ET

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After-market: IN \$53.75 IN +0.01 (0.02%) IN 6:50 PM ET

Zacks Rank: ☐

3 IN 3-Hold

Style Scores: ☐

IN ☐ Value | ☐ Growth | ☐ Momentum | ☒ VGM

Industry Rank: ☐

IN Top 41% (105 out of 251)

Industry: Utility - Electric Power

Alliant Energy (LNT) Quote Overview » Estimates » Alliant Energy (LNT) Detailed Earnings Estimates

Detailed Estimates

Estimates

Earnings Date	*AMC8/3/23
Current Quarter	0.59
EPS Last Quarter	0.65
Last EPS Surprise	-10.96%
ABR	2.11

Earnings ESP	0.00%
Current Year	2.87
Next Year	3.09
EPS (TTM)	2.67
P/E (F1)	18.80

*BMO = Before Market Open *AMC = After Market Close

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1

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	Current Qtr (6/2023)	Next Qtr (9/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	0.59	0.88	2.87	3.09
7 Days Ago	0.59	0.88	2.87	3.09
30 Days Ago	0.67	0.88	2.88	3.09
60 Days Ago	NA	0.88	2.89	3.09
90 Days Ago	NA	0.82	2.90	3.09

	Current Qtr (6/2023)	Next Qtr (9/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	0.59	0.88	2.85	3.09
Zacks Consensus Estimate	0.59	0.88	2.87	3.09
Earnings ESP □	0.00%	0.00%	-0.58%	0.00%

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At the center of everything we do is a strong commitment to independent research and sharing its profitable discoveries with investors. This dedication to giving investors a trading advantage led to the creation of our proven Zacks Rank stock-rating system. Since 1988 it has more than doubled the S&P 500 with an average gain of +24.26% per year. These returns cover a period from January 1, 1988 through July 3, 2023. Zacks Rank stock-rating system returns are computed monthly based on the beginning of the month and end of the month Zacks Rank stock prices plus any dividends received during that particular month. A simple, equally-weighted average return of all Zacks Rank stocks is calculated to determine the monthly return. The monthly returns are then compounded to arrive at the annual return. Only Zacks Rank stocks included in Zacks hypothetical portfolios at the beginning of each month are included in the return calculations. Zacks Rank stocks can, and often do, change throughout the month. Certain Zacks Rank stocks for which no month-end price was available, pricing information was not collected, or for certain other reasons have been excluded from these return calculations.

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Real time prices by BATS. Delayed quotes by FIS.

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Detailed Estimates

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Estimates

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Earnings Date

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*AMC8/2/23

Current Quarter0.78

EPS Last Quarter1.00

Last EPS Surprise6.38%

[ABR](#)1.67

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Earnings ESP

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0.00%

Current Year4.36

Next Year4.66

[EPS \(TTM\)](#)4.17

P/E (F1)19.69

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*BMO = Before Market Open *AMC = After Market Close

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Growth Estimates	AEE	IND	S&P
Current Qtr (06/2023)	-2.50	-1.70	17.35
Next Qtr (09/2023)	6.90	10.64	15.19
Current Year (12/2023)	5.31	2.50	8.78
Next Year (12/2024)	6.88	5.60	16.69
Past 5 Years	6.90	3.50	9.00
Next 5 Years	6.40	6.00	NA
PE	19.69	11.10	21.39
PEG Ratio	3.06	1.85	NA

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Research for AEE

Analyst

Snapshot

Price and EPS Surprise Chart

1 Month

3 Months



Interactive Chart | Fundamental Chart

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1

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	Current Qtr (6/2023)	Next Qtr (9/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	0.78	1.86	4.36	4.66
7 Days Ago	0.77	1.86	4.36	4.66
30 Days Ago	0.55	1.86	4.36	4.66
60 Days Ago	0.69	1.86	4.36	4.68
90 Days Ago	0.71	1.85	4.35	4.67

	Current Qtr (6/2023)	Next Qtr (9/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	0.78	1.86	4.36	4.66
Zacks Consensus Estimate	0.78	1.86	4.36	4.66
Earnings ESP □	0.00%	0.00%	0.00%	0.07%

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NYSE and AMEX data is at least 20 minutes delayed. NASDAQ data is at least 15 minutes delayed.

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Zacks Research	
Detailed Estimates	
IN	IN
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American Electric Power (AEP)

(Delayed Data from NSDQ)

\$84.74 USD

-0.68 (-0.80%)

Updated: Jul 31, 2023 04:10 PM ET

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After Market: **\$84.94** **IN +0.20 (0.24%)** 6:48 PM ET

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Zacks Rank: ☐

4 **IN 4-Sell**

Style Scores: ☐

C Value | **D** Growth | **A** Momentum | **D** VGM

Industry Rank: ☐

IN Top 41% (105 out of 251)

Industry: Utility - Electric Power

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Detailed Estimates

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Estimates

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Exp Earnings Date\n

10/26/23

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Current Quarter

1.85

EPS Last Quarter

1.13

Last EPS Surprise

-0.88%

ABR

2.12

ln

ln

[illegible]

Earnings ESP \n

ln ln

0.00%

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Current Year

5.26

Next Year

5.58

EPS (TTM)

4.91

P/E (F1)

16.25

ln

ln

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Growth Estimates	AEP	IND	S&P
Current Qtr (09/2023)	14.20	-1.70	17.35
Next Qtr (12/2023)	9.52	10.64	15.19
Current Year (12/2023)	3.34	2.50	8.78
Next Year (12/2024)	6.08	5.60	16.69
Past 5 Years	5.70	3.50	9.00
Next 5 Years	5.60	6.00	NA
PE	16.25	11.10	21.39
PEG Ratio	2.90	1.85	NA

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Analyst

Snapshot

Price and EPS Surprise Chart

1 Month

3 Months



Interactive Chart | Fundamental Chart

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	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Current	1.85	1.15	5.26	5.58
7 Days Ago	1.85	1.15	5.26	5.58
30 Days Ago	1.76	1.10	5.26	5.59
60 Days Ago	1.76	1.10	5.27	5.60
90 Days Ago	1.69	1.18	5.26	5.59

	Current Qtr (9/2023)	Next Qtr (12/2023)	Current Year (12/2023)	Next Year (12/2024)
Most Accurate Estimate	1.85	1.15	5.24	5.59
Zacks Consensus Estimate	1.85	1.15	5.26	5.58
Earnings ESP □	0.00%	0.00%	-0.41%	0.07%

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BBB Rating: A+

As of 10/8/2023

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החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

## Avista (AVA)

(Delayed Data from NYSE)

**\$38.64 USD**

**-0.32 (-0.82%)**

Updated Jul 31, 2023 04:48 PM ET

[Add to portfolio](#)

After-market: **\$38.64** **IN** 0.00 (0.00%) **IN** 6:48 PM ET

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

**Zacks Rank:** ☐

**4** **IN 4-Sell**

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

**Style Scores:** ☐

**C** Value | **C** Growth | **B** Momentum | **C** VGM

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

**Industry Rank:** ☐

**IN** Top 41% (105 out of 251)

Industry: Utility - Electric Power

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

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Detailed Estimates

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Estimates

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Earnings Date

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\*BMO8/2/23

Current Quarter

0.15

EPS Last Quarter

0.73

Last EPS Surprise

-37.07%

[ABR](#)

4.75

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Earnings ESP

↩

0.00%

Current Year

2.32

Next Year

2.43

[EPS \(TTM\)](#)

1.86

P/E (F1)

16.83

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\*BMO = Before Market Open   \*AMC = After Market Close

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| Growth Estimates       | AVA    | IND   | S&P   |
|------------------------|--------|-------|-------|
| Current Qtr (06/2023)  | -6.25  | -1.70 | 17.35 |
| Next Qtr (09/2023)     | 387.50 | 10.64 | 15.19 |
| Current Year (12/2023) | 9.43   | 2.50  | 8.78  |
| Next Year (12/2024)    | 4.74   | 5.60  | 16.69 |
| Past 5 Years           | 0.50   | 3.50  | 9.00  |
| Next 5 Years           | 6.30   | 6.00  | NA    |
| PE                     | 16.83  | 11.10 | 21.39 |
| PEG Ratio              | 2.65   | 1.85  | NA    |

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Research for AVA

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## Price and EPS Surprise Chart

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1 Month 3 Months YTD

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Interactive Chart | Fundamental Chart

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|             | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|----------------------|---------------------------|------------------------|
| Current     | 0.15                    | 0.23                 | 2.32                      | 2.43                   |
| 7 Days Ago  | 0.15                    | 0.23                 | 2.32                      | 2.43                   |
| 30 Days Ago | 0.19                    | 0.24                 | 2.32                      | 2.44                   |
| 60 Days Ago | 0.19                    | 0.24                 | 2.32                      | 2.44                   |
| 90 Days Ago | 0.26                    | 0.09                 | 2.32                      | 2.44                   |

|                          | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 0.15                    | 0.23                 | 2.33                      | 2.43                   |
| Zacks Consensus Estimate | 0.15                    | 0.23                 | 2.32                      | 2.43                   |
| Earnings ESP<br>□        | 0.00%                   | 0.00%                | 0.65%                     | 0.00%                  |

|            | Quarter Ending<br>(3/2023) | Quarter Ending<br>(12/2022) | Quarter Ending<br>(9/2022) | Quarter Ending<br>(6/2022) | Average Surprise |
|------------|----------------------------|-----------------------------|----------------------------|----------------------------|------------------|
| Reported   | 0.73                       | 1.05                        | -0.08                      | 0.16                       | NA               |
| Estimate   | 1.16                       | 0.72                        | 0.16                       | 0.18                       | NA               |
| Difference | -0.43                      | 0.33                        | -0.24                      | -0.02                      | -0.09            |
| Surprise   | -37.07%                    | 45.83%                      | -150.00%                   | -11.11%                    | -38.09%          |

## Annual Estimates By Analyst

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As of 10/8/2023

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| Detailed Estimates |    |
|                    | IN |
|                    | IN |

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## CMS Energy (CMS)

(Delayed Data from NYSE)

**\$61.07 USD**

**+0.05 (0.08%)**

Updated Jul 31, 2023 04:50 PM ET

[Add to portfolio](#) After-market: IN \$61.07 IN 0.00 (0.00%) IN 6:50 PM ET

**Zacks Rank:** ☐

**3** IN 3-Hold

**Style Scores:** ☐

IN **B** Value | **B** Growth | **C** Momentum | **B** VGM

**Industry Rank:** ☐

IN Top 41% (105 out of 251)

Industry: Utility - Electric Power

253

|                        |       |       |       |
|------------------------|-------|-------|-------|
| Current Qtr (09/2023)  | 42.86 | -1.70 | 17.35 |
| Next Qtr (12/2023)     | 51.67 | 10.64 | 15.19 |
| Current Year (12/2023) | 7.27  | 2.50  | 8.78  |
| Next Year (12/2024)    | 8.06  | 5.60  | 16.69 |
| Past 5 Years           | 5.80  | 3.50  | 9.00  |
| Next 5 Years           | 7.80  | 6.00  | NA    |
| PE                     | 19.66 | 11.10 | 21.39 |
| PEG Ratio              | 2.52  | 1.85  | NA    |

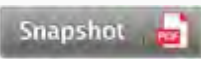
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☐ Research for CMS

 Analyst  Snapshot

## Price and EPS Surprise Chart

    YTD



Interactive Chart | Fundamental Chart



Sales Estimates

|                            | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------------------|-------------------------|-----------------------|---------------------------|------------------------|
| Zacks Consensus Estimate   | 2.11B                   | 2.41B                 | 8.82B                     | 9.17B                  |
| # of Estimates             | 4                       | 4                     | 4                         |                        |
| High Estimate              | 2.17B                   | 2.44B                 | 8.93B                     | 9.36B                  |
| Low Estimate               | 2.08B                   | 2.38B                 | 8.74B                     | 8.98B                  |
| Year ago Sales             | 2.02B                   | 2.28B                 | 8.60B                     | 8.82B                  |
| Year over Year Growth Est. | 4.49%                   | 5.76%                 | 2.60%                     | 3.93%                  |

1/1/2023

Earnings Estimates

|                            | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) |
|----------------------------|-------------------------|-----------------------|---------------------------|
| Zacks Consensus Estimate   | 0.80                    | 0.91                  | 3.1                       |
| # of Estimates             | 4                       | 4                     |                           |
| Most Recent Consensus      | 0.77                    | 0.91                  | N/A                       |
| High Estimate              | 0.87                    | 0.95                  | 3.1                       |
| Low Estimate               | 0.74                    | 0.88                  | 3.0                       |
| Year ago EPS               | 0.56                    | 0.60                  | 2.8                       |
| Year over Year Growth Est. | 42.86%                  | 51.67%                | 7.27%                     |

1/1/2023

Agreement - Estimate Revisions 1/1/2023

|                | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------|-------------------------|-----------------------|---------------------------|------------------------|
| Up Last 7 Days | 0                       | 0                     | 0                         | 0                      |

[illegible]

|             | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|-----------------------|---------------------------|------------------------|
| Current     | 0.80                    | 0.91                  | 3.10                      | 3.35                   |
| 7 Days Ago  | 0.80                    | 0.91                  | 3.10                      | 3.35                   |
| 30 Days Ago | 0.80                    | 0.89                  | 3.11                      | 3.35                   |
| 60 Days Ago | 0.80                    | 0.89                  | 3.11                      | 3.35                   |
| 90 Days Ago | 0.73                    | 0.87                  | 3.10                      | 3.35                   |

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|                          | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|-----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 0.77                    | 0.92                  | 3.10                      | 3.35                   |
| Zacks Consensus Estimate | 0.80                    | 0.91                  | 3.10                      | 3.35                   |
| Earnings ESP<br>□        | -3.15%                  | 1.19%                 | -0.27%                    | -0.05%                 |

|            | Quarter Ending<br>(6/2023) | Quarter Ending<br>(3/2023) | Quarter Ending<br>(12/2022) | Quarter Ending<br>(9/2022) | Average Surprise |
|------------|----------------------------|----------------------------|-----------------------------|----------------------------|------------------|
| Reported   | 0.75                       | 0.70                       | 0.60                        | 0.56                       | NA               |
| Estimate   | 0.69                       | 0.66                       | 0.60                        | 0.56                       | NA               |
| Difference | 0.06                       | 0.04                       | 0.00                        | 0.00                       | 0.03             |
| Surprise   | 8.70%                      | 6.06%                      | 0.00%                       | 0.00%                      | 3.69%            |

## Annual Estimates By Analyst

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## Duke Energy (DUK)

(Delayed Data from NYSE)

\$93.62 USD

+0.28 (0.30%)

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Updated Jul 31, 2023 04:06 PM ET

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After-market: IN \$93.61 IN -0.01 (-0.01%) IN 6:50 PM ET

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Zacks Rank: ☐

3 3-Hold

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Style Scores: ☐

Value | Growth | Momentum | VGM

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Industry Rank: ☐

Top 41% (105 out of 251)

Industry: Utility - Electric Power

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Duke Energy (DUK) Quote Overview » Estimates » Duke Energy (DUK) Detailed Earnings Estimates

Detailed Estimates

Estimates

|                   |            |
|-------------------|------------|
| Earnings Date     | *BMO8/8/23 |
| Current Quarter   | 0.98       |
| EPS Last Quarter  | 1.20       |
| Last EPS Surprise | -6.98%     |
| ABR               | 2.23       |

|              |        |
|--------------|--------|
| Earnings ESP | -4.02% |
| Current Year | 5.61   |
| Next Year    | 5.96   |
| EPS (TTM)    | 5.23   |
| P/E (F1)     | 16.64  |

\*BMO = Before Market Open \*AMC = After Market Close



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|             | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|----------------------|---------------------------|------------------------|
| Current     | 0.98                    | 2.01                 | 5.61                      | 5.96                   |
| 7 Days Ago  | 0.98                    | 2.01                 | 5.61                      | 5.96                   |
| 30 Days Ago | 1.14                    | 1.91                 | 5.61                      | 5.96                   |
| 60 Days Ago | 1.14                    | 1.91                 | 5.62                      | 5.96                   |
| 90 Days Ago | 1.16                    | 1.94                 | 5.61                      | 5.96                   |

|                          | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 0.94                    | 2.04                 | 5.63                      | 6.03                   |
| Zacks Consensus Estimate | 0.98                    | 2.01                 | 5.61                      | 5.96                   |
| Earnings ESP<br>□        | -4.02%                  | 1.91%                | 0.30%                     | 1.02%                  |

|            | Quarter Ending<br>(3/2023) | Quarter Ending<br>(12/2022) | Quarter Ending<br>(9/2022) | Quarter Ending<br>(6/2022) | Average Surprise |
|------------|----------------------------|-----------------------------|----------------------------|----------------------------|------------------|
| Reported   | 1.20                       | 1.11                        | 1.78                       | 1.14                       | NA               |
| Estimate   | 1.29                       | 1.06                        | 1.83                       | 1.10                       | NA               |
| Difference | -0.09                      | 0.05                        | -0.05                      | 0.04                       | -0.01            |
| Surprise   | -6.98%                     | 4.72%                       | -2.73%                     | 3.64%                      | -0.34%           |

## Annual Estimates By Analyst

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## Entergy (ETR)

(Delayed Data from NYSE)

**\$102.70 USD**

**-0.57 (-0.55%)**

Updated Jul 31, 2023 04:48 PM ET

**Add to portfolio**  
After-market: IN \$102.72 IN +0.02 (0.02%) IN 6:48 PM ET

**Zacks Rank:** ☐

**2** **2-Buy**

**Style Scores:** ☐

IN **B** Value | **B** Growth | **D** Momentum | **B** VGM

**Industry Rank:** ☐

IN **Top 41% (105 out of 251)**

Industry: Utility - Electric Power

Entergy (ETR) Quote Overview » Entergy (ETR) Estimates » Entergy (ETR) Detailed Earnings Estimates

Detailed Estimates

Estimates

|                   |            |
|-------------------|------------|
| Earnings Date     | *BMO8/2/23 |
| Current Quarter   | 1.69       |
| EPS Last Quarter  | 1.14       |
| Last EPS Surprise | -14.93%    |
| ABR               | 2.09       |

|              |        |
|--------------|--------|
| Earnings ESP | -0.18% |
| Current Year | 6.69   |
| Next Year    | 7.18   |
| EPS (TTM)    | 6.27   |
| P/E (F1)     | 15.43  |

\*BMO = Before Market Open \*AMC = After Market Close

| Growth Estimates       | ETR   | IND   | S&P   |
|------------------------|-------|-------|-------|
| Current Qtr (06/2023)  | -5.06 | -1.70 | 17.35 |
| Next Qtr (09/2023)     | 5.28  | 10.64 | 15.19 |
| Current Year (12/2023) | 4.21  | 2.50  | 8.78  |
| Next Year (12/2024)    | 7.32  | 5.60  | 16.69 |
| Past 5 Years           | -2.30 | 3.50  | 9.00  |
| Next 5 Years           | 5.70  | 6.00  | NA    |
| PE                     | 15.43 | 11.10 | 21.39 |
| PEG Ratio              | 2.73  | 1.85  | NA    |

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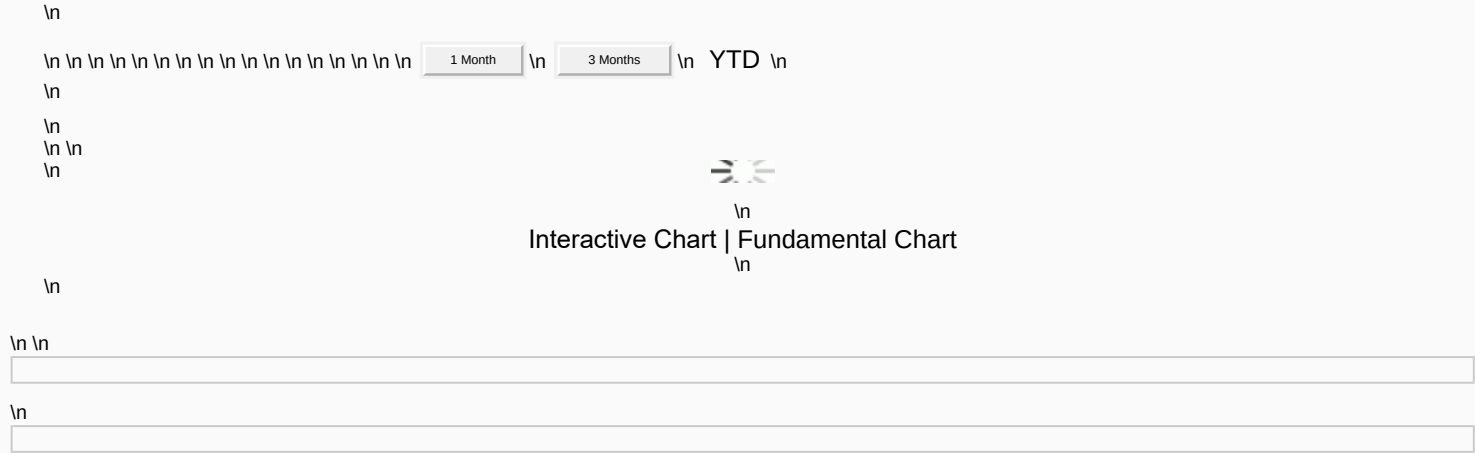
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Research for ETR

Analyst

Snapshot

Price and EPS Surprise Chart



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|             | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|----------------------|---------------------------|------------------------|
| Current     | 1.69                    | 2.99                 | 6.69                      | 7.18                   |
| 7 Days Ago  | 1.69                    | 2.94                 | 6.69                      | 7.18                   |
| 30 Days Ago | 1.76                    | 2.89                 | 6.67                      | 7.17                   |
| 60 Days Ago | 1.74                    | 2.88                 | 6.67                      | 7.17                   |
| 90 Days Ago | 1.73                    | 2.89                 | 6.69                      | 7.18                   |

|                          | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 1.69                    | 3.06                 | 6.74                      | 7.22                   |
| Zacks Consensus Estimate | 1.69                    | 2.99                 | 6.69                      | 7.18                   |
| Earnings ESP<br>□        | -0.18%                  | 2.34%                | 0.61%                     | 0.56%                  |



|            | Quarter Ending<br>(3/2023) | Quarter Ending<br>(12/2022) | Quarter Ending<br>(9/2022) | Quarter Ending<br>(6/2022) | Average Surprise |
|------------|----------------------------|-----------------------------|----------------------------|----------------------------|------------------|
| Reported   | 1.14                       | 0.51                        | 2.84                       | 1.78                       | NA               |
| Estimate   | 1.34                       | 0.45                        | 2.67                       | 1.42                       | NA               |
| Difference | -0.20                      | 0.06                        | 0.17                       | 0.36                       | 0.10             |
| Surprise   | -14.93%                    | 13.33%                      | 6.37%                      | 25.35%                     | 7.53%            |

## Annual Estimates By Analyst

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| Zacks Research     |    |
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| IN                 | IN |
| IN                 | IN |

### Evergy (EVRG)

(Delayed Data from NSDQ)

**\$59.97 USD**

-0.18 (-0.30%)

Updated: Jul 31, 2023 04:10 PM ET

After Market: **\$59.94** **IN -0.03 (-0.05%)** **IN 6:50 PM ET**

**Add to portfolio**

**Zacks Rank:** ☐

**3** **IN 3-Hold**

**Style Scores:** ☐

**C** Value | **B** Growth | **D** Momentum | **C** VGM

**Industry Rank:** ☐

**IN Top 42% (107 out of 251)**

**Industry:** Oil and Gas - Production and Pipelines

[\n Evergy \(EVRG\) Quote Overview »\n](#) [\n Estimates »\n](#) [\n Evergy \(EVRG\) Detailed Earnings Estimates \n](#)

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Earnings Date\n

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\*BMO8/4/23

Current Quarter

0.79

EPS Last Quarter

0.59

Last EPS Surprise

5.36%

ABR

**2.80**

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Earnings ESP \n

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**-3.80%**

Current Year

3.61

Next Year

3.93

EPS (TTM)

3.76

P/E (F1)

16.65

ln

\*BMO = Before Market Open      \*AMC = After Market Close

274

| Growth Estimates       | EVRG   | IND      | S&P   |
|------------------------|--------|----------|-------|
| Current Qtr (06/2023)  | -8.14  | 2,324.86 | 17.35 |
| Next Qtr (09/2023)     | -13.93 | 2,680.74 | 15.19 |
| Current Year (12/2023) | -2.70  | -4.60    | 8.78  |
| Next Year (12/2024)    | 8.86   | 6.60     | 16.69 |
| Past 5 Years           | 8.50   | 11.20    | 9.00  |
| Next 5 Years           | 5.20   | 4.50     | NA    |
| PE                     | 16.65  | 16.10    | 21.39 |
| PEG Ratio              | 3.19   | 3.58     | NA    |

[Learn More About Estimate Research](#)

[See Brokerage Recommendations](#)

[Research for EVRG](#)

[Analyst](#) [Snapshot](#)

### Price and EPS Surprise Chart

1 Month

3 Months

YTD

Interactive Chart

Fundamental Chart

Sales Estimates

|                            | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------------------|-------------------------|----------------------|---------------------------|------------------------|
| Zacks Consensus Estimate   | 1.24B                   | 1.75B                | 5.21B                     | 5.31B                  |
| # of Estimates             | 1                       | 1                    | 2                         |                        |
| High Estimate              | 1.24B                   | 1.75B                | 5.25B                     | 5.31B                  |
| Low Estimate               | 1.24B                   | 1.75B                | 5.16B                     | 5.30B                  |
| Year ago Sales             | 1.45B                   | 1.91B                | 5.86B                     | 5.21B                  |
| Year over Year Growth Est. | -14.22%                 | -8.33%               | -11.14%                   | 1.90%                  |
|                            |                         |                      |                           |                        |

Earnings Estimates

|                            | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------------------|-------------------------|----------------------|---------------------------|------------------------|
| Zacks Consensus Estimate   | 0.79                    | 1.73                 | 3.6                       |                        |
| # of Estimates             | 2                       | 1                    |                           |                        |
| Most Recent Consensus      | 0.82                    | 1.73                 | 3.6                       |                        |
| High Estimate              | 0.82                    | 1.73                 | 3.6                       |                        |
| Low Estimate               | 0.76                    | 1.73                 | 3.5                       |                        |
| Year ago EPS               | 0.86                    | 2.01                 | 3.7                       |                        |
| Year over Year Growth Est. | -8.14%                  | -13.93%              | -2.70%                    |                        |
|                            |                         |                      |                           |                        |

Agreement - Estimate Revisions \N

|                | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------|-------------------------|----------------------|---------------------------|------------------------|
| Up Last 7 Days | 0                       | 0                    | 0                         | 0                      |

[illegible]

|             | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|----------------------|---------------------------|------------------------|
| Current     | 0.79                    | 1.73                 | 3.61                      | 3.93                   |
| 7 Days Ago  | 0.79                    | 1.73                 | 3.61                      | 3.93                   |
| 30 Days Ago | 0.81                    | 1.73                 | 3.62                      | 3.93                   |
| 60 Days Ago | 0.82                    | 1.73                 | 3.62                      | 3.92                   |
| 90 Days Ago | 0.90                    | 1.42                 | 3.64                      | 3.92                   |

[illegible]

|                          | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 0.76                    | 1.73                 | 3.58                      | 3.93                   |
| Zacks Consensus Estimate | 0.79                    | 1.73                 | 3.61                      | 3.93                   |
| Earnings ESP<br>□        | -3.80%                  | 0.00%                | -0.92%                    | 0.00%                  |

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**ACCREDITED  
BUSINESS**

**BBB Rating: A+**

As of 10/8/2023

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At the center of everything we do is a strong commitment to independent research and sharing its profitable discoveries with investors. This dedication to giving investors a trading advantage led to the creation of our proven Zacks Rank stock-rating system. Since 1988 it has more than doubled the S&P 500 with an average gain of +24.26% per year. These returns cover a period from January 1, 1988 through July 3, 2023. Zacks Rank stock-rating system returns are computed monthly based on the beginning of the month and end of the month Zacks Rank stock prices plus any dividends received during that particular month. A simple, equally-weighted average return of all Zacks Rank stocks is calculated to determine the monthly return. The monthly returns are then compounded to arrive at the annual return. Only Zacks Rank stocks included in Zacks hypothetical portfolios at the beginning of each month are included in the return calculations. Zacks Ranks stocks can, and often do, change throughout the month. Certain Zacks Rank stocks for which no month-end price was available, pricing information was not collected, or for certain other reasons have been excluded from these return calculations.

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Visit [Performance Disclosure](#) for information about the performance numbers displayed above.

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Real time prices by BATS. Delayed quotes by FIS.

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NYSE and AMEX data is at least 20 minutes delayed. NASDAQ data is at least 15 minutes delayed.

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מחזוריות

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.



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| IN Zacks Research  | IN |
|--------------------|----|
| Detailed Estimates |    |
|                    | IN |
|                    | IN |

## IDACORP (IDA)

(Delayed Data from NYSE)

\$102.82 USD

+0.36 (0.35%)

Updated Jul 31, 2023 04:00 PM ET

Add to portfolio

After-market: IN \$102.83 IN +0.01 (0.01%) IN 6:50 PM ET

Zacks Rank: ☐

☐ ☐ 3 ☐ ☐ IN 3-Hold

Style Scores: ☐

IN ☐ Value | ☐ Growth | ☐ Momentum | ☐ VGM

Industry Rank: ☐

IN Top 41% (105 out of 251)

Industry: Utility - Electric Power

[\n IDACORP \(IDA\) Quote Overview »](#)[\n Estimates »](#)[\n IDACORP \(IDA\) Detailed Earnings Estimates \n](#)

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Earnings Date\n

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\*BMO8/3/23

Current Quarter

## 1.22

EPS Last Quarter

## 1.11

Last EPS Surprise

16.84%

ABR

**3.00**

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Earnings ESP \n

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0.00%

Current Year

5.07

Next Year

5.35

EPS (TTM)

5.31

P/E (F1)

20.23

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\*BMO = Before Market Open      \*AMC = After Market Close

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283

|             | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|----------------------|---------------------------|------------------------|
| Current     | 1.22                    | 1.68                 | 5.07                      | 5.35                   |
| 7 Days Ago  | 1.22                    | 1.68                 | 5.07                      | 5.35                   |
| 30 Days Ago | 1.22                    | 1.68                 | 5.07                      | 5.35                   |
| 60 Days Ago | 1.22                    | 1.68                 | 5.07                      | 5.35                   |
| 90 Days Ago | 1.22                    | 1.65                 | 5.06                      | 5.35                   |

|                          | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 1.22                    | 1.68                 | 5.07                      | 5.35                   |
| Zacks Consensus Estimate | 1.22                    | 1.68                 | 5.07                      | 5.35                   |
| Earnings ESP<br>□        | 0.00%                   | 0.00%                | 0.00%                     | 0.00%                  |

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החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

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| IN Zacks Research  | IN |
|--------------------|----|
| Detailed Estimates |    |
|                    | IN |
|                    | IN |

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## NextEra Energy (NEE)

(Delayed Data from NYSE)

\$73.30 USD

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

+0.45 (0.62%)

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

Updated Jul 31, 2023 04:00 PM ET

Add to portfolio

After-market: IN \$73.30 IN 0.00 (0.00%) IN 6:50 PM ET

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

Zacks Rank: ☐

☐ 2 ☐ ☐ ☐ ☐ IN 2-Buy

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

Style Scores: ☐

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

IN ☐ Value | ☐ Growth | ☐ Momentum | ☐ VGM

Industry Rank: ☐

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

IN Top 41% (105 out of 251)

Industry: Utility - Electric Power

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## Detailed Estimates

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## Estimates

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10/27/23

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Current Quarter

0.87

EPS Last Quarter

0.88

Last EPS Surprise

6.02%

ABR

1.38

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Earnings ESP \n

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0.00%

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Current Year

### 3.11

Next Year

3.40

EPS (TTM)

3.08

P/E (F1)

23.42

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## Growth Estimates

NEE

IND

S&P

[See Earnings Report Transcript](#)

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 Better trading starts *here*

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Analyst Snapshot

## Price and EPS Surprise Chart

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1 Month 3 Months YTD

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Interactive Chart | Fundamental Chart

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[illegible]

Sales Estimates

|                            | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------------------|-------------------------|-----------------------|---------------------------|------------------------|
| Zacks Consensus Estimate   | 7.41B                   | 6.31B                 | 27.12B                    | 29.35B                 |
| # of Estimates             | 3                       | 3                     | 3                         |                        |
| High Estimate              | 7.51B                   | 6.41B                 | 27.28B                    | 30.11B                 |
| Low Estimate               | 7.37B                   | 6.23B                 | 26.98B                    | 28.80B                 |
| Year ago Sales             | 6.72B                   | 6.16B                 | 20.96B                    | 27.12B                 |
| Year over Year Growth Est. | 10.35%                  | 2.42%                 | 29.44%                    | 8.20%                  |
|                            |                         |                       |                           |                        |

Earnings Estimates

|                            | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) |
|----------------------------|-------------------------|-----------------------|---------------------------|
| Zacks Consensus Estimate   | 0.87                    | 0.58                  | 3.1                       |
| # of Estimates             | 3                       | 3                     |                           |
| Most Recent Consensus      | 0.89                    | NA                    | 3.1                       |
| High Estimate              | 0.92                    | 0.65                  | 3.1                       |
| Low Estimate               | 0.81                    | 0.55                  | 3.1                       |
| Year ago EPS               | 0.85                    | 0.51                  | 2.9                       |
| Year over Year Growth Est. | 2.35%                   | 13.73%                | 7.24%                     |
|                            |                         |                       |                           |

Agreement - Estimate Revisions \N

|                | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------|-------------------------|-----------------------|---------------------------|------------------------|
| Up Last 7 Days | 0                       | 0                     | 0                         | 0                      |

[illegible]

|             | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|-----------------------|---------------------------|------------------------|
| Current     | 0.87                    | 0.58                  | 3.11                      | 3.40                   |
| 7 Days Ago  | 0.87                    | 0.58                  | 3.11                      | 3.40                   |
| 30 Days Ago | 0.90                    | 0.58                  | 3.11                      | 3.40                   |
| 60 Days Ago | 0.91                    | 0.63                  | 3.11                      | 3.39                   |
| 90 Days Ago | 0.92                    | 0.67                  | 3.11                      | 3.39                   |

[illegible]

|                          | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|-----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 0.87                    | 0.60                  | 3.11                      | 3.40                   |
| Zacks Consensus Estimate | 0.87                    | 0.58                  | 3.11                      | 3.40                   |
| Earnings ESP<br>□        | 0.00%                   | 2.86%                 | 0.00%                     | 0.10%                  |

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As of 10/8/2023

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Real

Real time prices by BATS. Delayed quotes by FIS.

NYSE

NYSE and AMEX data is at least 20 minutes delayed. NASDAQ data is at least 15 minutes delayed.

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|--------------------|----|
| Detailed Estimates |    |
|                    | IN |
|                    | IN |

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## NorthWestern (NWE)

(Delayed Data from NSDQ)

**\$56.47 USD**

**-0.35 (-0.62%)**

Updated Jul 31, 2023 04:10 PM ET

[Add to portfolio](#)

After-market: IN \$56.49 IN +0.02 (0.04%) IN 6:50 PM ET

החברה מפרסמת את המידע הבא כחלק מהפרסום המסודר של החברה. המידע אינו מהווה המלצה או תחזית, והוא אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר. המידע אינו מהווה חלק מהצעת המסחר.

**Zacks Rank:** ☐

**4** **4-Sell**

**Style Scores:** ☐

**C** Value | **F** Growth | **B** Momentum | **D** VGM

**Industry Rank:** ☐

**Top 41% (105 out of 251)**

**Industry: Utility - Electric Power**



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Detailed Estimates

↩

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Estimates

↩

Exp Earnings Date

10/23/23

↩

Current Quarter

0.70

EPS Last Quarter

0.35

Last EPS Surprise

-31.37%

[ABR](#)

2.43

↩

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↩

Earnings ESP

↩  ↩

0.00%

↩

Current Year

3.43

Next Year

3.56

[EPS \(TTM\)](#)

2.95

P/E (F1)

16.59

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Growth Estimates

NWE

IND

S&P

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 Better trading starts here

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Sales Estimates

|                            | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------------------|-------------------------|-----------------------|---------------------------|------------------------|
| Zacks Consensus Estimate   | 360.62M                 | 435.09M               | 1.59B                     | 1.63B                  |
| # of Estimates             | 2                       | 2                     | 2                         |                        |
| High Estimate              | 361.40M                 | 435.58M               | 1.60B                     | 1.66B                  |
| Low Estimate               | 359.83M                 | 434.60M               | 1.59B                     | 1.61B                  |
| Year ago Sales             | 335.10M                 | 425.20M               | 1.48B                     | 1.59B                  |
| Year over Year Growth Est. | 7.61%                   | 2.33%                 | 7.74%                     | 2.66%                  |
|                            |                         |                       |                           |                        |

Earnings Estimates

|                            | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) |
|----------------------------|-------------------------|-----------------------|---------------------------|
| Zacks Consensus Estimate   | 0.70                    | 1.13                  | 3.4                       |
| # of Estimates             | 2                       | 2                     |                           |
| Most Recent Consensus      | 0.70                    | 1.16                  | 3.4                       |
| High Estimate              | 0.70                    | 1.16                  | 3.4                       |
| Low Estimate               | 0.70                    | 1.10                  | 3.4                       |
| Year ago EPS               | 0.42                    | 1.13                  | 3.1                       |
| Year over Year Growth Est. | 66.67%                  | 0.00%                 | 7.86%                     |
|                            |                         |                       |                           |

Agreement - Estimate Revisions \N

|                | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------|-------------------------|-----------------------|---------------------------|------------------------|
| Up Last 7 Days | 0                       | 0                     | 0                         | 0                      |

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|             | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|-----------------------|---------------------------|------------------------|
| Current     | 0.70                    | 1.13                  | 3.43                      | 3.56                   |
| 7 Days Ago  | 0.70                    | 1.13                  | 3.43                      | 3.56                   |
| 30 Days Ago | 0.62                    | 1.12                  | 3.48                      | 3.58                   |
| 60 Days Ago | 0.62                    | 1.12                  | 3.48                      | 3.58                   |
| 90 Days Ago | 0.58                    | 1.13                  | 3.50                      | 3.63                   |

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|                          | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|-----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 0.70                    | 1.13                  | 3.43                      | 3.61                   |
| Zacks Consensus Estimate | 0.70                    | 1.13                  | 3.43                      | 3.56                   |
| Earnings ESP<br>□        | 0.00%                   | 0.00%                 | 0.05%                     | 1.33%                  |

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## Quarterly Estimates By Analyst

## Annual Estimates By Analyst

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**BBB Rating: A+**

As of 10/8/2023

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## OGE Energy (OGE)

(Delayed Data from NYSE)

**\$36.15 USD**

**+0.19 (0.53%)**

Updated Jul 31, 2023 04:10 PM ET

[Add to portfolio](#)

After-market: **\$36.16** **+0.03 (0.08%)** 6:50 PM ET

**Zacks Rank:** ☐

**4** **4-Sell**

**Style Scores:** ☐

**C** Value | **C** Growth | **B** Momentum | **C** VGM

**Industry Rank:** ☐

**Top 41% (105 out of 251)**

Industry: Utility - Electric Power

[»](#) [OGE Energy \(OGE\) Quote Overview](#) [»](#) [Estimates](#) [»](#) [OGE Energy \(OGE\) Detailed Earnings Estimates](#) [»](#)

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Earnings Date\n

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Current Quarter

0.19

EPS Last Quarter

0.19

Last EPS Surprise

26.67%

ABR

2.71

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Earnings ESP \n

$$\ln \left[ \frac{1}{\ln} \right]$$

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0.00%

Current Year

2.00

Next Year

2.12

EPS (TTM)

## 2.11

P/E (F1)

17.96

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\*BMO = Before Market Open      \*AMC = After Market Close

[illegible]



| Growth Estimates       | OGE    | IND   | S&P   |
|------------------------|--------|-------|-------|
| Current Qtr (06/2023)  | -47.22 | -1.70 | 17.35 |
| Next Qtr (09/2023)     | -49.62 | 10.64 | 15.19 |
| Current Year (12/2023) | -39.76 | 2.50  | 8.78  |
| Next Year (12/2024)    | 6.00   | 5.60  | 16.69 |
| Past 5 Years           | 11.60  | 3.50  | 9.00  |
| Next 5 Years           | 3.70   | 6.00  | NA    |
| PE                     | 17.96  | 11.10 | 21.39 |
| PEG Ratio              | 4.92   | 1.85  | NA    |

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304

|             | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|----------------------|---------------------------|------------------------|
| Current     | 0.19                    | 0.66                 | 2.00                      | 2.12                   |
| 7 Days Ago  | 0.19                    | 0.66                 | 2.00                      | 2.12                   |
| 30 Days Ago | 0.65                    | 0.90                 | 2.01                      | 2.12                   |
| 60 Days Ago | 0.65                    | 0.90                 | 2.01                      | 2.12                   |
| 90 Days Ago | NA                      | NA                   | 2.02                      | 2.12                   |

|                          | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 0.19                    | 0.66                 | 1.95                      | 2.12                   |
| Zacks Consensus Estimate | 0.19                    | 0.66                 | 2.00                      | 2.12                   |
| Earnings ESP<br>□        | 0.00%                   | 0.00%                | -2.62%                    | 0.00%                  |

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| PNW                |
|--------------------|
| Detailed Estimates |
| PNW                |
| PNW                |

## Pinnacle West Capital (PNW)

(Delayed Data from NYSE)

\$82.82 USD

-0.98 (-1.17%)

Updated Jul 31, 2023 04:03 PM ET

Add to portfolio

After-market: \$82.84 in +0.02 (0.02%) in 6:50 PM ET

Zacks Rank: ☐

2 2-Buy

Style Scores: ☐

B Value | C Growth | C Momentum | B VGM

Industry Rank: ☐

Top 41% (105 out of 251)

Industry: Utility - Electric Power

Pinnacle West Capital (PNW) Quote Overview » Estimates » Pinnacle West Capital (PNW) Detailed Earnings Estimates

Detailed Estimates

Estimates

|                   |            |
|-------------------|------------|
| Earnings Date     | *BMO8/3/23 |
| Current Quarter   | 1.19       |
| EPS Last Quarter  | -0.03      |
| Last EPS Surprise | -200.00%   |
| ABR               | 3.57       |

|              |        |
|--------------|--------|
| Earnings ESP | -4.40% |
| Current Year | 4.13   |
| Next Year    | 4.86   |
| EPS (TTM)    | 4.09   |
| P/E (F1)     | 20.28  |

\*BMO = Before Market Open    \*AMC = After Market Close

| Growth Estimates       | PNW    | IND   | S&P   |
|------------------------|--------|-------|-------|
| Current Qtr (06/2023)  | -17.93 | -1.70 | 17.35 |
| Next Qtr (09/2023)     | -0.35  | 10.64 | 15.19 |
| Current Year (12/2023) | -3.05  | 2.50  | 8.78  |
| Next Year (12/2024)    | 17.68  | 5.60  | 16.69 |
| Past 5 Years           | -0.10  | 3.50  | 9.00  |
| Next 5 Years           | 6.30   | 6.00  | NA    |
| PE                     | 20.28  | 11.10 | 21.39 |
| PEG Ratio              | 3.21   | 1.85  | NA    |

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Research for PNW

Analyst

Snapshot

Price and EPS Surprise Chart

1 Month

3 Months

YTD

Interactive Chart | Fundamental Chart



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|            | Quarter Ending<br>(3/2023) | Quarter Ending<br>(12/2022) | Quarter Ending<br>(9/2022) | Quarter Ending<br>(6/2022) | Average Surprise |
|------------|----------------------------|-----------------------------|----------------------------|----------------------------|------------------|
| Reported   | -0.03                      | -0.21                       | 2.88                       | 1.45                       | NA               |
| Estimate   | 0.03                       | -0.18                       | 2.62                       | 1.30                       | NA               |
| Difference | -0.06                      | -0.03                       | 0.26                       | 0.15                       | 0.08             |
| Surprise   | -200.00%                   | -16.67%                     | 9.92%                      | 11.54%                     | -48.80%          |

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### Zacks Research is Reported On:

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**BBB Rating: A+**

As of 10/8/2023

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| Zacks Research     |    |
|--------------------|----|
| Detailed Estimates |    |
| IN                 | IN |
| IN                 | IN |

## Portland General Electric (POR)

(Delayed Data from NYSE)

**\$47.67 USD**

**+0.13 (0.27%)**

Updated: Jul 31, 2023 04:10 PM ET

After Market: **\$47.66** **+0.01 (0.02%)** 6:50 PM ET

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**Zacks Rank:** ☐

**2** **2-Buy**

**Style Scores:** ☐

**B** Value | **F** Growth | **F** Momentum | **D** VGM

**Industry Rank:** ☐

**Top 41% (105 out of 251)**

**Industry: Utility - Electric Power**

**Portland General Electric (POR) Quote Overview » Estimates » Portland General Electric (POR) Detailed Earnings Estimates**

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## Detailed Estimates

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## Estimates

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Current Quarter

0.76

EPS Last Quarter

0.44

Last EPS Surprise

**-6.38%**

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Earnings ESP \n

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**3.95%**

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Current Year

**2.73**

Next Year

### 3.11

EPS (TTM)

2.59

P/E (F1)

17.39

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| Growth Estimates       | POR   | IND   | S&P   |
|------------------------|-------|-------|-------|
| Current Qtr (09/2023)  | 16.92 | -1.70 | 17.35 |
| Next Qtr (12/2023)     | -1.43 | 10.64 | 15.19 |
| Current Year (12/2023) | -0.36 | 2.50  | 8.78  |
| Next Year (12/2024)    | 13.92 | 5.60  | 16.69 |
| Past 5 Years           | 3.80  | 3.50  | 9.00  |
| Next 5 Years           | 6.00  | 6.00  | NA    |
| PE                     | 17.39 | 11.10 | 21.39 |
| PEG Ratio              | 2.89  | 1.85  | NA    |

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Research for POR



Snapshot

## Price and EPS Surprise Chart

1 Month 3 Months YTD



Interactive Chart | Fundamental Chart

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|             | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|-----------------------|---------------------------|------------------------|
| Current     | 0.76                    | 0.69                  | 2.73                      | 3.11                   |
| 7 Days Ago  | 0.76                    | 0.69                  | 2.69                      | 3.11                   |
| 30 Days Ago | 0.70                    | 0.65                  | 2.69                      | 3.10                   |
| 60 Days Ago | 0.70                    | 0.65                  | 2.68                      | 3.08                   |
| 90 Days Ago | 0.65                    | 0.65                  | 2.70                      | 3.07                   |

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|                          | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|-----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 0.79                    | 0.71                  | 2.77                      | 3.11                   |
| Zacks Consensus Estimate | 0.76                    | 0.69                  | 2.73                      | 3.11                   |
| Earnings ESP<br>□        | 3.95%                   | 3.65%                 | 1.16%                     | -0.11%                 |

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|            | Quarter Ending<br>(6/2023) | Quarter Ending<br>(3/2023) | Quarter Ending<br>(12/2022) | Quarter Ending<br>(9/2022) | Average Surprise |
|------------|----------------------------|----------------------------|-----------------------------|----------------------------|------------------|
| Reported   | 0.44                       | 0.80                       | 0.70                        | 0.65                       | NA               |
| Estimate   | 0.47                       | 0.79                       | 0.59                        | 0.63                       | NA               |
| Difference | -0.03                      | 0.01                       | 0.11                        | 0.02                       | 0.03             |
| Surprise   | -6.38%                     | 1.27%                      | 18.64%                      | 3.17%                      | 4.18%            |

### Quarterly Estimates By Analyst

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### Annual Estimates By Analyst

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BBB Rating: A+  
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## The Southern Company (SO)

(Delayed Data from NYSE)

\$72.34 USD

-0.01 (-0.01%)

Updated Jul 31, 2023 04:04 PM ET

Add to portfolio

After-market: IN \$72.34 IN 0.00 (0.00%) IN 6:50 PM ET

Zacks Rank: ☐

☐ ☐ ☒ 3 ☐ ☐ IN 3-Hold

Style Scores: ☐

IN ☒ Value | ☐ Growth | ☐ Momentum | ☒ VGM

Industry Rank: ☐

IN Top 41% (105 out of 251)

Industry: Utility - Electric Power

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| <p>  </p> <p> <b>الوزارة</b><br/> <b>المعالي</b><br/> <b>التعليم</b><br/> <b>والتعليم</b><br/> <b>الاعلى</b> </p> | <p> <b>الوزارة</b><br/> <b>المعالي</b><br/> <b>التعليم</b><br/> <b>والتعليم</b><br/> <b>الاعلى</b> </p> |
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Earnings Date\n



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\*BMO8/3/23

Current Quarter

0.74

EPS Last Quarter

0.79

Last EPS Surprise

11.27%

ABR

2.52

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Earnings ESP \n

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**-0.48%**

Current Year

3.60

Next Year

## 4.02

EPS (TTM)

3.43

P/E (F1)

## 20.10

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\*BMO = Before Market Open      \*AMC = After Market Close

[illegible]

| Growth Estimates       | SO     | IND   | S&P   |
|------------------------|--------|-------|-------|
| Current Qtr (06/2023)  | -30.84 | -1.70 | 17.35 |
| Next Qtr (09/2023)     | 16.79  | 10.64 | 15.19 |
| Current Year (12/2023) | 0.00   | 2.50  | 8.78  |
| Next Year (12/2024)    | 11.67  | 5.60  | 16.69 |
| Past 5 Years           | 3.80   | 3.50  | 9.00  |
| Next 5 Years           | 4.00   | 6.00  | NA    |
| PE                     | 20.10  | 11.10 | 21.39 |
| PEG Ratio              | 5.03   | 1.85  | NA    |

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Research for SO

Analyst

Snapshot

Price and EPS Surprise Chart

1 Month

3 Months

YTD

Interactive Chart | Fundamental Chart

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325

(6/2023)

(9/2023)

(12/2023)

(12/2024)

|                   |   |   |   |   |
|-------------------|---|---|---|---|
| Up Last 7 Days    | 1 | 0 | 1 | 1 |
| Up Last 30 Days   | 0 | 1 | 0 | 1 |
| Up Last 60 Days   | 1 | 2 | 0 | 2 |
| Down Last 7 Days  | 0 | 0 | 0 | 0 |
| Down Last 30 Days | 3 | 2 | 3 | 2 |
| Down Last 60 Days | 3 | 2 | 2 | 2 |

In

## Magnitude - Consensus Estimate Trend IN

IN

IN

|             | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|----------------------|---------------------------|------------------------|
| Current     | 0.74                    | 1.53                 | 3.60                      | 4.02                   |
| 7 Days Ago  | 0.73                    | 1.53                 | 3.60                      | 4.01                   |
| 30 Days Ago | 0.75                    | 1.55                 | 3.61                      | 4.02                   |
| 60 Days Ago | 0.88                    | 1.50                 | 3.61                      | 4.02                   |
| 90 Days Ago | 1.05                    | 1.49                 | 3.61                      | 4.02                   |

## Upside - Most Accurate Estimate Versus Zacks Consensus

IN

IN

|                          | Current Qtr<br>(6/2023) | Next Qtr<br>(9/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 0.73                    | 1.48                 | 3.59                      | 4.01                   |
| Zacks Consensus Estimate | 0.74                    | 1.53                 | 3.60                      | 4.02                   |
| Earnings ESP             | -0.48%                  | -3.17%               | -0.38%                    | -0.18%                 |





IN

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[illegible]

|            | Quarter Ending<br>(3/2023) | Quarter Ending<br>(12/2022) | Quarter Ending<br>(9/2022) | Quarter Ending<br>(6/2022) | Average Surprise |
|------------|----------------------------|-----------------------------|----------------------------|----------------------------|------------------|
| Reported   | 0.79                       | 0.26                        | 1.31                       | 1.07                       | NA               |
| Estimate   | 0.71                       | 0.24                        | 1.33                       | 0.84                       | NA               |
| Difference | 0.08                       | 0.02                        | -0.02                      | 0.23                       | 0.08             |
| Surprise   | 11.27%                     | 8.33%                       | -1.50%                     | 27.38%                     | 11.37%           |

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| Zacks Research     |  |
|--------------------|--|
| Detailed Estimates |  |
|                    |  |
|                    |  |
|                    |  |

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## Xcel Energy (XEL)

(Delayed Data from NSDQ)

**\$62.73 USD**

**-0.16 (-0.25%)**

Updated Jul 31, 2023 04:10 PM ET

After-market: **\$62.74** **+0.01 (0.02%)** 6:50 PM ET

**Zacks Rank:** ☐

**3** **Hold**

**Style Scores:** ☐

**C** Value | **D** Growth | **A** Momentum | **C** VGM

**Industry Rank:** ☐

**Top 41% (105 out of 251)**

Industry: Utility - Electric Power

330

|                        |       |       |       |
|------------------------|-------|-------|-------|
| Current Qtr (09/2023)  | 10.17 | -1.70 | 17.35 |
| Next Qtr (12/2023)     | 5.80  | 10.64 | 15.19 |
| Current Year (12/2023) | 5.36  | 2.50  | 8.78  |
| Next Year (12/2024)    | 7.19  | 5.60  | 16.69 |
| Past 5 Years           | 6.40  | 3.50  | 9.00  |
| Next 5 Years           | 6.30  | 6.00  | NA    |
| PE                     | 18.85 | 11.10 | 21.39 |
| PEG Ratio              | 2.97  | 1.85  | NA    |

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[Analyst](#) [Snapshot](#)

## Price and EPS Surprise Chart

[1 Month](#) [3 Months](#) [YTD](#)



[Interactive Chart](#) | [Fundamental Chart](#)

Sales Estimates

|                            | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------------------|-------------------------|-----------------------|---------------------------|------------------------|
| Zacks Consensus Estimate   | 4.02B                   | 3.90B                 | 15.41B                    | 15.70B                 |
| # of Estimates             | 4                       | 4                     | 4                         |                        |
| High Estimate              | 4.19B                   | 4.19B                 | 15.97B                    | 16.57B                 |
| Low Estimate               | 3.76B                   | 3.55B                 | 14.63B                    | 14.54B                 |
| Year ago Sales             | 4.08B                   | 4.05B                 | 15.31B                    | 15.41B                 |
| Year over Year Growth Est. | -1.43%                  | -3.78%                | 0.63%                     | 1.90%                  |
|                            |                         |                       |                           |                        |

Earnings Estimates

|                            | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) |
|----------------------------|-------------------------|-----------------------|---------------------------|
| Zacks Consensus Estimate   | 1.30                    | 0.73                  | 3.3                       |
| # of Estimates             | 5                       | 4                     |                           |
| Most Recent Consensus      | 1.25                    | 0.83                  | 3.3                       |
| High Estimate              | 1.39                    | 0.83                  | 3.3                       |
| Low Estimate               | 1.25                    | 0.62                  | 3.3                       |
| Year ago EPS               | 1.18                    | 0.69                  | 3.1                       |
| Year over Year Growth Est. | 10.17%                  | 5.80%                 | 5.36%                     |
|                            |                         |                       |                           |

Agreement - Estimate Revisions \N

|                | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|----------------|-------------------------|-----------------------|---------------------------|------------------------|
| Up Last 7 Days | 2                       | 1                     | 0                         | 1                      |

[illegible]

|             | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|-------------|-------------------------|-----------------------|---------------------------|------------------------|
| Current     | 1.30                    | 0.73                  | 3.34                      | 3.58                   |
| 7 Days Ago  | 1.28                    | 0.72                  | 3.34                      | 3.58                   |
| 30 Days Ago | 1.27                    | 0.71                  | 3.36                      | 3.58                   |
| 60 Days Ago | 1.28                    | 0.71                  | 3.37                      | 3.60                   |
| 90 Days Ago | 1.19                    | 0.74                  | 3.37                      | 3.60                   |

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|                          | Current Qtr<br>(9/2023) | Next Qtr<br>(12/2023) | Current Year<br>(12/2023) | Next Year<br>(12/2024) |
|--------------------------|-------------------------|-----------------------|---------------------------|------------------------|
| Most Accurate Estimate   | 1.30                    | 0.72                  | 3.33                      | 3.57                   |
| Zacks Consensus Estimate | 1.30                    | 0.73                  | 3.34                      | 3.58                   |
| Earnings ESP<br>□        | 0.00%                   | -1.03%                | -0.20%                    | -0.37%                 |

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## Quarterly Estimates By Analyst

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**Top Analysts' Forecasts Of U.S. And Foreign Interest Rates, Currency Values  
And The Factors That Influence Them**

**Vol. 42, No. 8, August 1, 2023**

**Wolters Kluwer**

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## Fed Funds Rate Path at a Crossroads

The Fed's July 25-26 decision to raise the federal funds rate by 25bps, bringing the policy target to a range of 5.25% to 5.5%, was widely expected in markets. However, the path forward from here is much less clear, especially since there have been mixed signals from the economy and the Fed has already tightened more aggressively in the past year and a half than at any other time in the past four decades. On the one hand, the labor market remains tight and core inflation continues to run well above target, suggesting a need for even more restraint. In his press conference, Fed Chair Powell stated that "the process of getting inflation down to 2% has a long way to go." On the other hand, there have been leading signals that the economy may be headed for a downturn in coming quarters. Against this backdrop, Fed officials have left their policy options open.

**Near-term rate expectations.** Since the Fed's rate decision and press conference, markets give low odds for further rate hikes this year. Fed funds futures prices imply there is less than 30% probability of another rate hike at each of the next three FOMC meetings. Likewise, the Blue Chip Financial Forecasts (BCFF) consensus also indicates no change in the funds rate. However, these summary measures are averages and obscure the fact that there is considerable uncertainty surrounding the near-term policy path.

We can look under the surface at the individual BCFF policy projections to obtain insights into market thinking. More than half of the panelists look for no further changes in the funds rate this year. However, a significant group of panelists, 38%, are focused on the robust labor market and elevated inflation, and they expect the Fed to raise rates again this year. Conversely, three forecasters worry that the economy may be headed for a hard landing, and they look for rate cuts by the end of this year.

**Labor market and inflation.** Nonfarm payrolls have increased by 316,000 per month on average over the past year, the unemployment rate is hovering near 70-year lows, and the participation rate is rising. Importantly, wage gains have remained high, with average hourly earnings up 4.4% over the past year. Likewise, the employment cost index has increased by 4.5% in that time. Tight labor market conditions imply further second-round pressures on inflation.

Any further Fed tightening will depend on the path of inflation. Thus far, the progress in lowering inflation has been frustratingly slow. Headline PCE inflation has subsided notably, from a peak of 7.0% a year ago to the latest reading of 3.0%, but the declines have been centered in the volatile food and energy sectors. In contrast, core PCE inflation has declined much more gradually, from a peak of 5.4% in February 2022 to 4.1% currently. The latest core reading is more than double the Fed's 2% target. The Fed continues to believe that a period of below-trend growth is needed to bring down core inflation.

**Economic downturn?** The economy has continued to expand at a healthy pace, with real GDP growing at a 2.4% annualized pace in the second quarter. The gains were led by a solid contribution from nonresidential investment and resilient consumer spending. Despite these gains, leading indicators of eco-

omic activity point to a period of below-trend growth or a mild recession going forward. The Conference Board's index of leading indicators has fallen sharply for more than a year. The yield curve, which is one of the individual leading indicators with an exceptional track record predicting downturns, has been sharply negative. In fact, the yield curve remains near the lowest levels in the past 40 years, signaling a strong possibility of a slump. Based on the yield curve, the Federal Reserve Bank of New York's recession gauge gives a 67% probability that the economy will experience a downturn in the next year, and the Federal Reserve Bank of Cleveland's measure gives the odds at 75%.

The BCFF consensus agrees with this assessment. Over the next four quarters, GDP growth is expected to be just 0.5%, which is well below trend. In fact, 51% of the respondents are projecting two consecutive quarterly declines in GDP in the coming year. In addition, all BCFF respondents who answered the special questions anticipate some rise in the unemployment rate. The median expected increase in the jobless rate is 0.9 percentage point. Historically, increases of that magnitude have been associated with declines in economic activity. This weakness would be expected to help alleviate underlying price pressures. Indeed, BCFF panelists projected in another special question that core inflation would subside to 3.5% by yearend 2023 and 2.4% by the end of 2024.

**First rate cut.** Even though there is much uncertainty about the near-term path of policy, with an outlook for below-trend growth and subsiding inflation, every BCFF panelist expects the Fed to cut rates by the end of 2024. In fact, based on panelists' quarterly forecasts, 81% expect the first cut to occur by midyear 2024. The BCFF consensus expects the Fed to cut by more than is penciled into the Fed's June Statement of Economic Projections. BCFF respondents expect the fed funds rate to be 4.0% at the end of 2024 versus the FOMC rate projection of 4.6%.

**Market rates.** BCFF consensus projections for Treasury yields indicate that the yield curve will remain inverted over the forecast horizon, consistent with their forecast of below-trend economic growth. Interestingly, the consensus looks for real interest rates to rise over the next six quarters. For example, the 10-year yield is expected to fall 0.4 percentage point to 3.5%, while core inflation is expected to decline by 1.7 percentage points to 2.4%.

Despite the belief that the economy will experience a mild recession, BCFF panelists do not anticipate an accompanying increase in credit spreads. In fact, the consensus suggests a period of only mild risk for corporations. One factor behind this benign outlook for credit spreads is that the banking sector now appears to be on a more solid footing. The Fed mentioned in its FOMC statement that "the US banking system is sound and resilient." In fact, measures of financial market stress, such as the OFR financial stress index, have remained near historical norms.

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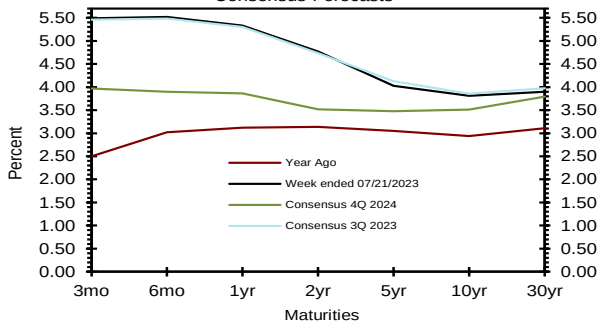
## Consensus Forecasts of U.S. Interest Rates and Key Assumptions

|                         | -----History-----                 |               |              |               |                          |             |             |                | Consensus Forecasts-Quarterly Avg. |             |             |             |             |             |             |
|-------------------------|-----------------------------------|---------------|--------------|---------------|--------------------------|-------------|-------------|----------------|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                         | -----Average For Week Ending----- |               |              |               | ----Average For Month--- |             |             |                | Latest Qtr                         | 3Q          | 4Q          | 1Q          | 2Q          | 3Q          | 4Q          |
| <u>Interest Rates</u>   | <u>Jul 21</u>                     | <u>Jul 14</u> | <u>Jul 7</u> | <u>Jun 30</u> | <u>Jun</u>               | <u>May</u>  | <u>Apr</u>  | <u>2Q 2023</u> | <u>2023</u>                        | <u>2023</u> | <u>2024</u> | <u>2024</u> | <u>2024</u> | <u>2024</u> | <u>2024</u> |
| Federal Funds Rate      | 5.08                              | 5.08          | 5.08         | 5.07          | 5.08                     | 5.06        | 4.83        | 4.99           | 5.4                                | 5.4         | 5.2         | 4.9         | 4.4         | 4.0         | 4.0         |
| Prime Rate              | 8.25                              | 8.25          | 8.25         | 8.25          | 8.25                     | 8.23        | 8.00        | 8.16           | 8.5                                | 8.5         | 8.4         | 8.0         | 7.5         | 7.1         | 7.1         |
| SOFR                    | 5.06                              | 5.06          | 5.06         | 5.06          | 5.06                     | 5.02        | 4.81        | 4.96           | 5.3                                | 5.4         | 5.2         | 4.9         | 4.4         | 4.0         | 4.0         |
| Commercial Paper, 1-mo. | 5.16                              | 5.14          | 5.11         | 5.12          | 5.10                     | 5.06        | 4.82        | 4.99           | 5.4                                | 5.4         | 5.3         | 4.9         | 4.4         | 4.1         | 4.1         |
| Treasury bill, 3-mo.    | 5.49                              | 5.48          | 5.45         | 5.45          | 5.42                     | 5.31        | 5.07        | 5.27           | 5.5                                | 5.4         | 5.2         | 4.7         | 4.3         | 4.0         | 4.0         |
| Treasury bill, 6-mo.    | 5.52                              | 5.53          | 5.53         | 5.47          | 5.42                     | 5.27        | 4.99        | 5.23           | 5.5                                | 5.4         | 5.0         | 4.7         | 4.2         | 3.9         | 3.9         |
| Treasury bill, 1 yr.    | 5.33                              | 5.36          | 5.42         | 5.35          | 5.24                     | 4.91        | 4.68        | 4.94           | 5.3                                | 5.1         | 4.8         | 4.5         | 4.2         | 3.9         | 3.9         |
| Treasury note, 2 yr.    | 4.77                              | 4.76          | 4.95         | 4.77          | 4.64                     | 4.13        | 4.02        | 4.26           | 4.7                                | 4.5         | 4.2         | 4.0         | 3.8         | 3.5         | 3.5         |
| Treasury note, 5 yr.    | 4.03                              | 4.11          | 4.29         | 4.04          | 3.95                     | 3.59        | 3.54        | 3.69           | 4.1                                | 4.0         | 3.8         | 3.7         | 3.6         | 3.5         | 3.5         |
| Treasury note, 10 yr.   | 3.81                              | 3.89          | 3.98         | 3.77          | 3.75                     | 3.57        | 3.46        | 3.59           | 3.9                                | 3.8         | 3.7         | 3.6         | 3.6         | 3.5         | 3.5         |
| Treasury note, 30 yr.   | 3.90                              | 3.97          | 3.97         | 3.85          | 3.87                     | 3.86        | 3.68        | 3.80           | 4.0                                | 3.9         | 4.0         | 3.9         | 3.9         | 3.8         | 3.8         |
| Corporate Aaa bond      | 4.91                              | 5.00          | 5.02         | 4.92          | 4.95                     | 4.95        | 4.76        | 4.88           | 4.9                                | 4.9         | 4.9         | 4.9         | 4.8         | 4.7         | 4.7         |
| Corporate Baa bond      | 5.58                              | 5.67          | 5.69         | 5.60          | 5.64                     | 5.66        | 5.44        | 5.58           | 6.0                                | 6.0         | 6.0         | 6.0         | 5.9         | 5.7         | 5.7         |
| State & Local bonds     | 4.16                              | 4.24          | 4.24         | 4.20          | 4.23                     | 4.21        | 4.07        | 4.17           | 4.2                                | 4.2         | 4.2         | 4.1         | 4.0         | 4.0         | 4.0         |
| Home mortgage rate      | 6.78                              | 6.96          | 6.81         | 6.71          | 6.71                     | 6.43        | 6.34        | 6.49           | 6.7                                | 6.6         | 6.4         | 6.2         | 6.1         | 5.9         | 5.9         |
|                         | -----History-----                 |               |              |               |                          |             |             |                | Consensus Forecasts-Quarterly      |             |             |             |             |             |             |
|                         | 3Q                                | 4Q            | 1Q           | 2Q            | 3Q                       | 4Q          | 1Q          | 2Q             | 3Q                                 | 4Q          | 1Q          | 2Q          | 3Q          | 4Q          |             |
| <u>Key Assumptions</u>  | <u>2021</u>                       | <u>2021</u>   | <u>2022</u>  | <u>2022</u>   | <u>2022</u>              | <u>2022</u> | <u>2023</u> | <u>2023</u>    | <u>2023</u>                        | <u>2023</u> | <u>2024</u> | <u>2024</u> | <u>2024</u> | <u>2024</u> | <u>2024</u> |
| Fed's AFE \$ Index      | 104.9                             | 106.9         | 108.3        | 113.5         | 118.8                    | 119.8       | 115.5       | 114.6          | 114.4                              | 114.1       | 113.6       | 113.1       | 112.7       | 112.4       | 112.4       |
| Real GDP                | 2.7                               | 7.0           | -1.6         | -0.6          | 3.2                      | 2.6         | 2.0         | 2.4            | 0.8                                | 0.0         | 0.2         | 0.8         | 1.6         | 1.8         |             |
| GDP Price Index         | 6.2                               | 6.8           | 8.3          | 9.0           | 4.4                      | 3.9         | 4.1         | 2.2            | 2.7                                | 2.6         | 2.5         | 2.3         | 2.3         | 2.3         |             |
| Consumer Price Index    | 6.6                               | 8.8           | 9.2          | 9.7           | 5.5                      | 4.2         | 3.8         | 2.7            | 2.9                                | 2.8         | 2.6         | 2.4         | 2.4         | 2.3         |             |
| PCE Price Index         | 5.6                               | 6.2           | 7.5          | 7.3           | 4.3                      | 3.7         | 4.1         | 2.6            | 2.7                                | 2.7         | 2.4         | 2.3         | 2.2         | 2.2         |             |

Forecasts for interest rates and the Federal Reserve's Advanced Foreign Economies Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index, CPI and PCE Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; SOFR from the New York Fed. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP, GDP Price Index and PCE Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index history is from the Department of Labor's Bureau of Labor Statistics (BLS).

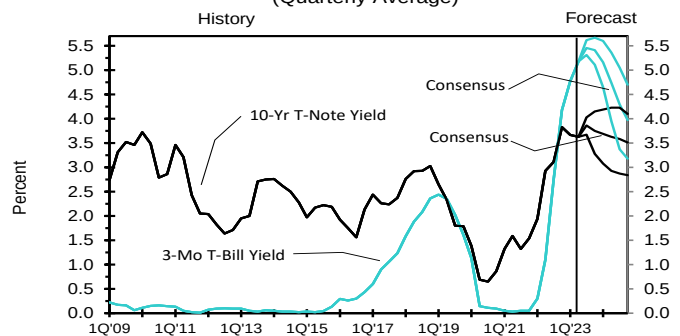
## US Treasury Yield Curve

Week ended Jul 21, 2023 &amp; Year Ago vs.

3Q 2023 & 4Q 2024  
Consensus Forecasts

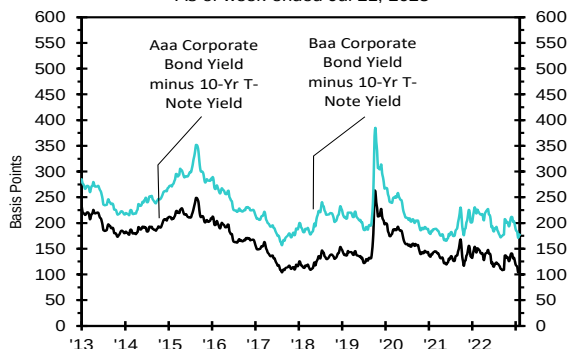
## US 3-Mo T-Bills &amp; 10-Yr T-Note Yield

(Quarterly Average)



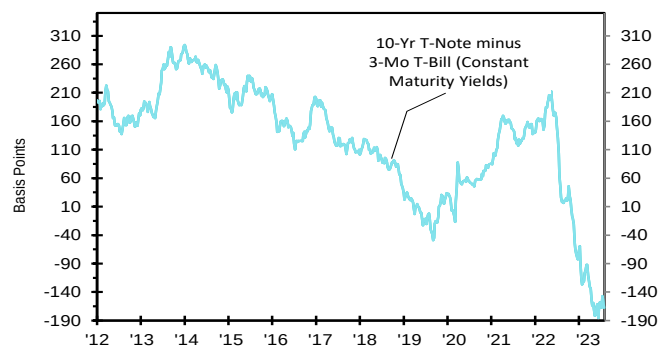
## Corporate Bond Spreads

As of week ended Jul 21, 2023



## US Treasury Yield Curve

As of week ended Jul 21, 2023



-----Policy Rates<sup>1</sup>-----

|             | History----- |       |           | Consensus Forecasts |       |       |
|-------------|--------------|-------|-----------|---------------------|-------|-------|
|             | Month        |       |           | Months From Now:    |       |       |
|             | Latest:      | Ago:  | Year Ago: | 3                   | 6     | 12    |
| U.S.        | 5.13         | 5.13  | 1.63      | 5.42                | 5.44  | 4.92  |
| Japan       | -0.10        | -0.10 | -0.10     | -0.08               | -0.08 | -0.06 |
| U.K.        | 5.00         | 5.00  | 1.25      | 5.59                | 5.69  | 5.41  |
| Switzerland | 1.75         | 1.75  | -0.25     | 1.96                | 2.04  | 1.94  |
| Canada      | 5.00         | 4.75  | 2.50      | 4.98                | 5.00  | 4.64  |
| Australia   | 4.10         | 4.10  | 1.35      | 4.36                | 4.35  | 4.10  |
| Euro area   | 4.00         | 4.00  | 0.00      | 4.27                | 4.34  | 4.12  |

-----10-Yr. Government Bond Yields<sup>2</sup>-----

|             | History----- |      |           | Consensus Forecasts |      |      |
|-------------|--------------|------|-----------|---------------------|------|------|
|             | Month        |      |           | Months From Now:    |      |      |
|             | Latest:      | Ago: | Year Ago: | 3                   | 6    | 12   |
| U.S.        | 3.84         | 3.74 | 2.77      | 3.82                | 3.68 | 3.47 |
| Germany     | 2.44         | 2.37 | 1.04      | 2.44                | 2.40 | 2.27 |
| Japan       | 0.48         | 0.39 | 0.22      | 0.48                | 0.58 | 0.61 |
| U.K.        | 4.30         | 4.37 | 2.07      | 4.30                | 4.23 | 4.03 |
| France      | 2.99         | 2.88 | 1.62      | 2.95                | 2.89 | 2.74 |
| Italy       | 4.07         | 4.00 | 3.46      | 4.21                | 4.10 | 3.89 |
| Switzerland | 0.92         | 0.93 | 0.72      | 1.29                | 1.41 | 1.37 |
| Canada      | 3.41         | 3.36 | 2.84      | 3.46                | 3.41 | 3.32 |
| Australia   | 4.00         | 4.00 | 3.45      | 4.03                | 3.96 | 3.77 |
| Spain       | 3.41         | 3.42 | 2.40      | 3.51                | 3.46 | 3.32 |

-----Foreign Exchange Rates<sup>3</sup>-----

|             | History----- |        |           | Consensus Forecasts |       |       |
|-------------|--------------|--------|-----------|---------------------|-------|-------|
|             | Month        |        |           | Months From Now:    |       |       |
|             | Latest:      | Ago:   | Year Ago: | 3                   | 6     | 12    |
| U.S.        | 112.96       | 114.54 | 116.89    | 112.8               | 112.4 | 110.2 |
| Japan       | 141.75       | 143.78 | 136.12    | 138.3               | 135.8 | 129.9 |
| U.K.        | 1.29         | 1.27   | 1.20      | 1.30                | 1.30  | 1.34  |
| Switzerland | 0.87         | 0.90   | 0.96      | 0.89                | 0.89  | 0.87  |
| Canada      | 1.32         | 1.32   | 1.29      | 1.32                | 1.32  | 1.29  |
| Australia   | 0.67         | 0.67   | 0.69      | 0.68                | 0.68  | 0.71  |
| Euro        | 1.11         | 1.09   | 1.02      | 1.10                | 1.11  | 1.14  |

Consensus  
Policy Rates  
vs. US Rate

|             | Now   | In 12 Mo. |
|-------------|-------|-----------|
| Japan       | -5.23 | -4.98     |
| U.K.        | -0.13 | 0.49      |
| Switzerland | -3.38 | -2.98     |
| Canada      | -0.13 | -0.28     |
| Australia   | -1.03 | -0.82     |
| Euro area   | -1.13 | -0.79     |

Consensus  
10-Year Gov't  
Yields vs. U.S. Yield

|             | Now   | In 12 Mo. |
|-------------|-------|-----------|
| Germany     | -1.40 | -1.19     |
| Japan       | -3.36 | -2.86     |
| U.K.        | 0.46  | 0.56      |
| France      | -0.85 | -0.73     |
| Italy       | 0.23  | 0.43      |
| Switzerland | -2.92 | -2.10     |
| Canada      | -0.43 | -0.14     |
| Australia   | 0.16  | 0.31      |
| Spain       | -0.43 | -0.15     |

Forecasts of panel members are on pages 10 and 11. Definitions of variables are as follows: <sup>1</sup>Monetary policy rates. <sup>2</sup>Government bonds are yields to maturity. <sup>3</sup>Foreign exchange rate forecasts for U.K., Australia and the Euro are U.S. dollars per currency unit. For the U.S. dollar, forecasts are of the U.S. Federal Reserve Board's AFE Dollar Index.

**International.** The mood in the world's financial markets has been more upbeat over the past few weeks partly thanks to some stronger-than-expected US corporate earnings reports. Investors have also become more optimistic that central banks either already have completed, or are now close to completing, their monetary policy tightening campaigns. Further downside inflation surprises in many major economies coupled with tentative evidence suggesting that labor markets are cooling off have been pivotal for that view. But, more ominously, so too have data suggesting that economic growth is cooling more rapidly than expected in Europe and China.

That loss of growth momentum was evidenced by July's flash PMI surveys showing a broadly based slowdown at the start of Q3. Country-specific data revealed that US business activity growth slipped to a five-month low, that Japan's activity slowed to a four-month low, that the UK slowed to near-stagnation and that the euro area fell into a much steeper decline. The latter also chimes with more backward-looking data suggesting that activity has been slipping in the euro area's industrial and retail sectors. It chimes too with GDP data suggesting that the German economy has recently entered a recession.

The news from China has been equally downbeat. GDP growth in Q2, 0.8% compared with the previous quarter, was well shy of expectations with accompanying detail from June's retail sales data suggesting that flagging consumption is an important reason for this. Property sector investment, in the meantime, is also still sinking, a symptom of excess capacity that's engulfing the housing market. Sub-par levels of CPI inflation in July coupled with negative rates of PPI inflation speak to excess capacity issues lurking in the broader economy as well.

But while those sub-par inflation rates have given cover to China's authorities to announce a package of fiscal policy support in recent days, above-par core inflation levels elsewhere leave limited scope for policy support. And this may be one reason, notwithstanding a raft of inflation-friendly data, why the decisions and communications from central banks, as well as the views of our BCFF panelists, are not fully synchronized with the views of financial market participants.

Indeed, most major central banks appear willing, at least in their communications, to calibrate monetary policy at a more restrictive level than financial market participants are (or had been) anticipating. The ECB, for example, enacted a further 25bps of policy rate hikes at their latest meeting. While that was in line with expectations, the subsequent post-meeting commentary from President Lagarde appeared to be inconsistent with the idea that the ECB's inflation battle is now over. In the meantime, both the RBA and the BoC have wrong-footed financial markets by lifting their policy rates by 25bps in recent weeks, having previously communicated that they would pause their tightening cycles. As a result, there is now much uncertainty about both central banks' intentions at their upcoming meetings in August. In the meantime, large positive surprises on inflation and pay growth forced the BoE to respond with a 50bps rate hike in June and have raised the possibility that it will keep hiking until it sees clear evidence that services inflation is cooling.

Not for the first time the BoJ is an outlier in this narrative. However, while monetary policy was ostensibly left unchanged at its July 28 meeting, as expected, greater flexibility was announced in its yield curve control policy. That might be seen as a prelude to an eventual shift away from its ultra-loose monetary policy.

Against this backdrop, our latest survey reveals persistent concerns about the global economic outlook. The BCFF consensus estimates a 52% probability of a recession in the euro area and 58% of one in the UK over the next 12 months. As for monetary policy, our panelists have marked up their near- and medium-term projections for policy rates in Canada, Australia, the euro area, and the UK this month. Notwithstanding those recession concerns, hardly any easing is anticipated from the ECB or the BoE over the next 12 months. Finally, expectations for Japan's policy rates in 12 months have been lifted slightly.

## Third Quarter 2023

## Interest Rate Forecasts

## Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | Percent Per Annum -- Average For Quarter |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      | Avg. For<br>--Qtr.--<br>A.<br>Fed's Adv<br>Fgn Econ<br>\$ Index | (Q-Q % Change)<br>--(SAAR)--<br>B. C. D. E.<br>GDP Price Cons. PCE<br>Real Price Price Price<br>GDP Index Index Index Index |     |     |     |     |     |     |     |     |       |       |     |       |     |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|---------------------------------------------------|------------------------------------------|-----------------------|--------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|----------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-------|-----|------|---|-----|---|-----|---|-----|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|
|                                                   | Short-Term                               |                       |              |                        |                          | Intermediate-Term        |                          |                          |                          |                           | Long-Term                |                      |                      |                           |                      |                                                                 |                                                                                                                             |     |     |     |     |     |     |     |     |       |       |     |       |     |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|                                                   | 1                                        | 2                     | 3            | 4                      | 5                        | 6                        | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |                                                                 |                                                                                                                             |     |     |     |     |     |     |     |     |       |       |     |       |     |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|                                                   | Federal<br>Funds<br>Rate                 | Prime<br>Bank<br>Rate | SOFR<br>Rate | Com.<br>Paper<br>1-Mo. | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo. | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Local<br>Bonds | Home<br>Mtg.<br>Rate |                                                                 |                                                                                                                             |     |     |     |     |     |     |     |     |       |       |     |       |     |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|                                                   | Rate                                     | Rate                  |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |                                                                 |                                                                                                                             |     |     |     |     |     |     |     |     |       |       |     |       |     |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Chan Economics                                    | 5.7                                      | H                     | 8.7          | H                      | 5.6                      | H                        | 5.7                      | H                        | 5.8                      | H                         | 5.8                      | H                    | 5.6                  | 5.0                       | H                    | 4.4                                                             | H                                                                                                                           | 4.1 | H   | 4.2 | H   | 5.2 | 6.2 | 4.7 | H   | 6.6   | 112.9 | 1.5 | 2.7   | 2.9 | 2.4  |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Bank of America                                   | 5.6                                      |                       | na           |                        | na                       |                          | na                       |                          | na                       |                           | na                       |                      | na                   | 4.5                       |                      | 4.0                                                             |                                                                                                                             | 3.6 |     | 3.8 |     | na  | na  | na  | na  | na    | na    | 1.0 | 3.3   | 2.7 | 2.4  |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Barclays                                          | 5.6                                      |                       | na           |                        | na                       |                          | na                       |                          | na                       |                           | na                       |                      | na                   | 4.8                       |                      | 4.0                                                             |                                                                                                                             | 3.9 |     | 3.9 |     | na  | na  | na  | na  | na    | na    | 1.0 | 2.8   | 2.9 | 2.6  |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Naroff Economic Advisors                          | 5.6                                      |                       | 8.6          | 5.6                    | H                        | 5.7                      | H                        | 5.6                      | 5.7                      | 5.2                       | 4.8                      | 4.3                  | 3.9                  | 4.0                       |                      | na                                                              |                                                                                                                             | na  |     | na  |     | na  | na  | 4.1 | 6.7 | 114.0 | -0.3  | 3.9 | H     | 3.6 | 3.5  |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Bank of the West                                  | 5.5                                      |                       | 8.6          | 5.4                    | 5.4                      | 5.5                      | 5.6                      | 5.4                      | 4.9                      | 4.2                       | 4.0                      | 4.1                  | 4.9                  | 6.0                       | 4.5                  | 6.9                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 113.9 | 1.8   | 2.5 | 2.6   | 2.5 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Fannie Mae                                        | 5.5                                      |                       | 8.6          | na                     | na                       | 5.5                      | 5.5                      | 5.3                      | 4.8                      | 4.1                       | 3.9                      | 3.9                  | na                   | na                        | na                   | 6.8                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | na    | 1.0   | 2.7 | 2.7   | 2.8 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Scotiabank Group                                  | 5.5                                      |                       | na           | 5.3                    | na                       | 5.3                      | na                       | na                       | 4.6                      | 4.0                       | 3.7                      | 3.9                  | na                   | na                        | na                   | na                                                              |                                                                                                                             |     |     |     |     |     |     |     |     | na    | -0.7  | 1.1 | 3.8   | 1.7 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Action Economics                                  | 5.4                                      |                       | 8.6          | 5.5                    | 5.5                      | 5.6                      | 5.5                      | 5.4                      | 4.7                      | 4.1                       | 3.9                      | 4.0                  | 4.7                  | 5.8                       | 3.9                  | 7.3                                                             | H                                                                                                                           |     |     |     |     |     |     |     |     | 114.6 | 1.5   | 1.9 | 2.4   | 2.2 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| BMO Capital Markets                               | 5.4                                      |                       | 8.5          | 5.2                    | na                       | 5.6                      | 5.6                      | 5.4                      | 4.8                      | 4.1                       | 3.9                      | 3.9                  | na                   | na                        | na                   | 6.8                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 113.1 | 2.0   | 2.4 | 2.8   | 2.7 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Economist Intelligence Unit                       | 5.4                                      |                       | 8.4          | na                     | 5.3                      | 5.5                      | 5.6                      | 5.3                      | 4.8                      | 4.3                       | 3.9                      | 4.0                  | na                   | na                        | na                   | 6.9                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | na    | -1.4  | na  | 2.1   | na  |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Georgia State University                          | 5.4                                      |                       | 8.5          | na                     | na                       | 5.4                      | 5.4                      | 5.0                      | 4.4                      | 4.3                       | 3.8                      | 3.9                  | 4.6                  | 5.6                       | na                   | 6.5                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | na    | 0.5   | 3.5 | 4.0   | H   | 3.6  |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Goldman Sachs & Co.                               | 5.4                                      |                       | na           | na                     | na                       | 5.1                      | L                        | na                       | na                       | 4.4                       | 3.9                      | 3.9                  | 4.0                  | na                        | na                   | na                                                              | na                                                                                                                          |     |     |     |     |     |     |     |     | na    | 1.0   | 3.4 | 2.9   | 2.8 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| ING                                               | 5.4                                      |                       | na           | na                     | na                       | na                       | na                       | na                       | 5.0                      | H                         | 4.3                      | 4.0                  | 4.0                  | na                        | na                   | na                                                              | na                                                                                                                          |     |     |     |     |     |     |     |     | na    | 1.3   | na  | na    | na  |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Nomura Securities, Inc.                           | 5.4                                      |                       | 8.5          | na                     | na                       | na                       | na                       | na                       | 4.7                      | 4.0                       | 3.5                      | L                    | na                   | na                        | na                   | na                                                              | na                                                                                                                          |     |     |     |     |     |     |     |     | na    | 1.4   | 2.8 | 3.1   | 2.8 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| RDQ Economics                                     | 5.4                                      |                       | 8.5          | 5.4                    | 5.4                      | 5.6                      | 5.7                      | 5.2                      | 4.6                      | 4.2                       | 3.9                      | 4.0                  | 5.2                  | 6.0                       | 4.4                  | 6.6                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 114.5 | 1.6   | 3.7 | 4.0   | H   | 3.3  |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| The Lonski Group                                  | 5.4                                      |                       | 8.5          | 5.3                    | 5.6                      | 5.4                      | 5.5                      | 5.3                      | 4.8                      | 4.1                       | 3.8                      | 3.9                  | 5.0                  | 5.7                       | 4.3                  | 6.8                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 113.1 | 0.8   | 2.7 | 2.7   | 3.4 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Wells Fargo                                       | 5.4                                      |                       | 8.5          | 5.3                    | 5.4                      | 5.4                      | 5.4                      | 5.3                      | 4.6                      | 4.0                       | 3.8                      | 3.9                  | 5.0                  | 6.0                       | 4.4                  | 6.7                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | na    | 1.7   | 2.4 | 2.3   | 2.4 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Chmura Economics & Analytics                      | 5.3                                      |                       | 8.4          | 5.3                    | 5.3                      | 5.6                      | 5.6                      | 5.4                      | 4.9                      | 4.3                       | 4.0                      | 4.1                  | 4.9                  | na                        | na                   | 6.9                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | na    | -1.9  | 3.9 | H     | 3.9 | 3.9  | H |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Daiwa Capital Markets America                     | 5.3                                      |                       | 8.5          | na                     | na                       | 5.4                      | na                       | na                       | 4.8                      | 4.0                       | 3.9                      | 4.0                  | na                   | na                        | na                   | 7.1                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 115.0 | 1.3   | 2.7 | 2.9   | 3.0 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| DePrince & Assoc.                                 | 5.3                                      |                       | 8.4          | 5.2                    | 5.3                      | 5.6                      | 5.6                      | 5.4                      | 4.9                      | 4.2                       | 3.9                      | 4.0                  | 4.7                  | 5.8                       | 4.0                  | 6.8                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 114.2 | 0.0   | 3.3 | 3.4   | 3.3 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| EY-Parthenon                                      | 5.3                                      |                       | na           | na                     | na                       | 5.4                      | na                       | na                       | na                       | na                        | 3.8                      | na                   | na                   | na                        | na                   | na                                                              |                                                                                                                             |     |     |     |     |     |     |     |     | na    | 0.0   | 1.1 | 2.9   | 2.5 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| GLC Financial Economics                           | 5.3                                      |                       | 8.5          | 5.2                    | 5.3                      | 5.4                      | 5.4                      | 5.1                      | 4.6                      | 4.2                       | 4.0                      | 4.2                  | H                    | 4.8                       | 5.9                  | 4.2                                                             | 6.5                                                                                                                         |     |     |     |     |     |     |     |     | 115.2 | 0.7   | 2.9 | 2.9   | 2.9 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| J.P. Morgan Chase                                 | 5.3                                      |                       | na           | na                     | na                       | na                       | na                       | na                       | 4.4                      | 3.9                       | 3.7                      | 3.9                  | na                   | na                        | na                   | na                                                              |                                                                                                                             |     |     |     |     |     |     |     |     | na    | 0.5   | 3.5 | 3.3   | 3.4 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| KPMG                                              | 5.3                                      |                       | 8.4          | 5.3                    | 5.3                      | 5.5                      | 5.6                      | 5.6                      | 5.0                      | H                         | 4.3                      | 4.1                  | H                    | 4.1                       | 5.0                  | 6.1                                                             | na                                                                                                                          | 7.0 |     |     |     |     |     |     |     | na    | 1.0   | 2.6 | 2.9   | 2.8 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Loomis, Sayles & Company                          | 5.3                                      |                       | 8.4          | 5.3                    | 5.5                      | 5.7                      | 5.8                      | H                        | 5.4                      | 4.7                       | 3.9                      | 3.8                  | 3.9                  | 4.7                       | 5.7                  | 4.4                                                             | 6.8                                                                                                                         |     |     |     |     |     |     |     |     | 113.1 | 0.7   | 2.8 | 2.5   | 2.6 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| MacroFin Analytics & Rutgers Bus School           | 5.3                                      |                       | 8.5          | 5.3                    | 5.4                      | 5.4                      | 5.5                      | 5.4                      | 5.0                      | H                         | 4.3                      | 4.1                  | H                    | 4.2                       | H                    | 5.2                                                             | 6.2                                                                                                                         | 4.4 | 7.1 |     |     |     |     |     |     | 113.5 | 1.0   | 2.7 | 2.8   | 3.0 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| MacroPolicy Perspectives                          | 5.3                                      |                       | 8.5          | 5.3                    | 5.1                      | L                        | 5.5                      | 5.5                      | 5.4                      | 4.8                       | 4.1                      | 3.9                  | 4.0                  | 4.7                       | 5.6                  | 4.2                                                             | 6.8                                                                                                                         |     |     |     |     |     |     |     |     | 112.3 | L     | 1.4 | 2.4   | 1.9 | 2.0  |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Moody's Analytics                                 | 5.3                                      |                       | 8.4          | 5.2                    | 5.4                      | 5.3                      | 5.4                      | 5.4                      | 5.0                      | H                         | 4.3                      | 3.8                  | 4.2                  | H                         | 5.2                  | 6.2                                                             | 4.2                                                                                                                         | 6.6 |     |     |     |     |     |     |     | na    | 0.7   | 2.7 | 2.9   | 2.5 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Oxford Economics                                  | 5.3                                      |                       | 8.4          | 5.3                    | na                       | 5.4                      | 5.4                      | 5.3                      | 4.9                      | 4.1                       | 3.8                      | 3.9                  | 4.3                  | L                         | na                   | na                                                              | 6.8                                                                                                                         |     |     |     |     |     |     |     |     | 115.0 | 1.4   | 1.0 | L     | 3.0 | 2.6  |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| PNC Financial Services Corp.                      | 5.3                                      |                       | 8.4          | 5.2                    | na                       | 5.3                      | 5.4                      | 5.3                      | 4.8                      | 4.3                       | 4.0                      | 4.0                  | na                   | 6.1                       | 3.9                  | 7.0                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 115.0 | 0.5   | 2.9 | 3.2   | 2.6 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Regions Financial Corporation                     | 5.3                                      |                       | 8.4          | 5.3                    | 5.4                      | 5.4                      | 5.5                      | 5.3                      | 4.8                      | 4.2                       | 3.9                      | 4.0                  | 5.4                  | 6.3                       | 4.5                  | 6.8                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 113.2 | 0.9   | 2.7 | 2.8   | 2.8 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| S&P Global Market Intelligence                    | 5.3                                      |                       | 8.4          | 5.2                    | na                       | 5.4                      | 5.4                      | 5.7                      | H                        | 5.0                       | H                        | 4.4                  | H                    | 4.0                       | 4.0                  | na                                                              | na                                                                                                                          | na  | 6.8 |     |     |     |     |     |     | na    | 1.3   | 2.7 | 2.8   | 2.9 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Santander Capital Markets                         | 5.3                                      |                       | 8.4          | 5.2                    | 5.3                      | 5.5                      | 5.5                      | 5.4                      | 4.9                      | 4.2                       | 4.0                      | 4.1                  | 4.8                  | 5.9                       | 3.9                  | 6.9                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 113.5 | 2.5   | H   | 3.3   | 3.2 | 2.9  |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Societe Generale                                  | 5.3                                      |                       | 8.4          | 5.3                    | na                       | 5.5                      | 5.4                      | 5.2                      | 4.6                      | 4.0                       | 3.8                      | 3.8                  | na                   | na                        | na                   | na                                                              |                                                                                                                             |     |     |     |     |     |     |     |     | na    | 1.4   | 2.3 | 2.5   | 2.2 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| The Northern Trust Company                        | 5.3                                      |                       | 8.5          | 5.3                    | 5.4                      | 5.4                      | 5.3                      | 5.2                      | 4.7                      | 4.0                       | 3.8                      | 4.0                  | 4.9                  | 6.0                       | 4.3                  | 6.2                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 114.0 | 0.8   | 2.4 | 2.8   | 2.4 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Via Nova Investment Mgt.                          | 5.2                                      |                       | 8.4          | 5.2                    | 5.2                      | 5.6                      | 5.7                      | 5.5                      | 4.5                      | 3.8                       | 3.5                      | L                    | 3.7                  | 4.7                       | 5.5                  | L                                                               | 4.0                                                                                                                         | 6.2 |     |     |     |     |     |     |     | 113.3 | 1.5   | 3.0 | 2.9   | 2.5 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| ACIMA Private Wealth                              | 5.0                                      | L                     | 8.0          | L                      | 5.0                      | L                        | 5.1                      | L                        | 4.3                      | L                         | 4.1                      | L                    | 4.0                  | L                         | 3.7                  | L                                                               | 3.5                                                                                                                         | L   | 3.6 | L   | 5.8 | H   | 7.0 | H   | 3.0 | L     | 6.0   | L   | 125.0 | H   | -2.0 | L | 1.0 | L | 0.8 | L | 1.0 | L |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| August Consensus                                  | 5.4                                      |                       | 8.5          | 5.3                    | 5.4                      | 5.5                      | 5.5                      | 5.3                      | 4.7                      | 4.1                       | 3.9                      | 4.0                  | 4.9                  | 6.0                       | 4.2                  | 6.7                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 114.4 | 0.8   | 2.7 | 2.9   | 2.7 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Top 10 Avg.                                       | 5.5                                      |                       | 8.6          | 5.4                    | 5.5                      | 5.6                      | 5.7                      | 5.5                      | 5.0                      | 4.3                       | 4.0                      | 4.1                  | 5.2                  | 6.2                       | 4.4                  | 7.0                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 115.7 | 1.7   | 3.5 | 3.6   | 3.3 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Bottom 10 Avg.                                    | 5.3                                      |                       | 8.4          | 5.2                    | 5.3                      | 5.3                      | 5.1                      | 4.5                      | 3.9                      | 3.7                       | 3.8                      | 4.7                  | 5.8                  | 3.9                       | 6.5                  |                                                                 |                                                                                                                             |     |     |     |     |     |     |     |     | 113.2 | -0.5  | 1.8 | 2.3   | 2.1 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| July Consensus                                    | 5.3                                      |                       | 8.4          | 5.2                    | 5.2                      | 5.3                      | 5.3                      | 5.1                      | 4.4                      | 3.9                       | 3.7                      | 3.9                  | 4.8                  | 5.9                       | 4.2                  | 6.6                                                             |                                                                                                                             |     |     |     |     |     |     |     |     | 114.7 | 0.0   | 2.9 | 3.0   | 2.9 |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| Number of Forecasts Changed From A Month Ago:     |                                          |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |                                                                 |                                                                                                                             |     |     |     |     |     |     |     |     |       |       |     |       |     |      |   |     |   |     |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |



AUGUST 1, 2023 ■ BLUE CHIP FINANCIAL FORECASTS ■ 5

## Fourth Quarter 2023

## Interest Rate Forecasts

## Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | Percent Per Annum -- Average For Quarter |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      | Avg. For<br>--Qtr--<br>A.<br>Fed's Adv<br>Fgn Econ<br>\$ Index | (Q-Q % Change)<br>(SAAR) |                      |                               |                             |     |       |       |      |       |      |     |      |     |      |   |
|---------------------------------------------------|------------------------------------------|-----------------------|--------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|----------------------|----------------------------------------------------------------|--------------------------|----------------------|-------------------------------|-----------------------------|-----|-------|-------|------|-------|------|-----|------|-----|------|---|
|                                                   | Short-Term                               |                       |              |                        |                          | Intermediate-Term        |                          |                          |                          |                           | Long-Term                |                      |                      |                           |                      |                                                                | B.<br>Real<br>GDP        | C.<br>Price<br>Index | D.<br>Cons.<br>Price<br>Index | E.<br>PCE<br>Price<br>Index |     |       |       |      |       |      |     |      |     |      |   |
|                                                   | 1                                        | 2                     | 3            | 4                      | 5                        | 6                        | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |                                                                |                          |                      |                               |                             |     |       |       |      |       |      |     |      |     |      |   |
|                                                   | Federal<br>Funds<br>Rate                 | Prime<br>Bank<br>Rate | SOFR<br>Rate | Com.<br>Paper<br>1-Mo. | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo. | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Local<br>Bonds | Home<br>Mtg.<br>Rate |                                                                |                          |                      |                               |                             |     |       |       |      |       |      |     |      |     |      |   |
|                                                   | H                                        | H                     | H            | H                      | H                        | H                        | H                        | H                        | H                        | H                         | H                        | L                    | L                    | L                         | L                    |                                                                |                          |                      |                               |                             |     |       |       |      |       |      |     |      |     |      |   |
| Chan Economics                                    | 5.7                                      | H                     | 8.7          | 5.6                    | 5.7                      | H                        | 5.8                      | H                        | 5.8                      | H                         | 5.6                      | 5.0                  | 4.4                  | 4.4                       | 4.5                  | H                                                              | 5.5                      | 6.5                  | 5.0                           | H                           | 6.9 | 112.7 | 1.0   | 2.6  | 2.8   | 2.3  |     |      |     |      |   |
| Action Economics                                  | 5.6                                      |                       | 8.8          | H                      | 5.9                      | H                        | 5.6                      |                          | 5.6                      |                           | 5.5                      | 5.3                  | 4.5                  | 4.1                       | 4.0                  |                                                                | 4.8                      | 5.9                  | 3.9                           |                             | 7.3 | H     | 113.2 | 1.2  | 2.4   | 2.5  | 2.2 |      |     |      |   |
| Bank of America                                   | 5.6                                      |                       | na           |                        | na                       |                          | na                       |                          | na                       |                           | na                       | 4.3                  | 3.9                  | 3.5                       | 3.8                  |                                                                | na                       | na                   | na                            |                             | na  | na    | 0.5   | 3.5  | 3.0   | 2.7  |     |      |     |      |   |
| Bank of the West                                  | 5.6                                      |                       | 8.8          | H                      | 5.5                      |                          | 5.6                      |                          | 5.7                      |                           | 5.7                      | 5.5                  | 4.9                  | 4.3                       | 4.1                  | 4.2                                                            | 5.0                      | 6.1                  | 4.6                           |                             | 7.0 | 112.8 | 0.4   | 2.6  | 2.5   | 2.4  |     |      |     |      |   |
| Barclays                                          | 5.6                                      |                       | na           |                        | na                       |                          | na                       |                          | na                       |                           | na                       | 4.5                  | 3.9                  | 3.9                       | 3.9                  |                                                                | na                       | na                   | na                            |                             | na  | na    | 0.0   | 2.4  | 1.7   | 2.2  |     |      |     |      |   |
| Chmura Economics & Analytics                      | 5.6                                      |                       | 8.7          |                        | 5.6                      |                          | 5.7                      | H                        | 5.8                      | H                         | 5.8                      | H                    | 5.7                  | H                         | 5.1                  | H                                                              | 4.7                      | H                    | 4.5                           | H                           | 4.4 | na    | -1.8  | 3.5  | 3.6   | 3.8  | H   |      |     |      |   |
| Daiwa Capital Markets America                     | 5.6                                      |                       | 8.8          | H                      | na                       |                          | na                       |                          | 5.6                      |                           | na                       |                      | 4.7                  |                           | 3.9                  |                                                                | 3.8                      |                      | 4.1                           |                             | na  | na    | na    | 6.9  | 115.0 | -0.7 | 3.0 | 3.0  | 3.1 |      |   |
| Fannie Mae                                        | 5.6                                      |                       | 8.8          | H                      | na                       |                          | na                       |                          | 5.4                      |                           | 5.3                      |                      | 5.1                  |                           | 4.5                  |                                                                | 4.0                      |                      | 3.8                           |                             | 3.9 | na    | -0.4  | 2.9  | 2.7   | 2.8  |     |      |     |      |   |
| Naroff Economic Advisors                          | 5.6                                      |                       | 8.6          |                        | 5.6                      |                          | 5.7                      | H                        | 5.6                      |                           | 5.7                      |                      | 5.1                  |                           | 4.7                  |                                                                | 4.2                      |                      | 3.8                           |                             | 4.0 | na    | -3.5  | L    | 3.6   | 3.5  | 3.4 |      |     |      |   |
| The Northern Trust Company                        | 5.6                                      |                       | 8.8          | H                      | 5.6                      |                          | 5.7                      | H                        | 5.6                      |                           | 5.5                      |                      | 5.3                  |                           | 4.8                  |                                                                | 3.8                      |                      | 3.7                           |                             | 3.9 | 4.9   | 0.7   | 2.3  | 2.5   | 2.3  |     |      |     |      |   |
| KPMG                                              | 5.5                                      |                       | 8.7          |                        | 5.5                      |                          | 5.5                      |                          | 5.7                      |                           | 5.5                      |                      | 5.5                  |                           | 4.9                  |                                                                | 4.2                      |                      | 4.0                           |                             | 4.1 | 4.9   | 0.5   | 3.0  | 3.4   | 3.2  |     |      |     |      |   |
| S&P Global Market Intelligence                    | 5.5                                      |                       | 8.6          |                        | 5.5                      |                          | na                       |                          | 5.5                      |                           | 5.3                      |                      | 5.5                  |                           | 4.9                  |                                                                | 4.3                      |                      | 4.0                           |                             | 4.0 | na    | 0.9   | 3.0  | 3.5   | 3.2  |     |      |     |      |   |
| Santander Capital Markets                         | 5.5                                      |                       | 8.7          |                        | 5.5                      |                          | 5.6                      |                          | 5.6                      |                           | 5.6                      |                      | 5.3                  | H                         | 4.4                  |                                                                | 4.2                      |                      | 4.3                           |                             | 4.3 | 5.1   | 1.9   | H    | 3.2   | 3.7  | 3.3 |      |     |      |   |
| Scotiabank Group                                  | 5.5                                      |                       | na           |                        | 5.3                      |                          | na                       |                          | 5.3                      |                           | na                       |                      | na                   |                           | 4.4                  |                                                                | 3.9                      |                      | 3.6                           |                             | 3.9 | na    | -0.3  | 1.4  | 3.9   | 3.7  |     |      |     |      |   |
| BMO Capital Markets                               | 5.4                                      |                       | 8.5          |                        | 5.3                      |                          | na                       |                          | 5.7                      |                           | 5.7                      |                      | 5.3                  |                           | 4.5                  |                                                                | 4.0                      |                      | 3.7                           |                             | 3.8 | na    | 1.0   | 2.9  | 3.3   | 3.1  |     |      |     |      |   |
| DePrince & Assoc.                                 | 5.4                                      |                       | 8.5          |                        | 5.4                      |                          | 5.4                      |                          | 5.6                      |                           | 5.6                      |                      | 5.5                  |                           | 5.0                  |                                                                | 4.4                      |                      | 4.0                           |                             | 4.0 | 5.0   | 0.1   | 3.0  | 3.0   | 2.9  |     |      |     |      |   |
| Economist Intelligence Unit                       | 5.4                                      |                       | 8.4          |                        | na                       |                          | 5.3                      |                          | 5.4                      |                           | 5.5                      |                      | 5.0                  |                           | 4.8                  |                                                                | 4.0                      |                      | 3.8                           |                             | 3.9 | na    | 0.2   | na   | 1.8   | na   |     |      |     |      |   |
| Goldman Sachs & Co.                               | 5.4                                      |                       | na           |                        | na                       |                          | na                       |                          | 5.1                      |                           | na                       |                      | na                   |                           | 4.5                  |                                                                | 4.0                      |                      | 3.9                           |                             | 4.0 | na    | 1.0   | 4.1  | H     | 4.4  | H   | 3.3  |     |      |   |
| ING                                               | 5.4                                      |                       | na           |                        | na                       |                          | na                       |                          | na                       |                           | na                       |                      | 4.3                  |                           | 3.8                  |                                                                | 3.5                      |                      | 3.7                           |                             | na  | na    | -0.7  | na   | na    | na   |     |      |     |      |   |
| J.P. Morgan Chase                                 | 5.4                                      |                       | na           |                        | na                       |                          | na                       |                          | na                       |                           | na                       |                      | 4.4                  |                           | 3.7                  |                                                                | 3.7                      |                      | 3.9                           |                             | na  | na    | -0.5  | 3.2  | 2.9   | 3.0  |     |      |     |      |   |
| Loomis, Sayles & Company                          | 5.4                                      |                       | 8.5          |                        | 5.4                      |                          | 5.4                      |                          | 5.6                      |                           | 5.6                      |                      | 5.1                  |                           | 3.9                  |                                                                | 3.7                      |                      | 3.1                           |                             | 3.7 | 4.1   | -2.1  | 2.3  | 1.9   | 1.9  |     |      |     |      |   |
| MacroPolicy Perspectives                          | 5.4                                      |                       | 8.5          |                        | 5.3                      |                          | na                       |                          | na                       |                           | na                       |                      | 5.4                  |                           | 4.7                  |                                                                | 4.3                      |                      | 4.1                           |                             | 4.2 | 4.9   | 1.1   | 2.1  | 1.6   | 1.7  |     |      |     |      |   |
| Nomura Securities, Inc.                           | 5.4                                      |                       | 8.5          |                        | na                       |                          | na                       |                          | na                       |                           | na                       |                      | 3.9                  |                           | 3.3                  |                                                                | 2.9                      |                      | na                            |                             | na  | na    | -1.6  | 2.3  | 2.5   | 2.2  |     |      |     |      |   |
| Oxford Economics                                  | 5.4                                      |                       | 8.5          |                        | 5.4                      |                          | na                       |                          | 5.3                      |                           | 5.2                      |                      | 5.1                  |                           | 4.6                  |                                                                | 3.8                      |                      | 3.6                           |                             | 3.7 | 4.2   | -1.6  | -0.6 | 3.2   | 2.7  |     |      |     |      |   |
| RDQ Economics                                     | 5.4                                      |                       | 8.5          |                        | 5.4                      |                          | 5.5                      |                          | 5.4                      |                           | 5.4                      |                      | 4.8                  |                           | 4.2                  |                                                                | 4.1                      |                      | 4.0                           |                             | 4.0 | 5.6   | 0.8   | 3.6  | 3.6   | 3.5  |     |      |     |      |   |
| The Lonski Group                                  | 5.4                                      |                       | 8.5          |                        | 5.3                      |                          | 5.7                      | H                        | 5.4                      |                           | 5.4                      |                      | 5.0                  |                           | 4.6                  |                                                                | 3.9                      |                      | 3.7                           |                             | 3.8 | 4.9   | 0.2   | 2.5  | 2.9   | 3.1  |     |      |     |      |   |
| Wells Fargo                                       | 5.4                                      |                       | 8.5          |                        | 5.4                      |                          | 5.4                      |                          | 5.3                      |                           | 5.3                      |                      | 4.8                  |                           | 4.2                  |                                                                | 3.7                      |                      | 3.6                           |                             | 3.8 | 4.8   | 0.2   | 2.6  | 3.0   | 2.6  |     |      |     |      |   |
| EY-Parthenon                                      | 5.3                                      |                       | na           |                        | na                       |                          | na                       |                          | 5.2                      |                           | na                       |                      | na                   |                           | na                   |                                                                | na                       |                      | 3.3                           |                             | na  | na    | -0.6  | 1.8  | 2.6   | 2.2  |     |      |     |      |   |
| MacroFin Analytics & Rutgers Bus School           | 5.3                                      |                       | 8.5          |                        | 5.3                      |                          | 5.4                      |                          | 5.4                      |                           | 5.4                      |                      | 5.0                  |                           | 4.3                  |                                                                | 4.1                      |                      | 4.2                           |                             | 4.2 | 5.2   | 1.2   | 2.6  | 2.8   | 2.8  |     |      |     |      |   |
| Moody's Analytics                                 | 5.3                                      |                       | 8.5          |                        | 5.3                      |                          | 5.5                      |                          | 5.2                      |                           | 5.1                      |                      | 4.9                  |                           | 4.6                  |                                                                | 4.2                      |                      | 3.9                           |                             | 4.3 | 5.4   | 0.4   | 2.9  | 3.3   | 3.1  |     |      |     |      |   |
| PNC Financial Services Corp.                      | 5.3                                      |                       | 8.5          |                        | 5.3                      |                          | na                       |                          | 5.3                      |                           | 5.3                      |                      | 4.8                  |                           | 4.5                  |                                                                | 4.1                      |                      | 3.9                           |                             | 4.0 | na    | 0.2   | 2.5  | 2.5   | 2.2  |     |      |     |      |   |
| Regions Financial Corporation                     | 5.3                                      |                       | 8.5          |                        | 5.3                      |                          | 5.4                      |                          | 5.4                      |                           | 5.5                      |                      | 5.3                  |                           | 4.4                  |                                                                | 4.0                      |                      | 3.7                           |                             | 3.9 | 5.2   | 0.6   | 2.7  | 3.0   | 2.8  |     |      |     |      |   |
| Societe Generale                                  | 5.3                                      |                       | 8.5          |                        | 5.3                      |                          | na                       |                          | 5.3                      |                           | 5.1                      |                      | 4.7                  |                           | 3.9                  |                                                                | 3.6                      |                      | 3.5                           |                             | 3.7 | na    | 1.0   | 2.7  | 3.1   | 2.8  |     |      |     |      |   |
| Via Nova Investment Mgt.                          | 5.3                                      |                       | 8.5          |                        | 5.3                      |                          | 5.3                      |                          | 5.6                      |                           | 5.7                      |                      | 5.5                  |                           | 4.3                  |                                                                | 3.6                      |                      | 3.3                           |                             | 3.6 | 4.5   | 1.5   | 2.5  | 2.4   | 2.3  |     |      |     |      |   |
| GLC Financial Economics                           | 5.2                                      |                       | 8.3          |                        | 5.1                      |                          | 5.2                      |                          | 5.2                      |                           | 5.2                      |                      | 5.0                  |                           | 4.6                  |                                                                | 4.3                      |                      | 4.1                           |                             | 4.4 | 5.1   | 0.4   | 2.9  | 2.9   | 2.8  |     |      |     |      |   |
| Georgia State University                          | 5.0                                      |                       | 8.2          |                        | na                       |                          | na                       |                          | 5.0                      |                           | 4.8                      |                      | 4.7                  |                           | 4.0                  |                                                                | 3.8                      |                      | 3.6                           |                             | 3.7 | 4.4   | 0.1   | 3.4  | 2.4   | 2.8  |     |      |     |      |   |
| ACIMA Private Wealth                              | 4.1                                      | L                     | 7.1          | L                      | 4.1                      | L                        | 4.2                      | L                        | 4.2                      | L                         | 3.3                      | L                    | 3.0                  | L                         | 2.7                  | L                                                              | 2.5                      | L                    | 2.5                           | L                           | 2.8 | L     | 118.0 | H    | -2.0  | -1.5 | L   | -1.0 | L   | -1.1 | L |
| August Consensus                                  | 5.4                                      |                       | 8.5          |                        | 5.4                      |                          | 5.4                      |                          | 5.4                      |                           | 5.1                      |                      | 4.5                  |                           | 4.0                  |                                                                | 3.8                      |                      | 3.9                           |                             | 3.9 | 4.9   | 0.0   | 2.6  | 2.8   | 2.7  |     |      |     |      |   |
| Top 10 Avg.                                       | 5.6                                      |                       | 8.7          |                        | 5.6                      |                          | 5.6                      |                          | 5.7                      |                           | 5.7                      |                      | 5.5                  |                           | 5.0                  |                                                                | 4.4                      |                      | 4.2                           |                             | 4.3 | 5.3   | 1.2   | 3.4  | 3.6   | 3.4  |     |      |     |      |   |
| Bottom 10 Avg.                                    | 5.1                                      |                       | 8.3          |                        | 5.2                      |                          | 5.3                      |                          | 5.1                      |                           | 5.0                      |                      | 4.7                  |                           | 4.0                  |                                                                | 3.6                      |                      | 3.3                           |                             | 3.6 | 4.6   | -1.5  | 1.5  | 1.8   | 1.8  |     |      |     |      |   |
| July Consensus                                    | 5.2                                      |                       | 8.4          |                        | 5.2                      |                          | 5.2                      |                          | 5.2                      |                           | 5.1                      |                      | 4.9                  |                           | 4.3                  |                                                                | 3.8                      |                      | 3.6                           |                             | 3.9 | 4.9   | -0.2  | 2.8  | 2.8   | 2.7  |     |      |     |      |   |
| Number of Forecasts Changed From A Month Ago:     |                                          |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |                                                                |                          |                      |                               |                             |     |       |       |      |       |      |     |      |     |      |   |
| Down                                              | 2                                        |                       | 2            |                        | 0                        |                          | 0                        |                          | 0                        |                           | 0                        |                      | 0                    |                           | 2                    |                                                                | 1                        |                      | 3                             |                             | 3   | 5     | 10    | 15   | 12    | 11   |     |      |     |      |   |
| Same                                              | 16                                       |                       | 12           |                        | 9                        |                          | 6                        |                          | 10                       |                           | 6                        |                      | 4                    |                           | 8                    |                                                                | 12                       |                      | 15                            |                             | 16  | 6     | 14    | 12   | 13    | 11   |     |      |     |      |   |
| Up                                                | 19                                       |                       | 16           |                        | 16                       |                          | 14                       |                          | 21                       |                           | 21                       |                      | 23                   |                           | 28                   |                                                                | 21                       |                      | 21                            |                             | 15  | 11    | 13    | 8    | 11    | 13   |     |      |     |      |   |
| Diffusion Index                                   | 73%                                      |                       | 73%          |                        | 82%                      |                          | 85%                      |                          | 84%                      |                           | 89%                      |                      | 93%                  |                           | 89%                  |                                                                | 77%                      |                      | 77%                           |                             | 68% | 70%   | 54%   | 40%  | 49%   | 53%  |     |      |     |      |   |

## First Quarter 2024

## Interest Rate Forecasts

## Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | Percent Per Annum -- Average For Quarter-- |                       |                |                         |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      | Avg. For<br>--Qtr.--<br>A. | (Q-Q % Change)-----<br>(SAAR)----- |       |      |      |     |     |       |     |   |     |     |     |   |
|---------------------------------------------------|--------------------------------------------|-----------------------|----------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|----------------------|----------------------------|------------------------------------|-------|------|------|-----|-----|-------|-----|---|-----|-----|-----|---|
|                                                   | -----Short-Term-----                       |                       |                |                         |                          | --Intermediate-Term--    |                          |                          |                          |                           | -----Long-Term-----      |                      |                      |                           |                      |                            | B.                                 | C.    | D.   | E.   |     |     |       |     |   |     |     |     |   |
|                                                   | 1                                          | 2                     | 3              | 4                       | 5                        | 6                        | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |                            |                                    |       |      |      |     |     |       |     |   |     |     |     |   |
|                                                   | Federal<br>Funds<br>Rate                   | Prime<br>Bank<br>Rate | SOFR<br>Rate   | Com.<br>Paper<br>1-Mo.  | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo. | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Local<br>Bonds | Home<br>Mtg.<br>Rate |                            |                                    |       |      |      |     |     |       |     |   |     |     |     |   |
|                                                   | Fed's Adv<br>Fgn Econ<br>\$ Index          | Real<br>GDP           | Price<br>Index | Cons.<br>Price<br>Index | PCE<br>Price<br>Index    |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |                            |                                    |       |      |      |     |     |       |     |   |     |     |     |   |
| Bank of America                                   | 5.6                                        | H                     | na             | na                      | na                       | na                       | na                       | 3.9                      | 3.7                      | 3.4                       | 3.7                      | na                   | na                   | na                        | na                   | na                         | -1.0                               | 3.6   | H    | 3.4  | 2.9 |     |       |     |   |     |     |     |   |
| Barclays                                          | 5.6                                        | H                     | na             | na                      | na                       | na                       | na                       | na                       | 4.3                      | 3.8                       | 3.8                      | 3.9                  | na                   | na                        | na                   | na                         | -0.5                               | 2.7   |      | 2.4  | 2.5 |     |       |     |   |     |     |     |   |
| Chmura Economics & Analytics                      | 5.6                                        | H                     | 8.7            | 5.6                     | 5.7                      | H                        | 5.8                      | H                        | 5.8                      | H                         | 5.3                      | H                    | 5.2                  | H                         | 4.9                  | H                          | 5.0                                | 1.8   | 3.4  | 3.5  | H   | 3.6 | H     |     |   |     |     |     |   |
| Daiwa Capital Markets America                     | 5.6                                        | H                     | 8.8            | H                       | na                       | na                       | 5.3                      | na                       | na                       | 4.5                       | 3.8                      | 3.8                  | 4.2                  | na                        | na                   | na                         | 6.7                                | 114.5 | -1.2 | 2.8  | 2.5 | 2.6 |       |     |   |     |     |     |   |
| KPMG                                              | 5.6                                        | H                     | 8.8            | H                       | 5.6                      | 5.4                      | 5.6                      | 5.4                      | 5.3                      | 4.7                       | 4.0                      | 3.8                  | 4.0                  | 4.7                       | 5.9                  | na                         | 6.4                                | na    | 0.8  | 2.5  | 1.9 | 2.2 |       |     |   |     |     |     |   |
| Naroff Economic Advisors                          | 5.6                                        | H                     | 8.6            | 5.6                     | 5.7                      | H                        | 5.6                      | 5.7                      | 4.9                      | 4.6                       | 4.1                      | 3.9                  | 4.0                  | na                        | na                   | 4.1                        | 6.5                                | 114.5 | 0.9  | 3.3  | 3.2 | 3.2 |       |     |   |     |     |     |   |
| S&P Global Market Intelligence                    | 5.6                                        | H                     | 8.7            | 5.6                     | na                       | 5.5                      | 5.1                      | 5.2                      | 4.6                      | 4.0                       | 3.8                      | 4.0                  | na                   | na                        | na                   | 6.4                        | na                                 | 1.1   | 2.5  | 1.9  | 2.3 |     |       |     |   |     |     |     |   |
| Santander Capital Markets                         | 5.6                                        | H                     | 8.8            | H                       | 5.6                      | 5.7                      | H                        | 5.6                      | 5.6                      | 5.3                       | 5.0                      | 4.4                  | 4.3                  | 4.4                       | 5.3                  | 6.5                        | 4.2                                | 113.5 | 1.1  | 3.1  | 3.2 | 2.9 |       |     |   |     |     |     |   |
| The Northern Trust Company                        | 5.6                                        | H                     | 8.8            | H                       | 5.6                      | 5.7                      | H                        | 5.6                      | 5.3                      | 5.2                       | 4.7                      | 3.8                  | 3.5                  | 3.8                       | 4.8                  | 5.9                        | 4.3                                | 114.0 | 1.1  | 2.2  | 2.4 | 2.1 |       |     |   |     |     |     |   |
| Action Economics                                  | 5.5                                        | 8.7                   | 6.0            | H                       | 5.6                      | 5.5                      | 5.3                      | 5.0                      | 4.3                      | 4.0                       | 4.0                      | 4.0                  | 4.8                  | 5.9                       | 3.9                  | 7.3                        | H                                  | 113.4 | 1.2  | 2.2  | 2.4 | 2.0 |       |     |   |     |     |     |   |
| Bank of the West                                  | 5.5                                        | 8.7                   | 5.4            | 5.5                     | 5.6                      | 5.5                      | 5.4                      | 4.7                      | 4.3                      | 4.1                       | 4.2                      | 5.1                  | 6.1                  | 4.7                       | 7.0                  |                            | 112.2                              | 0.3   | 2.4  | 2.4  | 2.3 |     |       |     |   |     |     |     |   |
| J.P. Morgan Chase                                 | 5.5                                        | na                    | na             | na                      | na                       | na                       | na                       | 4.2                      | 3.6                      | 3.5                       | 3.8                      | na                   | na                   | na                        | na                   | na                         | na                                 | -0.5  | 2.7  | 2.6  | 2.5 |     |       |     |   |     |     |     |   |
| Scotiabank Group                                  | 5.5                                        | na                    | 5.3            | na                      | 5.3                      | na                       | na                       | 4.0                      | 3.8                      | 3.7                       | 3.9                      | na                   | na                   | na                        | na                   | na                         | na                                 | 0.6   | 1.4  | 2.4  | 2.7 |     |       |     |   |     |     |     |   |
| BMO Capital Markets                               | 5.4                                        | 8.5                   | 5.3            | na                      | 5.7                      | 5.7                      | 5.1                      | 4.2                      | 3.8                      | 3.6                       | 3.7                      | na                   | na                   | na                        | 6.6                  |                            | 111.4                              | -0.5  | 2.6  | 2.9  | 2.7 |     |       |     |   |     |     |     |   |
| Chan Economics                                    | 5.4                                        | 8.4                   | 5.3            | 5.4                     | 5.5                      | 5.5                      | 5.3                      | 4.7                      | 4.1                      | 4.1                       | 4.2                      | 5.2                  | 6.2                  | 4.7                       | 6.6                  |                            | 112.5                              | -0.8  | 2.5  | 2.7  | 2.2 |     |       |     |   |     |     |     |   |
| Economist Intelligence Unit                       | 5.4                                        | 8.4                   | na             | 5.3                     | 5.3                      | 5.2                      | 4.9                      | 4.6                      | 3.8                      | 3.7                       | 3.8                      | na                   | na                   | na                        | 6.3                  |                            | na                                 | 0.8   | na   | 2.2  | na  |     |       |     |   |     |     |     |   |
| Goldman Sachs & Co.                               | 5.4                                        | na                    | na             | na                      | 5.1                      | na                       | na                       | 4.4                      | 4.0                      | 3.8                       | 3.9                      | na                   | na                   | na                        | na                   | na                         | na                                 | 1.9   | 3.1  | 3.5  | H   | 2.7 |       |     |   |     |     |     |   |
| MacroPolicy Perspectives                          | 5.4                                        | 8.5                   | 5.3            | na                      | na                       | na                       | 5.0                      | 4.7                      | 4.3                      | 4.1                       | 4.3                      | 4.9                  | 5.8                  | na                        | 6.9                  |                            | na                                 | 1.2   | 2.2  | 1.9  | 1.8 |     |       |     |   |     |     |     |   |
| Wells Fargo                                       | 5.4                                        | 8.5                   | 5.4            | 5.4                     | 5.0                      | 4.7                      | 4.0                      | 3.7                      | 3.3                      | 3.3                       | 3.7                      | 4.5                  | 5.5                  | 3.9                       | 6.1                  |                            | na                                 | -1.4  | 2.1  | 2.4  | 2.1 |     |       |     |   |     |     |     |   |
| DePrince & Assoc.                                 | 5.3                                        | 8.5                   | 5.3            | 5.3                     | 5.5                      | 5.5                      | 5.4                      | 5.0                      | 4.4                      | 4.1                       | 4.0                      | 5.2                  | 6.1                  | 4.4                       | 6.6                  |                            | 116.7                              | 0.8   | 2.8  | 2.9  | 2.7 |     |       |     |   |     |     |     |   |
| Fannie Mae                                        | 5.3                                        | 8.4                   | na             | na                      | 5.1                      | 5.0                      | 4.7                      | 4.3                      | 3.9                      | 3.7                       | 3.9                      | na                   | na                   | na                        | 6.4                  |                            | na                                 | -1.3  | 2.8  | 3.4  | 2.9 |     |       |     |   |     |     |     |   |
| Moody's Analytics                                 | 5.3                                        | 8.5                   | 5.3            | 5.4                     | 5.1                      | 5.0                      | 4.8                      | 4.6                      | 4.2                      | 4.0                       | 4.4                      | 5.5                  | 6.5                  | 4.4                       | 6.5                  |                            | na                                 | 0.9   | 2.5  | 2.8  | 2.5 |     |       |     |   |     |     |     |   |
| PNC Financial Services Corp.                      | 5.3                                        | 8.5                   | 5.3            | na                      | 4.9                      | 5.0                      | 4.4                      | 4.2                      | 3.9                      | 3.8                       | 4.0                      | na                   | 6.9                  | H                         | 5.0                  | H                          | 6.4                                | 117.2 | H    | -0.7 | 1.3 | 1.0 | L     | 1.0 |   |     |     |     |   |
| Regions Financial Corporation                     | 5.3                                        | 8.5                   | 5.3            | 5.4                     | 5.3                      | 5.4                      | 5.3                      | 4.2                      | 4.0                      | 3.7                       | 3.9                      | 5.2                  | 6.1                  | 4.3                       | 6.4                  |                            | 113.2                              | 0.9   | 2.5  | 2.8  | 2.6 |     |       |     |   |     |     |     |   |
| Loomis, Sayles & Company                          | 5.2                                        | 8.3                   | 5.1            | 5.1                     | 5.3                      | 5.3                      | 4.4                      | 2.6                      | 3.0                      | 2.9                       | 3.4                      | 3.9                  | L                    | 4.9                       | L                    | 3.5                        | 5.7                                | 112.2 | -1.7 | 2.6  | 3.1 | 2.6 |       |     |   |     |     |     |   |
| RDQ Economics                                     | 5.2                                        | 8.3                   | 5.3            | 5.3                     | 5.1                      | 5.0                      | 4.4                      | 3.9                      | 4.0                      | 4.0                       | 4.0                      | 5.8                  | H                    | 6.6                       | 4.4                  | 6.5                        |                                    | 110.7 | -1.2 | 3.5  | 3.4 | 3.3 |       |     |   |     |     |     |   |
| The Lonski Group                                  | 5.2                                        | 8.3                   | 5.1            | 5.5                     | 5.1                      | 5.2                      | 4.8                      | 4.4                      | 3.7                      | 3.6                       | 3.7                      | 4.8                  | 5.7                  | 4.1                       | 6.5                  |                            | 116.0                              | 0.1   | 2.3  | 1.7  | 2.6 |     |       |     |   |     |     |     |   |
| Nomura Securities, Inc.                           | 5.1                                        | 8.3                   | na             | na                      | na                       | na                       | na                       | 3.2                      | 3.0                      | 2.9                       | na                       | na                   | na                   | na                        | na                   | na                         | na                                 | -1.9  | L    | 2.0  | 2.5 | 2.2 |       |     |   |     |     |     |   |
| Oxford Economics                                  | 5.1                                        | 8.3                   | 5.1            | na                      | 5.0                      | 4.9                      | 4.8                      | 4.3                      | 3.5                      | 3.3                       | 3.6                      | 3.9                  | L                    | na                        | na                   | 5.8                        | 114.4                              | -1.8  | 0.6  | L    | 2.8 | 2.4 |       |     |   |     |     |     |   |
| Societe Generale                                  | 5.1                                        | 8.3                   | 5.1            | na                      | 4.9                      | 4.6                      | 4.2                      | 3.4                      | 3.4                      | 3.3                       | 3.6                      | na                   | na                   | na                        | na                   | na                         | na                                 | -0.5  | 1.8  | 2.2  | 2.5 |     |       |     |   |     |     |     |   |
| EY-Parthenon                                      | 5.0                                        | na                    | na             | na                      | 4.9                      | na                       | na                       | na                       | na                       | 2.9                       | na                       | na                   | na                   | na                        | na                   | na                         | na                                 | 0.4   | 2.2  | 2.3  | 2.0 |     |       |     |   |     |     |     |   |
| Via Nova Investment Mgt.                          | 5.0                                        | 8.3                   | 5.1            | 5.1                     | 5.0                      | 5.1                      | 4.7                      | 4.7                      | 4.3                      | 4.2                       | 4.4                      | 5.4                  | 6.2                  | 4.6                       | 6.9                  |                            | 110.0                              | L     | 2.0  | 2.2  | 2.1 | 2.0 |       |     |   |     |     |     |   |
| GLC Financial Economics                           | 4.9                                        | 8.1                   | 4.9            | 4.9                     | 5.0                      | 4.9                      | 4.8                      | 4.3                      | 4.2                      | 4.1                       | 4.4                      | 5.0                  | 6.0                  | 4.1                       | 6.1                  |                            | 114.7                              | 0.9   | 2.5  | 2.9  | 2.7 |     |       |     |   |     |     |     |   |
| ING                                               | 4.9                                        | na                    | na             | na                      | na                       | na                       | na                       | 3.8                      | 3.5                      | 3.3                       | 3.7                      | na                   | na                   | na                        | na                   | na                         | na                                 | -1.4  | na   | na   | na  | na  |       |     |   |     |     |     |   |
| MacroFin Analytics & Rutgers Bus School           | 4.9                                        | 8.3                   | 4.8            | 4.9                     | 5.0                      | 5.2                      | 5.3                      | 4.9                      | 4.3                      | 4.0                       | 4.1                      | 5.1                  | 6.1                  | 4.2                       | 6.9                  |                            | 113.2                              | 1.4   | 2.6  | 2.7  | 2.6 |     |       |     |   |     |     |     |   |
| Georgia State University                          | 4.2                                        | 7.3                   | na             | na                      | 4.0                      | 3.7                      | 4.4                      | 3.7                      | 3.4                      | 3.6                       | 3.9                      | 4.6                  | 5.7                  | na                        | 6.0                  |                            | na                                 | -0.2  | 3.4  | 2.0  | 2.5 |     |       |     |   |     |     |     |   |
| ACIMA Private Wealth                              | 2.8                                        | L                     | 5.8            | L                       | 2.8                      | L                        | 2.8                      | L                        | 1.5                      | L                         | 1.1                      | L                    | 1.0                  | L                         | 1.0                  | L                          | 2.0                                | L     | 2.8  | L    | 4.5 | L   | 115.0 | 5.5 | H | 1.9 | 1.5 | 0.8 | L |
| August Consensus                                  |                                            | 5.2                   | 8.4            | 5.2                     | 5.3                      | 5.2                      | 5.0                      | 4.8                      | 4.2                      | 3.8                       | 3.7                      | 4.0                  | 4.9                  | 6.0                       | 4.2                  | 6.4                        |                                    | 113.6 | 0.2  | 2.5  | 2.6 | 2.4 |       |     |   |     |     |     |   |
| Top 10 Avg.                                       |                                            | 5.6                   | 8.7            | 5.6                     | 5.6                      | 5.6                      | 5.5                      | 5.4                      | 4.8                      | 4.4                       | 4.2                      | 4.4                  | 5.4                  | 6.3                       | 4.5                  | 6.9                        |                                    | 115.1 | 1.8  | 3.2  | 3.3 | 3.0 |       |     |   |     |     |     |   |
| Bottom 10 Avg.                                    |                                            | 4.7                   | 7.9            | 4.9                     | 5.0                      | 4.7                      | 4.4                      | 4.1                      | 3.3                      | 3.1                       | 3.1                      | 3.6                  | 4.5                  | 5.7                       | 3.8                  | 5.9                        |                                    | 112.2 | -1.4 | 1.8  | 1.8 | 1.8 |       |     |   |     |     |     |   |
| July Consensus                                    |                                            | 5.0                   | 8.1            | 5.0                     | 5.0                      | 5.0                      | 4.9                      | 4.6                      | 4.0                      | 3.7                       | 3.6                      | 3.9                  | 4.7                  | 5.7                       | 4.1                  | 6.3                        |                                    | 114.9 | 0.6  | 2.5  | 2.5 | 2.5 |       |     |   |     |     |     |   |
| Number of Forecasts Changed From A Month Ago:     |                                            |                       |                |                         |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |                            |                                    |       |      |      |     |     |       |     |   |     |     |     |   |
| Down                                              |                                            | 1                     | 1              | 1                       | 1                        | 0                        | 0                        | 0                        | 1                        | 2                         | 1                        | 2                    | 1                    | 3                         | 1                    | 0                          |                                    | 11    | 19   | 12   | 10  | 10  |       |     |   |     |     |     |   |
| Same                                              |                                            | 17                    | 8              | 7                       | 6                        | 11                       | 6                        | 6                        | 12                       | 12                        | 18                       | 15                   | 8                    | 5                         | 9                    | 8                          |                                    | 5     | 14   | 15   | 18  | 18  |       |     |   |     |     |     |   |
| Up                                                |                                            | 19                    | 21             | 17                      | 13                       | 20                       | 21                       | 21                       | 23                       | 21                        | 18                       | 17                   | 11                   | 11                        | 8                    | 20                         |                                    | 3     | 4    | 8    | 8   | 7   |       |     |   |     |     |     |   |
| Diffusion Index                                   |                                            | 74%                   | 83%            | 82%                     | 80%                      | 82%                      | 89%                      | 89%                      | 81%                      | 77%                       | 73%                      | 72%                  | 75%                  | 71%                       | 69%                  | 86%                        |                                    | 29%   | 30%  | 44%  | 47% | 46% |       |     |   |     |     |     |   |

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## Second Quarter 2024

## Interest Rate Forecasts

## Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | -----Percent Per Annum -- Average For Quarter----- |                       |              |                        |                          |                             |                          |                          |                          |                           |                          |                      |                      |                           |                      | Avg. For<br>--Qtr.--<br>A.<br>Fed's Adv<br>Fgn Econ<br>\$ Index | ------(Q-Q % Change)-----<br>------(SAAR)----- |      |       |       |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------|----------------------------------------------------|-----------------------|--------------|------------------------|--------------------------|-----------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|----------------------|-----------------------------------------------------------------|------------------------------------------------|------|-------|-------|-----|------|-----|-----|-----|-----|-----|---|-------|-----|---|-----|-----|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                                                   | -----Short-Term-----                               |                       |              |                        |                          | -----Intermediate-Term----- |                          |                          |                          |                           | -----Long-Term-----      |                      |                      |                           |                      |                                                                 |                                                |      |       |       |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                   | 1                                                  | 2                     | 3            | 4                      | 5                        | 6                           | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |                                                                 |                                                |      |       |       |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                   | Federal<br>Funds<br>Rate                           | Prime<br>Bank<br>Rate | SOFR<br>Rate | Com.<br>Paper<br>1-Mo. | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo.    | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Local<br>Bonds | Home<br>Mtg.<br>Rate |                                                                 |                                                |      |       |       |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                   |                                                    |                       |              |                        |                          |                             |                          |                          |                          |                           |                          |                      |                      |                           |                      |                                                                 |                                                |      |       |       |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Barclays                                          | 5.6                                                | H                     | na           | na                     | na                       | na                          | na                       | na                       | 4.0                      | 3.7                       | 3.8                      | 3.9                  | na                   | na                        | na                   | na                                                              | na                                             | -1.0 | 2.4   | 2.0   | 2.2 |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Santander Capital Markets                         | 5.6                                                | H                     | 8.8          | H                      | 5.6                      | 5.7                         | H                        | 5.5                      | 5.4                      | 5.1                       | 4.8                      | 4.3                  | 4.2                  | 4.4                       | 5.3                  | 6.5                                                             | 4.1                                            | 6.9  | 112.5 | 1.0   | 2.9 | 2.9  | 2.6 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| The Northern Trust Company                        | 5.6                                                | H                     | 8.8          | H                      | 5.6                      | 5.7                         | H                        | 5.4                      | 5.1                      | 4.9                       | 4.4                      | 3.5                  | 3.3                  | 3.6                       | 4.5                  | 5.7                                                             | 4.1                                            | 5.1  | 112.0 | 1.1   | 2.1 | 2.2  | 2.1 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chmura Economics & Analytics                      | 5.5                                                |                       | 8.6          |                        | 5.4                      | 5.5                         |                          | 5.6                      | H                        | 5.7                       | H                        | 5.5                  | H                    | 5.5                       | H                    | 6.0                                                             | H                                              | na   | na    | 6.7   | na  | 2.1  | 3.4 | 3.5 | 3.6 | H   |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chan Economics                                    | 5.4                                                |                       | 8.4          |                        | 5.3                      | 5.4                         |                          | 5.5                      | 5.5                      | 5.3                       | 4.7                      | 4.1                  | 4.1                  | 4.2                       | 5.2                  | 6.2                                                             | 4.7                                            | 6.6  | 112.0 | -0.2  | 2.3 | 2.5  | 2.0 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Daiwa Capital Markets America                     | 5.4                                                |                       | 8.5          |                        | na                       | na                          |                          | 4.9                      | na                       | na                        | 4.2                      | 3.8                  | 3.7                  | 4.2                       | na                   | na                                                              | na                                             | 6.5  | 114.0 | 1.2   | 2.7 | 2.6  | 2.5 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Economist Intelligence Unit                       | 5.4                                                |                       | 8.4          |                        | na                       | 5.3                         |                          | 5.2                      | 5.0                      | 4.7                       | 4.5                      | 3.8                  | 3.5                  | 3.7                       | na                   | na                                                              | na                                             | 6.0  | na    | 1.4   | na  | 2.4  | na  |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| J.P. Morgan Chase                                 | 5.4                                                |                       | na           |                        | na                       | na                          |                          | na                       | na                       | na                        | 4.0                      | 3.4                  | 3.4                  | 3.7                       | na                   | na                                                              | na                                             | na   | na    | 0.5   | 2.4 | 2.4  | 2.2 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| S&P Global Market Intelligence                    | 5.4                                                |                       | 8.5          |                        | 5.4                      | na                          |                          | 5.2                      | 4.7                      | 4.8                       | 4.2                      | 3.8                  | 3.8                  | 3.9                       | na                   | na                                                              | na                                             | 6.1  | na    | 1.2   | 2.8 | 3.0  | 2.6 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Action Economics                                  | 5.3                                                |                       | 8.4          | 5.8                    | H                        | 5.3                         |                          | 5.2                      | 5.0                      | 4.8                       | 4.2                      | 3.9                  | 3.9                  | 4.0                       | 4.7                  | 5.8                                                             | 3.8                                            | 7.3  | H     | 113.6 | 1.6 | 1.7  | 2.3 | 2.0 |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BMO Capital Markets                               | 5.3                                                |                       | 8.4          |                        | 5.3                      | na                          | 5.6                      | H                        | 5.6                      | 5.0                       | 3.9                      | 3.7                  | 3.4                  | 3.5                       | na                   | na                                                              | na                                             | 6.4  | 110.8 | 1.0   | 2.2 | 2.4  | 2.2 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Moody's Analytics                                 | 5.3                                                |                       | 8.5          |                        | 5.3                      | 5.3                         |                          | 5.0                      | 4.9                      | 4.8                       | 4.5                      | 4.2                  | 4.0                  | 4.4                       | 5.4                  | 6.4                                                             | 4.4                                            | 6.4  | na    | 1.6   | 2.1 | 2.4  | 2.4 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Regions Financial Corporation                     | 5.3                                                |                       | 8.5          |                        | 5.3                      | 5.3                         |                          | 5.2                      | 5.3                      | 5.2                       | 3.8                      | 3.7                  | 3.6                  | 3.8                       | 5.1                  | 6.0                                                             | 4.2                                            | 6.3  | 113.0 | 1.2   | 2.1 | 2.1  | 2.1 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Scotiabank Group                                  | 5.3                                                |                       | na           |                        | 5.2                      | na                          |                          | 4.8                      | na                       | na                        | 3.8                      | 3.8                  | 3.8                  | 3.9                       | na                   | na                                                              | na                                             | na   | na    | 0.6   | 4.0 | H    | 1.0 | 1.8 |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| KPMG                                              | 5.2                                                |                       | 8.3          |                        | 5.2                      | 4.9                         |                          | 5.1                      | 5.0                      | 5.0                       | 4.5                      | 3.8                  | 3.6                  | 3.9                       | 4.5                  | 5.7                                                             | na                                             | 6.1  | na    | 1.1   | 2.7 | 3.0  | 2.6 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MacroPolicy Perspectives                          | 5.2                                                |                       | 8.4          |                        | 5.1                      | na                          |                          | na                       | na                       | 4.9                       | 4.5                      | 4.3                  | 4.1                  | 4.3                       | 4.9                  | 5.8                                                             | na                                             | 6.9  | na    | 1.5   | 1.7 | 1.4  | 1.3 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bank of America                                   | 5.1                                                |                       | na           |                        | na                       | na                          |                          | na                       | na                       | na                        | 3.5                      | 3.5                  | 3.4                  | 3.7                       | na                   | na                                                              | na                                             | na   | na    | -0.5  | 3.1 | 2.2  | 1.9 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bank of the West                                  | 5.1                                                |                       | 8.3          |                        | 5.0                      | 5.1                         |                          | 5.1                      | 5.1                      | 5.0                       | 4.5                      | 4.2                  | 4.0                  | 4.1                       | 5.1                  | 6.2                                                             | 4.7                                            | 6.9  | 112.2 | 1.0   | 2.3 | 2.3  | 2.2 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DePrince & Assoc.                                 | 5.1                                                |                       | 8.2          |                        | 5.0                      | 5.1                         |                          | 5.2                      | 5.2                      | 5.2                       | 4.9                      | 4.4                  | 4.1                  | 4.1                       | 5.3                  | 6.2                                                             | 4.5                                            | 6.5  | 116.5 | 1.5   | 2.7 | 2.8  | 2.6 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Goldman Sachs & Co.                               | 5.1                                                |                       | na           |                        | na                       | na                          |                          | 4.8                      | na                       | na                        | 4.2                      | 3.9                  | 3.8                  | 3.9                       | na                   | na                                                              | na                                             | na   | na    | 1.9   | 2.7 | 2.6  | 2.4 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Fannie Mae                                        | 5.0                                                |                       | 8.1          |                        | na                       | na                          |                          | 4.8                      | 4.7                      | 4.4                       | 4.1                      | 3.8                  | 3.7                  | 3.8                       | na                   | na                                                              | na                                             | 6.2  | na    | -0.7  | 2.5 | 2.5  | 2.3 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Naroff Economic Advisors                          | 5.0                                                |                       | 8.0          |                        | 5.0                      | 5.1                         |                          | 5.2                      | 5.3                      | 4.5                       | 4.5                      | 4.1                  | 3.9                  | 4.1                       | na                   | na                                                              | 4.0                                            | 6.2  | 114.0 | 2.1   | 3.0 | 3.0  | 3.0 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Oxford Economics                                  | 5.0                                                |                       | 7.8          |                        | 5.0                      | na                          |                          | 4.5                      | 4.5                      | 4.3                       | 3.8                      | 3.2                  | 3.2                  | 3.4                       | 3.5                  | L                                                               | na                                             | 5.4  | 113.6 | 1.2   | 1.5 | 2.4  | 2.1 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Via Nova Investment Mgt.                          | 4.8                                                |                       | 8.0          |                        | 4.8                      | 4.9                         |                          | 4.8                      | 4.9                      | 4.9                       | 4.9                      | 4.5                  | 4.4                  | 4.7                       | 5.6                  | 6.4                                                             | 4.8                                            | H    | 7.1   | 110.0 | 2.5 | 2.1  | 2.1 | 2.1 |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| EY-Parthenon                                      | 4.7                                                |                       | na           |                        | na                       | na                          |                          | 4.2                      | na                       | na                        | na                       | na                   | 2.8                  | na                        | na                   | na                                                              | na                                             | na   | na    | 1.4   | 1.2 | 1.8  | 1.6 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PNC Financial Services Corp.                      | 4.7                                                |                       | 7.8          |                        | 4.7                      | na                          |                          | 4.2                      | 4.2                      | 3.8                       | 3.8                      | 3.7                  | 3.7                  | 4.0                       | na                   | 6.5                                                             | 4.8                                            | H    | 6.1   | 118.2 | H   | -1.2 | 1.1 | L   | 0.9 | L   | 0.8 | L |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RDQ Economics                                     | 4.7                                                |                       | 7.8          |                        | 4.8                      | 4.8                         |                          | 4.6                      | 4.5                      | 4.1                       | 3.7                      | 3.8                  | 3.9                  | 3.9                       | 5.8                  | 6.9                                                             | H                                              | 4.3  | 6.3   | 109.4 | L   | -1.8 | L   | 3.2 | 3.2 | 3.2 |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| The Lonski Group                                  | 4.7                                                |                       | 7.8          |                        | 4.7                      | 5.0                         |                          | 4.6                      | 4.7                      | 4.4                       | 4.2                      | 3.7                  | 3.5                  | 3.7                       | 4.8                  | 5.6                                                             | 4.1                                            | 6.5  | 116.8 | 0.2   | 2.2 | 2.4  | 2.3 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nomura Securities, Inc.                           | 4.6                                                |                       | 7.8          |                        | na                       | na                          |                          | na                       | na                       | na                        | 2.8                      | 2.8                  | 2.8                  | na                        | na                   | na                                                              | na                                             | na   | na    | 0.3   | 1.5 | 1.9  | 1.8 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Societe Generale                                  | 4.6                                                |                       | 7.8          |                        | 4.6                      | na                          |                          | 4.4                      | 4.1                      | 3.6                       | 3.1                      | 3.2                  | 3.2                  | 3.5                       | na                   | na                                                              | na                                             | na   | na    | -1.5  | 1.8 | 2.2  | 2.2 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| GLC Financial Economics                           | 4.5                                                |                       | 7.7          |                        | 4.6                      | 4.5                         |                          | 4.6                      | 4.5                      | 4.5                       | 4.0                      | 4.0                  | 3.9                  | 4.2                       | 4.8                  | 5.8                                                             | 4.0                                            | 5.8  | 114.4 | 1.1   | 2.4 | 2.7  | 2.6 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Loomis, Sayles & Company                          | 4.4                                                |                       | 7.5          |                        | 4.4                      | 4.4                         |                          | 4.5                      | 4.5                      | 3.7                       | 2.1                      | 2.4                  | 2.7                  | 2.9                       | 3.7                  | 4.7                                                             | L                                              | 3.3  | 5.4   | 112.1 | 1.5 | 2.6  | 3.9 | H   | 2.9 |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MacroFin Analytics & Rutgers Bus School           | 4.4                                                |                       | 7.8          |                        | 4.3                      | 4.4                         |                          | 4.7                      | 4.9                      | 5.0                       | 4.8                      | 3.9                  | 4.0                  | 4.0                       | 5.0                  | 6.0                                                             | 4.1                                            | 6.8  | 113.0 | 1.5   | 2.5 | 2.6  | 2.6 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Wells Fargo                                       | 4.4                                                |                       | 7.5          |                        | 4.4                      | 4.0                         |                          | 3.8                      | 3.2                      | 3.1                       | 3.2                      | 3.1                  | 3.2                  | 3.6                       | 4.4                  | 5.4                                                             | 3.8                                            | 5.9  | na    | -1.8  | L   | 1.4  | 1.5 | 1.4 |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ING                                               | 3.9                                                |                       | na           |                        | na                       | na                          |                          | na                       | na                       | na                        | 3.2                      | 3.1                  | 3.0                  | 3.4                       | na                   | na                                                              | na                                             | na   | na    | -0.6  | na  | na   | na  | na  |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Georgia State University                          | 3.6                                                |                       | 6.7          |                        | na                       | na                          |                          | 3.4                      | 3.1                      | 4.0                       | 3.6                      | 3.4                  | 3.6                  | 3.9                       | 4.6                  | 5.7                                                             | na                                             | 5.9  | na    | 0.8   | 2.9 | 2.1  | 2.4 |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ACIMA Private Wealth                              | 1.0                                                | L                     | 4.0          | L                      | 1.0                      | L                           | 1.1                      | L                        | 1.1                      | L                         | 1.0                      | L                    | 0.8                  | L                         | 0.7                  | L                                                               | 0.7                                            | L    | 1.7   | L     | 2.5 | L    | 4.3 | 5.7 | 1.7 | L   | 3.7 | L | 110.0 | 4.0 | H | 1.8 | 2.0 | 2.2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| August Consensus                                  | 4.9                                                | 8.0                   | 4.9          | 4.9                    | 4.7                      | 4.7                         | 4.5                      | 4.0                      | 3.7                      | 3.6                       | 3.9                      | 4.9                  | 6.0                  | 4.1                       | 6.2                  | 113.1                                                           | 0.8                                            | 2.3  | 2.4   | 2.3   |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Top 10 Avg.                                       | 5.5                                                | 8.5                   | 5.4          | 5.4                    | 5.4                      | 5.3                         | 5.1                      | 4.8                      | 4.4                      | 4.2                       | 4.4                      | 5.4                  | 6.3                  | 4.5                       | 6.8                  | 114.7                                                           | 2.0                                            | 3.1  | 3.1   | 2.8   |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bottom 10 Avg.                                    | 4.0                                                | 7.2                   | 4.2          | 4.4                    | 4.0                      | 3.9                         | 3.6                      | 3.0                      | 2.9                      | 2.9                       | 3.4                      | 4.4                  | 5.6                  | 3.7                       | 5.5                  | 111.4                                                           | -0.9                                           | 1.6  | 1.7   | 1.7   |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| July Consensus                                    | 4.6                                                | 7.7                   | 4.7          | 4.6                    | 4.6                      | 4.5                         | 4.3                      | 3.8                      | 3.6                      | 3.5                       | 3.8                      | 4.6                  | 5.6                  | 4.0                       | 6.1                  | 114.7                                                           | 1.1                                            | 2.4  | 2.3   | 2.2   |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Number of Forecasts Changed From A Month Ago:     |                                                    |                       |              |                        |                          |                             |                          |                          |                          |                           |                          |                      |                      |                           |                      |                                                                 |                                                |      |       |       |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Down                                              | 1                                                  | 1                     | 2            | 2                      | 2                        | 1                           | 0                        | 0                        | 1                        | 4                         | 5                        | 3                    | 3                    | 2                         | 1                    | 11                                                              | 18                                             | 15   | 9     | 9     |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Same                                              | 15                                                 | 12                    | 6            | 7                      | 12                       | 7                           | 8                        | 14                       | 15                       | 16                        | 15                       | 7                    | 6                    | 8                         | 7                    | 6                                                               | 16                                             | 14   | 17    | 20    |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Up                                                | 21                                                 | 17                    | 17           | 11                     | 17                       | 19                          | 19                       | 22                       | 19                       | 17                        | 14                       | 10                   | 10                   | 8                         | 20                   | 2                                                               | 3                                              | 6    | 10    | 6     |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Diffusion Index                                   | 77%                                                | 77%                   | 80%          | 73%                    | 74%                      | 83%                         | 85%                      | 81%                      | 76%                      | 68%                       | 63%                      | 68%                  | 68%                  | 67%                       | 84%                  | 26%                                                             | 30%                                            | 37%  | 51%   | 46%   |     |      |     |     |     |     |     |   |       |     |   |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Third Quarter 2024

## Interest Rate Forecasts

## Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | Percent Per Annum -- Average For Quarter-- |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      | Avg. For<br>--Qtr.--<br>A.<br>Fed's Adv<br>Fgn Econ<br>\$ Index | (Q-Q % Change)<br>--(SAAR)-- |                             |                               |                             |     |     |     |     |       |   |     |     |     |     |
|---------------------------------------------------|--------------------------------------------|-----------------------|--------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|----------------------|-----------------------------------------------------------------|------------------------------|-----------------------------|-------------------------------|-----------------------------|-----|-----|-----|-----|-------|---|-----|-----|-----|-----|
|                                                   | Short-Term                                 |                       |              |                        |                          | Intermediate-Term        |                          |                          |                          |                           | Long-Term                |                      |                      |                           |                      |                                                                 | B.<br>Real<br>GDP            | C.<br>GDP<br>Price<br>Index | D.<br>Cons.<br>Price<br>Index | E.<br>PCE<br>Price<br>Index |     |     |     |     |       |   |     |     |     |     |
|                                                   | 1                                          | 2                     | 3            | 4                      | 5                        | 6                        | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |                                                                 |                              |                             |                               |                             |     |     |     |     |       |   |     |     |     |     |
|                                                   | Federal<br>Funds<br>Rate                   | Prime<br>Bank<br>Rate | SOFR<br>Rate | Com.<br>Paper<br>1-Mo. | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo. | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Local<br>Bonds | Home<br>Mtg.<br>Rate |                                                                 |                              |                             |                               |                             |     |     |     |     |       |   |     |     |     |     |
|                                                   | H                                          | H                     | H            | H                      | H                        | H                        | H                        | H                        | H                        | H                         | H                        | H                    | H                    | H                         | H                    |                                                                 |                              |                             |                               |                             |     |     |     |     |       |   |     |     |     |     |
| Santander Capital Markets                         | 5.4                                        | 8.6                   | 5.4          | 5.4                    | 5.3                      | 5.2                      | 5.0                      | 4.6                      | 4.2                      | 4.0                       | 4.2                      | 5.1                  | 6.3                  | 4.0                       | 6.7                  | 112.0                                                           | 0.9                          | 2.7                         | 2.7                           | 2.3                         |     |     |     |     |       |   |     |     |     |     |
| Chan Economics                                    | 5.2                                        | 8.2                   | 5.1          | 5.2                    | 5.3                      | 5.3                      | 5.1                      | 4.5                      | 3.9                      | 3.9                       | 4.0                      | 5.0                  | 6.0                  | 4.5                       | 6.4                  | 112.2                                                           | 0.8                          | 2.3                         | 2.5                           | 2.0                         |     |     |     |     |       |   |     |     |     |     |
| Barclays                                          | 5.1                                        | na                    | na           | na                     | na                       | na                       | na                       | na                       | na                       | na                        | na                       | na                   | na                   | na                        | na                   | na                                                              | 0.0                          | 2.7                         | 2.6                           | 2.6                         |     |     |     |     |       |   |     |     |     |     |
| Economist Intelligence Unit                       | 5.1                                        | 8.1                   | na           | 5.0                    | 4.9                      | 4.9                      | 4.5                      | 4.4                      | 3.5                      | 3.3                       | 3.5                      | na                   | na                   | na                        | 5.5                  | na                                                              | 2.1                          | na                          | 2.4                           | na                          |     |     |     |     |       |   |     |     |     |     |
| Regions Financial Corporation                     | 5.1                                        | 8.3                   | 5.0          | 5.2                    | 4.9                      | 5.0                      | 5.0                      | 3.5                      | 3.6                      | 3.5                       | 3.7                      | 5.0                  | 5.9                  | 4.1                       | 6.2                  | 112.9                                                           | 1.4                          | 1.9                         | 2.0                           | 1.9                         |     |     |     |     |       |   |     |     |     |     |
| The Northern Trust Company                        | 5.1                                        | 8.3                   | 5.1          | 5.2                    | 4.9                      | 4.5                      | 4.3                      | 3.8                      | 3.4                      | 3.3                       | 3.6                      | 4.5                  | 5.7                  | 4.1                       | 5.1                  | 111.0                                                           | 1.4                          | 2.0                         | 2.1                           | 2.0                         |     |     |     |     |       |   |     |     |     |     |
| Action Economics                                  | 5.0                                        | 8.2                   | 5.5          | 5.1                    | 5.0                      | 4.8                      | 4.5                      | 4.0                      | 3.9                      | 3.9                       | 3.9                      | 4.7                  | 5.8                  | 3.8                       | 7.2                  | 113.7                                                           | 1.9                          | 1.4                         | 2.3                           | 1.9                         |     |     |     |     |       |   |     |     |     |     |
| BMO Capital Markets                               | 5.0                                        | 8.2                   | 5.0          | na                     | 5.3                      | 5.3                      | 4.7                      | 3.7                      | 3.5                      | 3.4                       | 3.5                      | na                   | na                   | na                        | 6.3                  | 110.2                                                           | 1.5                          | 2.0                         | 2.2                           | 2.0                         |     |     |     |     |       |   |     |     |     |     |
| Chmura Economics & Analytics                      | 5.0                                        | 8.2                   | 5.0          | 5.1                    | 5.3                      | 5.3                      | 5.4                      | 5.5                      | 5.5                      | 5.6                       | 5.6                      | 6.0                  | na                   | na                        | 6.7                  | na                                                              | 3.0                          | 3.2                         | 3.4                           | 3.4                         |     |     |     |     |       |   |     |     |     |     |
| J.P. Morgan Chase                                 | 5.0                                        | na                    | na           | na                     | na                       | na                       | na                       | na                       | na                       | na                        | na                       | na                   | na                   | na                        | na                   | na                                                              | 2.3                          | 2.3                         | 2.3                           | 2.1                         |     |     |     |     |       |   |     |     |     |     |
| Daiwa Capital Markets America                     | 4.9                                        | 8.0                   | na           | na                     | 4.7                      | na                       | na                       | 3.9                      | 3.7                      | 3.6                       | 4.3                      | na                   | na                   | na                        | 6.3                  | 113.5                                                           | 1.3                          | 2.5                         | 2.5                           | 2.4                         |     |     |     |     |       |   |     |     |     |     |
| Goldman Sachs & Co.                               | 4.9                                        | na                    | na           | na                     | 4.6                      | na                       | na                       | 4.1                      | 3.8                      | 3.8                       | 3.9                      | na                   | na                   | na                        | na                   | na                                                              | 1.9                          | 2.3                         | 2.1                           | 2.1                         |     |     |     |     |       |   |     |     |     |     |
| Moody's Analytics                                 | 4.9                                        | 8.0                   | 4.8          | 4.8                    | 4.6                      | 4.5                      | 4.5                      | 4.3                      | 4.1                      | 3.9                       | 4.4                      | 5.4                  | 6.3                  | 4.3                       | 6.1                  | na                                                              | 1.9                          | 1.9                         | 2.2                           | 2.2                         |     |     |     |     |       |   |     |     |     |     |
| S&P Global Market Intelligence                    | 4.9                                        | 8.0                   | 4.8          | na                     | 4.6                      | 4.3                      | 4.3                      | 3.9                      | 3.6                      | 3.7                       | 3.9                      | na                   | na                   | na                        | 5.9                  | na                                                              | 1.3                          | 2.4                         | 2.7                           | 2.4                         |     |     |     |     |       |   |     |     |     |     |
| Bank of the West                                  | 4.8                                        | 7.9                   | 4.7          | 4.7                    | 4.8                      | 4.8                      | 4.6                      | 4.2                      | 4.1                      | 3.9                       | 4.0                      | 5.0                  | 6.1                  | 4.7                       | 6.7                  | 112.4                                                           | 1.2                          | 2.2                         | 2.2                           | 2.2                         |     |     |     |     |       |   |     |     |     |     |
| Scotiabank Group                                  | 4.8                                        | na                    | 4.6          | na                     | 4.1                      | na                       | na                       | 3.6                      | 3.7                      | 3.8                       | 3.9                      | na                   | na                   | na                        | na                   | na                                                              | 1.1                          | 0.0                         | L                             | 3.5                         | H   | 1.4 |     |     |       |   |     |     |     |     |
| DePrince & Assoc.                                 | 4.7                                        | 7.8                   | 4.7          | 4.7                    | 4.8                      | 4.9                      | 4.9                      | 4.7                      | 4.3                      | 4.1                       | 4.1                      | 5.3                  | 6.2                  | 4.5                       | 6.3                  | 115.8                                                           | 2.1                          | 2.5                         | 2.5                           | 2.4                         |     |     |     |     |       |   |     |     |     |     |
| Fannie Mae                                        | 4.7                                        | 7.8                   | na           | na                     | 4.5                      | 4.3                      | 4.2                      | 3.9                      | 3.7                      | 3.6                       | 3.8                      | na                   | na                   | na                        | 6.1                  | na                                                              | 0.3                          | 2.4                         | 2.8                           | 2.4                         |     |     |     |     |       |   |     |     |     |     |
| MacroPolicy Perspectives                          | 4.7                                        | 7.8                   | 4.6          | na                     | na                       | na                       | 4.8                      | 4.0                      | 4.2                      | 4.1                       | 4.3                      | 4.9                  | 5.8                  | na                        | 6.9                  | na                                                              | 1.8                          | 2.4                         | 2.4                           | 2.0                         |     |     |     |     |       |   |     |     |     |     |
| Bank of America                                   | 4.6                                        | na                    | na           | na                     | na                       | na                       | na                       | 3.3                      | 3.3                      | 3.3                       | 3.7                      | na                   | na                   | na                        | na                   | na                                                              | 0.5                          | 3.2                         | 2.2                           | 2.2                         |     |     |     |     |       |   |     |     |     |     |
| Oxford Economics                                  | 4.6                                        | 7.1                   | 4.6          | na                     | 4.2                      | 4.3                      | 3.8                      | 3.3                      | 3.0                      | 3.0                       | 3.2                      | 3.5                  | L                    | na                        | na                   | 5.0                                                             | 112.6                        | 1.6                         | 3.5                           | H                           | 2.2 | 2.1 |     |     |       |   |     |     |     |     |
| Naroff Economic Advisors                          | 4.5                                        | 7.5                   | 4.5          | 4.6                    | 4.5                      | 4.5                      | 4.5                      | 4.5                      | 4.0                      | 4.0                       | 4.2                      | na                   | na                   | na                        | 6.0                  | 113.5                                                           | 3.6                          | H                           | 2.6                           | 2.8                         | 2.9 |     |     |     |       |   |     |     |     |     |
| Via Nova Investment Mgt.                          | 4.5                                        | 7.8                   | 4.6          | 4.6                    | 4.5                      | 4.6                      | 4.7                      | 4.8                      | 4.8                      | 4.8                       | 4.8                      | 6.0                  | H                    | 6.8                       | H                    | 5.3                                                             | H                            | 7.5                         | H                             | 110.0                       | 2.5 | 2.1 | 2.1 | 2.1 |       |   |     |     |     |     |
| KPMG                                              | 4.4                                        | 7.5                   | 4.4          | 4.1                    | 4.3                      | 4.3                      | 4.3                      | 4.0                      | 3.6                      | 3.5                       | 3.9                      | 4.5                  | 5.7                  | na                        | 5.8                  | na                                                              | 1.5                          | 2.4                         | 2.7                           | 2.4                         |     |     |     |     |       |   |     |     |     |     |
| GLC Financial Economics                           | 4.3                                        | 7.4                   | 4.3          | 4.2                    | 4.3                      | 4.2                      | 4.2                      | 3.9                      | 3.9                      | 4.0                       | 4.2                      | 4.8                  | 5.8                  | 4.0                       | 5.7                  | 114.3                                                           | 1.7                          | 2.2                         | 2.8                           | 2.6                         |     |     |     |     |       |   |     |     |     |     |
| EY-Parthenon                                      | 4.2                                        | na                    | na           | na                     | 3.9                      | na                       | na                       | na                       | na                       | 2.9                       | na                       | na                   | na                   | na                        | na                   | na                                                              | 1.9                          | 2.5                         | 2.2                           | 2.0                         |     |     |     |     |       |   |     |     |     |     |
| RDQ Economics                                     | 4.2                                        | 7.3                   | 4.2          | 4.3                    | 4.1                      | 4.0                      | 3.8                      | 3.6                      | 3.7                      | 3.8                       | 3.7                      | 5.6                  | 6.4                  | 4.1                       | 6.1                  | 109.1                                                           | 1.0                          | 3.0                         | 3.0                           | 3.1                         |     |     |     |     |       |   |     |     |     |     |
| The Lonski Group                                  | 4.2                                        | 7.3                   | 4.2          | 4.4                    | 4.1                      | 4.2                      | 4.1                      | 4.0                      | 3.5                      | 3.4                       | 3.6                      | 4.6                  | 5.5                  | 4.0                       | 6.3                  | 117.0                                                           | 1.2                          | 2.0                         | 2.2                           | 2.1                         |     |     |     |     |       |   |     |     |     |     |
| Nomura Securities, Inc.                           | 4.1                                        | 7.3                   | na           | na                     | na                       | na                       | na                       | 2.5                      | 2.7                      | 2.8                       | na                       | na                   | na                   | na                        | na                   | na                                                              | 1.3                          | 1.5                         | 2.5                           | 2.2                         |     |     |     |     |       |   |     |     |     |     |
| Societe Generale                                  | 4.1                                        | 7.3                   | 4.1          | na                     | 3.9                      | 3.6                      | 3.2                      | 2.9                      | 3.1                      | 3.1                       | 3.4                      | na                   | na                   | na                        | na                   | na                                                              | 2.3                          | 1.8                         | 2.2                           | 2.0                         |     |     |     |     |       |   |     |     |     |     |
| MacroFin Analytics & Rutgers Bus School           | 3.9                                        | 7.3                   | 3.8          | 3.9                    | 4.1                      | 4.3                      | 4.7                      | 4.7                      | 3.9                      | 3.9                       | 4.0                      | 4.9                  | 5.9                  | 4.0                       | 6.7                  | 112.8                                                           | 1.6                          | 2.5                         | 2.3                           | 2.4                         |     |     |     |     |       |   |     |     |     |     |
| PNC Financial Services Corp.                      | 3.8                                        | 6.9                   | 3.8          | na                     | 3.5                      | 3.6                      | 3.3                      | 3.4                      | 3.6                      | 3.7                       | 3.9                      | na                   | 6.1                  | 4.6                       | 5.9                  | 118.8                                                           | H                            | -1.0                        | L                             | 1.1                         | 0.9 | L   | 0.7 | L   |       |   |     |     |     |     |
| Loomis, Sayles & Company                          | 3.5                                        | 6.6                   | 3.4          | 3.4                    | 3.5                      | 3.5                      | 3.0                      | 2.0                      | 2.4                      | 2.7                       | 2.9                      | 3.7                  | 4.7                  | L                         | 3.3                  | 5.3                                                             | 112.0                        | 2.2                         | 2.2                           | 2.8                         | 2.3 |     |     |     |       |   |     |     |     |     |
| ING                                               | 3.4                                        | na                    | na           | na                     | na                       | na                       | na                       | 3.0                      | 3.0                      | 3.0                       | 3.4                      | na                   | na                   | na                        | na                   | na                                                              | 1.3                          | na                          | na                            | na                          |     |     |     |     |       |   |     |     |     |     |
| Wells Fargo                                       | 3.4                                        | 6.5                   | 3.4          | 3.4                    | 3.0                      | 3.0                      | 3.0                      | 3.1                      | 3.1                      | 3.1                       | 3.5                      | 4.3                  | 5.3                  | 3.7                       | 5.8                  | na                                                              | 2.1                          | 2.4                         | 2.8                           | 2.4                         |     |     |     |     |       |   |     |     |     |     |
| Georgia State University                          | 3.3                                        | 6.4                   | na           | na                     | 3.0                      | 2.9                      | 3.6                      | 3.3                      | 3.2                      | 3.5                       | 3.9                      | 4.6                  | 5.7                  | na                        | 5.8                  | na                                                              | 1.4                          | 2.4                         | 2.5                           | 2.3                         |     |     |     |     |       |   |     |     |     |     |
| ACIMA Private Wealth                              | 0.5                                        | L                     | 3.5          | L                      | 0.6                      | L                        | 0.6                      | L                        | 0.6                      | L                         | 0.7                      | L                    | 0.7                  | L                         | 1.5                  | L                                                               | 2.3                          | L                           | 4.0                           | 5.0                         | 15  | L   | 3.3 | L   | 108.0 | L | 3.3 | 2.7 | 2.2 | 2.2 |
| August Consensus                                  | 4.4                                        | 7.5                   | 4.4          | 4.4                    | 4.3                      | 4.2                      | 4.2                      | 3.8                      | 3.6                      | 3.6                       | 3.9                      | 4.8                  | 5.9                  | 4.0                       | 6.1                  | 112.7                                                           | 1.6                          | 2.3                         | 2.4                           | 2.2                         |     |     |     |     |       |   |     |     |     |     |
| Top 10 Avg.                                       | 5.1                                        | 8.2                   | 5.0          | 5.0                    | 5.1                      | 5.0                      | 4.9                      | 4.6                      | 4.3                      | 4.2                       | 4.4                      | 5.3                  | 6.2                  | 4.4                       | 6.7                  | 114.5                                                           | 2.6                          | 2.9                         | 2.9                           | 2.7                         |     |     |     |     |       |   |     |     |     |     |
| Bottom 10 Avg.                                    | 3.4                                        | 6.6                   | 3.6          | 3.8                    | 3.4                      | 3.4                      | 3.3                      | 2.8                      | 2.8                      | 2.9                       | 3.3                      | 4.3                  | 5.5                  | 3.6                       | 5.3                  | 111.0                                                           | 0.6                          | 1.6                         | 2.0                           | 1.8                         |     |     |     |     |       |   |     |     |     |     |
| July Consensus                                    | 4.3                                        | 7.3                   | 4.3          | 4.2                    | 4.2                      | 4.1                      | 4.0                      | 3.6                      | 3.5                      | 3.5                       | 3.8                      | 4.6                  | 5.6                  | 4.0                       | 6.0                  | 114.7                                                           | 1.7                          | 2.2                         | 2.4                           | 2.2                         |     |     |     |     |       |   |     |     |     |     |
| Number of Forecasts Changed From A Month Ago:     |                                            |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |                                                                 |                              |                             |                               |                             |     |     |     |     |       |   |     |     |     |     |
| Down                                              | 4                                          | 3                     | 2            | 4                      | 4                        | 1                        | 1                        | 2                        | 3                        | 6                         | 4                        | 3                    | 3                    | 2                         | 3                    | 10                                                              | 14                           | 6                           | 8                             | 9                           |     |     |     |     |       |   |     |     |     |     |
| Same                                              | 14                                         | 11                    | 8            | 6                      | 11                       | 8                        | 8                        | 14                       | 16                       | 17                        | 17                       | 9                    | 7                    | 9                         | 7                    | 7                                                               | 14                           | 23                          | 20                            | 20                          |     |     |     |     |       |   |     |     |     |     |
| Up                                                | 19                                         | 16                    | 15           | 10                     | 16                       | 18                       | 18                       | 18                       | 14                       | 12                        | 11                       | 8                    | 9                    | 7                         | 18                   | 2                                                               | 9                            | 6                           | 8                             | 6                           |     |     |     |     |       |   |     |     |     |     |
| Diffusion Index                                   | 70%                                        | 72%                   | 76%          | 65%                    | 69%                      | 81%                      | 81%                      | 74%                      | 67%                      | 59%                       | 61%                      | 63%                  | 66%                  | 64%                       | 77%                  | 29%                                                             | 43%                          | 50%                         | 50%                           | 46%                         |     |     |     |     |       |   |     |     |     |     |

AUGUST 1, 2023 ■ BLUE CHIP FINANCIAL FORECASTS ■ 9

## Fourth Quarter 2024

## Interest Rate Forecasts

## Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | -----Percent Per Annum -- Average For Quarter----- |                       |              |                        |                          |                             |                          |                          |                          |                           |                          |                      |                      |                           |                      | Avg. For<br>--Qtr.--<br>A. | ------(Q-Q % Change)-----<br>------(SAAR)----- |                   |                             |                               |                             |
|---------------------------------------------------|----------------------------------------------------|-----------------------|--------------|------------------------|--------------------------|-----------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|----------------------|----------------------------|------------------------------------------------|-------------------|-----------------------------|-------------------------------|-----------------------------|
|                                                   | -----Short-Term-----                               |                       |              |                        |                          | -----Intermediate-Term----- |                          |                          |                          |                           | -----Long-Term-----      |                      |                      |                           |                      |                            | Fed's Adv<br>Fgn Econ<br>\$ Index              | B.<br>Real<br>GDP | C.<br>GDP<br>Price<br>Index | D.<br>Cons.<br>Price<br>Index | E.<br>PCE<br>Price<br>Index |
|                                                   | 1                                                  | 2                     | 3            | 4                      | 5                        | 6                           | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |                            |                                                |                   |                             |                               |                             |
|                                                   | Federal<br>Funds<br>Rate                           | Prime<br>Bank<br>Rate | SOFR<br>Rate | Com.<br>Paper<br>1-Mo. | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo.    | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Local<br>Bonds | Home<br>Mtg.<br>Rate |                            |                                                |                   |                             |                               |                             |
|                                                   | 4.9                                                | H 7.9                 | 4.8          | 4.9                    | H 5.0                    | H 5.0                       | 4.8                      | 4.2                      | 3.6                      | 3.6                       | 3.7                      | 4.7                  | 5.7                  | 4.2                       | 6.1                  |                            |                                                |                   |                             |                               |                             |
| Chan Economics                                    | 4.9                                                | H 8.1                 | H 4.9        | 4.9                    | H 4.8                    | 4.7                         | 4.6                      | 4.2                      | 4.0                      | 3.8                       | 4.1                      | 5.0                  | 6.2                  | 3.8                       | 6.4                  | 112.5                      | 1.5                                            | 2.2               | 2.4                         | 1.9                           |                             |
| Santander Capital Markets                         | 4.8                                                | 7.9                   | 5.3          | H 4.8                  | 4.7                      | 4.5                         | 4.3                      | 4.0                      | 3.8                      | 3.8                       | 3.9                      | 4.6                  | 5.7                  | 3.7                       | 7.2                  | 111.5                      | 1.1                                            | 2.5               | 2.5                         | 2.1                           |                             |
| Action Economics                                  | 4.8                                                | 7.9                   | 4.8          | na                     | 5.0                      | H 5.0                       | 4.4                      | 3.5                      | 3.4                      | 3.3                       | 3.4                      | na                   | na                   | na                        | 6.3                  | 113.9                      | na                                             | na                | na                          | na                            |                             |
| BMO Capital Markets                               | 4.7                                                | 7.8                   | 4.7          | 4.8                    | 5.0                      | H 5.1                       | H 5.1                    | H 5.1                    | H 5.2                    | H 5.2                     | H 5.3                    | H 5.7                | na                   | na                        | 6.6                  | 109.6                      | 2.0                                            | 1.9               | 2.1                         | 1.9                           |                             |
| Chmura Economics & Analytics                      | 4.7                                                | 7.7                   | na           | 4.8                    | 4.7                      | 4.4                         | 4.3                      | 4.3                      | 3.3                      | 3.2                       | 3.3                      | na                   | na                   | na                        | 5.3                  | na                         | 2.5                                            | na                | 2.1                         | na                            |                             |
| Economist Intelligence Unit                       | 4.6                                                | na                    | na           | na                     | na                       | na                          | na                       | na                       | na                       | na                        | na                       | na                   | na                   | na                        | na                   | na                         | 1.0                                            | 2.7               | 2.5                         | 2.5                           |                             |
| Barclays                                          | 4.6                                                | na                    | na           | na                     | 4.4                      | na                          | na                       | 3.9                      | 3.8                      | 3.8                       | 3.9                      | na                   | na                   | na                        | na                   | na                         | 1.9                                            | 3.0               | 3.3                         | 2.6                           |                             |
| Goldman Sachs & Co.                               | 4.6                                                | 7.8                   | 4.5          | 4.7                    | 4.5                      | 4.6                         | 4.7                      | 3.4                      | 3.4                      | 3.4                       | 3.6                      | 4.9                  | 5.8                  | 4.0                       | 6.0                  | 112.7                      | 1.5                                            | 1.9               | 2.0                         | 1.8                           |                             |
| Regions Financial Corporation                     | 4.6                                                | 7.8                   | 4.6          | 4.7                    | 4.4                      | 3.8                         | 3.6                      | 3.5                      | 3.3                      | 3.3                       | 3.6                      | 4.5                  | 5.7                  | 4.1                       | 5.1                  | 110.0                      | 1.6                                            | 2.0               | 2.0                         | 1.9                           |                             |
| The Northern Trust Company                        | 4.5                                                | 7.7                   | 4.4          | 4.5                    | 4.5                      | 4.5                         | 4.4                      | 4.0                      | 4.0                      | 3.8                       | 3.9                      | 5.0                  | 6.1                  | 4.7                       | 6.5                  | 112.6                      | 1.5                                            | 2.2               | 2.2                         | 2.1                           |                             |
| Bank of the West                                  | 4.5                                                | na                    | na           | na                     | na                       | na                          | na                       | na                       | na                       | na                        | na                       | na                   | na                   | na                        | na                   | na                         | 1.8                                            | 2.3               | 2.3                         | 2.1                           |                             |
| J.P. Morgan Chase                                 | 4.4                                                | 7.5                   | na           | na                     | 4.3                      | na                          | na                       | 3.6                      | 3.5                      | 3.6                       | 4.3                      | na                   | na                   | na                        | 6.2                  | 113.5                      | 1.5                                            | 2.3               | 2.4                         | 2.3                           |                             |
| Daiwa Capital Markets America                     | 4.4                                                | 7.5                   | 4.3          | na                     | 4.1                      | 3.9                         | 3.9                      | 3.6                      | 3.4                      | 3.6                       | 3.9                      | na                   | na                   | na                        | 5.7                  | na                         | 1.5                                            | 2.3               | 1.7                         | 1.9                           |                             |
| S&P Global Market Intelligence                    | 4.3                                                | 7.5                   | 4.3          | 4.3                    | 4.4                      | 4.6                         | 4.6                      | 4.4                      | 4.2                      | 4.1                       | 4.1                      | 5.3                  | 6.2                  | 4.5                       | 6.2                  | 115.0                      | 2.2                                            | 2.4               | 2.5                         | 2.4                           |                             |
| DePrince & Assoc.                                 | 4.3                                                | 7.5                   | 4.3          | 4.4                    | 4.3                      | 4.4                         | 4.5                      | 4.6                      | 4.6                      | 4.6                       | 4.6                      | 5.8                  | H 6.6                | H 5.0                     | H 7.3                | H 110.0                    | 2.5                                            | 2.1               | 2.1                         | 2.1                           |                             |
| Via Nova Investment Mgt.                          | 4.2                                                | 7.4                   | na           | na                     | 4.2                      | 4.1                         | 4.0                      | 3.8                      | 3.7                      | 3.6                       | 3.8                      | na                   | na                   | na                        | 5.9                  | na                         | 1.5                                            | 2.3               | 3.0                         | 2.4                           |                             |
| Fannie Mae                                        | 4.2                                                | 7.4                   | 4.2          | na                     | na                       | na                          | 4.7                      | 3.5                      | 4.0                      | 3.9                       | 4.1                      | 4.7                  | 5.6                  | na                        | 6.7                  | na                         | 2.0                                            | 2.6               | 2.7                         | 2.2                           |                             |
| MacroPolicy Perspectives                          | 4.1                                                | na                    | na           | na                     | na                       | na                          | na                       | 3.0                      | 3.2                      | 3.3                       | 3.7                      | na                   | na                   | na                        | na                   | na                         | 1.0                                            | 3.1               | 1.8                         | 2.0                           |                             |
| Bank of America                                   | 4.1                                                | 6.5                   | 4.1          | na                     | 3.8                      | 3.8                         | 3.5                      | 3.0                      | 2.9                      | 2.9                       | 3.1                      | 3.4                  | L na                 | na                        | 4.7                  | 111.7                      | 1.8                                            | 3.5               | H 2.2                       | 2.0                           |                             |
| Oxford Economics                                  | 4.0                                                | na                    | na           | na                     | 3.7                      | na                          | na                       | na                       | na                       | 2.9                       | na                       | na                   | na                   | na                        | na                   | na                         | 1.9                                            | 2.3               | 2.1                         | 1.9                           |                             |
| EY-Parthenon                                      | 4.0                                                | 7.0                   | 4.0          | 4.1                    | 3.9                      | 3.9                         | 3.9                      | 3.9                      | 3.9                      | 3.9                       | 4.2                      | na                   | na                   | 4.1                       | 5.8                  | 113.0                      | 2.2                                            | 2.5               | 2.5                         | 2.2                           |                             |
| Naroff Economic Advisors                          | 4.0                                                | na                    | 3.9          | na                     | 3.7                      | na                          | na                       | 3.5                      | 3.7                      | 3.9                       | 3.9                      | na                   | na                   | na                        | na                   | na                         | 1.6                                            | 0.4               | L 3.3                       | 3.1                           |                             |
| Scotiabank Group                                  | 3.9                                                | 7.1                   | 3.9          | 4.0                    | 4.0                      | 3.9                         | 4.0                      | 3.8                      | 3.9                      | 3.9                       | 4.2                      | 4.8                  | 5.8                  | 3.9                       | 5.3                  | 114.1                      | 2.0                                            | 2.2               | 2.2                         | 2.2                           |                             |
| GLC Financial Economics                           | 3.9                                                | 7.1                   | 3.9          | 3.5                    | 3.8                      | 3.8                         | 3.7                      | 3.5                      | 3.2                      | 3.4                       | 3.8                      | 4.3                  | 5.5                  | na                        | 5.5                  | na                         | 1.5                                            | 2.2               | 1.8                         | 1.9                           |                             |
| KPMG                                              | 3.9                                                | 7.0                   | 3.9          | 4.0                    | 3.8                      | 3.8                         | 3.7                      | 3.5                      | 3.7                      | 3.8                       | 3.7                      | 5.4                  | 6.1                  | 4.1                       | 6.0                  | 108.5                      | 1.2                                            | 2.9               | 3.0                         | 3.0                           |                             |
| RDQ Economics                                     | 3.8                                                | 6.9                   | 3.7          | 3.9                    | 3.7                      | 3.7                         | 3.8                      | 3.8                      | 3.8                      | 3.9                       | 4.3                      | 5.3                  | 6.3                  | 4.3                       | 5.8                  | na                         | 2.1                                            | 2.0               | 2.0                         | 2.1                           |                             |
| Moody's Analytics                                 | 3.7                                                | 6.8                   | 3.6          | 3.9                    | 3.7                      | 3.8                         | 3.6                      | 3.5                      | 3.3                      | 3.2                       | 3.4                      | 4.5                  | 5.3                  | 3.8                       | 6.0                  | 116.3                      | 1.7                                            | 2.1               | 2.1                         | 2.0                           |                             |
| The Lonski Group                                  | 3.6                                                | 6.8                   | na           | na                     | na                       | na                          | na                       | 2.3                      | 2.7                      | 2.7                       | na                       | na                   | na                   | na                        | na                   | na                         | 1.9                                            | 1.3               | 2.6                         | 2.2                           |                             |
| Nomura Securities, Inc.                           | 3.6                                                | 6.8                   | 3.6          | na                     | 3.4                      | 3.1                         | 2.9                      | 2.7                      | 3.0                      | 3.1                       | 3.4                      | na                   | na                   | na                        | na                   | na                         | 4.3                                            | H 1.8             | 2.2                         | 1.9                           |                             |
| Societe Generale                                  | 3.5                                                | 6.6                   | 3.5          | na                     | 3.2                      | 3.3                         | 3.1                      | 3.2                      | 3.4                      | 3.7                       | 3.9                      | na                   | 5.7                  | 4.4                       | 5.6                  | 118.7                      | H 0.8                                          | L 0.8             | 0.9                         | L 0.7                         | L                           |
| PNC Financial Services Corp.                      | 3.4                                                | 6.8                   | 3.3          | 3.4                    | 3.6                      | 4.0                         | 4.3                      | 4.5                      | 3.8                      | 3.8                       | 4.0                      | 4.8                  | 5.8                  | 3.9                       | 6.6                  | 112.6                      | 1.8                                            | 2.2               | 2.1                         | 2.2                           |                             |
| MacroFin Analytics & Rutgers Bus School           | 3.3                                                | 6.4                   | na           | na                     | 2.9                      | 2.9                         | 3.4                      | 3.2                      | 3.2                      | 3.5                       | 3.9                      | 4.6                  | 5.7                  | na                        | 5.6                  | na                         | 2.1                                            | 2.3               | 2.5                         | 2.2                           |                             |
| Georgia State University                          | 3.1                                                | 6.2                   | 3.1          | 3.0                    | 3.1                      | 3.1                         | 2.7                      | 2.0                      | 2.5                      | 2.8                       | 3.0                      | 3.8                  | 4.8                  | L 3.4                     | 5.2                  | 111.9                      | 2.2                                            | 2.0               | 2.0                         | 1.8                           |                             |
| Loomis, Sayles & Company                          | 2.9                                                | na                    | na           | na                     | na                       | na                          | na                       | 3.0                      | 3.1                      | 3.0                       | 3.4                      | na                   | na                   | na                        | na                   | na                         | 2.2                                            | na                | na                          | na                            |                             |
| ING                                               | 2.9                                                | 6.0                   | 2.9          | 2.9                    | 2.9                      | 2.9                         | 3.0                      | 3.0                      | 3.1                      | 3.1                       | 3.5                      | 4.3                  | 5.3                  | 3.7                       | 5.6                  | na                         | 2.6                                            | 3.0               | 3.6                         | H 3.0                         |                             |
| Wells Fargo                                       | 1.5                                                | L 4.5                 | L 1.5        | L 1.6                  | L 1.6                    | L 0.6                       | L 0.6                    | L 0.7                    | L 0.7                    | L 1.5                     | L 2.3                    | L 4.0                | 5.0                  | 1.5                       | L 3.3                | L 108.0                    | L 1.3                                          | 2.6               | 2.0                         | 2.0                           |                             |
| ACIMA Private Wealth                              |                                                    |                       |              |                        |                          |                             |                          |                          |                          |                           |                          |                      |                      |                           |                      |                            |                                                |                   |                             |                               |                             |
| August Consensus                                  | 4.0                                                | 7.1                   | 4.0          | 4.1                    | 4.0                      | 3.9                         | 3.9                      | 3.5                      | 3.5                      | 3.5                       | 3.8                      | 4.7                  | 5.7                  | 4.0                       | 5.9                  | 112.4                      | 1.8                                            | 2.3               | 2.3                         | 2.2                           |                             |
| Top 10 Avg.                                       | 4.7                                                | 7.8                   | 4.7          | 4.7                    | 4.7                      | 4.7                         | 4.6                      | 4.3                      | 4.1                      | 4.1                       | 4.3                      | 5.2                  | 6.1                  | 4.3                       | 6.6                  | 114.2                      | 2.5                                            | 2.9               | 3.0                         | 2.7                           |                             |
| Bottom 10 Avg.                                    | 3.2                                                | 6.3                   | 3.3          | 3.4                    | 3.2                      | 3.1                         | 3.0                      | 2.6                      | 2.8                      | 2.8                       | 3.2                      | 4.3                  | 5.4                  | 3.6                       | 5.1                  | 110.6                      | 1.2                                            | 1.6               | 1.8                         | 1.8                           |                             |
| July Consensus                                    | 3.9                                                | 7.0                   | 3.9          | 3.9                    | 3.9                      | 3.8                         | 3.8                      | 3.5                      | 3.5                      | 3.5                       | 3.8                      | 4.6                  | 5.5                  | 4.0                       | 5.9                  | 114.1                      | 2.0                                            | 2.2               | 2.4                         | 2.2                           |                             |
| Number of Forecasts Changed From A Month Ago:     |                                                    |                       |              |                        |                          |                             |                          |                          |                          |                           |                          |                      |                      |                           |                      |                            |                                                |                   |                             |                               |                             |
| Down                                              | 4                                                  | 1                     | 1            | 2                      | 2                        | 1                           | 2                        | 2                        | 2                        | 3                         | 3                        | 2                    | 2                    | 2                         | 2                    | 9                          | 13                                             | 4                 | 6                           | 7                             |                             |
| Same                                              | 11                                                 | 11                    | 7            | 7                      | 11                       | 7                           | 9                        | 16                       | 17                       | 15                        | 15                       | 8                    | 7                    | 8                         | 9                    | 6                          | 13                                             | 21                | 21                          | 20                            |                             |
| Up                                                | 22                                                 | 18                    | 17           | 11                     | 18                       | 19                          | 16                       | 16                       | 14                       | 17                        | 14                       | 10                   | 10                   | 8                         | 17                   | 4                          | 10                                             | 9                 | 8                           | 7                             |                             |
| Diffusion Index                                   | 74%                                                | 78%                   | 82%          | 73%                    | 76%                      | 83%                         | 76%                      | 71%                      | 68%                      | 70%                       | 67%                      | 70%                  | 71%                  | 67%                       | 77%                  | 37%                        | 46%                                            | 57%               | 53%                         | 50%                           |                             |

## International Interest Rate And Foreign Exchange Rate Forecasts

| Blue Chip Forecasters          | Fed Fund Target Rate |             |             |
|--------------------------------|----------------------|-------------|-------------|
|                                | In 3 Mo.             | In 6 Mo.    | In 12 Mo.   |
| Barclays                       | 5.63                 | 5.63        | 5.38        |
| BMO Capital Markets            | 5.38                 | 5.38        | 5.38        |
| ING Financial Markets          | 5.38                 | 5.38        | 3.88        |
| Moody's Analytics              | 5.30                 | 5.37        | 5.34        |
| Northern Trust                 | 5.63                 | 5.63        | 4.88        |
| Oxford Economics               | 5.31                 | 5.38        | 4.96        |
| S&P Global Market Intelligence | --                   | --          | --          |
| Scotiabank                     | 5.38                 | 5.38        | 5.13        |
| Wells Fargo                    | 5.38                 | 5.38        | 4.38        |
| <b>August Consensus</b>        | <b>5.42</b>          | <b>5.44</b> | <b>4.92</b> |
| High                           | 5.63                 | 5.63        | 5.38        |
| Low                            | 5.30                 | 5.37        | 3.88        |
| Last Months Avg.               | 5.20                 | 5.06        | 4.50        |

| Blue Chip Forecasters          | Policy-Rate Balance Rate |              |              |
|--------------------------------|--------------------------|--------------|--------------|
|                                | In 3 Mo.                 | In 6 Mo.     | In 12 Mo.    |
| Barclays                       | 0.00                     | 0.00         | 0.00         |
| BMO Capital Markets            | -0.10                    | -0.10        | -0.10        |
| ING Financial Markets          | -0.10                    | -0.10        | 0.00         |
| Moody's Analytics              | -0.10                    | -0.10        | -0.10        |
| Nomura Securities              | --                       | --           | --           |
| Northern Trust                 | -0.10                    | -0.10        | -0.10        |
| Oxford Economics               | -0.03                    | -0.04        | -0.04        |
| S&P Global Market Intelligence | --                       | --           | --           |
| Scotiabank                     | --                       | --           | --           |
| Wells Fargo                    | -0.10                    | -0.10        | -0.10        |
| <b>August Consensus</b>        | <b>-0.08</b>             | <b>-0.08</b> | <b>-0.06</b> |
| High                           | 0.00                     | 0.00         | 0.00         |
| Low                            | -0.10                    | -0.10        | -0.10        |
| Last Months Avg.               | -0.07                    | -0.07        | -0.05        |

| Blue Chip Forecasters          | Official Bank Rate |             |             |
|--------------------------------|--------------------|-------------|-------------|
|                                | In 3 Mo.           | In 6 Mo.    | In 12 Mo.   |
| Barclays                       | 5.75               | 5.75        | 5.75        |
| BMO Capital Markets            | 5.75               | 5.75        | 5.75        |
| ING Financial Markets          | 5.50               | 5.50        | 5.00        |
| Moody's Analytics              | 5.35               | 5.75        | 5.75        |
| Nomura Securities              | --                 | --          | --          |
| Northern Trust                 | 5.75               | 5.75        | 5.50        |
| Oxford Economics               | 5.35               | 5.75        | 5.75        |
| S&P Global Market Intelligence | --                 | --          | --          |
| Scotiabank                     | 5.50               | 5.50        | 5.00        |
| Wells Fargo                    | 5.75               | 5.75        | 4.75        |
| <b>August Consensus</b>        | <b>5.59</b>        | <b>5.69</b> | <b>5.41</b> |
| High                           | 5.75               | 5.75        | 5.75        |
| Low                            | 5.35               | 5.50        | 4.75        |
| Last Months Avg.               | 5.12               | 5.20        | 4.89        |

| Blue Chip Forecasters          | SNB Policy Rate |             |             |
|--------------------------------|-----------------|-------------|-------------|
|                                | In 3 Mo.        | In 6 Mo.    | In 12 Mo.   |
| Barclays                       | 2.00            | 2.25        | 2.25        |
| ING Financial Markets          | 2.00            | 2.00        | 2.00        |
| Moody's Analytics              | 2.00            | 2.00        | 2.00        |
| Nomura Securities              | --              | --          | --          |
| Northern Trust                 | 2.00            | 2.00        | 1.75        |
| Oxford Economics               | 1.77            | 2.00        | 1.88        |
| S&P Global Market Intelligence | --              | --          | --          |
| Scotiabank                     | --              | --          | --          |
| Wells Fargo                    | 2.00            | 2.00        | 1.75        |
| <b>August Consensus</b>        | <b>1.96</b>     | <b>2.04</b> | <b>1.94</b> |
| High                           | 2.00            | 2.25        | 2.25        |
| Low                            | 1.77            | 2.00        | 1.75        |
| Last Months Avg.               | 1.86            | 1.91        | 1.79        |

| Blue Chip Forecasters          | O/N MMkt Financing Rate |             |             |
|--------------------------------|-------------------------|-------------|-------------|
|                                | In 3 Mo.                | In 6 Mo.    | In 12 Mo.   |
| Barclays                       | 5.00                    | 5.00        | 4.75        |
| BMO Capital Markets            | 5.00                    | 5.00        | 4.75        |
| ING Financial Markets          | 5.00                    | 5.00        | 4.25        |
| Moody's Analytics              | 4.94                    | 5.00        | 4.71        |
| Nomura Securities              | --                      | --          | --          |
| Northern Trust                 | 5.00                    | 5.00        | 4.50        |
| Oxford Economics               | 4.88                    | 5.00        | 4.88        |
| S&P Global Market Intelligence | --                      | --          | --          |
| Scotiabank                     | 5.00                    | 5.00        | 4.75        |
| Wells Fargo                    | 5.00                    | 5.00        | 4.50        |
| <b>August Consensus</b>        | <b>4.98</b>             | <b>5.00</b> | <b>4.64</b> |
| High                           | 5.00                    | 5.00        | 4.88        |
| Low                            | 4.88                    | 5.00        | 4.25        |
| Last Months Avg.               | 4.80                    | 4.69        | 4.26        |

| United States             |             |             |  |
|---------------------------|-------------|-------------|--|
| 10 Yr. Gov't Bond Yield % |             |             |  |
| In 3 Mo.                  | In 6 Mo.    | In 12 Mo.   |  |
| 3.90                      | 3.80        | 3.75        |  |
| 3.77                      | 3.63        | 3.48        |  |
| 4.00                      | 3.50        | 3.00        |  |
| 3.84                      | 3.94        | 3.96        |  |
| 3.65                      | 3.50        | 3.25        |  |
| 3.80                      | 3.64        | 3.16        |  |
| 4.00                      | 3.88        | 3.69        |  |
| 3.65                      | 3.60        | 3.75        |  |
| 3.75                      | 3.60        | 3.15        |  |
| <b>3.82</b>               | <b>3.68</b> | <b>3.47</b> |  |
| 4.00                      | 3.94        | 3.96        |  |
| 3.65                      | 3.50        | 3.00        |  |
| 3.67                      | 3.57        | 3.57        |  |

| Japan                     |             |             |  |
|---------------------------|-------------|-------------|--|
| 10 Yr. Gov't Bond Yield % |             |             |  |
| In 3 Mo.                  | In 6 Mo.    | In 12 Mo.   |  |
| 0.35                      | 0.30        | 0.25        |  |
| 0.67                      | 0.80        | 0.80        |  |
| 0.50                      | 0.75        | 1.00        |  |
| 0.45                      | 0.48        | 0.53        |  |
| --                        | --          | --          |  |
| 0.45                      | 0.50        | 0.50        |  |
| 0.45                      | 0.46        | 0.48        |  |
| --                        | --          | --          |  |
| --                        | --          | --          |  |
| 0.50                      | 0.75        | 0.70        |  |
| <b>0.48</b>               | <b>0.58</b> | <b>0.61</b> |  |
| 0.67                      | 0.80        | 1.00        |  |
| 0.35                      | 0.30        | 0.25        |  |
| 0.43                      | 0.46        | 0.50        |  |

| United Kingdom       |             |             |  |
|----------------------|-------------|-------------|--|
| 10 Yr. Gilt Yields % |             |             |  |
| In 3 Mo.             | In 6 Mo.    | In 12 Mo.   |  |
| 4.50                 | 4.50        | 4.40        |  |
| 3.96                 | 3.71        | 3.51        |  |
| 4.40                 | 3.80        | 3.25        |  |
| 4.33                 | 4.99        | 5.11        |  |
| --                   | --          | --          |  |
| 4.30                 | 4.20        | 4.00        |  |
| 4.33                 | 4.28        | 4.18        |  |
| --                   | --          | --          |  |
| --                   | --          | --          |  |
| 4.25                 | 4.10        | 3.75        |  |
| <b>4.30</b>          | <b>4.23</b> | <b>4.03</b> |  |
| 4.50                 | 4.99        | 5.11        |  |
| 3.96                 | 3.71        | 3.25        |  |
| 4.16                 | 4.00        | 3.78        |  |

| Switzerland               |             |             |  |
|---------------------------|-------------|-------------|--|
| 10 Yr. Gov't Bond Yield % |             |             |  |
| In 3 Mo.                  | In 6 Mo.    | In 12 Mo.   |  |
| --                        | --          | --          |  |
| 1.15                      | 1.15        | 1.10        |  |
| 1.90                      | 2.11        | 2.22        |  |
| --                        | --          | --          |  |
| 1.00                      | 1.00        | 0.80        |  |
| 1.09                      | 1.37        | 1.34        |  |
| --                        | --          | --          |  |
| --                        | --          | --          |  |
| <b>1.29</b>               | <b>1.41</b> | <b>1.37</b> |  |
| 1.90                      | 2.11        | 2.22        |  |
| 1.00                      | 1.00        | 0.80        |  |
| 1.25                      | 1.22        | 1.22        |  |

| Canada                    |             |             |  |
|---------------------------|-------------|-------------|--|
| 10 Yr. Gov't Bond Yield % |             |             |  |
| In 3 Mo.                  | In 6 Mo.    | In 12 Mo.   |  |
| --                        | --          | --          |  |
| 3.33                      | 3.21        | 3.08        |  |
| 3.50                      | 3.40        | 3.00        |  |
| 3.82                      | 4.02        | 4.21        |  |
| --                        | --          | --          |  |
| 3.40                      | 3.30        | 3.10        |  |
| 3.44                      | 3.48        | 3.42        |  |
| --                        | --          | --          |  |
| 3.25                      | 3.20        | 3.40        |  |
| 3.45                      | 3.25        | 3.05        |  |
| <b>3.46</b>               | <b>3.41</b> | <b>3.32</b> |  |
| 3.82                      | 4.02        | 4.21        |  |
| 3.25                      | 3.20        | 3.00        |  |
| 3.36                      | 3.22        | 3.14        |  |

| Fed's AFE \$ Index |              |              |  |
|--------------------|--------------|--------------|--|
| In 3 Mo.           | In 6 Mo.     | In 12 Mo.    |  |
| --                 | --           | --           |  |
| 112.4              | 111.6        | 111.0        |  |
| 109.9              | 107.2        | 104.0        |  |
| --                 | --           | --           |  |
| 114.0              | 116.0        | 112.0        |  |
| 115.0              | 114.9        | 113.6        |  |
| --                 | --           | --           |  |
| --                 | --           | --           |  |
| --                 | --           | --           |  |
| <b>112.8</b>       | <b>112.4</b> | <b>110.2</b> |  |
| 115.0              | 116.0        | 113.6        |  |
| 109.9              | 107.2        | 104.0        |  |
| 113.6              | 113.6        | 111.9        |  |

| Yen per US\$ |              |              |  |
|--------------|--------------|--------------|--|
| In 3 Mo.     | In 6 Mo.     | In 12 Mo.    |  |
| 137.0        | 135.0        | 128.0        |  |
| 138.0        | 137.0        | 136.0        |  |
| 135.0        | 130.0        | 120.0        |  |
| 133.5        | 130.3        | 124.8        |  |
| 138.0        | 130.0        | 122.5        |  |
| 140.0        | 137.0        | 132.0        |  |
| 144.6        | 144.9        | 139.6        |  |
| 143.9        | 143.3        | 135.8        |  |
| 135.0        | 135.0        | 130.0        |  |
| --           | --           | --           |  |
| <b>138.3</b> | <b>135.8</b> | <b>129.9</b> |  |
| 144.6        | 144.9        | 139.6        |  |
| 133.5        | 130.0        | 120.0        |  |
| 135.9        | 134.0        | 129.7        |  |

| US\$ per Pound Sterling |             |             |  |
|-------------------------|-------------|-------------|--|
| In 3 Mo.                | In 6 Mo.    | In 12 Mo.   |  |
| 1.29                    | 1.29        | 1.29        |  |
| 1.28                    | 1.27        | 1.28        |  |
| 1.29                    | 1.31        | 1.34        |  |
| 1.42                    | 1.46        | 1.55        |  |
| 1.26                    | 1.27        | 1.33        |  |
| 1.25                    | 1.23        | 1.28        |  |
| 1.27                    | 1.27        | 1.28        |  |
| 1.29                    | 1.28        | 1.29        |  |
| 1.35                    | 1.35        | 1.38        |  |
| --                      | --          | --          |  |
| <b>1.30</b>             | <b>1.30</b> | <b>1.34</b> |  |
| 1.42                    | 1.46        | 1.55        |  |
| 1.25                    | 1.23        | 1.28        |  |
| 1.26                    | 1.28        | 1.30        |  |

| CHF per US\$ |             |             |  |
|--------------|-------------|-------------|--|
| In 3 Mo.     | In 6 Mo.    | In 12 Mo.   |  |
| 0.90         | 0.88        | 0.87        |  |
| 0.86         | 0.84        | 0.85        |  |
| 0.88         | 0.86        | 0.82        |  |
| 0.88         | 0.89        | 0.89        |  |
| 0.91         | 0.93        | 0.88        |  |
| 0.90         | 0.91        | 0.90        |  |
| 0.91         | 0.90        | 0.89        |  |
| 0.88         | 0.88        | 0.87        |  |
| --           | --          | --          |  |
| <b>0.89</b>  | <b>0.89</b> | <b>0.87</b> |  |
| 0.91         | 0.93        | 0.90        |  |
| 0.86         | 0.84        | 0.82        |  |
| 0.90         | 0.89        | 0.89        |  |

| C\$ per US\$ |             |             |  |
|--------------|-------------|-------------|--|
| In 3 Mo.     | In 6 Mo.    | In 12 Mo.   |  |
| 1.33         | 1.32        | 1.30        |  |
| 1.31         | 1.30        | 1.29        |  |
| 1.29         | 1.27        | 1.25        |  |
| 1.33         | 1.29        | 1.24        |  |
| 1.36         | 1.35        | 1.33        |  |
| 1.33         | 1.35        | 1.28        |  |
| 1.32         | 1.32        | 1.31        |  |
| 1.32         | 1.34        | 1.31        |  |
| 1.30         | 1.30        | 1.27        |  |
| --           | --          | --          |  |
| <b>1.32</b>  | <b>1.32</b> | <b>1.29</b> |  |
| 1.36         | 1.35        | 1.33        |  |
| 1.29         | 1.27        | 1.24        |  |
| 1.34         | 1.33        | 1.30        |  |

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## International Interest Rate And Foreign Exchange Rate Forecasts

| Blue Chip Forecasters          | Official Cash Rate |             |             |
|--------------------------------|--------------------|-------------|-------------|
|                                | In 3 Mo.           | In 6 Mo.    | In 12 Mo.   |
| Barclays                       | 4.35               | 3.85        | 3.60        |
| ING Financial Markets          | 4.35               | 4.35        | 4.10        |
| Moody's Analytics              | 4.18               | 4.35        | 4.10        |
| Nomura Securities              | --                 | --          | --          |
| Northern Trust                 | 4.60               | 4.60        | 4.10        |
| Oxford Economics               | 4.35               | 4.60        | 4.60        |
| S&P Global Market Intelligence | --                 | --          | --          |
| Scotiabank                     | --                 | --          | --          |
| Wells Fargo                    | 4.35               | 4.35        | 4.10        |
| <b>August Consensus</b>        | <b>4.36</b>        | <b>4.35</b> | <b>4.10</b> |
| High                           | 4.60               | 4.60        | 4.60        |
| Low                            | 4.18               | 3.85        | 3.60        |
| Last Months Avg.               | 4.16               | 4.10        | 3.64        |

| Australia                 |             |             |  |
|---------------------------|-------------|-------------|--|
| 10 Yr. Gov't Bond Yield % |             |             |  |
| In 3 Mo.                  | In 6 Mo.    | In 12 Mo.   |  |
| --                        | --          | --          |  |
| 3.75                      | 3.30        | 3.20        |  |
| 4.49                      | 4.66        | 4.41        |  |
| --                        | --          | --          |  |
| 4.00                      | 4.00        | 3.80        |  |
| 3.88                      | 3.89        | 3.68        |  |
| --                        | --          | --          |  |
| --                        | --          | --          |  |
| --                        | --          | --          |  |
| <b>4.03</b>               | <b>3.96</b> | <b>3.77</b> |  |
| 4.49                      | 4.66        | 4.41        |  |
| 3.75                      | 3.30        | 3.20        |  |
| 3.68                      | 3.52        | 3.35        |  |

| US\$ per A\$ |             |             |  |
|--------------|-------------|-------------|--|
| In 3 Mo.     | In 6 Mo.    | In 12 Mo.   |  |
| 0.67         | 0.68        | 0.70        |  |
| 0.68         | 0.70        | 0.74        |  |
| 0.68         | 0.69        | 0.72        |  |
| 0.68         | 0.69        | 0.70        |  |
| 0.66         | 0.64        | 0.68        |  |
| 0.66         | 0.67        | 0.68        |  |
| 0.68         | 0.70        | 0.72        |  |
| 0.69         | 0.69        | 0.70        |  |
| --           | --          | --          |  |
| <b>0.68</b>  | <b>0.68</b> | <b>0.71</b> |  |
| 0.69         | 0.70        | 0.74        |  |
| 0.66         | 0.64        | 0.68        |  |
| 0.67         | 0.68        | 0.70        |  |

| Blue Chip Forecasters          | Main Refinancing Rate |             |             |
|--------------------------------|-----------------------|-------------|-------------|
|                                | In 3 Mo.              | In 6 Mo.    | In 12 Mo.   |
| Barclays                       | 4.25                  | 4.25        | 4.25        |
| BMO Capital Markets            | 4.25                  | 4.25        | 4.25        |
| ING Financial Markets          | 4.50                  | 4.50        | 4.25        |
| Moody's Analytics              | 4.19                  | 4.50        | 4.45        |
| Nomura Securities              | --                    | --          | --          |
| Northern Trust                 | 4.50                  | 4.50        | 4.25        |
| Oxford Economics               | 4.22                  | 4.50        | 4.04        |
| S&P Global Market Intelligence | --                    | --          | --          |
| Scotiabank                     | 4.50                  | 4.50        | 4.25        |
| Wells Fargo                    | 3.75                  | 3.75        | 3.25        |
| <b>August Consensus</b>        | <b>4.27</b>           | <b>4.34</b> | <b>4.12</b> |
| High                           | 4.50                  | 4.50        | 4.45        |
| Low                            | 3.75                  | 3.75        | 3.25        |
| Last Months Avg.               | 4.07                  | 4.20        | 3.94        |

## Euro area

| US\$ per Euro |             |             |  |
|---------------|-------------|-------------|--|
| In 3 Mo.      | In 6 Mo.    | In 12 Mo.   |  |
| 1.08          | 1.10        | 1.12        |  |
| 1.11          | 1.12        | 1.13        |  |
| 1.12          | 1.15        | 1.18        |  |
| 1.09          | 1.11        | 1.16        |  |
| 1.12          | 1.12        | 1.14        |  |
| 1.07          | 1.05        | 1.12        |  |
| 1.09          | 1.09        | 1.10        |  |
| 1.08          | 1.09        | 1.12        |  |
| 1.12          | 1.12        | 1.15        |  |
| --            | --          | --          |  |
| <b>1.10</b>   | <b>1.11</b> | <b>1.14</b> |  |
| 1.12          | 1.15        | 1.18        |  |
| 1.07          | 1.05        | 1.10        |  |
| 1.09          | 1.10        | 1.13        |  |

| Blue Chip Forecasters   | 10 Yr. Gov't Bond Yields % |             |             |             |             |             |             |             |             |             |             |             |
|-------------------------|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                         | Germany                    |             |             | France      |             |             | Italy       |             |             | Spain       |             |             |
|                         | In 3 Mo.                   | In 6 Mo.    | In 12 Mo.   | In 3 Mo.    | In 6 Mo.    | In 12 Mo.   | In 3 Mo.    | In 6 Mo.    | In 12 Mo.   | In 3 Mo.    | In 6 Mo.    | In 12 Mo.   |
| Barclays                | 2.55                       | 2.50        | 2.30        | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| BMO Capital Markets     | 2.38                       | 2.32        | 2.19        | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| ING Financial Markets   | 2.30                       | 2.20        | 2.10        | 2.90        | 2.75        | 2.65        | 4.30        | 4.10        | 3.90        | 3.40        | 3.25        | 3.10        |
| Moody's Analytics       | 2.62                       | 2.75        | 2.78        | 3.01        | 3.08        | 3.05        | 4.34        | 4.24        | 3.96        | 3.49        | 3.57        | 3.54        |
| Northern Trust          | 2.40                       | 2.40        | 2.20        | 2.90        | 2.90        | 2.70        | 4.00        | 4.00        | 3.80        | 3.70        | 3.70        | 3.50        |
| Oxford Economics        | 2.42                       | 2.30        | 2.08        | 2.97        | 2.82        | 2.54        | 4.18        | 4.07        | 3.91        | 3.44        | 3.32        | 3.13        |
| Wells Fargo             | 2.40                       | 2.35        | 2.25        | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>August Consensus</b> | <b>2.44</b>                | <b>2.40</b> | <b>2.27</b> | <b>2.95</b> | <b>2.89</b> | <b>2.74</b> | <b>4.21</b> | <b>4.10</b> | <b>3.89</b> | <b>3.51</b> | <b>3.46</b> | <b>3.32</b> |
| High                    | 2.62                       | 2.75        | 2.78        | 3.01        | 3.08        | 3.05        | 4.34        | 4.24        | 3.96        | 3.70        | 3.70        | 3.54        |
| Low                     | 2.30                       | 2.20        | 2.08        | 2.90        | 2.75        | 2.54        | 4.00        | 4.00        | 3.80        | 3.40        | 3.25        | 3.10        |
| Last Months Avg.        | 2.38                       | 2.35        | 2.35        | 2.86        | 2.82        | 2.87        | 4.09        | 4.06        | 4.05        | 3.40        | 3.35        | 3.42        |

|                | Consensus Forecasts               |          |          |           |
|----------------|-----------------------------------|----------|----------|-----------|
|                | 10-year Bond Yields vs U.S. Yield |          |          |           |
|                | Current                           | In 3 Mo. | In 6 Mo. | In 12 Mo. |
| Japan          | -3.36                             | -3.34    | -3.10    | -2.86     |
| United Kingdom | 0.46                              | 0.48     | 0.55     | 0.56      |
| Switzerland    | -2.92                             | -2.53    | -2.27    | -2.10     |
| Canada         | -0.43                             | -0.36    | -0.27    | -0.14     |
| Australia      | 0.16                              | 0.21     | 0.29     | 0.31      |
| Germany        | -1.40                             | -1.38    | -1.27    | -1.19     |
| France         | -0.85                             | -0.87    | -0.79    | -0.73     |
| Italy          | 0.23                              | 0.39     | 0.43     | 0.43      |
| Spain          | -0.43                             | -0.31    | -0.22    | -0.15     |

|                | Consensus Forecasts              |          |          |           |
|----------------|----------------------------------|----------|----------|-----------|
|                | Policy Rates vs U.S. Target Rate |          |          |           |
|                | Current                          | In 3 Mo. | In 6 Mo. | In 12 Mo. |
| Japan          | -5.23                            | -5.50    | -5.36    | -4.98     |
| United Kingdom | -0.13                            | 0.16     | 0.25     | 0.49      |
| Switzerland    | -3.38                            | -3.46    | -3.40    | -2.98     |
| Canada         | -0.13                            | -0.45    | -0.44    | -0.28     |
| Australia      | -1.03                            | -1.06    | -1.09    | -0.82     |
| Euro area      | -1.13                            | -1.15    | -1.10    | -0.79     |

**Viewpoints:****A Sampling of Views on the Economy, Financial Markets and Government Policy  
Excerpted from Recent Reports Issued by our Blue Chip Panel Members and Others****A “patient and resolute” Fed**

The goal is to defeat, not just cool, inflation.

The Federal Open Market Committee (FOMC) – the policy arm of the Federal Reserve voted to raise rates again in July after a brief reprieve in June. That increased the fed funds rate to a 5.25% - 5.5% range, the highest rate for short-term rates since 2001, before it cut rates to mop up in the wake of the dot.com bust. The vote to raise rates was once again unanimous, which underscored Chairman Powell’s finesse in corralling the cats in a key vote.

At least two meeting participants, Austan Goolsbee of Chicago and Raphael Bostic of Atlanta, had voiced their preferences to pause on rate hikes in July before this meeting. Powell hinted that they may have pushed back against this hike. He said that will be reflected in the minutes to this meeting, which will be released in three weeks. Debate is expected to intensify within the ranks of the Fed leadership about how far they should go on rate hikes given the cooling in inflation we have seen and the uncertainty about the path of inflation going forward.

The statement following the meeting was little changed. It left the door open to additional rate hikes, much to the chagrin of market participants eager for an end to rate hikes. Chairman Jay Powell emphasized the Fed’s commitment to hold rates higher for longer at the press conference following the meeting; that will raise real rates as inflation cools. A cut in rates by year-end or at the start of next year is unlikely, barring a full-blown recession.

The Fed worries that financial markets will front-run it on rate cuts and undo some of the progress made on inflation. The ground is fertile. The excess savings triggered by the pandemic are still significant, a GenAI bubble is taking root and earlier fiscal stimulus is boosting infrastructure investment. The construction of chip and EV plants is accelerating, while funds allocated to upgrade schools and roads during the pandemic are being deployed.

Chairman Jay Powell underscored that the Fed needs to see core inflation come down in a more “durable” way. The “historic record” is clear on the fact that the worst error would be to fail to fully derail inflation now. “Policy has not been restrictive enough for long enough” to ensure that inflation will come down and stay there.

Much of the cooling in goods inflation reflects a reversal of the supply chain problems triggered by an uneven reopening of the global economy. That is good news as it has alleviated inflation in the goods sector. However, supply chains remain fragile.

Concern is high that we could see a bump in inflation this Fall when a quirk in how medical insurance is measured plays out. The consumer price index (CPI) measure of medical insurance plummeted nearly 25% from a year ago in June; that measure reverses course and rises on both a month-on-month and year-over-year basis in October. That could prevent inflation from cooling as much as needed in the service sector. Nearly all other insurance costs are already rising rapidly, with extreme weather risks prompting insurers to pull out of some markets entirely.

Separately, recent improvements in inflation have likely emboldened the Fed to reach its 2% inflation target. There was an unspoken sense that the Fed would stop short of its actual target to avoid the pain – a rise in unemployment – necessary to get inflation back to its target. The resilience of the economy has helped alleviate those concerns, while simultaneously upping the risk of an overshoot on rate hikes by the Fed. Powell said, “We are determined to bring inflation down to 2% over time and no one should doubt that.”

The bulk of the drag associated with earlier rate hikes is still ahead of us. Business loans that were taken out when rates were much lower are about to reset, while rejections for credit card, mortgage and vehicle loans have surged since the turmoil we saw in financial markets in the Spring. Powell acknowledged that bank lending conditions continued to tighten since the last report; bank lending standards were in recession territory in the first quarter. That data is due to be released on Monday, July 31.

Powell was careful to point out that the Fed would not need to reach the 2% level before cutting rates. The Fed is expecting to cut rates well before inflation reaches 2%; it only needs to be moving toward 2% over a sustained period. Note: The Fed does not expect inflation to fall to 2% until 2025. Real or inflation-adjusted interest rates will rise as inflation decelerates. Those shifts coupled with the lags in monetary policy mean the Fed should cut rates before it hits the 2% target, or it will most definitely overshoot and trigger a much harder landing. He said that the Fed could keep reducing its balance sheet or what is known as quantitative tightening, even after starting to cut short-term rates.

Powell noted that the staff has a significant slowdown in the economy at the end of the year but no longer has a full-blown recession in their forecast. That is only one forecast. He cautioned that the historical record suggests some softening in labor market conditions, aka increases in unemployment, are likely before inflation is defeated.

Powell said that the short-term social costs of unemployment were less than the long-term social costs of inflation. He thinks some increase in unemployment will occur – the issue is how much.

**Bottom Line**

The Fed will stand its ground and hold rates high well into 2024, barring a more pronounced slowdown in the economy and rise in unemployment. The goal is to defeat, not just cool, inflation. Another rate hike is possible. Our current forecast has it in November, given the time needed to assess how rapidly the economy is actually cooling and the risk of noise due to strikes. The writers’ and actors’ strikes could hit payrolls in August in the movie and production sector, while the UAW is weighing a strike in September. The Fed is scheduled to release its next forecast in September, which would enable it to signal its intent to hold rates elevated or hike again. The goal is to keep real rates elevated.

*Diane Swonk (KPMG)*



**Tight Job Market Limits Growth and Lifts Inflation Risk**

A historically low unemployment rate and industry specific shortages of qualified workers are the biggest threat to continued declines by price inflation. A tight job market traps the economy. An ultra-low jobless rate limits the upside for noninflationary economic growth. Today's reality of a high rate of labor market utilization implies the economy can grow slowly at best. Little more than a near depletion of the available supply of qualified labor warns of slower growth rates for jobs and spending. As spending ebbs, more businesses may find that their sales fall short of what justifies current staffing levels. In turn, layoffs will mount. And it is a slackening of the labor market that will curb the growth of both consumer spending and prices. Not until wage growth subsides from June's 4.4% year-on-year increase to a pace no greater than 3% might the demise of rapid inflation be declared with confidence. The latest upturn by actual and potential strikes, as well as the growing number of announced pay hikes of 5% to 10% annually, warn of a possible upturn by the year-on-year growth of the average hourly wage from June's 4.4%. As long as the labor market remains tight, the risk of a wage driven upturn by price inflation persists. Faster wage growth will do more than just boost operating costs. In addition, faster wage growth will enliven consumer spending and enhance the ability of workers to absorb higher prices. Once a wage price spiral becomes entrenched, only a significantly higher unemployment rate might succeed at taming wage driven price inflation.

**Slower jobs growth will decelerate business sales.** Retail sales, which serve as a proxy for consumer spending, ultimately depend on personal income growth, which is closely tied to jobs growth. An unfolding deceleration by private sector jobs growth will curb consumer spending. The drop by monthly jobs growth from May's 306,000 to June's 209,000 would have been deeper were it not for an increase by the monthly change in public sector payrolls from 47,000 to 60,000. Far different was the drop by the monthly addition to private-sector payrolls from May's 259,000 to June's 149,000. June's results reflect a continuation of 2023's distribution of payrolls growth between the private and public sectors. Seasonally adjusted data show the average monthly increase for private-sector jobs fell from the 317,000 of 2022's second half to the 215,000 of 2023's first half. According to the same serial comparison, the average monthly addition to public-sector payrolls rose from H2-2022's 37,000 to H1-2023's 63,000.

The faster growth of government employment brings attention to how government spending now contradicts Fed efforts to slow expenditures via higher interest rates. By not raising any objections, the Fed is effectively complicit with the Biden Administration's aim to expand the role of government in the US economy. The current expansion of government in the economy warns of slower economic growth and faster price inflation than otherwise.

**Yearly growth for core retail sales slumps from Q1-2023's 6.0% to Q2-2023's 3.9%.** Ordinarily, the change in corporate revenues is expressed in terms of year-over-year growth rates

using data that is not adjusted for seasonality. When comparing second-quarter data with results from prior second quarters, it makes little sense to employ seasonal adjustment. Before seasonal adjustment, retail sales year-over-year growth rate decelerated from first quarter 2023's 5.1% to the second quarter's 1.6%. After excluding the downward bias imparted to total retail sales by gasoline's second quarter yearly price plunge of -19.8%, the yearly increase for retail sales excluding gas station sales, or core retail sales, fell from Q1-2023's 6.0% to 3.9% for the second quarter.

**Strong retail sales confined to e-commerce and restaurants.** However, Q2-2023's 3.9% year-over-year increase by core retail sales masked considerable variation across categories of core retail sales. For example, the second quarter's 9.0% yearly advance by restaurant and bar sales led all broad categories of retail sales. However, almost all of the 9.0% advance consisted of price increases as inferred from Q2-2023's 8.2% yearly increase by the CPI's "food away from home" component.

**Restaurant sales now top food store sales.** Americans are more inclined to either dine out or order takeout than to prepare food at home. According to the retail sales report, the \$1,065 billion of restaurant and bar sales from the 12-months-ended June 2023 topped the accompanying \$971 billion of food and beverage store sales. In fact, 2022 was the first calendar year, wherein restaurant and bar sales surpassed food and beverage store sales. Things were far different as recently as the five years ended 2015, or when the span's annual averages of \$647 billion for food and beverage store sales exceeded the \$553 billion of restaurant and bar sales by 17%. Nevertheless, a significant amount of grocery sales has moved from the food and beverage store category to the general merchandise store excluding department stores category. Still, restaurants and bars share of core retail sales has climbed up from 2019's 13.7% to the record high 14.2% of the year-ended June 2023.

**Core retail sales growth drops from 3.9% to 3.1% excluding restaurants.** Absent restaurants and bars, remaining core retail sales grew by a modest 3.1% yearly, which was faster than Q1-2023's 2.5% yearly increase but slower than yearlong 2022's 6.8% annual growth rate. Second-quarter's year-to-year growth rate for remaining core retail sales was led by the 8.2% increase for non-store sales that is heavily weighted towards e-commerce. The second quarter's yearly gain by non-store sales outran Q1-2023's 7.8%, but lagged calendar year 2022's 12.8% annual advance. The 3.4% yearly increase by Q2-2023's sales of motor vehicle and parts dealerships was up from both Q1-2023's 2.1% and yearlong 2022's 2.8%. The second-quarter's price index for new and used autos barely rose by 0.7% from a year earlier. By contrast, the CPI's price index for motor vehicle parts and equipment rose by a faster 4.6% yearly in the second quarter.

In addition, second-quarter 2023's seasonally-adjusted, annualized sales pace of 15.6 million units for new cars and light trucks was up by 17.4% year-over-year, but was -8.9% less than 2017-2019's 17.1-million units average.

*John Lonski (The Lonski Group)*

**Special Questions:**

1. What do you think will be the peak federal funds rate target (midpoint of range) in the current tightening cycle? 5.47%
2. What do you think the fed funds rate target (midpoint of range) will be at the end of: 2023 5.40% 2024 3.82%
3. a. When will the first fed funds rate cut occur?
- |                |                |                |                |              |
|----------------|----------------|----------------|----------------|--------------|
| <u>Q3 2023</u> | <u>Q4 2023</u> | <u>Q1 2024</u> | <u>Q2 2024</u> | <u>Later</u> |
| 6%             | 6%             | 47%            | 28%            | 13%          |
- b. What will likely be the primary factor behind the first fed funds rate cut?
- |                                                         |     |
|---------------------------------------------------------|-----|
| <u>A sharp slowdown in the economy</u>                  | 26% |
| <u>A meaningful and persistent slowing in inflation</u> | 74% |
| <u>Global financial market stress</u>                   | 0%  |
4. What probability do you attach to a recession beginning over the next 12 months in the:
- |                  |     |
|------------------|-----|
| <u>US</u>        | 48% |
| <u>euro area</u> | 52% |
| <u>UK</u>        | 58% |
5. a. Repayments of U.S. student loan debt will resume in October. Will this lower your outlook for the US economy in:
- |      |            |           |
|------|------------|-----------|
|      | <u>Yes</u> | <u>No</u> |
| 2023 | 37%        | 63%       |
| 2024 | 63%        | 37%       |
- b. Have your forecasts for global growth been adversely impacted by recent sluggish data releases, notably in Asia and Europe?
- |            |     |           |     |
|------------|-----|-----------|-----|
| <u>Yes</u> | 81% | <u>No</u> | 19% |
|------------|-----|-----------|-----|
- c. Does China's recent disappointing data threaten to weaken the global outlook for economic growth in 2023?
- |            |     |           |     |
|------------|-----|-----------|-----|
| <u>Yes</u> | 89% | <u>No</u> | 11% |
|------------|-----|-----------|-----|
6. While the headline US PCE price index has slowed markedly, core inflation, which excludes food and energy prices, has slowed much less. What do you expect the core inflation rate to be for:
- |                     |      |                     |      |
|---------------------|------|---------------------|------|
| <u>Dec/Dec 2023</u> | 3.5% | <u>Dec/Dec 2024</u> | 2.4% |
|---------------------|------|---------------------|------|
7. What is your US unemployment rate forecast for:
- |               |      |
|---------------|------|
| December 2023 | 3.9% |
| June 2024     | 4.4% |
| December 2024 | 4.5% |

**2023 Historical Data**

| Monthly Indicator                      | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|----------------------------------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|
| Retail and Food Service Sales (a)      | 2.8   | -0.7  | -0.9  | 0.4   | 0.5   | 0.2   | .... | .... | .... | .... | .... | .... |
| Auto & Light Truck Sales (b)           | 15.95 | 14.92 | 14.92 | 16.09 | 15.08 | 15.68 | .... | .... | .... | .... | .... | .... |
| Personal Income (a, current \$)        | 0.7   | 0.4   | 0.4   | 0.3   | 0.5   | 0.3   | .... | .... | .... | .... | .... | .... |
| Personal Consumption (a, current \$)   | 1.9   | 0.3   | 0.1   | 0.6   | 0.2   | 0.5   | .... | .... | .... | .... | .... | .... |
| Consumer Credit (e)                    | 5.3   | 2.9   | 4.8   | 5.0   | 1.8   | ....  | .... | .... | .... | .... | .... | .... |
| Consumer Sentiment (U. of Mich.)       | 64.9  | 67.0  | 62.0  | 63.5  | 59.2  | 64.4  | 71.6 | .... | .... | .... | .... | .... |
| Household Employment (c)               | 894   | 177   | 577   | 139   | -310  | 273   | .... | .... | .... | .... | .... | .... |
| Nonfarm Payroll Employment (c)         | 472   | 248   | 217   | 217   | 306   | 209   | .... | .... | .... | .... | .... | .... |
| Unemployment Rate (%)                  | 3.4   | 3.6   | 3.5   | 3.4   | 3.7   | 3.6   | .... | .... | .... | .... | .... | .... |
| Average Hourly Earnings (All, cur. \$) | 33.02 | 33.11 | 33.20 | 33.34 | 33.46 | 33.58 | .... | .... | .... | .... | .... | .... |
| Average Workweek (All, hrs.)           | 34.6  | 34.5  | 34.4  | 34.4  | 34.3  | 34.4  | .... | .... | .... | .... | .... | .... |
| Industrial Production (d)              | 1.5   | 0.9   | 0.2   | 0.5   | 0.0   | -0.4  | .... | .... | .... | .... | .... | .... |
| Capacity Utilization (%)               | 79.6  | 79.6  | 79.5  | 79.9  | 79.4  | 78.9  | .... | .... | .... | .... | .... | .... |
| ISM Manufacturing Index (g)            | 47.4  | 47.7  | 46.3  | 47.1  | 46.9  | 46.0  | .... | .... | .... | .... | .... | .... |
| ISM Nonmanufacturing Index (g)         | 55.2  | 55.1  | 51.2  | 51.9  | 50.3  | 53.9  | .... | .... | .... | .... | .... | .... |
| Housing Starts (b)                     | 1.340 | 1.436 | 1.380 | 1.348 | 1.559 | 1.434 | .... | .... | .... | .... | .... | .... |
| Housing Permits (b)                    | 1.354 | 1.482 | 1.437 | 1.417 | 1.496 | 1.441 | .... | .... | .... | .... | .... | .... |
| New Home Sales (1-family, c)           | 649   | 625   | 640   | 671   | 715   | 697   | .... | .... | .... | .... | .... | .... |
| Construction Expenditures (a)          | 2.2   | 0.4   | 0.6   | 0.4   | 0.9   | ....  | .... | .... | .... | .... | .... | .... |
| Consumer Price Index (nsa, d)          | 6.4   | 6.0   | 5.0   | 4.9   | 4.0   | 3.0   | .... | .... | .... | .... | .... | .... |
| CPI ex. Food and Energy (nsa, d)       | 5.6   | 5.5   | 5.6   | 5.5   | 5.3   | 4.8   | .... | .... | .... | .... | .... | .... |
| PCE Chain Price Index (d)              | 5.4   | 5.0   | 4.2   | 4.3   | 3.8   | 3.0   | .... | .... | .... | .... | .... | .... |
| Core PCE Chain Price Index (d)         | 4.7   | 4.7   | 4.6   | 4.6   | 4.6   | 4.1   | .... | .... | .... | .... | .... | .... |
| Producer Price Index (nsa, d)          | 5.7   | 4.7   | 2.7   | 2.1   | 0.9   | 0.1   | .... | .... | .... | .... | .... | .... |
| Durable Goods Orders (a)               | -1.3  | -2.7  | 3.3   | 1.2   | 2.0   | 4.7   | .... | .... | .... | .... | .... | .... |
| Leading Economic Indicators (a)        | -0.5  | -0.5  | -1.2  | -0.7  | -0.6  | -0.7  | .... | .... | .... | .... | .... | .... |
| Balance of Trade & Services (f)        | -70.2 | -70.2 | -60.6 | -74.4 | -69.0 | ....  | .... | .... | .... | .... | .... | .... |
| Federal Funds Rate (%)                 | 4.33  | 4.57  | 4.65  | 4.83  | 5.06  | 5.08  | .... | .... | .... | .... | .... | .... |
| 3-Mo. Treasury Bill Rate (%)           | 4.69  | 4.79  | 4.86  | 5.07  | 5.31  | 5.42  | .... | .... | .... | .... | .... | .... |
| 10-Year Treasury Note Yield (%)        | 3.53  | 3.75  | 3.66  | 3.46  | 3.57  | 3.75  | .... | .... | .... | .... | .... | .... |

**2022 Historical Data**

| Monthly Indicator                      | Jan   | Feb   | Mar    | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct   | Nov   | Dec   |
|----------------------------------------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Retail and Food Service Sales (a)      | 1.4   | 1.4   | 2.1    | 1.3   | -0.1  | 0.7   | -0.5  | 0.7   | 0.0   | 1.0   | -1.3  | -0.7  |
| Auto & Light Truck Sales (b)           | 15.11 | 13.71 | 13.56  | 14.28 | 12.58 | 13.05 | 13.31 | 13.23 | 13.64 | 15.28 | 14.34 | 13.37 |
| Personal Income (a, current \$)        | -0.1  | 0.5   | 0.5    | 0.2   | 0.5   | 0.5   | 0.8   | 0.6   | 0.5   | 0.6   | 0.2   | 0.2   |
| Personal Consumption (a, current \$)   | 1.2   | 0.7   | 1.2    | 0.4   | 0.7   | 1.2   | -0.1  | 0.7   | 0.6   | 0.7   | -0.2  | 0.0   |
| Consumer Credit (e)                    | 5.0   | 8.6   | 11.0   | 7.8   | 7.4   | 9.2   | 7.3   | 7.4   | 7.2   | 8.9   | 8.3   | 4.9   |
| Consumer Sentiment (U. of Mich.)       | 67.2  | 62.8  | 59.4   | 65.2  | 58.4  | 50.0  | 51.5  | 58.2  | 58.6  | 59.9  | 56.8  | 59.7  |
| Household Employment (c)               | 1041  | 468   | 738    | -346  | 317   | -242  | 215   | 422   | 156   | -257  | -66   | 717   |
| Nonfarm Payroll Employment (c)         | 364   | 904   | 414    | 254   | 364   | 370   | 568   | 352   | 350   | 324   | 290   | 239   |
| Unemployment Rate (%)                  | 4.0   | 3.8   | 3.6    | 3.6   | 3.6   | 3.6   | 3.5   | 3.7   | 3.5   | 3.7   | 3.6   | 3.5   |
| Average Hourly Earnings (All, cur. \$) | 31.63 | 31.63 | 31.83  | 31.94 | 32.06 | 32.18 | 32.33 | 32.43 | 32.53 | 32.66 | 32.80 | 32.92 |
| Average Workweek (All, hrs.)           | 34.6  | 34.7  | 34.7   | 34.6  | 34.6  | 34.6  | 34.6  | 34.5  | 34.6  | 34.6  | 34.5  | 34.4  |
| Industrial Production (d)              | 2.3   | 6.6   | 4.4    | 4.6   | 3.7   | 3.2   | 3.0   | 3.1   | 4.5   | 3.1   | 1.9   | 0.6   |
| Capacity Utilization (%)               | 79.4  | 79.9  | 80.5   | 80.7  | 80.6  | 80.5  | 80.7  | 80.7  | 80.8  | 80.6  | 80.3  | 78.9  |
| ISM Manufacturing Index (g)            | 57.6  | 58.4  | 57.0   | 55.9  | 56.1  | 53.1  | 52.7  | 52.9  | 51.0  | 50.0  | 49.0  | 48.4  |
| ISM Nonmanufacturing Index (g)         | 60.4  | 57.2  | 58.4   | 57.5  | 56.4  | 56.0  | 56.4  | 56.1  | 55.9  | 54.5  | 55.5  | 49.2  |
| Housing Starts (b)                     | 1.669 | 1.771 | 1.713  | 1.803 | 1.543 | 1.561 | 1.371 | 1.505 | 1.463 | 1.432 | 1.427 | 1.357 |
| Housing Permits (b)                    | 1.898 | 1.817 | 1.877  | 1.795 | 1.708 | 1.701 | 1.658 | 1.586 | 1.588 | 1.555 | 1.402 | 1.409 |
| New Home Sales (1-family, c)           | 810   | 773   | 707    | 611   | 636   | 563   | 543   | 638   | 567   | 577   | 582   | 636   |
| Construction Expenditures (a)          | 2.4   | 1.5   | 1.4    | 1.8   | -0.1  | -0.4  | -0.2  | -1.2  | -0.6  | -0.4  | 0.6   | -0.1  |
| Consumer Price Index (nsa, d)          | 7.5   | 7.9   | 8.5    | 8.3   | 8.6   | 9.1   | 8.5   | 8.3   | 8.2   | 7.7   | 7.1   | 6.5   |
| CPI ex. Food and Energy (nsa, d)       | 6.0   | 6.4   | 6.5    | 6.2   | 6.0   | 5.9   | 5.9   | 6.3   | 6.6   | 6.3   | 6.0   | 5.7   |
| PCE Chain Price Index (d)              | 6.1   | 6.4   | 6.8    | 6.4   | 6.5   | 7.0   | 6.4   | 6.3   | 6.3   | 6.1   | 5.7   | 5.3   |
| Core PCE Chain Price Index (d)         | 5.2   | 5.4   | 5.4    | 5.0   | 4.9   | 5.0   | 4.7   | 4.9   | 5.2   | 5.1   | 4.8   | 4.6   |
| Producer Price Index (nsa, d)          | 10.1  | 10.4  | 11.7   | 11.2  | 11.1  | 11.2  | 9.7   | 8.7   | 8.5   | 8.2   | 7.4   | 6.4   |
| Durable Goods Orders (a)               | 2.0   | -1.4  | -0.1   | 1.0   | 0.7   | 1.6   | -0.8  | -0.1  | 0.3   | 1.0   | -3.1  | 4.5   |
| Leading Economic Indicators (a)        | -0.5  | 0.3   | 0.0    | -0.6  | -0.9  | -0.7  | -0.6  | -0.3  | -0.5  | -0.9  | -0.9  | -0.7  |
| Balance of Trade & Services (f)        | -86.5 | -87.0 | -102.5 | -86.0 | -84.1 | -80.9 | -71.7 | -67.3 | -71.7 | -78.3 | -63.8 | -71.4 |
| Federal Funds Rate (%)                 | 0.08  | 0.08  | 0.20   | 0.33  | 0.77  | 1.21  | 1.68  | 2.33  | 2.56  | 3.08  | 3.78  | 4.10  |
| 3-Mo. Treasury Bill Rate (%)           | 0.15  | 0.31  | 0.45   | 0.76  | 0.99  | 1.54  | 2.30  | 2.72  | 3.22  | 3.87  | 4.32  | 4.36  |
| 10-Year Treasury Note Yield (%)        | 1.76  | 1.93  | 2.13   | 2.75  | 2.90  | 3.14  | 2.90  | 2.90  | 3.52  | 3.98  | 3.89  | 3.62  |

(a) month-over-month % change; (b) millions, saar; (c) month-over-month change, thousands; (d) year-over-year % change; (e) annualized % change; (f) \$ billions; (g) level. Most series are subject to frequent government revisions. Use with care.

## Calendar of Upcoming Economic Data Releases

| Monday                                                                 | Tuesday                                                                                                                                                                                                       | Wednesday                                                                                                                                                                                                                        | Thursday                                                                                                                                                                                                                                                 | Friday                                                                                                                                                            |
|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                        | <b>August 1</b><br>Construction (Jun & Revisions)<br>JOLTS (Jun)<br>ISM Manufacturing (Jul)<br>S&P Global Mfg PMI (Jul)<br>Texas Service Sector Outlook Survey (Jul)                                          | <b>2</b><br>ADP Employment Report (Jul)<br>BEA Auto and Truck Sales (Jul)<br>Housing Vacancies (Q2)<br>EIA Crude Oil Stocks<br>Mortgage Application                                                                              | <b>3</b><br>Productivity & Costs (Q2)<br>Manufacturers' Shipments,<br>Inventories & Orders (Jun)<br>ISM Services PMI (Jul)<br>S&P Global Services PMI (Jul)<br>Challenger Employment Report (Jul)<br>CEO Confidence Survey (Q3)<br>Weekly Jobless Claims | <b>4</b><br>Employment Situation (Jul)<br>Public Debt (Jul)<br>Interest Expense on the Public Debt (Jul)                                                          |
| <b>7</b><br>Consumer Credit (Jun)<br>Treasury Auction Allotments (Jul) | <b>8</b><br>International Trade (Jun)<br>Wholesale Trade (Jun)<br>NFIB (Jul)<br>Kansas City Fed Labor Market Conditions Indicators (Jul)                                                                      | <b>9</b><br>Transportation Services Index (Jun)<br>Kansas City Financial Stress Index (Jul)<br>EIA Crude Oil Stocks<br>Mortgage Application                                                                                      | <b>10</b><br>CPI & Real Earnings (Jul)<br>Cleveland Fed Median CPI (Jul)<br>First Time Housing Affordability (Q2)<br>Housing Affordability (Jun)<br>NAHB-Wells Fargo Housing Opportunity Index (Q2)<br>Monthly Treasury (Jul)<br>Weekly Jobless Claims   | <b>11</b><br>Producer Prices (Jul)<br>Consumer Sentiment (Aug, Preliminary)<br>Survey of Professional Forecasters (Q3)                                            |
| <b>14</b>                                                              | <b>15</b><br>Advance Retail Sales (Jul)<br>Import & Export Prices (Jul)<br>MTIS (Jun)<br>Empire State Mfg Survey (Aug)<br>Home Builders (Aug)<br>TIC Data (Jun)                                               | <b>16</b><br>New Residential Construction (Jul)<br>IP & Capacity Utilization (Jul)<br>Business Leaders Survey (Aug)<br>EIA Crude Oil Stocks<br>Mortgage Application                                                              | <b>17</b><br>Retail E-Commerce Sales (Q2)<br>Philadelphia Fed Mfg Business Outlook Survey (Aug)<br>Composite Indexes (Jul)<br>Weekly Jobless Claims                                                                                                      | <b>18</b><br>Advance Quarterly Services (Q2)                                                                                                                      |
| <b>21</b><br>Dallas Fed Banking Conditions Survey (Jul)                | <b>22</b><br>Existing Home Sales (Jul)<br>H.6 Money Stock (Jul)<br>Treas Auction Allotments (Aug)<br>Philadelphia Fed Nonmfg Business Outlook Survey (Aug)<br>Richmond Fed Mfg & Service Sector Surveys (Aug) | <b>23</b><br>New Residential Sales (Jul)<br>CEW (Q1)<br>S&P Global Flash PMIs (Aug)<br>FRB Philadelphia Coincident Economic Activity Index (Jul)<br>Final Building Permits (Jul)<br>EIA Crude Oil Stocks<br>Mortgage Application | <b>24</b><br>Advance Durable Goods (Jul)<br>Chicago Fed National Activity Index (Jul)<br>Kansas City Fed Manufacturing Survey (Aug)<br>Weekly Jobless Claims                                                                                             | <b>25</b><br>Consumer Sentiment (Aug, Final)<br>Strike Report (Aug)<br>Steel Imports for Consumption (Jul, Preliminary)                                           |
| <b>28</b><br>Texas Manufacturing Outlook Survey (Aug)                  | <b>29</b><br>Case-Shiller HPI (Jun)<br>FHFA HPI (Jun & Q2)<br>Consumer Confidence (Aug)<br>JOLTS (Jul)<br>Texas Service Sector Outlook Survey (Aug)                                                           | <b>30</b><br>ADP Employment Report (Aug)<br>GDP (Q2, 2nd Estimate)<br>Adv Trade & Inventories (Jul)<br>Pending Home Sales (Jul)<br>EIA Crude Oil Stocks<br>Mortgage Application                                                  | <b>31</b><br>Dallas Fed Trimmed Mean PCE (Jul)<br>Personal Income (Jul)<br>Agricultural Prices (Jul)<br>Underlying NIPA Tables (Q2, 2 <sup>nd</sup> Estimate)<br>Challenger Employment Report (Aug)<br>Chicago PMI (Aug)<br>Weekly Jobless Claims        | <b>September 1</b><br>Employment Situation (Aug)<br>ISM Manufacturing (Aug)<br>S&P Global Mfg PMI (Aug)<br>Construction (Jul)                                     |
| <b>4</b><br><br><b>LABOR DAY</b><br><br><b>ALL MARKETS CLOSED</b>      | <b>5</b><br>Manufacturers' Shipments, Inventories & Orders (Jul)<br>BEA Auto & Truck Sales (Aug)                                                                                                              | <b>6</b><br>International Trade (Jul)<br>ISM Services PMI (Aug)<br>S&P Global Services PMI (Aug)<br>QFR (Q2)<br>Kansas City Fed Labor Market Conditions Indicators (Aug)<br>Mortgage Application                                 | <b>7</b><br>Productivity & Costs (Q2)<br>QSS (Q2)<br>Weekly Jobless Claims<br>EIA Crude Oil Stocks                                                                                                                                                       | <b>8</b><br>Wholesale Trade (Jul)<br>Treasury Auction Allotments (Aug)<br>Consumer Credit (Jul)<br>Public Debt (Aug)<br>Interest Expense on the Public Debt (Aug) |

## BLUE CHIP FORECASTERS

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# Blue Chip Financial Forecasts®

**Top Analysts' Forecasts Of U.S. And Foreign Interest Rates, Currency Values  
And The Factors That Influence Them**

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## Downside Economic Risks Complicate Inflation Fight

While the Fed would like to avoid recession, there is arguably a need for slower-than-trend growth to ease pressure in the labor market. Recently, there have been some important signs of slowing in the labor market, including a rise in initial unemployment claims and a decline in job openings. However, the pace of job growth has been strong and the unemployment rate matched its 50-year low of 3.4% in April. Further easing in the labor market ought to reduce wage pressures and ultimately help tame inflation. Against this backdrop, Fed officials, market participants, and the Blue Chip Financial Forecasts (BCFF) panelists have been trying to predict the end of tightening and the start of easing.

**Turning point.** Several FOMC members recently commented that a rate hike in June is data dependent. The decision is contingent on the balance between stubbornly high inflation and the risks to the economy from the aggressive tightening over the past year and a half. The federal funds futures market has recently priced in significant odds of one last rate hike in coming months. In contrast, the June BCFF consensus expects that the Fed has already hiked rates for the last time in this cycle. In fact, the overwhelming majority of respondents (89%) believe the next move will be a rate cut.

**Short-term economic outlook.** Chairman Powell recently noted that the Fed may not have to raise rates again because of tightening credit. Many panelists agreed with this sentiment, with nearly half (47%) stating that they had downgraded their economic outlook due to the recent banking sector turmoil.

BCFF panelists expect a mild recession in the second half of 2023, with two quarters of slightly declining GDP. In addition, 97% of forecasters anticipate a rise in the unemployment rate in 2023, with a median increase of 0.8 percentage point to 4.2%. Following the mild downturn, the consensus expects GDP to rebound modestly in the first half of 2024, with gains of just 0.8% in Q1 and 1.3% in Q2. These views are consistent with Fed measures of recession probabilities based on the yield curve.

**Signs from the yield curve.** The yield curve, a harbinger of economic turning points and an important signal of financial conditions, has been inverted for the past year. In fact, the yield curve (measured either as the difference between the 10-year yield minus the 1-year bill rate or the 10-year yield minus the fed funds rate) is more inverted now than at any other time since the early 1980s. This deep inversion suggests that the economy will soon experience a period of recession. Based on the yield curve, the New York Fed estimates a 68% probability of recession. The Cleveland Fed measure puts the odds at 79%.

**Yields and spreads.** Panelists predict that yields on 2-year, 5-year, and 10-year Treasury debt have already peaked and will decline modestly over the next six quarters. However, the projections suggest that tight financial conditions will persist. The consensus view is that the yield curve will steepen, but remain

inverted, perhaps indicating that panelists expect the Fed to maintain some degree of tightening for the entire forecast horizon.

Also, corporate credit spreads (the gap between yields on corporate and Treasury debt) can signal business distress and recession risks. The consensus view is that corporate yields will edge up even as Treasury yields begin to decline. While this suggests credit spreads will widen slightly through year-end, they are expected to remain in a range that does not indicate excessive financial stress.

**Stubborn inflation and rate cuts.** Although inflation has moderated noticeably over the past year, it remains well above the Fed's target. The decline in CPI inflation from the June 2022 peak of 8.9% year-to-year largely reflected diminished energy and goods inflation. The more intractable services inflation has remained elevated. As a result, core measures of inflation have likely not declined enough for Fed officials to be comfortable signaling rate cuts later this year. The BCFF consensus, however, projects that PCE inflation will subside significantly over the next year dropping to 2.2% by midyear 2024. As a result, 31% of panelists expect the first rate cut by Q4 2023 and 55% believe the first cut will occur in Q1 2024.

The BCFF consensus forecast is for the funds rate to decline to 4.6% by Q1 2024 and to hit 3.9% by the end of the forecast horizon in Q3 2024. Every respondent expects some decline in the funds rate, and the average of the bottom 10 responses is 2.9%. This view likely reflects the expected retreat of inflation. In fact, 72% of respondents believe that a meaningful and persistent decline in the inflation rate will motivate the first rate cut.

**Long-range forecasts.** Blue Chip publishes longer-range forecasts twice a year, in June and December. These projections show the BCFF consensus views on trends in growth, inflation, and interest rates out 11 years to 2034. Respondents generally expect US GDP to grow at a pace slightly above the CBO estimate of potential, inflation to decline nearly to the Fed's target, and interest rates to remain somewhat elevated. Following the expected mild recession and recovery in 2023-24, the consensus looks for annual GDP growth in the range of 1.9% to 2.2%. PCE inflation is expected to drop to 2.4% in 2024, 2.2% in 2025, and remain at 2.1% thereafter.

Compared to the December forecasts, the BCFF consensus looks for a lower fed funds rate to prevail over the long-term horizon. Despite this markdown, the projected funds rate is higher than the actual funds rate for the decade prior to the pandemic. This could reflect either a higher expected neutral funds rate or the expectation of an extended period of tight Fed policy. Similarly, yields across the maturity spectrum were downgraded in this long-term forecast round relative to December. Nevertheless, the BCFF projected Treasury yields are actually high relative to pre-pandemic norms.

*Peter D'Antonio (Haver Analytics, New York, NY)*



## Consensus Forecasts of U.S. Interest Rates and Key Assumptions

| Interest Rates          | -----History-----                 |        |        |       | -----Average For Month--- Latest Qtr |      |      |         | Consensus Forecasts-Quarterly Avg. |      |      |      |      |      |
|-------------------------|-----------------------------------|--------|--------|-------|--------------------------------------|------|------|---------|------------------------------------|------|------|------|------|------|
|                         | -----Average For Week Ending----- |        |        |       |                                      |      |      |         | 2Q                                 | 3Q   | 4Q   | 1Q   | 2Q   | 3Q   |
|                         | May 26                            | May 19 | May 12 | May 5 | Apr                                  | Mar  | Feb  | 1Q 2023 | 2023                               | 2023 | 2023 | 2024 | 2024 | 2024 |
| Federal Funds Rate      | 5.08                              | 5.08   | 5.08   | 4.83  | 4.83                                 | 4.65 | 4.57 | 4.52    | 5.0                                | 5.1  | 5.0  | 4.6  | 4.2  | 3.9  |
| Prime Rate              | 8.25                              | 8.25   | 8.25   | 8.00  | 8.00                                 | 7.82 | 7.74 | 7.69    | 8.2                                | 8.2  | 8.1  | 7.8  | 7.3  | 7.0  |
| SOFR                    | 5.05                              | 5.05   | 5.06   | 4.91  | 4.81                                 | 4.64 | 4.54 | 4.49    | 5.0                                | 5.1  | 4.9  | 4.6  | 4.2  | 3.9  |
| Commercial Paper, 1-mo. | 5.10                              | 5.07   | 5.04   | 5.00  | 4.82                                 | 4.74 | 4.55 | 4.54    | 5.1                                | 5.1  | 4.9  | 4.5  | 4.1  | 3.9  |
| Treasury bill, 3-mo.    | 5.37                              | 5.26   | 5.26   | 5.26  | 5.07                                 | 4.86 | 4.79 | 4.78    | 5.2                                | 5.2  | 4.9  | 4.6  | 4.1  | 3.8  |
| Treasury bill, 6-mo.    | 5.43                              | 5.31   | 5.15   | 5.09  | 4.99                                 | 4.99 | 4.97 | 4.92    | 5.2                                | 5.1  | 4.8  | 4.4  | 4.0  | 3.7  |
| Treasury bill, 1 yr.    | 5.15                              | 4.91   | 4.75   | 4.72  | 4.68                                 | 4.68 | 4.93 | 4.77    | 4.8                                | 4.7  | 4.4  | 4.1  | 3.8  | 3.6  |
| Treasury note, 2 yr.    | 4.38                              | 4.14   | 3.96   | 3.93  | 4.02                                 | 4.30 | 4.53 | 4.35    | 4.2                                | 4.1  | 3.9  | 3.7  | 3.5  | 3.4  |
| Treasury note, 5 yr.    | 3.82                              | 3.60   | 3.44   | 3.43  | 3.54                                 | 3.82 | 3.94 | 3.80    | 3.7                                | 3.7  | 3.6  | 3.5  | 3.4  | 3.3  |
| Treasury note, 10 yr.   | 3.76                              | 3.59   | 3.47   | 3.44  | 3.46                                 | 3.66 | 3.75 | 3.65    | 3.6                                | 3.6  | 3.5  | 3.5  | 3.4  | 3.4  |
| Treasury note, 30 yr.   | 3.97                              | 3.89   | 3.80   | 3.75  | 3.68                                 | 3.77 | 3.80 | 3.74    | 3.8                                | 3.8  | 3.8  | 3.8  | 3.8  | 3.7  |
| Corporate Aaa bond      | 5.07                              | 4.98   | 4.88   | 4.82  | 4.76                                 | 4.92 | 4.87 | 4.84    | 4.8                                | 4.8  | 4.8  | 4.7  | 4.6  | 4.6  |
| Corporate Baa bond      | 5.78                              | 5.70   | 5.59   | 5.52  | 5.44                                 | 5.61 | 5.50 | 5.49    | 5.8                                | 5.9  | 5.9  | 5.7  | 5.6  | 5.5  |
| State & Local bonds     | 4.36                              | 4.19   | 4.11   | 4.13  | 4.07                                 | 4.23 | 4.16 | 4.15    | 4.0                                | 4.1  | 4.1  | 4.0  | 3.9  | 3.9  |
| Home mortgage rate      | 6.57                              | 6.39   | 6.35   | 6.39  | 6.34                                 | 6.54 | 6.26 | 6.36    | 6.4                                | 6.3  | 6.2  | 6.0  | 5.9  | 5.7  |

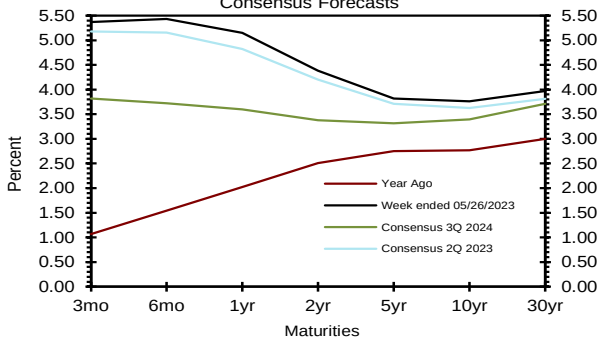
  

| Key Assumptions      | -----History----- |       |       |       | -----Average For Month--- Latest Qtr |       |       |       | Consensus Forecasts-Quarterly |       |       |       |       |       |
|----------------------|-------------------|-------|-------|-------|--------------------------------------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|-------|
|                      | 2Q                | 3Q    | 4Q    | 1Q    | 2Q                                   | 3Q    | 4Q    | 1Q    | 2Q                            | 3Q    | 4Q    | 1Q    | 2Q    | 3Q    |
|                      | 2021              | 2021  | 2021  | 2022  | 2022                                 | 2022  | 2022  | 2023  | 2023                          | 2023  | 2023  | 2024  | 2024  | 2024  |
| Fed's AFE \$ Index   | 102.8             | 104.9 | 106.9 | 108.3 | 113.5                                | 118.8 | 119.8 | 115.5 | 115.4                         | 114.4 | 114.0 | 113.6 | 113.5 | 113.5 |
| Real GDP             | 7.0               | 2.7   | 7.0   | -1.6  | -0.6                                 | 3.2   | 2.6   | 1.3   | 0.8                           | -0.4  | -0.1  | 0.8   | 1.3   | 1.9   |
| GDP Price Index      | 6.3               | 6.2   | 6.8   | 8.3   | 9.0                                  | 4.4   | 3.9   | 4.2   | 3.3                           | 2.8   | 2.7   | 2.5   | 2.5   | 2.2   |
| Consumer Price Index | 7.5               | 6.6   | 8.8   | 9.2   | 9.7                                  | 5.5   | 4.2   | 3.8   | 3.3                           | 3.0   | 2.8   | 2.5   | 2.4   | 2.4   |
| PCE Price Index      | 6.4               | 5.6   | 6.2   | 7.5   | 7.3                                  | 4.3   | 3.7   | 4.2   | 3.0                           | 2.8   | 2.6   | 2.4   | 2.2   | 2.2   |

Forecasts for interest rates and the Federal Reserve's Advanced Foreign Economies Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index, CPI and PCE Price Index are seasonally adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; SOFR from the New York Fed. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP, GDP Price Index and PCE Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index history is from the Department of Labor's Bureau of Labor Statistics (BLS).

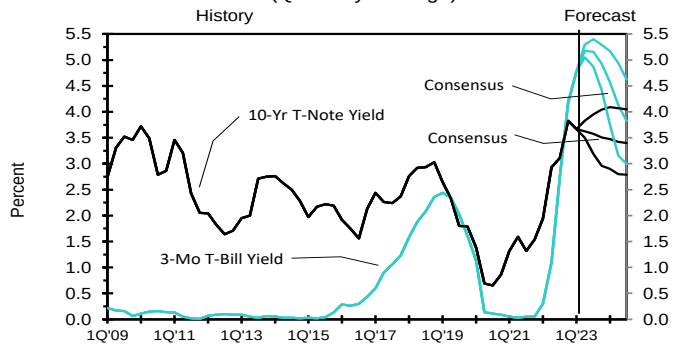
## US Treasury Yield Curve

Week ended May 26, 2023 & Year Ago vs.  
2Q 2023 & 3Q 2024  
Consensus Forecasts



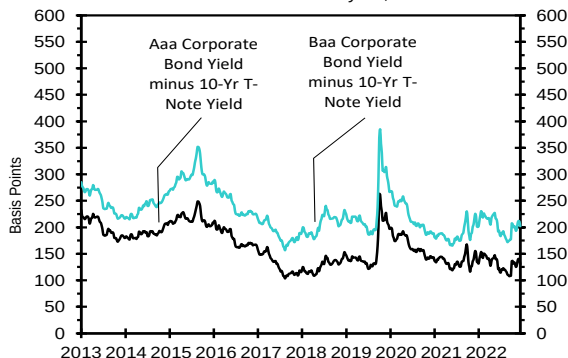
## US 3-Mo T-Bills &amp; 10-Yr T-Note Yield

(Quarterly Average)



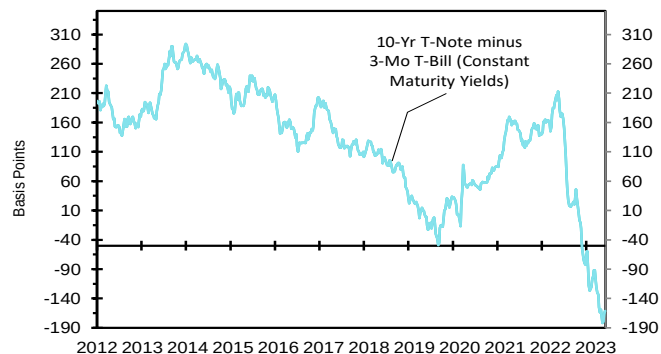
## Corporate Bond Spreads

As of week ended May 26, 2023



## US Treasury Yield Curve

As of week ended May 26, 2023



-----Policy Rates<sup>1</sup>-----

|             | -----History----- |       |       | Consensus Forecasts |              |              |
|-------------|-------------------|-------|-------|---------------------|--------------|--------------|
|             | Month             | Year  |       | Months From Now:    |              |              |
|             | Latest:           | Aggo: | Aggo: | 3                   | 6            | 12           |
| U.S.        | 5.13              | 4.88  | 0.88  | <b>5.08</b>         | <b>4.95</b>  | <b>4.02</b>  |
| Japan       | -0.10             | -0.10 | -0.10 | <b>-0.06</b>        | <b>-0.06</b> | <b>-0.05</b> |
| U.K.        | 4.50              | 4.25  | 1.00  | <b>4.60</b>         | <b>4.60</b>  | <b>4.11</b>  |
| Switzerland | 1.50              | 1.50  | -0.75 | <b>1.68</b>         | <b>1.77</b>  | <b>1.61</b>  |
| Canada      | 4.50              | 4.50  | 1.00  | <b>4.53</b>         | <b>4.36</b>  | <b>3.54</b>  |
| Australia   | 3.85              | 3.60  | 0.35  | <b>3.99</b>         | <b>4.06</b>  | <b>3.58</b>  |
| Euro area   | 3.75              | 3.50  | 0.00  | <b>3.92</b>         | <b>4.03</b>  | <b>3.72</b>  |

-----10-Yr. Government Bond Yields<sup>2</sup>-----

|             | -----History----- |       |       | Consensus Forecasts |             |             |
|-------------|-------------------|-------|-------|---------------------|-------------|-------------|
|             | Month             | Year  |       | Months From Now:    |             |             |
|             | Latest:           | Aggo: | Aggo: | 3                   | 6           | 12          |
| U.S.        | 3.80              | 3.44  | 2.74  | <b>3.54</b>         | <b>3.42</b> | <b>3.35</b> |
| Germany     | 2.52              | 2.33  | 0.98  | <b>2.49</b>         | <b>2.43</b> | <b>2.37</b> |
| Japan       | 0.43              | 0.40  | 0.24  | <b>0.47</b>         | <b>0.50</b> | <b>0.58</b> |
| U.K.        | 4.39              | 3.74  | 1.92  | <b>3.81</b>         | <b>3.65</b> | <b>3.43</b> |
| France      | 3.12              | 2.89  | 1.48  | <b>3.06</b>         | <b>3.00</b> | <b>2.93</b> |
| Italy       | 4.37              | 4.18  | 2.90  | <b>4.35</b>         | <b>4.29</b> | <b>4.15</b> |
| Switzerland | 1.06              | 1.08  | 0.74  | <b>1.41</b>         | <b>1.38</b> | <b>1.36</b> |
| Canada      | 3.33              | 2.84  | 2.79  | <b>3.23</b>         | <b>3.07</b> | <b>3.09</b> |
| Australia   | 3.74              | 3.34  | 3.26  | <b>3.55</b>         | <b>3.47</b> | <b>3.47</b> |
| Spain       | 3.56              | 3.42  | 2.02  | <b>3.56</b>         | <b>3.49</b> | <b>3.44</b> |

-----Foreign Exchange Rates<sup>3</sup>-----

|             | -----History----- |        |        | Consensus Forecasts |              |              |
|-------------|-------------------|--------|--------|---------------------|--------------|--------------|
|             | Month             | Year   |        | Months From Now:    |              |              |
|             | Latest:           | Aggo:  | Aggo:  | 3                   | 6            | 12           |
| U.S.        | 116.50            | 114.01 | 112.81 | <b>113.9</b>        | <b>111.3</b> | <b>111.5</b> |
| Japan       | 140.53            | 135.99 | 127.14 | <b>132.8</b>        | <b>129.8</b> | <b>128.3</b> |
| U.K.        | 1.23              | 1.26   | 1.26   | <b>1.26</b>         | <b>1.28</b>  | <b>1.28</b>  |
| Switzerland | 0.91              | 0.89   | 0.96   | <b>0.90</b>         | <b>0.88</b>  | <b>0.89</b>  |
| Canada      | 1.36              | 1.36   | 1.27   | <b>1.34</b>         | <b>1.33</b>  | <b>1.31</b>  |
| Australia   | 0.65              | 0.66   | 0.72   | <b>0.67</b>         | <b>0.68</b>  | <b>0.70</b>  |
| Euro        | 1.07              | 1.10   | 1.07   | <b>1.10</b>         | <b>1.12</b>  | <b>1.13</b>  |

Consensus  
Policy Rates  
vs. US Rate

|             | Now   | In 12 Mo.    |
|-------------|-------|--------------|
| Japan       | -5.23 | <b>-4.07</b> |
| U.K.        | -0.63 | <b>0.09</b>  |
| Switzerland | -3.63 | <b>-2.42</b> |
| Canada      | -0.63 | <b>-0.48</b> |
| Australia   | -1.28 | <b>-0.44</b> |
| Euro area   | -1.38 | <b>-0.30</b> |

Consensus  
10-Year Gov't  
Yields vs. U.S. Yield

|             | Now   | In 12 Mo.    |
|-------------|-------|--------------|
| Germany     | -1.28 | <b>-0.98</b> |
| Japan       | -3.37 | <b>-2.77</b> |
| U.K.        | 0.59  | <b>0.08</b>  |
| France      | -0.68 | <b>-0.42</b> |
| Italy       | 0.57  | <b>0.80</b>  |
| Switzerland | -2.74 | <b>-1.99</b> |
| Canada      | -0.47 | <b>-0.26</b> |
| Australia   | -0.06 | <b>0.12</b>  |
| Spain       | -0.24 | <b>0.09</b>  |

Forecasts of panel members are on pages 10 and 11. Definitions of variables are as follows: <sup>1</sup>Monetary policy rates. <sup>2</sup>Government bonds are yields to maturity. <sup>3</sup>Foreign exchange rate forecasts for U.K., Australia and the Euro are U.S. dollars per currency unit. For the U.S. dollar, forecasts are of the U.S. Federal Reserve Board's AFE Dollar Index.

**International.** The world economy's underlying vulnerabilities have been in sharp focus over the past few weeks, but more deep-seated wounds with longer-lasting scars have been avoided, at least for now. The anxiety that surfaced about the health of the US banking sector in March, for example, has faded, partly because of the willingness of policymakers to offer targeted support. More recently some heightened uncertainty about the willingness of US politicians to raise the debt ceiling has eased after a deal was struck to cap government spending. In the meantime, the alarm bells that had been ringing about the weakness of global growth have softened thanks to weaker energy prices and still-sturdy labor markets. That weakness in energy prices has been helpful for the economic outlook by offering some relief on the headline inflation front as well.

Still, the avoidance for now of bigger wounds does not mean that these vulnerabilities have been erased. Those issues in the United States that bedeviled the banking sector, for example, are arguably a symptom of broader efforts from the Fed – and other central banks – to tighten monetary policy and slow the wheels of credit. But the latest surveys of credit conditions in the US and Europe, suggest the wheels are indeed now slowing down quite quickly. Financial markets (and Blue Chip panelists) also now appear much less convinced that a pivot toward easier monetary policy will unfold in the immediate months ahead. Meanwhile, the intensity of that debt ceiling debate has exposed the absence of US growth drivers and highlighted the fractious nature of US politics at the same time.

As for economic growth, May's flash PMI surveys certainly suggest that global growth has picked up pace of late. Service sector PMIs, for example, rose to multi-month highs in the US and UK and to multi-year highs in Japan. The modest drop recorded in the euro area, moreover, occurred from a 12-month high that had been chalked up in April. Those same surveys, nevertheless, also reveal broadly-based weakness in the manufacturing sector. Indeed with the exception of Japan, the manufacturing PMI in all major economies was deep in contractionary territory in May and most notably in the euro area. This squares too with latest GDP data for Q1 from Germany revealing recessionary conditions over the last 6 months.

Those vulnerabilities in manufacturing – and Germany – find an echo too in China and its disappointing reopening phase. While the annual pace of retail sales growth picked up in April, much of that growth has been centered on domestic services. Spending on goods has been much weaker, as has fixed asset investment and industrial production, leaving much less scope for a boost to those economies that import into China.

It is, however, on inflation matters that there is arguably most cause for concern. For while falling energy prices have been generating weaker headline CPI readings in most major economies, core inflationary pressures have remained firm, most notably in services. Those flash PMI surveys in May suggested that input costs and prices charged for services continued to rise at a solid pace in May and at elevated rates by historic standards. That message additionally chimes with recent service sector CPI readings for Europe in April. And it is this, namely stubborn service sector price pressures, coupled with still-sturdy labor market activity, which is generating the pressure on central banks to now keep interest rates higher for longer.

Against this backdrop, our latest survey reveals that Blue Chip panelists have lifted their forecasts for 3-month and 6-month-ahead forecasts for policy rates in most major economies compared with our survey in May. The pivot toward easier policy setting that had been anticipated in Australia, Switzerland and to a lesser extent in the UK over the next 6 months has also now been pushed out to 2024. This is incidentally notwithstanding still-elevated probabilities about the likelihood of a European and broader global recession. In response to a special question this month our panelists attach around a 55% probability on the chances of a US and euro area recession in 2023 and a 60% probability for the UK.

## 4 ■ BLUE CHIP FINANCIAL FORECASTS ■ JUNE 1, 2023

## Second Quarter 2023

## Interest Rate Forecasts

## Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | -----Percent Per Annum -- Average For Quarter----- |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      | Avg. For<br>---Qtr.--- | ------(Q-Q % Change)-----               |                   |                   |                |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
|---------------------------------------------------|----------------------------------------------------|-----------------------|--------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|----------------------|------------------------|-----------------------------------------|-------------------|-------------------|----------------|----------------|-----|-----|-----|-------|---|------|---|-----|---|-----|---|-----|---|
|                                                   | -----Short-Term-----                               |                       |              |                        |                          |                          |                          | ---Intermediate-Term---  |                          |                           |                          | -----Long-Term-----  |                      |                           |                      |                        | A.<br>Fed's Adv<br>Fgn Econ<br>\$ Index | B.<br>Real<br>GDP | ------(SAAR)----- |                |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
|                                                   | 1                                                  | 2                     | 3            | 4                      | 5                        | 6                        | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |                        |                                         |                   | C.<br>GDP         | D.<br>Cons.    | E.<br>PCE      |     |     |     |       |   |      |   |     |   |     |   |     |   |
|                                                   | Federal<br>Funds<br>Rate                           | Prime<br>Bank<br>Rate | SOFR<br>Rate | Com.<br>Paper<br>1-Mo. | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo. | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Local<br>Bonds | Home<br>Mtg.<br>Rate |                        |                                         |                   | Price<br>Index    | Price<br>Index | Price<br>Index |     |     |     |       |   |      |   |     |   |     |   |     |   |
|                                                   |                                                    |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |                        |                                         |                   |                   |                |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Naroff Economic Advisors                          | 5.3                                                | H                     | 8.3          | 5.3                    | H                        | 5.3                      | H                        | 5.4                      | H                        | 5.5                       | H                        | 5.1                  | 4.4                  | 3.8                       | 3.8                  | 4.0                    | na                                      | na                | 4.1               | 6.4            | 115.6          | 2.0 | 4.7 | 4.8 | 4.3   |   |      |   |     |   |     |   |     |   |
| Scotiabank Group                                  | 5.3                                                | H                     | na           | na                     | na                       | 5.1                      | na                       | na                       | na                       | 4.2                       | 3.5                      | L                    | 3.6                  | 3.8                       | na                   | na                     | na                                      | na                | na                | na             | na             | 0.7 | 7.9 | H   | 5.2   | H | 3.3  |   |     |   |     |   |     |   |
| TS Lombard                                        | 5.3                                                | H                     | 8.4          | H                      | 5.2                      | 5.2                      | 5.4                      | 4.9                      | 4.5                      | 3.9                       | 3.8                      | 3.9                  | 4.6                  | 5.5                       | L                    | 3.8                    | 5.6                                     | L                 | 115.0             | -0.5           | 5.0            | 5.0 | 5.0 | 5.0 | H     |   |      |   |     |   |     |   |     |   |
| Bank of America                                   | 5.1                                                | na                    | na           | na                     | na                       | na                       | na                       | na                       | 4.0                      | L                         | 3.6                      | 3.5                  | L                    | 3.7                       | na                   | na                     | na                                      | na                | na                | na             | na             | 1.0 | 3.6 | 3.0 | 3.0   |   |      |   |     |   |     |   |     |   |
| Chan Economics                                    | 5.1                                                | 8.1                   | 5.0          | 5.1                    | 5.2                      | 5.2                      | 4.9                      | 4.4                      | 3.8                      | 3.8                       | 3.8                      | 3.8                  | 4.8                  | 5.8                       | 4.4                  | 6.3                    | 115.0                                   | 2.5               | H                 | 3.1            | 3.3            | 2.8 |     |     |       |   |      |   |     |   |     |   |     |   |
| Goldman Sachs & Co.                               | 5.1                                                | na                    | na           | na                     | 5.0                      | na                       | na                       | na                       | 4.5                      | 3.8                       | 3.8                      | 3.9                  | na                   | na                        | na                   | na                     | na                                      | na                | na                | na             | na             | 2.1 | 3.2 | 2.9 | 2.9   |   |      |   |     |   |     |   |     |   |
| ING                                               | 5.1                                                | na                    | na           | na                     | na                       | na                       | na                       | na                       | 4.6                      | H                         | 4.1                      | H                    | 4.0                  | H                         | 4.0                  | na                     | na                                      | na                | na                | na             | na             | 2.0 | na  | na  | na    |   |      |   |     |   |     |   |     |   |
| NatWest Markets                                   | 5.1                                                | 8.2                   | na           | 5.2                    | 5.4                      | H                        | 5.5                      | H                        | 5.6                      | H                         | 4.4                      | 3.7                  | 3.6                  | 3.8                       | 5.4                  | 6.4                    | 4.8                                     | H                 | 6.6               | na             | 0.7            | 3.2 | 2.8 | 2.8 |       |   |      |   |     |   |     |   |     |   |
| Nomura Securities, Inc.                           | 5.1                                                | 8.3                   | na           | na                     | na                       | na                       | na                       | na                       | 4.3                      | 3.8                       | 3.6                      | na                   | na                   | na                        | na                   | na                     | na                                      | na                | na                | na             | 0.6            | 3.3 | 2.7 | 2.4 |       |   |      |   |     |   |     |   |     |   |
| RDQ Economics                                     | 5.1                                                | 8.2                   | 5.0          | 5.1                    | 5.4                      | H                        | 5.5                      | H                        | 4.9                      | 4.2                       | 3.8                      | 3.6                  | 3.8                  | 4.7                       | 5.7                  | 4.2                    | 6.4                                     | 114.7             | 1.9               | 4.0            | 4.1            | 3.9 |     |     |       |   |      |   |     |   |     |   |     |   |
| The Lonski Group                                  | 5.1                                                | 8.2                   | 5.0          | 5.1                    | 5.2                      | 5.2                      | 4.7                      | 4.2                      | 3.9                      | 3.6                       | 3.8                      | 4.8                  | 5.6                  | 4.2                       | 6.4                  | 115.3                  | 1.1                                     | 3.2               | 3.2               | 3.2            |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Via Nova Investment Mgt.                          | 5.1                                                | 8.2                   | 5.1          | 5.1                    | 5.2                      | 5.2                      | 4.8                      | 4.5                      | 4.1                      | H                         | 4.0                      | H                    | 4.0                  | 5.2                       | 6.0                  | 4.5                    | 6.8                                     | H                 | 114.0             | 1.5            | 3.5            | 3.4 | 3.0 |     |       |   |      |   |     |   |     |   |     |   |
| Wells Fargo                                       | 5.1                                                | 8.3                   | 5.1          | 5.1                    | 5.1                      | 5.1                      | 4.8                      | 4.1                      | 3.6                      | 3.5                       | L                        | 3.8                  | 4.7                  | 5.7                       | 4.1                  | 6.3                    | na                                      | 1.9               | 2.3               | 2.6            | 2.3            |     |     |     |       |   |      |   |     |   |     |   |     |   |
| ACIMA Private Wealth                              | 5.0                                                | 8.0                   | L            | 5.0                    | 5.1                      | 5.1                      | 4.3                      | L                        | 4.1                      | L                         | 4.0                      | L                    | 3.7                  | 3.5                       | L                    | 3.6                    | L                                       | 5.8               | H                 | 7.0            | H              | 3.0 | L   | 6.0 | 125.0 | H | -2.0 | L | 1.0 | L | 0.8 | L | 1.0 | L |
| Action Economics                                  | 5.0                                                | 8.2                   | 5.1          | 5.0                    | 5.2                      | 5.1                      | 4.8                      | 4.0                      | L                        | 3.5                       | L                        | 3.5                  | L                    | 3.7                       | 4.5                  | 5.5                    | L                                       | 3.8               | 6.8               | H              | 115.5          | 1.0 | 3.5 | 2.9 | 2.8   |   |      |   |     |   |     |   |     |   |
| Bank of the West                                  | 5.0                                                | 8.2                   | 4.9          | L                      | 5.0                      | 5.2                      | 5.1                      | 4.7                      | 4.0                      | L                         | 3.5                      | L                    | 3.5                  | L                         | 3.7                  | 4.5                    | 5.6                                     | 4.1               | 6.5               | 114.4          | -0.2           | 3.2 | 3.4 | 3.3 |       |   |      |   |     |   |     |   |     |   |
| BMO Capital Markets                               | 5.0                                                | 8.2                   | 5.0          | na                     | 5.2                      | 5.2                      | 4.8                      | 4.1                      | 3.5                      | L                         | 3.5                      | L                    | 3.8                  | na                        | na                   | na                     | 6.4                                     | 114.1             | -0.5              | 3.2            | 3.2            | 3.1 |     |     |       |   |      |   |     |   |     |   |     |   |
| Chmura Economics & Analytics                      | 5.0                                                | 8.2                   | 5.0          | 5.1                    | 5.2                      | 5.2                      | 4.8                      | 4.1                      | 3.6                      | 3.5                       | L                        | 3.8                  | 4.6                  | na                        | na                   | 6.4                    | na                                      | 0.5               | 3.9               | 4.0            | 4.1            |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Comerica Bank                                     | 5.0                                                | 8.1                   | 5.0          | na                     | 5.2                      | 5.1                      | 4.7                      | 4.0                      | L                        | 3.6                       | 3.5                      | L                    | 3.8                  | 4.5                       | 5.6                  | na                     | 6.4                                     | na                | -0.5              | 3.4            | 3.6            | 3.6 |     |     |       |   |      |   |     |   |     |   |     |   |
| Daiwa Capital Markets America                     | 5.0                                                | 8.1                   | na           | na                     | 5.1                      | na                       | na                       | 4.3                      | 3.8                      | 3.7                       | 3.8                      | na                   | na                   | na                        | na                   | 6.5                    | 115.0                                   | 0.2               | 3.5               | 3.4            | 3.3            |     |     |     |       |   |      |   |     |   |     |   |     |   |
| DePrince & Assoc.                                 | 5.0                                                | 8.2                   | 5.0          | 5.0                    | 5.2                      | 5.1                      | 4.8                      | 4.0                      | L                        | 3.5                       | L                        | 3.5                  | L                    | 3.8                       | 4.6                  | 5.7                    | 3.8                                     | 6.4               | 115.1             | 0.3            | 3.3            | 3.3 | 3.1 |     |       |   |      |   |     |   |     |   |     |   |
| Economist Intelligence Unit                       | 5.0                                                | 8.0                   | L            | na                     | 5.0                      | 5.4                      | H                        | 5.1                      | 4.5                      | 4.3                       | 3.7                      | 3.6                  | 3.7                  | na                        | na                   | na                     | 6.5                                     | na                | -0.3              | na             | 2.4            | 1.9 |     |     |       |   |      |   |     |   |     |   |     |   |
| EY-Parthenon                                      | 5.0                                                | na                    | na           | na                     | 5.0                      | na                       | na                       | na                       | na                       | na                        | 3.6                      | na                   | na                   | na                        | na                   | na                     | na                                      | na                | na                | 0.0            | 2.6            | 3.1 | 2.8 |     |       |   |      |   |     |   |     |   |     |   |
| Fannie Mae                                        | 5.0                                                | 8.1                   | na           | na                     | 5.2                      | 5.2                      | 4.8                      | 4.1                      | 3.6                      | 3.6                       | 3.8                      | na                   | na                   | na                        | na                   | 6.5                    | na                                      | 0.8               | 3.6               | 3.5            | 2.8            |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Georgia State University                          | 5.0                                                | 8.1                   | na           | na                     | 4.9                      | L                        | 4.9                      | 4.8                      | 4.0                      | L                         | 3.9                      | 3.6                  | 3.8                  | 4.9                       | 6.0                  | na                     | 6.4                                     | na                | -1.0              | 3.2            | 2.9            | 3.1 |     |     |       |   |      |   |     |   |     |   |     |   |
| GLC Financial Economics                           | 5.0                                                | 8.1                   | 4.9          | L                      | 5.0                      | 5.1                      | 5.1                      | 5.0                      | 4.3                      | 4.0                       | 3.7                      | 3.9                  | 4.7                  | 5.7                       | 4.0                  | 6.4                    | 116.3                                   | 1.6               | 3.6               | 2.5            | 3.2            |     |     |     |       |   |      |   |     |   |     |   |     |   |
| KPMG                                              | 5.0                                                | 8.1                   | 5.0          | 4.8                    | L                        | 5.1                      | 5.1                      | 4.7                      | 4.0                      | L                         | 3.5                      | L                    | 3.5                  | L                         | 3.7                  | 4.5                    | 5.9                                     | na                | 6.4               | na             | 0.7            | 3.7 | 3.5 | 3.0 |       |   |      |   |     |   |     |   |     |   |
| Loomis, Sayles & Company                          | 5.0                                                | 8.2                   | 5.0          | 4.9                    | 5.2                      | 5.2                      | 4.8                      | 4.0                      | L                        | 3.6                       | 3.5                      | L                    | 3.7                  | 4.5                       | 5.5                  | L                      | 4.1                                     | 6.4               | 115.1             | 0.8            | 3.5            | 2.9 | 2.4 |     |       |   |      |   |     |   |     |   |     |   |
| MacroFin Analytics & Rutgers Bus School           | 5.0                                                | 8.1                   | 4.9          | L                      | 5.1                      | 5.4                      | H                        | 5.4                      | 5.2                      | 4.4                       | 3.9                      | 3.9                  | 4.1                  | H                         | 5.1                  | 5.8                    | 4.3                                     | 6.7               | 115.7             | -0.3           | 3.7            | 3.7 | 3.8 |     |       |   |      |   |     |   |     |   |     |   |
| Moody's Analytics                                 | 5.0                                                | 8.1                   | 5.0          | 5.0                    | 5.1                      | 5.1                      | 4.8                      | 4.3                      | 3.8                      | 3.7                       | 3.8                      | 4.6                  | 5.6                  | 3.5                       | 6.3                  | na                     | 1.6                                     | 2.3               | 2.2               | 2.0            |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Oxford Economics                                  | 5.0                                                | 8.2                   | 5.0          | na                     | 5.2                      | 5.1                      | 4.7                      | 4.0                      | L                        | 3.5                       | L                        | 3.5                  | L                    | 3.7                       | 4.0                  | L                      | na                                      | na                | 6.3               | 114.8          | 0.6            | 1.1 | 3.8 | 3.0 |       |   |      |   |     |   |     |   |     |   |
| PNC Financial Services Corp.                      | 5.0                                                | 8.2                   | 5.0          | na                     | 5.1                      | 5.1                      | 4.7                      | 4.0                      | L                        | 3.5                       | L                        | 3.5                  | L                    | 3.8                       | na                   | 5.7                    | 3.6                                     | 6.3               | 112.5             | L              | 0.5            | 2.9 | 3.8 | 2.9 |       |   |      |   |     |   |     |   |     |   |
| Regions Financial Corporation                     | 5.0                                                | 8.2                   | 5.0          | 5.1                    | 5.2                      | 5.1                      | 4.9                      | 4.1                      | 3.6                      | 3.6                       | 3.8                      | 5.1                  | 6.0                  | 4.3                       | 6.4                  | 114.3                  | 1.3                                     | 2.7               | 3.7               | 3.0            |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| S&P Global Market Intelligence                    | 5.0                                                | 8.1                   | 5.0          | na                     | 5.0                      | 4.9                      | 4.7                      | 4.1                      | 3.6                      | 3.5                       | L                        | 3.8                  | na                   | na                        | na                   | 6.4                    | na                                      | -0.1              | 3.4               | 3.2            | 3.8            |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Santander Capital Markets                         | 5.0                                                | 8.2                   | 5.0          | 5.0                    | 5.2                      | 5.2                      | 4.9                      | 4.2                      | 3.7                      | 3.6                       | 3.8                      | 4.7                  | 5.8                  | 3.6                       | 6.6                  | 115.0                  | 2.1                                     | 3.5               | 3.1               | 3.1            |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Societe Generale                                  | 5.0                                                | 8.2                   | 5.0          | na                     | 5.1                      | 5.1                      | 4.8                      | 4.1                      | 3.7                      | 3.5                       | L                        | 3.8                  | na                   | na                        | na                   | na                     | na                                      | 1.8               | 3.5               | 2.8            | 2.5            |     |     |     |       |   |      |   |     |   |     |   |     |   |
| The Northern Trust Company                        | 5.0                                                | 8.2                   | 5.0          | 5.0                    | 5.2                      | 5.3                      | 5.0                      | 4.3                      | 3.7                      | 3.7                       | 3.9                      | 4.7                  | 5.7                  | 4.2                       | 6.3                  | 115.0                  | 1.4                                     | 2.3               | 3.0               | 2.5            |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| J.P. Morgan Chase                                 | 4.9                                                | L                     | na           | na                     | na                       | na                       | na                       | na                       | 4.5                      | 4.0                       | 3.8                      | 3.9                  | na                   | na                        | na                   | na                     | na                                      | 1.5               | 2.3               | 3.0            | 3.0            |     |     |     |       |   |      |   |     |   |     |   |     |   |
| June Consensus                                    | 5.0                                                | 8.2                   | 5.0          | 5.1                    | 5.2                      | 5.2                      | 4.8                      | 4.2                      | 3.7                      | 3.6                       | 3.8                      | 4.8                  | 5.8                  | 4.0                       | 6.4                  | 115.4                  | 0.8                                     | 3.3               | 3.3               | 3.0            |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Top 10 Avg.                                       | 5.2                                                | 8.3                   | 5.1          | 5.1                    | 5.3                      | 5.3                      | 5.0                      | 4.5                      | 3.9                      | 3.8                       | 3.9                      | 5.1                  | 6.0                  | 4.3                       | 6.6                  | 116.4                  | 2.0                                     | 4.4               | 4.2               | 3.8            |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Bottom 10 Avg.                                    | 5.0                                                | 8.1                   | 5.0          | 5.0                    | 5.1                      | 5.0                      | 4.6                      | 4.0                      | 3.5                      | 3.5                       | 3.7                      | 4.5                  | 5.6                  | 3.7                       | 6.2                  | 114.4                  | -0.5                                    | 2.3               | 2.5               | 2.3            |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| May Consensus                                     | 5.0                                                | 8.2                   | 5.0          | 5.0                    | 5.1                      | 5.1                      | 4.8                      | 4.2                      | 3.7                      | 3.6                       | 3.8                      | 4.7                  | 5.8                  | 4.0                       | 6.4                  | 115.3                  | 0.2                                     | 3.2               | 3.4               | 3.0            |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Number of Forecasts Changed From A Month Ago:     |                                                    |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |                        |                                         |                   |                   |                |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Down                                              | 3                                                  | 7                     | 2            | 7                      | 2                        | 4                        | 7                        | 12                       | 15                       | 15                        | 13                       | 8                    | 9                    | 4                         | 4                    | 4                      | 4                                       | 10                | 20                | 19             |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Same                                              | 30                                                 | 21                    | 19           | 11                     | 16                       | 12                       | 8                        | 12                       | 11                       | 11                        | 11                       | 7                    | 6                    | 9                         | 15                   | 9                      | 3                                       | 14                | 8                 | 7              |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Up                                                | 5                                                  | 4                     | 5            | 4                      | 16                       | 14                       | 15                       | 13                       | 11                       | 12                        | 12                       | 8                    | 7                    | 7                         | 11                   | 7                      | 31                                      | 12                | 9                 | 10             |                |     |     |     |       |   |      |   |     |   |     |   |     |   |
| Diffusion Index                                   | 53%                                                | 45%                   | 56%          | 43%                    | 71%                      | 67%                      | 63%                      | 51%                      | 45%                      | 46%                       | 49%                      | 50%                  | 45%                  | 58%                       | 62%                  | 58%                    | 86%                                     | 53%               | 35%               | 38%            |                |     |     |     |       |   |      |   |     |   |     |   |     |   |

## Third Quarter 2023

## Interest Rate Forecasts

## Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | -----Percent Per Annum -- Average For Quarter----- |                       |              |                        |                          |                             |                          |                          |                          |                           |                          |                      |                      |                           |                      | Avg. For<br>--Qtr.--<br>A.<br>Fed's Adv<br>Fgn Econ<br>\$ Index | ----- (Q-Q % Change) -----<br>----- (SAAR) ----- |                             |                               |                             |       |      |       |      |     |     |     |     |   |       |   |      |      |   |      |   |      |   |
|---------------------------------------------------|----------------------------------------------------|-----------------------|--------------|------------------------|--------------------------|-----------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|----------------------|-----------------------------------------------------------------|--------------------------------------------------|-----------------------------|-------------------------------|-----------------------------|-------|------|-------|------|-----|-----|-----|-----|---|-------|---|------|------|---|------|---|------|---|
|                                                   | -----Short-Term-----                               |                       |              |                        |                          | -----Intermediate-Term----- |                          |                          |                          |                           | -----Long-Term-----      |                      |                      |                           |                      |                                                                 | B.<br>Real<br>GDP                                | C.<br>GDP<br>Price<br>Index | D.<br>Cons.<br>Price<br>Index | E.<br>PCE<br>Price<br>Index |       |      |       |      |     |     |     |     |   |       |   |      |      |   |      |   |      |   |
|                                                   | 1                                                  | 2                     | 3            | 4                      | 5                        | 6                           | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |                                                                 |                                                  |                             |                               |                             |       |      |       |      |     |     |     |     |   |       |   |      |      |   |      |   |      |   |
|                                                   | Federal<br>Funds<br>Rate                           | Prime<br>Bank<br>Rate | SOFR<br>Rate | Com.<br>Paper<br>1-Mo. | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo.    | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Local<br>Bonds | Home<br>Mtg.<br>Rate |                                                                 |                                                  |                             |                               |                             |       |      |       |      |     |     |     |     |   |       |   |      |      |   |      |   |      |   |
|                                                   | 1                                                  | 2                     | 3            | 4                      | 5                        | 6                           | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |                                                                 |                                                  |                             |                               |                             |       |      |       |      |     |     |     |     |   |       |   |      |      |   |      |   |      |   |
| RDQ Economics                                     | 5.4                                                | H                     | 8.5          | H                      | 5.4                      | H                           | 5.6                      | H                        | 5.7                      | H                         | 4.9                      | 4.1                  | 3.9                  | 3.8                       | 3.9                  | 5.1                                                             | 6.2                                              | 4.3                         | 6.5                           | 111.8                       | 1.6   | H    | 3.7   | 3.9  | 3.5 |     |     |     |   |       |   |      |      |   |      |   |      |   |
| The Lonski Group                                  | 5.4                                                | H                     | 8.5          | H                      | 5.3                      | H                           | 5.5                      | H                        | 5.5                      | H                         | 5.0                      | 4.6                  | 4.1                  | 3.6                       | 3.8                  | 4.9                                                             | 5.7                                              | 4.4                         | 6.4                           | 116.4                       | -0.2  |      | 2.8   | 2.9  | 3.1 |     |     |     |   |       |   |      |      |   |      |   |      |   |
| Naroff Economic Advisors                          | 5.3                                                |                       | 8.3          |                        | 5.3                      |                             | 5.4                      |                          | 5.4                      |                           | 5.1                      | 4.4                  | 3.9                  | 3.8                       | 4.0                  | na                                                              | na                                               | 4.1                         | 6.4                           | 115.0                       | -0.3  |      | 4.4   | H    | 4.6 | 4.1 | H   |     |   |       |   |      |      |   |      |   |      |   |
| Scotiabank Group                                  | 5.3                                                |                       | na           |                        | na                       |                             | na                       |                          | na                       |                           | na                       | 3.8                  | 3.5                  | 3.6                       | 3.9                  | na                                                              | na                                               | na                          | na                            | na                          | -0.3  |      | 1.7   | 4.3  | 3.4 |     |     |     |   |       |   |      |      |   |      |   |      |   |
| Via Nova Investment Mgt.                          | 5.3                                                |                       | 8.5          | H                      | 5.3                      | H                           | 5.4                      | H                        | 5.3                      | H                         | 5.4                      | 4.9                  | 4.9                  | H                         | 4.5                  | H                                                               | 4.4                                              | H                           | 7.1                           | H                           | 113.0 | 1.5  |       | 3.0  | 2.9 | 2.5 |     |     |   |       |   |      |      |   |      |   |      |   |
| Daiwa Capital Markets America                     | 5.2                                                |                       | 8.4          |                        | na                       |                             | na                       |                          | na                       |                           | na                       | 4.6                  | 4.0                  | 3.9                       | 4.0                  | na                                                              | na                                               | na                          | 6.6                           | 115.0                       | -1.3  |      | 3.2   | 3.3  | 3.2 |     |     |     |   |       |   |      |      |   |      |   |      |   |
| DePrince & Assoc.                                 | 5.2                                                |                       | 8.4          |                        | 5.2                      |                             | 5.1                      |                          | 5.4                      |                           | 5.2                      | 4.9                  | 4.1                  | 3.5                       | 3.5                  | 3.8                                                             | 4.8                                              | 5.8                         | 4.0                           | 6.2                         | 115.7 | 0.0  |       | 3.1  | 3.2 | 3.0 |     |     |   |       |   |      |      |   |      |   |      |   |
| GLC Financial Economics                           | 5.2                                                |                       | 8.3          |                        | 5.0                      |                             | 5.1                      |                          | 5.0                      |                           | 5.0                      | 4.8                  | 4.4                  | 4.2                       | 3.7                  | 3.9                                                             | 4.7                                              | 5.7                         | 4.2                           | 6.3                         | 115.6 | 0.9  |       | 2.8  | 2.9 | 2.7 |     |     |   |       |   |      |      |   |      |   |      |   |
| J.P. Morgan Chase                                 | 5.2                                                |                       | na           |                        | na                       |                             | na                       |                          | na                       |                           | na                       | 4.3                  | 3.9                  | 3.7                       | 3.9                  | na                                                              | na                                               | na                          | na                            | na                          | na    | 0.5  |       | 2.5  | 2.4 | 2.4 |     |     |   |       |   |      |      |   |      |   |      |   |
| Action Economics                                  | 5.1                                                |                       | 8.3          |                        | 5.5                      | H                           | 5.2                      |                          | 5.1                      |                           | 5.1                      | 4.9                  | 4.1                  | 3.6                       | 3.7                  | 3.9                                                             | 4.6                                              | 5.6                         | 3.9                           | 6.9                         | 114.1 | 0.6  |       | 2.1  | 2.4 | 2.1 |     |     |   |       |   |      |      |   |      |   |      |   |
| Bank of America                                   | 5.1                                                |                       | na           |                        | na                       |                             | na                       |                          | na                       |                           | na                       | 3.8                  | 3.5                  | 3.4                       | 3.6                  | na                                                              | na                                               | na                          | na                            | na                          | na    | -1.0 |       | 3.2  | 2.3 | 2.4 |     |     |   |       |   |      |      |   |      |   |      |   |
| Bank of the West                                  | 5.1                                                |                       | 8.3          |                        | 5.0                      |                             | 5.1                      |                          | 5.2                      |                           | 5.1                      | 4.8                  | 4.3                  | 3.9                       | 3.9                  | 4.0                                                             | 4.9                                              | 6.0                         | 4.6                           | 6.8                         | 113.5 | -1.1 |       | 2.9  | 2.9 | 3.0 |     |     |   |       |   |      |      |   |      |   |      |   |
| BMO Capital Markets                               | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | na                       |                          | 5.3                      |                           | 5.3                      | 4.9                  | 4.0                  | 3.5                       | 3.5                  | 3.8                                                             | na                                               | na                          | na                            | 6.4                         | 113.0 | -0.8 |       | 3.5  | 3.7 | 3.5 |     |     |   |       |   |      |      |   |      |   |      |   |
| Chan Economics                                    | 5.1                                                |                       | 8.1          |                        | 5.0                      |                             | 5.1                      |                          | 5.2                      |                           | 5.2                      | 4.9                  | 4.4                  | 3.8                       | 3.8                  | 3.8                                                             | 4.8                                              | 5.8                         | 4.4                           | 6.3                         | 114.9 | 0.3  |       | 2.9  | 3.1 | 2.6 |     |     |   |       |   |      |      |   |      |   |      |   |
| Chmura Economics & Analytics                      | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | 5.2                      |                          | 5.3                      |                           | 5.3                      | 5.0                  | 4.5                  | 4.1                       | 4.1                  | 4.1                                                             | 5.1                                              | na                          | na                            | 6.6                         | na    | -1.9 |       | 3.9  | 3.9 | 3.9 |     |     |   |       |   |      |      |   |      |   |      |   |
| Comerica Bank                                     | 5.1                                                |                       | 8.2          |                        | 5.1                      |                             | na                       |                          | 5.1                      |                           | 5.0                      | 4.6                  | 3.9                  | 3.6                       | 3.6                  | 3.9                                                             | 4.7                                              | 5.9                         | na                            | 6.4                         | na    | -1.0 |       | 3.1  | 3.4 | 3.4 |     |     |   |       |   |      |      |   |      |   |      |   |
| Economist Intelligence Unit                       | 5.1                                                |                       | 8.1          |                        | na                       |                             | 5.1                      |                          | 5.2                      |                           | 5.2                      | 4.3                  | 4.2                  | 3.6                       | 3.6                  | 3.7                                                             | na                                               | na                          | na                            | 6.5                         | na    | -1.2 |       | na   | 2.4 | 2.5 |     |     |   |       |   |      |      |   |      |   |      |   |
| EY-Parthenon                                      | 5.1                                                |                       | na           |                        | na                       |                             | na                       |                          | 4.9                      |                           | na                       | na                   | na                   | na                        | 2.9                  | na                                                              | na                                               | na                          | na                            | na                          | na    | -1.7 |       | 2.3  | 2.4 | 2.5 |     |     |   |       |   |      |      |   |      |   |      |   |
| Fannie Mae                                        | 5.1                                                |                       | 8.3          |                        | na                       |                             | na                       |                          | 5.3                      |                           | 5.2                      | 4.7                  | 4.1                  | 3.6                       | 3.7                  | 3.9                                                             | na                                               | na                          | na                            | 6.7                         | na    | -1.2 |       | 2.9  | 1.5 | 2.3 |     |     |   |       |   |      |      |   |      |   |      |   |
| Georgia State University                          | 5.1                                                |                       | 8.2          |                        | na                       |                             | na                       |                          | 4.9                      |                           | 4.7                      | 4.7                  | 3.8                  | 3.8                       | 3.5                  | 3.7                                                             | 4.8                                              | 5.9                         | na                            | 6.3                         | na    | -0.8 |       | 3.6  | 3.2 | 3.5 |     |     |   |       |   |      |      |   |      |   |      |   |
| Goldman Sachs & Co.                               | 5.1                                                |                       | na           |                        | na                       |                             | na                       |                          | 5.1                      |                           | na                       | na                   | 4.4                  | 3.9                       | 3.9                  | 4.0                                                             | na                                               | na                          | na                            | na                          | na    | 0.6  |       | 2.9  | 2.3 | 2.4 |     |     |   |       |   |      |      |   |      |   |      |   |
| ING                                               | 5.1                                                |                       | na           |                        | na                       |                             | na                       |                          | na                       |                           | na                       | 4.0                  | 3.6                  | 3.5                       | 3.7                  | na                                                              | na                                               | na                          | na                            | na                          | na    | -1.5 |       | na   | na  | na  |     |     |   |       |   |      |      |   |      |   |      |   |
| KPMG                                              | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | 4.9                      |                          | 5.2                      |                           | 5.1                      | 4.7                  | 4.0                  | 3.5                       | 3.5                  | 3.8                                                             | 4.5                                              | 5.8                         | na                            | 6.4                         | na    | 0.1  |       | 3.3  | 4.2 | 3.6 |     |     |   |       |   |      |      |   |      |   |      |   |
| Loomis, Sayles & Company                          | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | 5.0                      |                          | 5.3                      |                           | 5.3                      | 4.7                  | 3.6                  | 3.4                       | 3.0                  | 3.3                                                             | 4.0                                              | L                           | 5.0                           | L                           | 3.6   | 5.9  | 115.6 | -2.1 |     | 2.6 | 2.1 | 2.0 |   |       |   |      |      |   |      |   |      |   |
| MacroFin Analytics & Rutgers Bus School           | 5.1                                                |                       | 8.3          |                        | 5.0                      |                             | 5.1                      |                          | 5.4                      |                           | 5.5                      | 5.2                  | 4.3                  | 3.9                       | 3.9                  | 4.1                                                             | 5.2                                              | 5.9                         | 4.3                           | 6.7                         | 116.2 | 0.8  |       | 3.3  | 3.4 | 3.4 |     |     |   |       |   |      |      |   |      |   |      |   |
| Moody's Analytics                                 | 5.1                                                |                       | 8.2          |                        | 5.0                      |                             | 5.3                      |                          | 5.2                      |                           | 5.1                      | 4.7                  | 4.5                  | 4.1                       | 3.8                  | 4.2                                                             | 5.2                                              | 6.2                         | 4.2                           | 6.1                         | na    | 0.9  |       | 2.4  | 2.7 | 2.4 |     |     |   |       |   |      |      |   |      |   |      |   |
| NatWest Markets                                   | 5.1                                                |                       | 8.2          |                        | na                       |                             | 5.2                      |                          | 5.4                      |                           | 5.5                      | 5.6                  | H                    | 4.0                       | 3.5                  | 3.5                                                             | 3.7                                              | 5.3                         | 6.3                           | 4.7                         | 6.5   | na   | -2.5  |      | 2.6 | 2.8 | 2.7 |     |   |       |   |      |      |   |      |   |      |   |
| Nomura Securities, Inc.                           | 5.1                                                |                       | 8.3          |                        | na                       |                             | na                       |                          | na                       |                           | na                       | 4.1                  | 3.5                  | 3.0                       | na                   | na                                                              | na                                               | na                          | na                            | na                          | na    | -1.1 |       | 2.5  | 2.4 | 2.3 |     |     |   |       |   |      |      |   |      |   |      |   |
| Oxford Economics                                  | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | na                       |                          | 5.2                      |                           | 5.0                      | 4.7                  | 3.8                  | 3.4                       | 3.4                  | 3.7                                                             | 4.2                                              | na                          | na                            | 6.1                         | 114.6 | -5.1 | L     | 2.4  | 4.7 | H   | 3.8 |     |   |       |   |      |      |   |      |   |      |   |
| PNC Financial Services Corp.                      | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | na                       |                          | 5.1                      |                           | 5.0                      | 4.6                  | 4.0                  | 3.4                       | 3.4                  | 3.8                                                             | na                                               | 6.5                         | 4.4                           | 6.1                         | 112.5 | 0.2  |       | 2.6  | 3.1 | 2.7 |     |     |   |       |   |      |      |   |      |   |      |   |
| Regions Financial Corporation                     | 5.1                                                |                       | 8.3          |                        | 5.0                      |                             | 5.0                      |                          | 5.1                      |                           | 5.1                      | 4.7                  | 4.0                  | 3.5                       | 3.5                  | 3.8                                                             | 5.0                                              | 5.9                         | 4.2                           | 6.3                         | 114.0 | 0.8  |       | 2.9  | 3.3 | 3.1 |     |     |   |       |   |      |      |   |      |   |      |   |
| S&P Global Market Intelligence                    | 5.1                                                |                       | 8.2          |                        | 5.0                      |                             | na                       |                          | 5.0                      |                           | 4.9                      | 4.7                  | 4.0                  | 3.5                       | 3.5                  | 3.8                                                             | na                                               | na                          | na                            | 6.3                         | na    | 0.5  |       | 3.2  | 3.6 | 3.4 |     |     |   |       |   |      |      |   |      |   |      |   |
| Santander Capital Markets                         | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | 5.2                      |                          | 5.3                      |                           | 5.4                      | 5.2                  | 4.6                  | 4.0                       | 4.0                  | 4.2                                                             | 5.1                                              | 6.2                         | 4.0                           | 7.0                         | 115.5 | 1.5  |       | 3.4  | 4.0 | 3.7 |     |     |   |       |   |      |      |   |      |   |      |   |
| Societe Generale                                  | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | na                       |                          | 5.1                      |                           | 5.0                      | 4.7                  | 3.9                  | 3.6                       | 3.5                  | 3.8                                                             | na                                               | na                          | na                            | na                          | na    | 1.6  | H     | 3.5  | 3.2 | 2.8 |     |     |   |       |   |      |      |   |      |   |      |   |
| The Northern Trust Company                        | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | 5.2                      |                          | 5.2                      |                           | 5.2                      | 4.9                  | 4.1                  | 3.6                       | 3.5                  | 3.7                                                             | 4.6                                              | 5.8                         | 4.0                           | 5.9                         | 113.0 | 0.5  |       | 2.2  | 2.8 | 2.2 |     |     |   |       |   |      |      |   |      |   |      |   |
| Wells Fargo                                       | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | 5.1                      |                          | 5.0                      |                           | 4.3                      | 3.7                  | 3.3                  | 3.3                       | 3.3                  | 3.6                                                             | 4.5                                              | 5.5                         | 3.9                           | 5.9                         | na    | -0.2 |       | 2.1  | 2.2 | 2.1 |     |     |   |       |   |      |      |   |      |   |      |   |
| TS Lombard                                        | 4.3                                                |                       | 7.4          |                        | 4.2                      |                             | 4.3                      |                          | 4.3                      |                           | 4.1                      | 3.9                  | 3.7                  | 3.7                       | 3.5                  | 3.6                                                             | 4.4                                              | 5.2                         | 3.5                           | 5.3                         | 110.0 | L    | -1.5  |      | 4.0 | 4.0 | 4.0 |     |   |       |   |      |      |   |      |   |      |   |
| ACIMA Private Wealth                              | 4.1                                                | L                     | 7.1          | L                      | 4.1                      | L                           | 4.2                      | L                        | 4.2                      | L                         | 3.3                      | L                    | 3.0                  | L                         | 2.7                  | L                                                               | 2.5                                              | L                           | 2.5                           | L                           | 2.8   | L    | 4.8   | 6.8  | H   | 2.2 | L   | 5.0 | L | 118.0 | H | -2.0 | -1.5 | L | -1.0 | L | -1.1 | L |
| June Consensus                                    | 5.1                                                |                       | 8.2          |                        | 5.1                      |                             | 5.1                      |                          | 5.2                      |                           | 5.1                      | 4.7                  | 4.1                  | 3.7                       | 3.6                  | 3.8                                                             | 4.8                                              | 5.9                         | 4.1                           | 6.3                         | 114.4 | -0.4 |       | 2.8  | 3.0 | 2.8 |     |     |   |       |   |      |      |   |      |   |      |   |
| Top 10 Avg.                                       | 5.3                                                |                       | 8.4          |                        | 5.2                      |                             | 5.3                      |                          | 5.4                      |                           | 5.4                      | 5.1                  | 4.5                  | 4.1                       | 4.0                  | 4.1                                                             | 5.1                                              | 6.2                         | 4.4                           | 6.7                         | 115.8 | 1.1  |       | 3.7  | 4.1 | 3.7 |     |     |   |       |   |      |      |   |      |   |      |   |
| Bottom 10 Avg.                                    | 4.9                                                |                       | 8.0          |                        | 4.8                      |                             | 4.9                      |                          | 4.9                      |                           | 4.7                      | 4.4                  | 3.7                  | 3.4                       | 3.2                  | 3.5                                                             | 4.5                                              | 5.6                         | 3.7                           | 5.9                         | 113.0 | -2.1 |       | 1.9  | 1.9 | 1.9 |     |     |   |       |   |      |      |   |      |   |      |   |
| May Consensus                                     | 5.1                                                |                       | 8.3          |                        | 5.1                      |                             | 5.1                      |                          | 5.1                      |                           | 5.0                      | 4.7                  | 4.1                  | 3.7                       | 3.6                  | 3.8                                                             | 4.8                                              | 6.0                         | 4.1                           | 6.3                         | 114.6 | -0.3 |       | 2.9  | 3.0 | 2.8 |     |     |   |       |   |      |      |   |      |   |      |   |
| Number of Forecasts Changed From A Month Ago:     |                                                    |                       |              |                        |                          |                             |                          |                          |                          |                           |                          |                      |                      |                           |                      |                                                                 |                                                  |                             |                               |                             |       |      |       |      |     |     |     |     |   |       |   |      |      |   |      |   |      |   |
| Down                                              | 4                                                  |                       | 7            |                        | 4                        |                             | 6                        |                          | 3                        |                           | 4                        | 6                    | 10                   | 14                        | 12                   | 10                                                              | 4                                                | 5                           | 5                             | 7                           | 6     | 10   | 10    | 17   | 14  |     |     |     |   |       |   |      |      |   |      |   |      |   |
| Same                                              | 28                                                 |                       | 20           |                        | 17                       |                             | 10                       |                          | 16                       |                           | 12                       | 8                    | 15                   | 14                        | 17                   | 15                                                              | 11                                               | 10                          | 7                             | 10                          | 6     | 11   | 18    | 5    | 6   |     |     |     |   |       |   |      |      |   |      |   |      |   |
| Up                                                | 6                                                  |                       | 5            |                        | 5                        |                             | 6                        |                          | 15                       |                           | 14                       | 16                   | 12                   | 9                         | 9                    | 11                                                              | 8                                                | 7                           | 8                             | 13                          | 8     | 17   | 8     | 15   | 16  |     |     |     |   |       |   |      |      |   |      |   |      |   |
| Diffusion Index                                   | 53%                                                |                       | 47%          |                        | 52%                      |                             | 50%                      |                          | 68%                      |                           | 67%                      | 67%                  | 53%                  | 43%                       | 46%                  | 51%                                                             | 59%                                              | 55%                         | 58%                           | 60%                         | 55%   | 59%  | 47%   | 47%  | 53% |     |     |     |   |       |   |      |      |   |      |   |      |   |

## Fourth Quarter 2023

## Interest Rate Forecasts

## Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | Percent Per Annum -- Average For Quarter-- |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                                         | Avg. For<br>--Qtr.--<br>Fed's Adv<br>Fgn Econ<br>\$ Index | ------(Q-Q % Change)-----<br>------(SAAR)----- |                             |                               |                             |                      |      |      |     |     |     |     |     |
|---------------------------------------------------|--------------------------------------------|-----------------------|--------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|-----------------------------------------|-----------------------------------------------------------|------------------------------------------------|-----------------------------|-------------------------------|-----------------------------|----------------------|------|------|-----|-----|-----|-----|-----|
|                                                   | -----Short-Term-----                       |                       |              |                        |                          | ---Intermediate-Term---  |                          |                          |                          | -----Long-Term-----       |                          |                      |                      |                           | A.<br>Fed's Adv<br>Fgn Econ<br>\$ Index |                                                           | B.<br>Real<br>GDP                              | C.<br>GDP<br>Price<br>Index | D.<br>Cons.<br>Price<br>Index | E.<br>PCE<br>Price<br>Index |                      |      |      |     |     |     |     |     |
|                                                   | 1                                          | 2                     | 3            | 4                      | 5                        | 6                        | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        |                                         |                                                           |                                                |                             |                               |                             | 15                   |      |      |     |     |     |     |     |
|                                                   | Federal<br>Funds<br>Rate                   | Prime<br>Bank<br>Rate | SOFR<br>Rate | Com.<br>Paper<br>1-Mo. | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo. | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Local<br>Bonds |                                         |                                                           |                                                |                             |                               |                             | Home<br>Mtg.<br>Rate |      |      |     |     |     |     |     |
|                                                   |                                            |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                                         |                                                           |                                                |                             |                               |                             |                      |      |      |     |     |     |     |     |
| Daiwa Capital Markets America                     | 5.5                                        | H                     | 8.6          | H                      | na                       | na                       | 5.6                      | H                        | na                       | na                        | 4.4                      | 3.9                  | 3.8                  | 4.1                       | na                                      | na                                                        | na                                             | 6.5                         | 115.0                         | -0.5                        | 3.0                  | 3.0  | 2.9  |     |     |     |     |     |
| RDQ Economics                                     | 5.4                                        |                       | 8.5          |                        | 5.4                      | 5.5                      | H                        | 5.4                      | 5.4                      | H                         | 4.7                      | 4.0                  | 4.0                  | 4.0                       | 5.6                                     | H                                                         | 6.8                                            | H                           | 4.4                           | 111.1                       | 0.8                  | 3.6  | 3.8  | 3.5 |     |     |     |     |
| J.P. Morgan Chase                                 | 5.3                                        |                       | na           |                        | na                       | na                       |                          | na                       | na                       |                           | 4.1                      | 3.7                  | 3.6                  | 3.9                       | na                                      | na                                                        | na                                             | na                          | na                            | na                          | -0.5                 | 2.3  | 2.2  | 2.3 |     |     |     |     |
| Naroff Economic Advisors                          | 5.3                                        |                       | 8.3          |                        | 5.3                      | 5.3                      |                          | 5.4                      | H                        | 5.1                       | H                        | 4.4                  | 3.9                  | 3.9                       | 4.0                                     | na                                                        | na                                             | 4.1                         | 6.4                           | 114.5                       | -3.5                 | L    | 4.2  | H   | 4.3 | H   | 3.8 |     |
| Scotiabank Group                                  | 5.3                                        |                       | na           |                        | na                       | na                       |                          | 4.9                      | na                       | na                        |                          | 3.5                  | 3.4                  | 3.6                       | 3.9                                     | na                                                        | na                                             | na                          | na                            | na                          | -0.4                 | 1.3  | L    | 3.3 |     | 3.2 |     |     |
| Via Nova Investment Mgt.                          | 5.3                                        |                       | 8.5          |                        | 5.3                      | 5.4                      |                          | 5.3                      | 5.4                      | H                         | 4.9                      | 4.9                  | H                    | 4.5                       | 4.4                                     | 4.3                                                       | 5.6                                            | H                           | 6.4                           | 4.8                         | H                    | 7.1  | H    |     | 1.5 | 2.5 | 2.4 | 2.3 |
| GLC Financial Economics                           | 5.2                                        |                       | 8.3          |                        | 4.9                      | 4.9                      |                          | 4.9                      | 4.7                      |                           | 4.5                      | 4.2                  | 4.1                  | 3.6                       | 3.9                                     | 4.8                                                       | 6.0                                            | 4.2                         | 6.2                           | 115.3                       | 1.1                  | 2.6  | 2.7  |     | 2.6 |     |     |     |
| The Lonski Group                                  | 5.2                                        |                       | 8.3          |                        | 5.2                      | 5.2                      |                          | 5.2                      | 4.7                      |                           | 4.2                      | 3.8                  | 3.5                  | 3.7                       | 4.8                                     | 5.6                                                       | 4.3                                            | 6.3                         | 117.6                         | H                           | 0.1                  | 2.5  | 2.9  |     | 2.7 |     |     |     |
| Action Economics                                  | 5.1                                        |                       | 8.3          |                        | 5.5                      | H                        | 5.2                      |                          | 5.1                      | 5.1                       |                          | 4.9                  | 4.1                  | 3.7                       | 3.7                                     | 3.9                                                       | 4.6                                            | 5.6                         | 4.0                           | 6.9                         | 114.4                | 1.0  | 2.2  | 2.5 |     | 2.1 |     |     |
| Bank of America                                   | 5.1                                        |                       | na           |                        | na                       | na                       |                          | na                       | na                       |                           | 3.5                      | 3.4                  | 3.3                  | 3.4                       | na                                      | na                                                        | na                                             | na                          | na                            | na                          | -2.0                 | 2.9  | 2.3  |     | 1.8 |     |     |     |
| Bank of the West                                  | 5.1                                        |                       | 8.3          |                        | 5.0                      | 5.1                      |                          | 5.2                      | 5.1                      |                           | 4.7                      | 4.3                  | 3.9                  | 3.9                       | 4.0                                     | 4.9                                                       | 6.1                                            | 4.8                         | H                             | 6.8                         | 111.8                | 0.3  | 2.6  | 2.7 |     | 2.6 |     |     |
| BMO Capital Markets                               | 5.1                                        |                       | 8.3          |                        | 5.1                      | na                       |                          | 5.3                      | 5.3                      |                           | 4.8                      | 3.9                  | 3.5                  | 3.4                       | 3.7                                     | na                                                        | na                                             | na                          | 6.3                           | 111.7                       | 0.8                  | 2.4  | 2.7  |     | 2.5 |     |     |     |
| Chmura Economics & Analytics                      | 5.1                                        |                       | 8.3          |                        | 5.1                      | 5.2                      |                          | 5.2                      | 5.3                      |                           | 5.0                      | 4.8                  | 4.6                  | H                         | 4.7                                     | H                                                         | 4.5                                            | 5.5                         | na                            | na                          | 6.6                  | na   | -1.8 | 3.5 | 3.6 | 3.8 | H   |     |
| Economist Intelligence Unit                       | 5.1                                        |                       | 8.1          |                        | na                       | 5.1                      |                          | 5.2                      | 5.2                      |                           | 4.1                      | 4.1                  | 3.5                  | 3.5                       | 3.6                                     | na                                                        | na                                             | na                          | 6.3                           | na                          | 0.7                  | na   | 1.7  |     | 1.2 |     |     |     |
| EY-Parthenon                                      | 5.1                                        |                       | na           |                        | na                       | na                       |                          | 4.8                      | na                       | na                        |                          | na                   | na                   | 2.9                       | na                                      | na                                                        | na                                             | na                          | na                            | na                          | na                   | 0.5  | 2.0  | 2.3 |     | 2.2 |     |     |
| Goldman Sachs & Co.                               | 5.1                                        |                       | na           |                        | na                       | na                       |                          | 5.1                      | na                       | na                        |                          | 4.5                  | 4.0                  | 3.9                       | 4.0                                     | na                                                        | na                                             | na                          | na                            | na                          | na                   | 0.9  | 3.6  | 3.5 |     | 2.9 |     |     |
| KPMG                                              | 5.1                                        |                       | 8.3          |                        | 5.1                      | 4.8                      |                          | 5.1                      | 4.9                      |                           | 4.5                      | 3.9                  | 3.4                  | 3.4                       | 3.8                                     | 4.4                                                       | 5.7                                            | na                          | 6.1                           | na                          | -0.3                 | 3.1  | 2.8  |     | 2.9 |     |     |     |
| Moody's Analytics                                 | 5.1                                        |                       | 8.3          |                        | 5.0                      | 5.3                      |                          | 5.0                      | 4.9                      |                           | 4.5                      | 4.3                  | 4.1                  | 3.9                       | 4.3                                     | 5.4                                                       | 6.3                                            | 4.4                         | 6.0                           | na                          | 1.1                  | 2.6  | 3.0  |     | 2.7 |     |     |     |
| Nomura Securities, Inc.                           | 5.1                                        |                       | 8.3          |                        | na                       | na                       |                          | na                       | na                       |                           | 3.9                      | 3.3                  | 2.9                  | na                        | na                                      | na                                                        | na                                             | na                          | na                            | na                          | na                   | -1.2 | 2.3  | 2.1 |     | 2.2 |     |     |
| Oxford Economics                                  | 5.1                                        |                       | 8.3          |                        | 5.1                      | na                       |                          | 5.2                      | 5.0                      |                           | 4.6                      | 3.7                  | 3.3                  | 3.3                       | 3.7                                     | 4.2                                                       | na                                             | na                          | 5.8                           | 114.4                       | -0.6                 | 2.3  | 3.4  |     | 2.9 |     |     |     |
| PNC Financial Services Corp.                      | 5.1                                        |                       | 8.3          |                        | 5.1                      | na                       |                          | 5.0                      | 5.0                      |                           | 4.5                      | 3.8                  | 3.4                  | 3.4                       | 3.8                                     | na                                                        | 6.6                                            | 4.7                         | 6.0                           | 112.7                       | -0.5                 | 2.1  | 2.1  |     | 2.0 |     |     |     |
| Regions Financial Corporation                     | 5.1                                        |                       | 8.3          |                        | 4.9                      | 5.0                      |                          | 4.9                      | 4.9                      |                           | 4.6                      | 3.9                  | 3.5                  | 3.4                       | 3.7                                     | 4.9                                                       | 5.8                                            | 4.1                         | 6.2                           | 113.9                       | 1.0                  | 2.6  | 2.9  |     | 2.4 |     |     |     |
| S&P Global Market Intelligence                    | 5.1                                        |                       | 8.2          |                        | 5.0                      | na                       |                          | 4.9                      | 4.7                      |                           | 4.5                      | 3.9                  | 3.5                  | 3.5                       | 3.8                                     | na                                                        | na                                             | na                          | 6.2                           | na                          | 0.5                  | 2.9  | 2.7  |     | 3.2 |     |     |     |
| Santander Capital Markets                         | 5.1                                        |                       | 8.3          |                        | 5.1                      | 5.1                      |                          | 5.2                      | 5.3                      |                           | 5.1                      | H                    | 4.7                  | 4.2                       | 4.1                                     | 4.4                                                       | 5.3                                            | 6.4                         | 4.1                           | 7.0                         | 115.0                | 1.1  | 3.3  | 3.7 |     | 3.3 |     |     |
| Societe Generale                                  | 5.1                                        |                       | 8.3          |                        | 5.1                      | na                       |                          | 5.0                      | 4.8                      |                           | 4.3                      | 3.6                  | 3.5                  | 3.4                       | 3.7                                     | na                                                        | na                                             | na                          | na                            | na                          | na                   | 0.4  | 3.6  | 3.6 |     | 3.3 |     |     |
| The Northern Trust Company                        | 5.1                                        |                       | 8.3          |                        | 5.1                      | 5.2                      |                          | 5.0                      | 4.8                      |                           | 4.3                      | 3.8                  | 3.4                  | 3.3                       | 3.5                                     | 4.5                                                       | 5.7                                            | 4.0                         | 5.5                           | 112.0                       | 0.8                  | 2.3  | 2.5  |     | 2.2 |     |     |     |
| Wells Fargo                                       | 5.1                                        |                       | 8.3          |                        | 5.1                      | 5.1                      |                          | 4.8                      | 4.3                      |                           | 3.4                      | 3.2                  | 3.1                  | 3.0                       | 3.5                                     | 4.2                                                       | 5.2                                            | 3.6                         | 5.6                           | na                          | -2.8                 | 1.9  | 2.4  |     | 1.9 |     |     |     |
| Chan Economics                                    | 5.0                                        |                       | 8.0          |                        | 4.9                      | 5.0                      |                          | 5.1                      | 5.1                      |                           | 4.8                      | 4.3                  | 3.7                  | 3.7                       | 3.7                                     | 4.7                                                       | 5.7                                            | 4.3                         | 6.2                           | 114.7                       | -0.2                 | 2.7  | 2.9  |     | 2.4 |     |     |     |
| DePrince & Assoc.                                 | 5.0                                        |                       | 8.2          |                        | 5.0                      | 4.9                      |                          | 5.1                      | 5.0                      |                           | 4.7                      | 4.0                  | 3.5                  | 3.5                       | 3.9                                     | 4.8                                                       | 5.8                                            | 4.1                         | 6.1                           | 116.6                       | 0.3                  | 2.8  | 2.9  |     | 2.7 |     |     |     |
| Fannie Mae                                        | 5.0                                        |                       | 8.1          |                        | na                       | na                       |                          | 5.0                      | 4.7                      |                           | 4.3                      | 3.8                  | 3.5                  | 3.6                       | 3.9                                     | na                                                        | na                                             | na                          | 6.4                           | na                          | -1.7                 | 2.7  | 3.2  |     | 2.8 |     |     |     |
| Georgia State University                          | 5.0                                        |                       | 8.2          |                        | na                       | na                       |                          | 4.8                      | 4.5                      |                           | 4.5                      | 3.6                  | 3.6                  | 3.4                       | 3.6                                     | 4.8                                                       | 5.9                                            | na                          | 6.0                           | na                          | -0.2                 | 3.3  | 2.3  |     | 2.7 |     |     |     |
| MacroFin Analytics & Rutgers Bus School           | 5.0                                        |                       | 8.1          |                        | 5.0                      | 5.1                      |                          | 5.0                      | 5.1                      |                           | 5.0                      | 4.2                  | 3.8                  | 3.8                       | 4.0                                     | 5.1                                                       | 5.9                                            | 4.2                         | 6.6                           | 116.0                       | 1.2                  | 3.0  | 3.0  |     | 2.8 |     |     |     |
| Comerica Bank                                     | 4.8                                        |                       | 8.0          |                        | 4.8                      | na                       |                          | 4.8                      | 4.6                      |                           | 4.2                      | 3.6                  | 3.5                  | 3.6                       | 3.9                                     | 4.8                                                       | 6.0                                            | na                          | 6.2                           | na                          | -0.5                 | 2.7  | 2.9  |     | 2.9 |     |     |     |
| Loomis, Sayles & Company                          | 4.7                                        |                       | 7.8          |                        | 4.6                      | 4.5                      |                          | 4.7                      | 4.7                      |                           | 4.0                      | 2.8                  | 2.8                  | 2.6                       | 2.9                                     | 3.6                                                       | L                                              | 4.6                         | L                             | 3.2                         | 115.5                | -1.5 | 2.5  | 2.0 |     | 2.0 |     |     |
| NatWest Markets                                   | 4.6                                        |                       | 7.7          |                        | na                       | 4.7                      |                          | 4.9                      | 5.0                      |                           | 5.1                      | H                    | 3.9                  | 3.4                       | 3.4                                     | 3.7                                                       | 5.2                                            | 6.1                         | 4.7                           | 6.5                         | na                   | -1.5 | 2.0  | 1.8 |     | 2.3 |     |     |
| ING                                               | 4.1                                        |                       | na           |                        | na                       | na                       |                          | na                       | na                       |                           | 3.3                      | 3.2                  | 3.0                  | 3.4                       | na                                      | na                                                        | na                                             | na                          | na                            | na                          | na                   | -2.3 | na   | na  |     | na  |     |     |
| TS Lombard                                        | 3.0                                        |                       | 6.1          |                        | 2.9                      | 3.0                      |                          | 2.8                      | L                        | 3.0                       |                          | 3.1                  | 3.2                  | 3.4                       | 3.3                                     | 3.4                                                       | 4.1                                            | 5.0                         | 3.3                           | 5.1                         | 110.0                | L    | 0.5  | 3.5 | 3.5 |     | 3.5 |     |
| ACIMA Private Wealth                              | 2.8                                        | L                     | 5.8          | L                      | 2.8                      | L                        | 2.9                      | L                        | 2.8                      | L                         | 1.5                      | L                    | 1.1                  | L                         | 1.0                                     | L                                                         | 1.0                                            | L                           | 2.0                           | L                           | 2.8                  | L    | 4.5  | 6.0 | 2.0 | L   | 4.5 | L   |
| June Consensus                                    | 5.0                                        |                       | 8.1          |                        | 4.9                      | 4.9                      |                          | 4.9                      | 4.8                      |                           | 4.4                      | 3.9                  | 3.6                  | 3.5                       | 3.8                                     | 4.8                                                       | 5.9                                            | 4.1                         | 6.2                           | 114.0                       | -0.1                 | 2.7  | 2.8  |     | 2.6 |     |     |     |
| Top 10 Avg.                                       | 5.3                                        |                       | 8.4          |                        | 5.2                      | 5.3                      |                          | 5.3                      | 5.3                      |                           | 4.9                      | 4.5                  | 4.1                  | 4.0                       | 4.2                                     | 5.2                                                       | 6.3                                            | 4.5                         | 6.7                           | 115.5                       | 1.5                  | 3.5  | 3.6  |     | 3.3 |     |     |     |
| Bottom 10 Avg.                                    | 4.4                                        |                       | 7.6          |                        | 4.5                      | 4.5                      |                          | 4.4                      | 4.2                      |                           | 3.7                      | 3.1                  | 3.0                  | 3.0                       | 3.4                                     | 4.4                                                       | 5.5                                            | 3.7                         | 5.6                           | 112.4                       | -1.9                 | 2.0  | 2.0  |     | 1.8 |     |     |     |
| May Consensus                                     | 5.0                                        |                       | 8.1          |                        | 4.9                      | 4.9                      |                          | 4.9                      | 4.7                      |                           | 4.4                      | 3.9                  | 3.6                  | 3.5                       | 3.8                                     | 4.9                                                       | 5.9                                            | 4.0                         | 6.2                           | 114.1                       | 0.0                  | 2.7  | 2.7  |     | 2.5 |     |     |     |
| Number of Forecasts Changed From A Month Ago:     |                                            |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                                         |                                                           |                                                |                             |                               |                             |                      |      |      |     |     |     |     |     |
| Down                                              | 4                                          |                       | 5            |                        | 3                        | 6                        |                          | 4                        | 4                        |                           | 8                        | 8                    | 11                   | 12                        |                                         | 9                                                         | 4                                              | 4                           | 3                             | 10                          | 6                    | 17   | 9    | 11  |     | 9   |     |     |
| Same                                              | 28                                         |                       | 21           |                        | 17                       | 9                        |                          | 15                       | 12                       |                           | 11                       | 18                   | 18                   | 19                        |                                         | 20                                                        | 12                                             | 12                          | 9                             | 8                           | 7                    | 13   | 16   | 13  |     | 13  |     |     |
| Up                                                | 6                                          |                       | 6            |                        | 6                        | 7                        |                          | 15                       | 14                       |                           | 11                       | 11                   | 8                    | 7                         |                                         | 7                                                         | 7                                              | 6                           | 8                             | 12                          | 7                    | 8    | 11   | 13  |     | 14  |     |     |
| Diffusion Index                                   | 53%                                        |                       | 52%          |                        | 56%                      | 52%                      |                          | 66%                      | 67%                      |                           | 55%                      | 54%                  | 46%                  | 43%                       |                                         | 47%                                                       | 57%                                            | 55%                         | 63%                           | 53%                         | 53%                  | 38%  | 53%  | 53% |     | 57% |     |     |

## First Quarter 2024

## Interest Rate Forecasts

## Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | -----Percent Per Annum -- Average For Quarter----- |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |     | Avg. For<br>--Qtr.--<br>A.<br>Fed's Adv<br>Fgn Econ<br>\$ Index | ------(Q-Q % Change)-----<br>------(SAAR)----- |                         |                       |       |       |      |     |       |     |     |   |     |     |     |
|---------------------------------------------------|----------------------------------------------------|-----------------------|--------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|----------------------|-----|-----------------------------------------------------------------|------------------------------------------------|-------------------------|-----------------------|-------|-------|------|-----|-------|-----|-----|---|-----|-----|-----|
|                                                   | -----Short-Term-----                               |                       |              |                        |                          |                          | --Intermediate-Term--    |                          |                          |                           | -----Long-Term-----      |                      |                      |                           |                      |     |                                                                 |                                                |                         |                       |       |       |      |     |       |     |     |   |     |     |     |
|                                                   | 1                                                  | 2                     | 3            | 4                      | 5                        | 6                        | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |     |                                                                 |                                                |                         |                       |       |       |      |     |       |     |     |   |     |     |     |
|                                                   | Federal<br>Funds<br>Rate                           | Prime<br>Bank<br>Rate | SOFR<br>Rate | Com.<br>Paper<br>1-Mo. | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo. | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Local<br>Bonds | Home<br>Mtg.<br>Rate |     |                                                                 |                                                |                         |                       |       |       |      |     |       |     |     |   |     |     |     |
|                                                   |                                                    |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |     |                                                                 | B.                                             | C.                      | D.                    | E.    |       |      |     |       |     |     |   |     |     |     |
|                                                   |                                                    |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |     | Real<br>GDP                                                     | Price<br>Index                                 | Cons.<br>Price<br>Index | PCE<br>Price<br>Index |       |       |      |     |       |     |     |   |     |     |     |
| Daiwa Capital Markets America                     | 5.6                                                | H                     | 8.8          | H                      | na                       | na                       | 5.6                      | H                        | na                       | na                        | 4.3                      | 3.8                  | 3.8                  | 4.2                       | na                   | na  | na                                                              | 6.4                                            | 114.5                   | 0.9                   | 2.8   | 2.7   | 2.6  |     |       |     |     |   |     |     |     |
| J.P. Morgan Chase                                 | 5.3                                                |                       | na           |                        | na                       | na                       | na                       |                          | na                       | na                        | 3.9                      | 3.6                  | 3.4                  | 3.8                       | na                   | na  | na                                                              | na                                             | na                      | -0.5                  | 2.3   | 2.4   | 2.2  |     |       |     |     |   |     |     |     |
| Naroff Economic Advisors                          | 5.3                                                |                       | 8.3          |                        | 5.3                      | 5.3                      | H                        | 5.1                      | H                        | 4.4                       | 3.9                      | 3.9                  | 3.9                  | 4.1                       | na                   | na  | 4.0                                                             | 6.3                                            | 114.0                   | 0.9                   | 4.0   | H     | 4.0  | H   | 3.5   |     |     |   |     |     |     |
| RDQ Economics                                     | 5.2                                                |                       | 8.3          |                        | 5.3                      | 5.3                      | H                        | 5.1                      |                          | 5.0                       | 4.4                      | 3.9                  | 4.0                  | 4.0                       | 4.0                  | 5.8 | H                                                               | 7.1                                            | H                       | 4.4                   | 6.5   | 110.2 | -1.1 | L   | 3.5   | 3.6 | 3.3 |   |     |     |     |
| Action Economics                                  | 5.1                                                |                       | 8.3          |                        | 5.5                      | H                        | 5.2                      |                          | 5.1                      | 5.0                       | 4.8                      | 4.1                  | 3.6                  | 3.6                       | 3.9                  | 4.6 | 5.6                                                             | 3.9                                            | 6.9                     | 114.5                 | 1.6   | 2.3   | 2.4  | 2.0 |       |     |     |   |     |     |     |
| Chmura Economics & Analytics                      | 5.1                                                |                       | 8.3          |                        | 5.1                      | 5.2                      | 5.2                      | 5.3                      | H                        | 5.1                       | H                        | 5.1                  | H                    | 5.1                       | H                    | 5.8 | H                                                               | na                                             | na                      | 6.7                   | na    | 1.8   | 3.4  | 3.5 | 3.6   | H   |     |   |     |     |     |
| Economist Intelligence Unit                       | 5.1                                                |                       | 8.1          |                        | na                       | 5.1                      | 5.1                      | 5.1                      |                          | 4.0                       | 4.0                      | 3.5                  | 3.4                  | 3.5                       | na                   | na  | na                                                              | na                                             | 6.0                     | na                    | 1.2   | na    | 2.4  | 2.0 |       |     |     |   |     |     |     |
| Goldman Sachs & Co.                               | 5.1                                                |                       | na           |                        | na                       | na                       | na                       | na                       |                          | 4.4                       | 4.0                      | 3.8                  | 3.9                  | na                        | na                   | na  | na                                                              | na                                             | na                      | na                    | 1.9   | 2.6   | 2.9  | 2.4 |       |     |     |   |     |     |     |
| KPMG                                              | 5.1                                                |                       | 8.2          |                        | 5.0                      | 4.7                      | 4.9                      | 4.7                      |                          | 4.3                       | 3.7                      | 3.3                  | 3.4                  | 3.8                       | 4.3                  | 5.6 | na                                                              | 5.9                                            | na                      | na                    | 0.8   | 2.6   | 1.7  | 2.2 |       |     |     |   |     |     |     |
| Regions Financial Corporation                     | 5.1                                                |                       | 8.3          |                        | 4.8                      | 4.8                      | 4.6                      | 4.8                      |                          | 4.4                       | 3.7                      | 3.4                  | 3.4                  | 3.6                       | 4.9                  | 5.8 | 4.0                                                             | 6.0                                            | 113.6                   | 1.0                   | 2.6   | 2.6   | 2.6  |     |       |     |     |   |     |     |     |
| S&P Global Market Intelligence                    | 5.1                                                |                       | 8.2          |                        | 5.0                      | na                       | 4.8                      | 4.5                      |                          | 4.3                       | 3.8                      | 3.4                  | 3.5                  | 3.9                       | na                   | na  | na                                                              | 6.1                                            | na                      | 1.2                   | 2.6   | 1.7   | 2.9  |     |       |     |     |   |     |     |     |
| Santander Capital Markets                         | 5.1                                                |                       | 8.3          |                        | 5.1                      | 5.1                      | 5.1                      | 5.0                      |                          | 4.7                       | 4.2                      | 4.1                  | 4.4                  | 5.4                       | 6.6                  | 4.1 | 6.9                                                             | 114.0                                          | 1.0                     | 3.1                   | 3.2   | 2.9   |      |     |       |     |     |   |     |     |     |
| Bank of the West                                  | 5.0                                                |                       | 8.2          |                        | 4.9                      | 5.0                      | 5.0                      | 4.9                      |                          | 4.7                       | 4.2                      | 3.9                  | 3.9                  | 4.0                       | 5.0                  | 6.1 | 4.7                                                             | 6.8                                            | 111.2                   | 1.2                   | 2.4   | 2.4   | 2.3  |     |       |     |     |   |     |     |     |
| BMO Capital Markets                               | 5.0                                                |                       | 8.2          |                        | 5.0                      | na                       | 5.2                      | 5.3                      | H                        | 4.8                       | 3.8                      | 3.5                  | 3.4                  | 3.7                       | na                   | na  | na                                                              | 6.3                                            | 110.8                   | 1.7                   | 1.9   | 2.0   | 1.8  |     |       |     |     |   |     |     |     |
| Via Nova Investment Mgt.                          | 5.0                                                |                       | 8.3          |                        | 5.1                      | 5.1                      | 5.0                      | 5.1                      |                          | 4.7                       | 4.8                      | 4.5                  | 4.5                  | 4.5                       | 5.7                  | 6.5 | 5.0                                                             | H                                              | 7.2                     | H                     | 110.0 | L     | 2.0  | 2.2 | 2.1   | 2.0 |     |   |     |     |     |
| Bank of America                                   | 4.9                                                |                       | na           |                        | na                       | na                       | na                       | na                       |                          | 3.3                       | 3.3                      | 3.3                  | 3.4                  | na                        | na                   | na  | na                                                              | na                                             | na                      | na                    | -0.5  | 3.1   | 2.8  | 2.1 |       |     |     |   |     |     |     |
| Moody's Analytics                                 | 4.9                                                |                       | 8.0          |                        | 4.8                      | 5.0                      | 4.7                      | 4.6                      |                          | 4.3                       | 4.2                      | 4.0                  | 3.9                  | 4.4                       | 5.5                  | 6.4 | 4.4                                                             | 5.8                                            | na                      | na                    | 1.7   | 2.4   | 2.5  | 2.3 |       |     |     |   |     |     |     |
| Nomura Securities, Inc.                           | 4.9                                                |                       | 8.0          |                        | na                       | na                       | na                       | na                       |                          | na                        | 3.2                      | 3.0                  | 2.9                  | na                        | na                   | na  | na                                                              | na                                             | na                      | na                    | -0.4  | 2.0   | 2.2  | 2.2 |       |     |     |   |     |     |     |
| Oxford Economics                                  | 4.9                                                |                       | 8.0          |                        | 4.9                      | na                       | 4.9                      | 4.7                      |                          | 4.3                       | 3.6                      | 3.1                  | 3.3                  | 3.6                       | 3.8                  | na  | na                                                              | 5.5                                            | 113.9                   | 1.4                   | 2.6   | 2.6   | 2.3  |     |       |     |     |   |     |     |     |
| PNC Financial Services Corp.                      | 4.9                                                |                       | 8.0          |                        | 4.9                      | na                       | 4.7                      | 4.7                      |                          | 4.2                       | 3.5                      | 3.3                  | 3.3                  | 3.8                       | na                   | 6.4 | 4.5                                                             | 5.8                                            | 113.1                   | -1.0                  | 1.2   | 1.0   | 1.0  | L   |       |     |     |   |     |     |     |
| Societe Generale                                  | 4.9                                                |                       | 8.1          |                        | 4.9                      | na                       | 4.6                      | 4.4                      |                          | 3.9                       | 3.4                      | 3.3                  | 3.3                  | 3.6                       | na                   | na  | na                                                              | na                                             | na                      | na                    | -0.2  | 1.8   | 2.2  | 3.0 |       |     |     |   |     |     |     |
| Chan Economics                                    | 4.8                                                |                       | 7.8          |                        | 4.7                      | 4.8                      | 4.9                      | 4.9                      |                          | 4.6                       | 4.1                      | 3.5                  | 3.5                  | 3.5                       | 4.5                  | 5.5 | 4.1                                                             | 6.0                                            | 114.2                   | -0.8                  | 2.6   | 2.8   | 2.3  |     |       |     |     |   |     |     |     |
| EY-Parthenon                                      | 4.8                                                |                       | na           |                        | na                       | na                       | 4.4                      | na                       |                          | na                        | na                       | na                   | na                   | 3.0                       | na                   | na  | na                                                              | na                                             | na                      | na                    | 1.5   | 2.0   | 2.3  | 2.2 |       |     |     |   |     |     |     |
| GLC Financial Economics                           | 4.8                                                |                       | 7.9          |                        | 4.6                      | 4.6                      | 4.5                      | 4.4                      |                          | 4.3                       | 4.0                      | 4.0                  | 3.6                  | 3.8                       | 4.7                  | 5.9 | 4.1                                                             | 6.0                                            | 114.6                   | 1.7                   | 2.3   | 2.4   | 2.3  |     |       |     |     |   |     |     |     |
| Scotiabank Group                                  | 4.8                                                |                       | na           |                        | na                       | na                       | 4.5                      | na                       |                          | na                        | 3.3                      | 3.4                  | 3.6                  | 3.9                       | na                   | na  | na                                                              | na                                             | na                      | na                    | 0.4   | 1.1   | L    | 0.6 | L     | 1.7 |     |   |     |     |     |
| DePrince & Assoc.                                 | 4.7                                                |                       | 7.8          |                        | 4.6                      | 4.6                      | 4.7                      | 4.6                      |                          | 4.4                       | 3.8                      | 3.4                  | 3.5                  | 3.9                       | 4.8                  | 5.7 | 4.1                                                             | 5.9                                            | 116.8                   | 0.9                   | 2.6   | 2.6   | 2.5  |     |       |     |     |   |     |     |     |
| The Lonski Group                                  | 4.7                                                |                       | 7.8          |                        | 4.7                      | 4.7                      | 4.7                      | 4.8                      |                          | 4.3                       | 3.9                      | 3.6                  | 3.4                  | 3.6                       | 4.9                  | 5.7 | 4.3                                                             | 6.3                                            | 118.7                   | H                     | 0.6   | 2.3   | 1.9  | 2.1 |       |     |     |   |     |     |     |
| Comerica Bank                                     | 4.6                                                |                       | 7.7          |                        | 4.6                      | na                       | 4.5                      | 4.3                      |                          | 3.8                       | 3.3                      | 3.5                  | 3.6                  | 3.9                       | 4.8                  | 5.8 | na                                                              | 5.9                                            | na                      | na                    | 0.7   | 2.4   | 2.2  | 2.2 |       |     |     |   |     |     |     |
| MacroFin Analytics & Rutgers Bus School           | 4.6                                                |                       | 7.8          |                        | 4.5                      | 4.7                      | 4.6                      | 4.6                      |                          | 4.7                       | 4.2                      | 3.8                  | 3.8                  | 4.0                       | 5.0                  | 5.8 | 4.2                                                             | 6.5                                            | 115.8                   | 1.4                   | 2.8   | 2.7   | 2.6  |     |       |     |     |   |     |     |     |
| The Northern Trust Company                        | 4.6                                                |                       | 7.8          |                        | 4.6                      | 4.7                      | 4.5                      | 4.4                      |                          | 4.0                       | 3.6                      | 3.3                  | 3.3                  | 3.5                       | 4.5                  | 5.7 | 4.1                                                             | 5.3                                            | 111.0                   | 1.0                   | 2.3   | 2.4   | 2.1  |     |       |     |     |   |     |     |     |
| Fannie Mae                                        | 4.5                                                |                       | 7.6          |                        | na                       | na                       | 4.4                      | 4.1                      |                          | 3.8                       | 3.6                      | 3.5                  | 3.6                  | 3.9                       | na                   | na  | na                                                              | 6.2                                            | na                      | na                    | -0.5  | 2.5   | 3.7  | 2.9 |       |     |     |   |     |     |     |
| Georgia State University                          | 4.2                                                |                       | 7.3          |                        | na                       | na                       | 4.0                      | 3.6                      |                          | 3.4                       | 3.1                      | 2.9                  | 3.0                  | 3.4                       | 4.1                  | 5.3 | na                                                              | 5.8                                            | na                      | na                    | 0.1   | 2.9   | 1.9  | 2.3 |       |     |     |   |     |     |     |
| Wells Fargo                                       | 4.1                                                |                       | 7.3          |                        | 4.1                      | 4.1                      | 3.8                      | 3.3                      |                          | 2.9                       | 2.9                      | 2.9                  | 3.0                  | 3.4                       | 4.2                  | 5.2 | 3.6                                                             | 5.5                                            | na                      | na                    | -1.1  | L     | 2.1  | 2.5 | 2.1   |     |     |   |     |     |     |
| Loomis, Sayles & Company                          | 3.9                                                |                       | 7.1          |                        | 3.9                      | 3.8                      | 3.9                      | 3.9                      |                          | 3.3                       | 2.0                      | 2.3                  | 2.5                  | 2.8                       | 3.5                  | 4.5 | 3.1                                                             | 5.3                                            | 115.4                   | 1.1                   | 2.4   | 3.0   | 2.4  |     |       |     |     |   |     |     |     |
| NatWest Markets                                   | 3.6                                                |                       | 6.7          |                        | na                       | 3.7                      | 3.9                      | 4.0                      |                          | 4.1                       | 3.4                      | 3.1                  | 3.3                  | 3.5                       | 3.2                  | L   | 3.4                                                             | L                                              | 3.6                     | 6.3                   | na    | 1.0   | 1.8  | 2.1 | 2.0   |     |     |   |     |     |     |
| ING                                               | 3.1                                                |                       | na           |                        | na                       | na                       | na                       | na                       |                          | na                        | 3.1                      | 3.1                  | 3.0                  | 3.4                       | na                   | na  | na                                                              | na                                             | na                      | na                    | -1.0  | na    | na   | na  |       |     |     |   |     |     |     |
| TS Lombard                                        | 2.8                                                |                       | 5.9          |                        | 2.7                      | 2.7                      | 3.0                      | 3.0                      |                          | 3.1                       | 3.2                      | 3.4                  | 3.4                  | 3.5                       | 4.3                  | 5.1 | 3.4                                                             | 5.2                                            | 115.0                   | 3.5                   | 3.0   | 3.0   | 3.0  |     |       |     |     |   |     |     |     |
| ACIMA Private Wealth                              | 1.0                                                | L                     | 4.0          | L                      | 1.0                      | L                        | 1.1                      | L                        | 1.0                      | L                         | 0.8                      | L                    | 0.7                  | L                         | 1.7                  | L   | 2.5                                                             | L                                              | 4.3                     | 5.7                   | 1.7   | L     | 3.7  | L   | 110.0 | L   | 4.0 | H | 1.8 | 2.0 | 2.2 |
| June Consensus                                    | 4.6                                                |                       | 7.8          |                        | 4.6                      | 4.5                      | 4.6                      | 4.4                      |                          | 4.1                       | 3.7                      | 3.5                  | 3.5                  | 3.8                       | 4.7                  | 5.7 | 4.0                                                             | 6.0                                            | 113.6                   | 0.8                   | 2.5   | 2.5   | 2.4  |     |       |     |     |   |     |     |     |
| Top 10 Avg.                                       | 5.2                                                |                       | 8.3          |                        | 5.1                      | 5.1                      | 5.2                      | 5.1                      |                          | 4.8                       | 4.4                      | 4.1                  | 4.1                  | 4.3                       | 5.3                  | 6.2 | 4.4                                                             | 6.7                                            | 115.4                   | 2.1                   | 3.1   | 3.3   | 3.0  |     |       |     |     |   |     |     |     |
| Bottom 10 Avg.                                    | 3.6                                                |                       | 6.9          |                        | 3.9                      | 3.9                      | 3.8                      | 3.6                      |                          | 3.3                       | 2.8                      | 2.8                  | 2.9                  | 3.3                       | 4.1                  | 5.2 | 3.6                                                             | 5.4                                            | 111.8                   | -0.7                  | 1.8   | 1.7   | 1.9  |     |       |     |     |   |     |     |     |
| May Consensus                                     | 4.7                                                |                       | 7.8          |                        | 4.6                      | 4.6                      | 4.5                      | 4.4                      |                          | 4.1                       | 3.7                      | 3.5                  | 3.5                  | 3.8                       | 4.7                  | 5.8 | 4.0                                                             | 6.0                                            | 113.4                   | 0.7                   | 2.5   | 2.4   | 2.4  |     |       |     |     |   |     |     |     |
| Number of Forecasts Changed From A Month Ago:     |                                                    |                       |              |                        |                          |                          |                          |                          |                          |                           |                          |                      |                      |                           |                      |     |                                                                 |                                                |                         |                       |       |       |      |     |       |     |     |   |     |     |     |
| Down                                              | 6                                                  |                       | 7            |                        | 4                        | 6                        | 6                        | 5                        |                          | 9                         | 7                        | 13                   | 10                   | 10                        | 5                    | 6   | 5                                                               | 8                                              | 5                       | 16                    | 11    | 8     | 7    |     |       |     |     |   |     |     |     |
| Same                                              | 26                                                 |                       | 19           |                        | 15                       | 12                       | 19                       | 14                       |                          | 10                        | 19                       | 19                   | 20                   | 18                        | 10                   | 9   | 9                                                               | 11                                             | 7                       | 15                    | 19    | 15    | 19   |     |       |     |     |   |     |     |     |
| Up                                                | 6                                                  |                       | 6            |                        | 7                        | 4                        | 9                        | 11                       |                          | 11                        | 11                       | 5                    | 8                    | 8                         | 8                    | 7   | 6                                                               | 11                                             | 8                       | 7                     | 6     | 14    | 10   |     |       |     |     |   |     |     |     |
| Diffusion Index                                   | 50%                                                |                       | 48%          |                        | 56%                      | 45%                      | 54%                      | 60%                      |                          | 53%                       | 55%                      | 39%                  | 47%                  | 47%                       | 57%                  | 52% | 53%                                                             | 55%                                            | 58%                     | 38%                   | 43%   | 58%   | 54%  |     |       |     |     |   |     |     |     |

Second Quarter 2024

Interest Rate Forecasts

Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | -----Percent Per Annum -- Average For Quarter----- |                       |              |                        |                          |                             |                          |                          |                          |                           |                          |                      |                      |                           |                      | Avg. For<br>--Qtr.--<br>A.<br>Fed's Adv<br>Fgn Econ<br>\$ Index | ----- (Q-Q % Change) -----<br>----- (SAAR) ----- |                             |                               |                             |       |     |     |     |     |     |
|---------------------------------------------------|----------------------------------------------------|-----------------------|--------------|------------------------|--------------------------|-----------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|----------------------|----------------------|---------------------------|----------------------|-----------------------------------------------------------------|--------------------------------------------------|-----------------------------|-------------------------------|-----------------------------|-------|-----|-----|-----|-----|-----|
|                                                   | -----Short-Term-----                               |                       |              |                        |                          | -----Intermediate-Term----- |                          |                          |                          |                           | -----Long-Term-----      |                      |                      |                           |                      |                                                                 | B.                                               | C.<br>GDP<br>Price<br>Index | D.<br>Cons.<br>Price<br>Index | E.<br>PCE<br>Price<br>Index |       |     |     |     |     |     |
|                                                   | 1                                                  | 2                     | 3            | 4                      | 5                        | 6                           | 7                        | 8                        | 9                        | 10                        | 11                       | 12                   | 13                   | 14                        | 15                   |                                                                 |                                                  |                             |                               |                             |       |     |     |     |     |     |
|                                                   | Federal<br>Funds<br>Rate                           | Prime<br>Bank<br>Rate | SOFR<br>Rate | Com.<br>Paper<br>1-Mo. | Treas.<br>Bills<br>3-Mo. | Treas.<br>Bills<br>6-Mo.    | Treas.<br>Bills<br>1-Yr. | Treas.<br>Notes<br>2-Yr. | Treas.<br>Notes<br>5-Yr. | Treas.<br>Notes<br>10-Yr. | Treas.<br>Bond<br>30-Yr. | Aaa<br>Corp.<br>Bond | Baa<br>Corp.<br>Bond | State &<br>Corp.<br>Bonds | Home<br>Mtg.<br>Rate |                                                                 |                                                  |                             |                               |                             |       |     |     |     |     |     |
|                                                   | H                                                  | H                     | H            | H                      | H                        | H                           | H                        | H                        | H                        | H                         | H                        | H                    | H                    | H                         | H                    |                                                                 |                                                  |                             |                               |                             |       |     |     |     |     |     |
| Daiwa Capital Markets America                     | 5.5                                                | H                     | 8.5          | H                      | na                       | na                          | 5.3                      | H                        | na                       | na                        | 4.1                      | 3.8                  | 3.7                  | 4.4                       | na                   | na                                                              | na                                               | 6.3                         | 114.0                         | 1.5                         | 2.7   | 2.6 | 2.5 |     |     |     |
| Economist Intelligence Unit                       | 5.1                                                |                       | 8.1          |                        | na                       | 5.1                         | H                        | 5.0                      | 4.9                      | 3.9                       | 3.9                      | 3.4                  | 3.2                  | 3.5                       | na                   | na                                                              | na                                               | 5.7                         | na                            | 1.7                         | na    | 2.1 | 1.3 |     |     |     |
| J.P. Morgan Chase                                 | 5.1                                                |                       | na           |                        | na                       | na                          | na                       | na                       | na                       | na                        | na                       | na                   | na                   | na                        | na                   | na                                                              | na                                               | na                          | na                            | 0.5                         | 2.3   | 1.8 | 1.6 |     |     |     |
| Santander Capital Markets                         | 5.1                                                |                       | 8.3          |                        | 5.1                      | H                           | 5.0                      | 4.9                      | 4.7                      | 4.5                       | 4.1                      | 4.0                  | 4.4                  | 5.4                       | 6.6                  | 4.1                                                             | 6.7                                              | 113.5                       | 0.9                           | 2.9                         | 2.9   | 2.6 |     |     |     |     |
| Action Economics                                  | 5.0                                                |                       | 8.2          |                        | 5.5                      | H                           | 5.1                      | H                        | 5.0                      | 4.8                       | 4.5                      | 4.0                  | 3.5                  | 3.6                       | 3.8                  | 4.5                                                             | 5.5                                              | 3.9                         | 6.8                           | 114.7                       | 2.0   | 1.5 | 2.3 | 2.0 |     |     |
| Chmura Economics & Analytics                      | 5.0                                                |                       | 8.1          |                        | 4.9                      | 5.1                         | H                        | 5.0                      | 5.1                      | H                         | 5.1                      | H                    | 5.2                  | H                         | 5.3                  | H                                                               | na                                               | na                          | 6.7                           | na                          | 2.1   | 3.7 | 3.6 | 3.6 | H   |     |
| Naroff Economic Advisors                          | 5.0                                                |                       | 8.0          |                        | 5.0                      | 5.1                         | H                        | 4.9                      | 4.9                      | 5.0                       | 4.4                      | 3.9                  | 3.9                  | 4.1                       | na                   | na                                                              | 4.0                                              | 6.1                         | 113.5                         | 2.1                         | 3.7   | 3.6 | 3.2 |     |     |     |
| Goldman Sachs & Co.                               | 4.9                                                |                       | na           |                        | na                       | na                          | 4.8                      | na                       | na                       | 4.2                       | 3.9                      | 3.8                  | 3.9                  | na                        | na                   | na                                                              | na                                               | na                          | na                            | 1.9                         | 2.4   | 2.3 | 2.2 |     |     |     |
| BMO Capital Markets                               | 4.8                                                |                       | 7.9          |                        | 4.8                      | na                          | 4.9                      | 5.0                      | 4.5                      | 3.6                       | 3.5                      | 3.3                  | 3.6                  | na                        | na                   | na                                                              | 6.2                                              | 110.1                       | 2.2                           | 2.1                         | 2.3   | 2.2 |     |     |     |     |
| Regions Financial Corporation                     | 4.8                                                |                       | 8.0          |                        | 4.5                      | 4.6                         | 4.3                      | 4.4                      | 4.3                      | 3.5                       | 3.4                      | 3.3                  | 3.6                  | 4.9                       | 5.8                  | 3.9                                                             | 5.9                                              | 113.2                       | 1.2                           | 2.2                         | 2.3   | 2.3 |     |     |     |     |
| Via Nova Investment Mgt.                          | 4.8                                                |                       | 8.0          |                        | 4.8                      | 4.9                         | 4.8                      | 4.9                      | 4.9                      | 4.9                       | 5.1                      | 4.6                  | 4.7                  | 5.8                       | 6.6                  | 5.1                                                             | H                                                | 7.3                         | H                             | 110.0                       | 2.5   | 2.1 | 2.1 | 2.1 |     |     |
| RDQ Economics                                     | 4.7                                                |                       | 7.8          |                        | 4.8                      | 4.8                         | 4.6                      | 4.5                      | 4.1                      | 3.7                       | 3.8                      | 3.9                  | 3.9                  | 5.8                       | 6.9                  | H                                                               | 4.3                                              | 6.3                         | 109.4                         | -1.8                        | L     | 3.2 | 3.4 | 3.2 |     |     |
| Bank of the West                                  | 4.6                                                |                       | 7.8          |                        | 4.5                      | 4.6                         | 4.6                      | 4.5                      | 4.3                      | 4.0                       | 3.8                      | 3.7                  | 3.8                  | 4.9                       | 6.0                  | 4.6                                                             | 6.6                                              | 111.2                       | 1.2                           | 2.3                         | 2.3   | 2.2 |     |     |     |     |
| Chan Economics                                    | 4.6                                                |                       | 7.6          |                        | 4.5                      | 4.6                         | 4.7                      | 4.7                      | 4.4                      | 3.9                       | 3.3                      | 3.3                  | 3.3                  | 4.3                       | 5.3                  | 3.9                                                             | 5.8                                              | 113.9                       | -0.2                          | 2.5                         | 2.7   | 2.2 |     |     |     |     |
| S&P Global Market Intelligence                    | 4.6                                                |                       | 7.8          |                        | 4.6                      | na                          | 4.4                      | 4.1                      | 3.9                      | 3.5                       | 3.3                      | 3.5                  | 3.9                  | na                        | na                   | na                                                              | 5.8                                              | na                          | 1.1                           | 2.7                         | 2.6   | 2.7 |     |     |     |     |
| Bank of America                                   | 4.4                                                |                       | na           |                        | na                       | na                          | na                       | na                       | na                       | 3.0                       | 3.1                      | 3.3                  | 3.5                  | na                        | na                   | na                                                              | na                                               | na                          | na                            | 1.0                         | 3.2   | 2.2 | 2.0 |     |     |     |
| GLC Financial Economics                           | 4.4                                                |                       | 7.6          |                        | 4.1                      | 4.2                         | 4.1                      | 4.1                      | 3.9                      | 3.9                       | 4.1                      | 3.5                  | 3.8                  | 4.5                       | 5.7                  | 4.0                                                             | 5.9                                              | 114.3                       | 1.7                           | 2.2                         | 2.3   | 2.2 |     |     |     |     |
| Moody's Analytics                                 | 4.4                                                |                       | 7.6          |                        | 4.3                      | 4.5                         | 4.2                      | 4.2                      | 4.2                      | 4.1                       | 4.0                      | 4.0                  | 4.4                  | 5.4                       | 6.4                  | 4.4                                                             | 5.7                                              | na                          | 2.1                           | 2.1                         | 2.4   | 2.3 |     |     |     |     |
| Nomura Securities, Inc.                           | 4.4                                                |                       | 7.5          |                        | na                       | na                          | na                       | na                       | na                       | 2.8                       | 2.8                      | 2.8                  | na                   | na                        | na                   | na                                                              | na                                               | na                          | na                            | 0.5                         | 1.3   | 1.4 | 1.5 |     |     |     |
| Oxford Economics                                  | 4.4                                                |                       | 7.5          |                        | 4.4                      | na                          | 4.2                      | 4.2                      | 4.0                      | 3.4                       | 3.0                      | 3.1                  | 3.5                  | 3.7                       | na                   | na                                                              | 5.3                                              | 113.2                       | 1.9                           | 2.8                         | 2.3   | 2.1 |     |     |     |     |
| Societe Generale                                  | 4.4                                                |                       | 7.5          |                        | 4.4                      | na                          | 4.1                      | 3.9                      | 3.4                      | 3.1                       | 2.8                      | 3.3                  | 3.6                  | na                        | na                   | na                                                              | na                                               | na                          | na                            | -1.1                        | 1.8   | 2.2 | 2.6 |     |     |     |
| EY-Parthenon                                      | 4.3                                                |                       | na           |                        | na                       | na                          | 4.0                      | na                       | na                       | na                        | na                       | na                   | 3.1                  | na                        | na                   | na                                                              | na                                               | na                          | na                            | 1.8                         | 1.8   | 1.7 | 1.9 |     |     |     |
| Scotiabank Group                                  | 4.3                                                |                       | na           |                        | na                       | na                          | 3.9                      | na                       | na                       | 3.2                       | 3.3                      | 3.6                  | 3.9                  | na                        | na                   | na                                                              | na                                               | na                          | na                            | 1.3                         | 5.5   | H   | 3.7 | H   | 2.2 |     |
| Comerica Bank                                     | 4.2                                                |                       | 7.3          |                        | 4.2                      | na                          | 4.0                      | 3.8                      | 3.3                      | 3.1                       | 3.3                      | 3.4                  | 3.7                  | 4.6                       | 5.6                  | na                                                              | 5.4                                              | na                          | 1.6                           | 2.2                         | 1.9   | 1.9 |     |     |     |     |
| DePrince & Assoc.                                 | 4.2                                                |                       | 7.3          |                        | 4.1                      | 4.2                         | 4.3                      | 4.2                      | 4.0                      | 3.5                       | 3.3                      | 3.5                  | 3.9                  | 4.8                       | 5.6                  | 4.1                                                             | 5.8                                              | 116.4                       | 1.5                           | 2.5                         | 2.5   | 2.4 |     |     |     |     |
| KPMG                                              | 4.2                                                |                       | 7.4          |                        | 4.2                      | 3.8                         | 4.1                      | 3.9                      | 3.6                      | 3.2                       | 3.1                      | 3.3                  | 3.8                  | 4.3                       | 5.5                  | na                                                              | 5.6                                              | na                          | 1.3                           | 2.4                         | 2.3   | 2.3 |     |     |     |     |
| The Lonski Group                                  | 4.2                                                |                       | 7.3          |                        | 4.2                      | 4.2                         | 4.2                      | 4.3                      | 4.0                      | 3.7                       | 3.5                      | 3.4                  | 3.6                  | 4.7                       | 5.7                  | 4.4                                                             | 6.3                                              | 119.9                       | 0.4                           | 2.2                         | 2.4   | 1.9 |     |     |     |     |
| MacroFin Analytics & Rutgers Bus School           | 4.1                                                |                       | 7.3          |                        | 4.0                      | 4.2                         | 4.3                      | 4.4                      | 4.4                      | 4.1                       | 3.8                      | 3.8                  | 4.0                  | 4.9                       | 5.7                  | 4.1                                                             | 6.4                                              | 115.6                       | 1.5                           | 2.6                         | 2.6   | 2.4 |     |     |     |     |
| The Northern Trust Company                        | 4.1                                                |                       | 7.3          |                        | 4.1                      | 4.2                         | 4.0                      | 3.8                      | 3.7                      | 3.4                       | 3.2                      | 3.3                  | 3.6                  | 4.5                       | 5.7                  | 4.1                                                             | 5.1                                              | 110.0                       | 1.2                           | 2.3                         | 2.2   | 2.1 |     |     |     |     |
| PNC Financial Services Corp.                      | 4.0                                                |                       | 7.1          |                        | 4.0                      | na                          | 3.8                      | 3.8                      | 3.6                      | 3.3                       | 3.3                      | 3.3                  | 3.8                  | na                        | 6.1                  | 4.4                                                             | 5.6                                              | 113.8                       | -0.8                          | 1.0                         | L     | 0.8 | L   | 0.8 | L   |     |
| Fannie Mae                                        | 3.9                                                |                       | 7.1          |                        | na                       | na                          | 3.8                      | 3.6                      | 3.5                      | 3.5                       | 3.4                      | 3.6                  | 3.9                  | na                        | na                   | na                                                              | 6.0                                              | na                          | 1.2                           | 2.3                         | 2.7   | 2.5 |     |     |     |     |
| Georgia State University                          | 3.6                                                |                       | 6.7          |                        | na                       | na                          | 3.3                      | 3.1                      | 2.9                      | 3.0                       | 2.7                      | 2.9                  | 3.4                  | 4.0                       | 5.1                  | na                                                              | 5.3                                              | na                          | 1.0                           | 2.6                         | 1.9   | 2.2 |     |     |     |     |
| Loomis, Sayles & Company                          | 3.4                                                |                       | 6.6          |                        | 3.4                      | 3.3                         | 3.4                      | 3.4                      | 2.9                      | 1.8                       | 2.3                      | 2.5                  | 2.8                  | 3.5                       | 4.5                  | 3.1                                                             | 5.2                                              | 115.3                       | 2.0                           | 2.4                         | 3.6   | 2.7 |     |     |     |     |
| Wells Fargo                                       | 3.1                                                |                       | 6.3          |                        | 3.1                      | 3.1                         | 2.8                      | 2.8                      | 2.8                      | 2.8                       | 2.9                      | 2.9                  | 3.4                  | 4.1                       | 5.1                  | 3.5                                                             | 5.3                                              | na                          | 2.9                           | 2.2                         | 2.4   | 2.2 |     |     |     |     |
| TS Lombard                                        | 3.0                                                |                       | 6.1          |                        | 2.9                      | 3.0                         | 3.1                      | 3.1                      | 3.2                      | 3.2                       | 3.4                      | 3.4                  | 3.5                  | 4.3                       | 5.1                  | 3.4                                                             | 5.2                                              | 120.0                       | H                             | 3.0                         | 2.5   | 2.5 | 2.5 |     |     |     |
| ING                                               | 2.9                                                |                       | na           |                        | na                       | na                          | na                       | na                       | na                       | 3.0                       | 3.0                      | 3.0                  | 3.4                  | na                        | na                   | na                                                              | na                                               | na                          | na                            | 1.4                         | na    | na  | na  |     |     |     |
| NatWest Markets                                   | 2.6                                                |                       | 5.7          |                        | na                       | 2.7                         | 2.9                      | 3.0                      | 3.1                      | 2.7                       | 2.8                      | 3.0                  | 3.2                  | 2.9                       | L                    | 3.1                                                             | L                                                | 6.0                         | na                            | 1.3                         | 1.7   | 0.8 | L   | 1.0 |     |     |
| ACIMA Private Wealth                              | 0.5                                                | L                     | 3.5          | L                      | 0.5                      | L                           | 0.6                      | L                        | 0.6                      | L                         | 0.7                      | L                    | 0.7                  | L                         | 4.0                  | 5.0                                                             | 1.5                                              | L                           | 3.3                           | L                           | 108.0 | L   | 3.3 | H   | 2.7 | 2.2 |
| June Consensus                                    | 4.2                                                |                       | 7.3          |                        | 4.2                      | 4.1                         | 4.1                      | 4.0                      | 3.8                      | 3.5                       | 3.4                      | 3.4                  | 3.8                  | 4.6                       | 5.6                  | 3.9                                                             | 5.9                                              | 113.5                       | 1.3                           | 2.5                         | 2.4   | 2.2 |     |     |     |     |
| Top 10 Avg.                                       | 5.0                                                |                       | 8.1          |                        | 4.9                      | 4.9                         | 4.9                      | 4.8                      | 4.6                      | 4.3                       | 4.2                      | 4.1                  | 4.3                  | 5.3                       | 6.2                  | 4.4                                                             | 6.6                                              | 115.8                       | 2.4                           | 3.3                         | 3.1   | 2.8 |     |     |     |     |
| Bottom 10 Avg.                                    | 3.1                                                |                       | 6.4          |                        | 3.4                      | 3.3                         | 3.2                      | 3.1                      | 2.9                      | 2.6                       | 2.6                      | 2.8                  | 3.2                  | 4.0                       | 5.0                  | 3.5                                                             | 5.1                                              | 111.2                       | 0.0                           | 1.8                         | 1.7   | 1.6 |     |     |     |     |
| May Consensus                                     | 4.2                                                |                       | 7.3          |                        | 4.1                      | 4.1                         | 4.1                      | 4.0                      | 3.8                      | 3.5                       | 3.4                      | 3.4                  | 3.7                  | 4.6                       | 5.6                  | 3.9                                                             | 5.8                                              | 113.1                       | 1.3                           | 2.3                         | 2.3   | 2.2 |     |     |     |     |
| Number of Forecasts Changed From A Month Ago:     |                                                    |                       |              |                        |                          |                             |                          |                          |                          |                           |                          |                      |                      |                           |                      |                                                                 |                                                  |                             |                               |                             |       |     |     |     |     |     |
| Down                                              | 4                                                  |                       | 4            |                        | 3                        | 4                           | 5                        | 6                        | 8                        | 8                         | 8                        | 8                    | 6                    | 2                         | 4                    | 3                                                               | 6                                                | 5                           | 17                            | 7                           | 9     | 5   |     |     |     |     |
| Same                                              | 26                                                 |                       | 20           |                        | 16                       | 12                          | 16                       | 13                       | 12                       | 19                        | 21                       | 20                   | 21                   | 13                        | 11                   | 11                                                              | 13                                               | 6                           | 16                            | 19                          | 17    | 22  |     |     |     |     |
| Up                                                | 8                                                  |                       | 8            |                        | 7                        | 6                           | 13                       | 11                       | 10                       | 9                         | 7                        | 9                    | 8                    | 8                         | 7                    | 6                                                               | 11                                               | 9                           | 5                             | 10                          | 11    | 9   |     |     |     |     |
| Diffusion Index                                   | 55%                                                |                       | 56%          |                        | 58%                      | 55%                         | 62%                      | 58%                      | 53%                      | 51%                       | 49%                      | 51%                  | 53%                  | 63%                       | 57%                  | 58%                                                             | 58%                                              | 60%                         | 34%                           | 54%                         | 53%   | 56% |     |     |     |     |

Third Quarter 2024

Interest Rate Forecasts

Key Assumptions

| Blue Chip<br>Financial Forecasts<br>Panel Members | Percent Per Annum -- Average For Quarter-- |       |       |       |        |                   |        |        |        |        |           |       |       |         |          | Avg. For  | (Q-Q % Change) |       |       |       |       |       |     |     |       |     |       |     |     |     |     |     |
|---------------------------------------------------|--------------------------------------------|-------|-------|-------|--------|-------------------|--------|--------|--------|--------|-----------|-------|-------|---------|----------|-----------|----------------|-------|-------|-------|-------|-------|-----|-----|-------|-----|-------|-----|-----|-----|-----|-----|
|                                                   | Short-Term                                 |       |       |       |        | Intermediate-Term |        |        |        |        | Long-Term |       |       |         |          | --Qtr--   | (SAAR)         |       |       |       |       |       |     |     |       |     |       |     |     |     |     |     |
|                                                   | 1                                          | 2     | 3     | 4     | 5      | 6                 | 7      | 8      | 9      | 10     | 11        | 12    | 13    | 14      | 15       | A.        | B.             | C.    | D.    | E.    |       |       |     |     |       |     |       |     |     |     |     |     |
|                                                   | Federal                                    | Prime | SOFR  | Com.  | Treas. | Treas.            | Treas. | Treas. | Treas. | Treas. | Treas.    | Aaa   | Baa   | State & | Home     | Fed's Adv |                | GDP   | Cons. | PCE   |       |       |     |     |       |     |       |     |     |     |     |     |
|                                                   | Funds                                      | Bank  | Rate  | Paper | Bills  | Bills             | Bills  | Notes  | Notes  | Notes  | Bond      | Corp. | Corp. | Local   | Mtg.     | Fgn Econ  | Real           | Price | Price | Price |       |       |     |     |       |     |       |     |     |     |     |     |
| Rate                                              | Rate                                       |       | 1-Mo. | 3-Mo. | 6-Mo.  | 1-Yr.             | 2-Yr.  | 5-Yr.  | 10-Yr. | 30-Yr. | Bond      | Bond  | Bonds | Rate    | \$ Index | GDP       | Index          | Index | Index |       |       |       |     |     |       |     |       |     |     |     |     |     |
| Daiwa Capital Markets America                     | 4.9                                        | H     | 8.0   | H     | na     | na                | 4.8    | H      | na     | na     | 3.9       | 3.7   | 3.7   | 4.4     | na       | na        | na             | 6.2   | 113.5 | 1.9   | 2.5   | 2.5   | 2.4 |     |       |     |       |     |     |     |     |     |
| Santander Capital Markets                         | 4.9                                        | H     | 8.0   | H     | 4.8    | 4.9               | H      | 4.8    | H      | 4.7    | 4.5       | 4.3   | 4.0   | 3.9     | 4.3      | 5.3       | 6.5            | 4.0   | 6.5   | 113.0 | 0.8   | L     | 2.7 | 2.7 | 2.3   |     |       |     |     |     |     |     |
| Action Economics                                  | 4.8                                        |       | 7.9   | 5.3   | H      | 4.8               |        | 4.7    |        | 4.5    | 4.3       | 3.8   | 3.5   | 3.5     | 3.8      | 4.5       | 5.5            | 3.8   | 6.8   | 114.9 | na    | na    | na  | na  | na    |     |       |     |     |     |     |     |
| J.P. Morgan Chase                                 | 4.8                                        |       | na    | na    | na     | na                | na     | na     | na     | na     | na        | na    | na    | na      | na       | na        | na             | na    | na    | na    | 2.3   | 2.3   | 2.7 | 2.5 |       |     |       |     |     |     |     |     |
| Economist Intelligence Unit                       | 4.7                                        |       | 7.7   |       | na     | 4.7               |        | 4.6    |        | 4.5    | 3.8       | 3.8   | 3.2   | 3.0     | 3.3      | na        | na             | na    | 5.5   | na    | 2.2   | na    | 2.5 | 1.7 |       |     |       |     |     |     |     |     |
| Goldman Sachs & Co.                               | 4.6                                        |       | na    | na    | na     | na                | 4.6    | na     | na     | 4.1    | 3.8       | 3.8   | 3.9   | na      | na       | na        | na             | na    | na    | na    | 1.9   | 2.1   | 1.9 | 1.9 |       |     |       |     |     |     |     |     |
| BMO Capital Markets                               | 4.5                                        |       | 7.7   |       | 4.5    | na                | 4.7    | 4.8    | H      | 4.3    | 3.5       | 3.4   | 3.3   | 3.5     | na       | na        | na             | na    | 6.2   | 109.4 | 2.5   | 1.8   | 2.0 | 1.8 |       |     |       |     |     |     |     |     |
| Chmura Economics & Analytics                      | 4.5                                        |       | 7.7   |       | 4.5    | 4.7               |        | 4.6    |        | 4.7    | 4.8       | H     | 4.9   | H       | 5.0      | H         | 5.1            | H     | 5.1   | H     | 6.0   | H     | na  | na  | 6.6   | na  | 3.0   | 3.2 | 3.4 | 3.4 |     |     |
| Naroff Economic Advisors                          | 4.5                                        |       | 7.5   |       | 4.5    | 4.6               |        | 4.4    |        | 4.5    | 4.6       |       | 4.4   |         | 3.8      |           | 3.9            |       | 4.1   | na    | na    | na    | 3.9 | 5.9 | 113.0 | 3.6 | H     | 3.3 | 3.1 | 2.9 |     |     |
| Via Nova Investment Mgt.                          | 4.5                                        |       | 7.8   |       | 4.6    | 4.6               |        | 4.5    |        | 4.6    | 4.7       |       | 4.8   | 5.0     | H        | 4.8       |                | 4.8   | 6.0   | H     | 6.8   | H     | 5.3 | H   | 7.5   | H   | 110.0 | 2.5 | 2.1 | 2.1 | 2.1 |     |
| Chan Economics                                    | 4.4                                        |       | 7.4   |       | 4.3    | 4.4               |        | 4.5    |        | 4.2    | 3.7       |       | 3.1   | 3.1     |          | 4.1       |                | 5.1   |       | 3.7   | 5.6   | 113.4 | 0.8 | L   | 2.3   | 2.5 | 2.0   |     |     |     |     |     |
| Regions Financial Corporation                     | 4.4                                        |       | 7.7   |       | 4.2    | 4.3               |        | 4.1    |        | 4.2    | 4.2       |       | 3.4   | 3.3     | 3.3      | 3.5       | 4.8            | 5.6   | 3.9   | 5.7   | 112.8 | 1.5   | 2.1 | 2.1 | 2.0   |     |       |     |     |     |     |     |
| Bank of the West                                  | 4.3                                        |       | 7.4   |       | 4.2    | 4.2               |        | 4.2    |        | 4.2    | 3.9       |       | 3.7   | 3.6     | 3.5      | 3.6       | 4.7            | 5.8   | 4.5   | 6.3   | 111.4 | 1.3   | 2.2 | 2.2 | 2.2   |     |       |     |     |     |     |     |
| GLC Financial Economics                           | 4.3                                        |       | 7.4   |       | 3.8    | 3.9               |        | 3.8    |        | 3.8    | 3.8       |       | 3.8   | 4.0     | 3.4      | 3.7       | 4.5            | 5.6   | 3.9   | 5.8   | 113.9 | 1.7   | 2.1 | 2.3 | 2.1   |     |       |     |     |     |     |     |
| RDQ Economics                                     | 4.2                                        |       | 7.3   |       | 4.2    | 4.3               |        | 4.1    |        | 4.0    | 3.8       |       | 3.6   | 3.7     | 3.8      | 3.7       | 5.6            | 6.4   | 4.1   | 6.1   | 109.1 | 1.1   | 3.0 | 3.2 | 3.1   |     |       |     |     |     |     |     |
| Moody's Analytics                                 | 4.1                                        |       | 7.2   |       | 4.0    | 4.1               |        | 3.9    |        | 3.9    | 3.9       |       | 3.9   | 3.9     | 3.9      | 4.3       | 5.4            | 6.3   | 4.3   | 5.6   | na    | 2.3   | 1.8 | 2.1 | 2.0   |     |       |     |     |     |     |     |
| S&P Global Market Intelligence                    | 4.1                                        |       | 7.3   |       | 4.1    | na                |        | 3.9    |        | 3.7    | 3.6       |       | 3.3   | 3.2     | 3.5      | 3.9       | na             | na    | na    | 5.7   | na    | 1.3   | 2.3 | 2.6 | 2.4   |     |       |     |     |     |     |     |
| The Lonski Group                                  | 4.0                                        |       | 7.1   |       | 3.9    | 4.0               |        | 3.9    |        | 4.0    | 3.8       |       | 3.5   | 3.4     | 3.3      | 3.6       | 4.6            | 5.6   | 4.1   | 6.2   | 121.1 | 1.4   | 2.0 | 2.2 | 1.7   |     |       |     |     |     |     |     |
| Bank of America                                   | 3.9                                        |       | na    |       | na     | na                |        | na     |        | na     | na        |       | na    | na      | na       | na        | na             | na    | na    | na    | na    | 1.5   | 3.4 | 2.4 | 2.4   |     |       |     |     |     |     |     |
| EY-Parthenon                                      | 3.9                                        |       | na    |       | na     | na                |        | 3.6    |        | na     | na        |       | na    | na      | 3.1      | na        | na             | na    | na    | na    | na    | 2.3   | 2.0 | 2.2 | 2.1   |     |       |     |     |     |     |     |
| Nomura Securities, Inc.                           | 3.9                                        |       | 7.0   |       | na     | na                |        | na     |        | na     | 2.5       |       | 2.7   | 2.8     | na       | na        | na             | na    | na    | na    | na    | 0.9   | 1.2 | 1.9 | 1.8   |     |       |     |     |     |     |     |
| Oxford Economics                                  | 3.9                                        |       | 7.0   |       | 3.9    | na                |        | 3.8    |        | 3.8    | 3.7       |       | 3.2   | 3.0     | 3.0      | 3.2       | 3.6            | na    | na    | 5.0   | 112.3 | 2.0   | 3.0 | 2.2 | 2.0   |     |       |     |     |     |     |     |
| Societe Generale                                  | 3.9                                        |       | 7.0   |       | 3.9    | na                |        | 3.6    |        | 3.4    | 3.1       |       | 3.0   | 2.7     | 3.2      | 3.5       | na             | na    | na    | na    | na    | 2.5   | 1.8 | 2.2 | 2.4   |     |       |     |     |     |     |     |
| DePrince & Assoc.                                 | 3.8                                        |       | 6.9   |       | 3.7    | 3.7               |        | 3.8    |        | 3.8    | 3.7       |       | 3.2   | 3.2     | 3.5      | 3.9       | 4.8            | 5.6   | 4.0   | 5.7   | 115.5 | 2.1   | 2.5 | 2.5 | 2.4   |     |       |     |     |     |     |     |
| Scotiabank Group                                  | 3.8                                        |       | na    |       | na     | na                |        | 3.4    |        | na     | na        |       | 3.2   | 3.3     | 3.6      | 3.9       | na             | na    | na    | na    | na    | 1.9   | 0.0 | L   | 3.2   | 2.4 |       |     |     |     |     |     |
| KPMG                                              | 3.7                                        |       | 6.8   |       | 3.6    | 3.2               |        | 3.5    |        | 3.3    | 3.0       |       | 2.6   | 2.6     | 3.0      | 3.6       | 4.0            | 5.3   | na    | 5.2   | na    | 1.7   | 2.2 | 2.4 | 2.2   |     |       |     |     |     |     |     |
| Comerica Bank                                     | 3.6                                        |       | 6.7   |       | 3.6    | na                |        | 3.5    |        | 3.3    | 3.0       |       | 2.9   | 3.1     | 3.2      | 3.6       | 4.4            | 5.4   | na    | 5.0   | na    | 1.7   | 2.0 | 1.9 | 1.9   |     |       |     |     |     |     |     |
| MacroFin Analytics & Rutgers Bus School           | 3.6                                        |       | 6.8   |       | 3.5    | 3.7               |        | 4.1    |        | 4.2    | 4.1       |       | 4.1   | 3.8     | 3.8      | 4.0       | 4.8            | 5.6   | 4.1   | 6.3   | 115.4 | 1.8   | 2.5 | 2.3 | 2.2   |     |       |     |     |     |     |     |
| The Northern Trust Company                        | 3.6                                        |       | 6.8   |       | 3.6    | 3.7               |        | 3.5    |        | 3.3    | 3.2       |       | 3.0   | 3.2     | 3.3      | 3.6       | 4.5            | 5.7   | 4.1   | 5.1   | 109.0 | 1.5   | 2.2 | 2.1 | 2.1   |     |       |     |     |     |     |     |
| Fannie Mae                                        | 3.4                                        |       | 6.5   |       | na     | na                |        | 3.4    |        | 3.3    | 3.3       |       | 3.4   | 3.4     | 3.6      | 3.9       | na             | na    | na    | 5.9   | na    | 1.9   | 2.5 | 2.9 | 2.6   |     |       |     |     |     |     |     |
| Georgia State University                          | 3.3                                        |       | 6.4   |       | na     | na                |        | 3.0    |        | 2.9    | 2.8       |       | 2.9   | 2.8     | 3.1      | 3.5       | 4.2            | 5.2   | na    | 5.2   | na    | 1.9   | 2.2 | 2.4 | 2.2   |     |       |     |     |     |     |     |
| PNC Financial Services Corp.                      | 3.3                                        |       | 6.5   |       | 3.3    | na                |        | 3.2    |        | 3.2    | 3.1       |       | 3.1   | 3.2     | 3.3      | 3.8       | na             | 5.9   | 4.3   | 5.5   | 114.5 | 0.8   | L   | 1.0 | 0.9   | L   | 0.7   | L   |     |     |     |     |
| TS Lombard                                        | 3.3                                        |       | 6.4   |       | 3.2    | 3.2               |        | 3.4    |        | 3.4    | 3.6       |       | 3.7   | 3.7     | 3.8      | 3.9       | 4.7            | 5.5   | 3.8   | 5.6   | 125.0 | H     | 2.5 | 3.5 | H     | 3.5 | H     | 3.5 | H   |     |     |     |
| ING                                               | 2.9                                        |       | na    |       | na     | na                |        | na     |        | na     | 3.0       |       | 3.2   | 3.3     | 3.4      | na        | na             | na    | na    | na    | na    | 2.5   | na  | na  | na    | na  |       |     |     |     |     |     |
| Loomis, Sayles & Company                          | 2.9                                        |       | 6.1   |       | 2.9    | 2.8               |        | 2.9    |        | 2.9    | 2.6       |       | 1.9   | 2.4     | 2.6      | 2.9       | 3.6            | 4.6   | 3.2   | 5.2   | 115.2 | 2.2   | 2.0 | 2.8 | 2.2   |     |       |     |     |     |     |     |
| NatWest Markets                                   | 2.6                                        |       | 5.7   |       | na     | 2.7               |        | 2.9    |        | 3.0    | 3.1       |       | 2.6   | 2.7     | 2.9      | 3.2       | 2.8            | L     | 3.0   | L     | 3.3   | 6.0   | na  | 1.9 | 1.5   | 1.3 | 1.1   |     |     |     |     |     |
| Wells Fargo                                       | 2.6                                        |       | 5.8   |       | 2.6    | 2.6               |        | 2.7    |        | 2.7    | 2.8       |       | 2.8   | 2.8     | 2.9      | 3.3       | 4.1            | 5.1   | 3.5   | 5.0   | na    | 2.8   | 2.7 | 3.1 | 2.7   |     |       |     |     |     |     |     |
| ACIMA Private Wealth                              | 1.5                                        | L     | 4.5   | L     | 1.5    | L                 | 1.6    | L      | 1.6    | L      | 0.6       | L     | 0.7   | L       | 0.7      | L         | 1.5            | L     | 2.3   | L     | 4.0   | 5.0   | 1.5 | L   | 3.3   | L   | 108.0 | L   | 1.3 | 2.6 | 2.0 | 2.0 |
| June Consensus                                    | 3.9                                        |       | 7.0   |       | 3.9    | 3.9               |        | 3.8    |        | 3.7    | 3.6       |       | 3.4   | 3.3     | 3.4      | 3.7       | 4.6            | 5.5   | 3.9   | 5.7   | 113.5 | 1.9   | 2.2 | 2.4 | 2.2   |     |       |     |     |     |     |     |
| Top 10 Avg.                                       | 4.7                                        |       | 7.7   |       | 4.5    | 4.6               |        | 4.6    |        | 4.5    | 4.4       |       | 4.2   | 4.1     | 4.1      | 4.3       | 5.2            | 6.0   | 4.3   | 6.5   | 116.2 | 2.7   | 3.0 | 3.1 | 2.8   |     |       |     |     |     |     |     |
| Bottom 10 Avg.                                    | 2.9                                        |       | 6.1   |       | 3.2    | 3.1               |        | 3.0    |        | 2.9    | 2.7       |       | 2.5   | 2.6     | 2.8      | 3.2       | 3.9            | 5.0   | 3.5   | 5.0   | 110.8 | 1.1   | 1.5 | 1.8 | 1.7   |     |       |     |     |     |     |     |
| May Consensus                                     | 3.8                                        |       | 6.9   |       | 3.8    | 3.8               |        | 3.7    |        | 3.6    | 3.6       |       | 3.3   | 3.3     | 3.4      | 3.7       | 4.6            | 5.5   | 3.8   | 5.7   | 112.8 | 1.8   | 2.2 | 2.3 | 2.1   |     |       |     |     |     |     |     |
| Number of Forecasts Changed From A Month Ago:     |                                            |       |       |       |        |                   |        |        |        |        |           |       |       |         |          |           |                |       |       |       |       |       |     |     |       |     |       |     |     |     |     |     |
| Down                                              | 2                                          |       | 2     |       | 3      | 3                 |        | 3      |        | 5      | 7         |       | 8     |         | 8        |           | 7              |       | 6     | 2     |       | 3     |     | 4   |       | 6   | 5     | 13  | 6   | 5   | 8   |     |
| Same                                              | 27                                         |       | 22    |       | 15     | 12                |        | 17     |        | 15     | 12        |       | 18    |         | 19       |           | 20             |       | 19    | 11    |       | 10    |     | 10  |       | 14  | 7     | 16  | 18  | 19  | 16  |     |
| Up                                                | 9                                          |       | 8     |       | 8      | 7                 |        | 14     |        | 10     | 11        |       | 9     |         | 8        |           | 9              |       | 9     | 10    |       | 9     |     | 6   |       | 10  | 8     | 8   | 11  | 12  | 11  |     |
| Diffusion Index                                   | 59%                                        |       | 59%   |       | 60%    | 59%               |        | 66%    |        | 58%    | 57%       |       | 51%   | 50%     | 53%      | 54%       | 67%            | 64%   | 55%   | 57%   | 58%   | 43%   | 57% | 60% | 54%   |     |       |     |     |     |     |     |



## 10 ■ BLUE CHIP FINANCIAL FORECASTS ■ JUNE 1, 2023

## International Interest Rate And Foreign Exchange Rate Forecasts

| Blue Chip Forecasters          | Fed Fund Target Rate |             |             |
|--------------------------------|----------------------|-------------|-------------|
|                                | In 3 Mo.             | In 6 Mo.    | In 12 Mo.   |
| BMO Capital Markets            | 5.13                 | 5.13        | 4.88        |
| ING Financial Markets          | 5.10                 | 4.60        | 2.90        |
| Moody's Analytics              | 5.05                 | 5.13        | 4.92        |
| Northern Trust                 | 5.13                 | 5.13        | 4.38        |
| Oxford Economics               | 5.03                 | 5.13        | 4.85        |
| S&P Global Market Intelligence | --                   | --          | --          |
| Scotiabank                     | 5.25                 | 5.25        | 4.25        |
| TS Lombard                     | 4.85                 | 4.12        | 2.85        |
| Wells Fargo                    | 5.13                 | 5.13        | 3.13        |
| <b>June Consensus</b>          | <b>5.08</b>          | <b>4.95</b> | <b>4.02</b> |
| High                           | 5.25                 | 5.25        | 4.92        |
| Low                            | 4.85                 | 4.12        | 2.85        |
| Last Months Avg.               | 5.12                 | 5.11        | 4.40        |

| Blue Chip Forecasters          | Policy-Rate Balance Rate |              |              |
|--------------------------------|--------------------------|--------------|--------------|
|                                | In 3 Mo.                 | In 6 Mo.     | In 12 Mo.    |
| BMO Capital Markets            | 0.00                     | 0.00         | 0.00         |
| ING Financial Markets          | -0.10                    | -0.10        | 0.00         |
| Moody's Analytics              | -0.10                    | -0.10        | -0.10        |
| Nomura Securities              | --                       | --           | --           |
| Northern Trust                 | -0.10                    | -0.10        | -0.10        |
| Oxford Economics               | -0.03                    | -0.03        | -0.03        |
| S&P Global Market Intelligence | --                       | --           | --           |
| Scotiabank                     | --                       | --           | --           |
| TS Lombard                     | 0.00                     | 0.00         | 0.00         |
| Wells Fargo                    | -0.10                    | -0.10        | -0.10        |
| <b>June Consensus</b>          | <b>-0.06</b>             | <b>-0.06</b> | <b>-0.05</b> |
| High                           | 0.00                     | 0.00         | 0.00         |
| Low                            | -0.10                    | -0.10        | -0.10        |
| Last Months Avg.               | -0.06                    | -0.06        | -0.06        |

| Blue Chip Forecasters          | Official Bank Rate |             |             |
|--------------------------------|--------------------|-------------|-------------|
|                                | In 3 Mo.           | In 6 Mo.    | In 12 Mo.   |
| BMO Capital Markets            | 5.00               | 5.25        | 4.75        |
| ING Financial Markets          | 4.50               | 4.50        | 4.00        |
| Moody's Analytics              | 4.39               | 4.50        | 4.38        |
| Nomura Securities              | --                 | --          | --          |
| Northern Trust                 | 4.75               | 4.75        | 4.75        |
| Oxford Economics               | 4.39               | 4.50        | 4.50        |
| S&P Global Market Intelligence | --                 | --          | --          |
| Scotiabank                     | 4.50               | 4.50        | 4.00        |
| TS Lombard                     | 4.50               | 3.77        | 2.50        |
| Wells Fargo                    | 4.75               | 5.00        | 4.00        |
| <b>June Consensus</b>          | <b>4.60</b>        | <b>4.60</b> | <b>4.11</b> |
| High                           | 5.00               | 5.25        | 4.75        |
| Low                            | 4.39               | 3.77        | 2.50        |
| Last Months Avg.               | 4.47               | 4.53        | 4.28        |

| Blue Chip Forecasters          | SNB Policy Rate |             |             |
|--------------------------------|-----------------|-------------|-------------|
|                                | In 3 Mo.        | In 6 Mo.    | In 12 Mo.   |
| ING Financial Markets          | 1.75            | 1.75        | 1.75        |
| Moody's Analytics              | 1.75            | 1.75        | 1.75        |
| Nomura Securities              | --              | --          | --          |
| Northern Trust                 | 1.75            | 1.75        | 1.75        |
| Oxford Economics               | 1.56            | 2.13        | 2.13        |
| S&P Global Market Intelligence | --              | --          | --          |
| Scotiabank                     | --              | --          | --          |
| TS Lombard                     | 1.50            | 1.50        | 1.00        |
| Wells Fargo                    | 1.75            | 1.75        | 1.25        |
| <b>June Consensus</b>          | <b>1.68</b>     | <b>1.77</b> | <b>1.61</b> |
| High                           | 1.75            | 2.13        | 2.13        |
| Low                            | 1.50            | 1.50        | 1.00        |
| Last Months Avg.               | 1.88            | 1.94        | 1.90        |

| Blue Chip Forecasters          | O/N MMkt Financing Rate |             |             |
|--------------------------------|-------------------------|-------------|-------------|
|                                | In 3 Mo.                | In 6 Mo.    | In 12 Mo.   |
| BMO Capital Markets            | 4.50                    | 4.50        | 4.00        |
| ING Financial Markets          | 4.50                    | 4.50        | 3.25        |
| Moody's Analytics              | 4.50                    | 4.50        | 4.10        |
| Nomura Securities              | --                      | --          | --          |
| Northern Trust                 | 4.50                    | 4.50        | 3.75        |
| Oxford Economics               | 4.50                    | 4.50        | 4.38        |
| S&P Global Market Intelligence | --                      | --          | --          |
| Scotiabank                     | 4.75                    | 4.75        | 4.00        |
| TS Lombard                     | 4.50                    | 3.12        | 1.85        |
| Wells Fargo                    | 4.50                    | 4.50        | 3.00        |
| <b>June Consensus</b>          | <b>4.53</b>             | <b>4.36</b> | <b>3.54</b> |
| High                           | 4.75                    | 4.75        | 4.38        |
| Low                            | 4.50                    | 3.12        | 1.85        |
| Last Months Avg.               | 4.50                    | 4.50        | 3.79        |

| United States             |             |             |  |
|---------------------------|-------------|-------------|--|
| 10 Yr. Gov't Bond Yield % |             |             |  |
| In 3 Mo.                  | In 6 Mo.    | In 12 Mo.   |  |
| 3.45                      | 3.40        | 3.25        |  |
| 4.00                      | 3.50        | 3.00        |  |
| 3.74                      | 3.83        | 3.92        |  |
| 3.40                      | 3.30        | 3.30        |  |
| 3.47                      | 3.42        | 3.26        |  |
| 3.48                      | 3.52        | 3.52        |  |
| 3.60                      | 3.60        | 3.60        |  |
| 3.50                      | 3.25        | 3.40        |  |
| 3.25                      | 3.00        | 2.90        |  |
| <b>3.54</b>               | <b>3.42</b> | <b>3.35</b> |  |
| 4.00                      | 3.83        | 3.92        |  |
| 3.25                      | 3.00        | 2.90        |  |
| 3.58                      | 3.51        | 3.37        |  |

| Japan                     |             |             |  |
|---------------------------|-------------|-------------|--|
| 10 Yr. Gov't Bond Yield % |             |             |  |
| In 3 Mo.                  | In 6 Mo.    | In 12 Mo.   |  |
| 0.50                      | 0.50        | 0.50        |  |
| 0.40                      | 0.50        | 1.00        |  |
| 0.43                      | 0.53        | 0.50        |  |
| --                        | --          | --          |  |
| 0.50                      | 0.50        | 0.50        |  |
| 0.43                      | 0.45        | 0.47        |  |
| --                        | --          | --          |  |
| --                        | --          | --          |  |
| 0.60                      | 0.50        | 0.40        |  |
| 0.45                      | 0.50        | 0.70        |  |
| <b>0.47</b>               | <b>0.50</b> | <b>0.58</b> |  |
| 0.60                      | 0.53        | 1.00        |  |
| 0.40                      | 0.45        | 0.40        |  |
| 0.46                      | 0.49        | 0.62        |  |

| United Kingdom       |             |             |  |
|----------------------|-------------|-------------|--|
| 10 Yr. Gilt Yields % |             |             |  |
| In 3 Mo.             | In 6 Mo.    | In 12 Mo.   |  |
| 3.55                 | 3.50        | 3.20        |  |
| 3.50                 | 3.10        | 3.00        |  |
| 3.48                 | 3.44        | 3.33        |  |
| --                   | --          | --          |  |
| 4.20                 | 4.10        | 4.00        |  |
| 3.67                 | 3.63        | 3.55        |  |
| --                   | --          | --          |  |
| --                   | --          | --          |  |
| 4.25                 | 4.00        | 3.75        |  |
| 4.05                 | 3.75        | 3.20        |  |
| <b>3.81</b>          | <b>3.65</b> | <b>3.43</b> |  |
| 4.25                 | 4.10        | 4.00        |  |
| 3.48                 | 3.10        | 3.00        |  |
| 3.59                 | 3.47        | 3.22        |  |

| Switzerland               |             |             |  |
|---------------------------|-------------|-------------|--|
| 10 Yr. Gov't Bond Yield % |             |             |  |
| In 3 Mo.                  | In 6 Mo.    | In 12 Mo.   |  |
| 1.35                      | 1.30        | 1.30        |  |
| 1.45                      | 1.93        | 2.11        |  |
| --                        | --          | --          |  |
| 1.10                      | 1.05        | 1.00        |  |
| 1.17                      | 1.40        | 1.38        |  |
| --                        | --          | --          |  |
| --                        | --          | --          |  |
| 2.00                      | 1.24        | 1.00        |  |
| --                        | --          | --          |  |
| <b>1.41</b>               | <b>1.38</b> | <b>1.36</b> |  |
| 2.00                      | 1.93        | 2.11        |  |
| 1.10                      | 1.05        | 1.00        |  |
| 1.45                      | 1.51        | 1.51        |  |

| Canada                    |             |             |  |
|---------------------------|-------------|-------------|--|
| 10 Yr. Gov't Bond Yield % |             |             |  |
| In 3 Mo.                  | In 6 Mo.    | In 12 Mo.   |  |
| 2.95                      | 2.90        | 2.85        |  |
| 3.50                      | 3.00        | 3.00        |  |
| 3.25                      | 3.77        | 4.04        |  |
| --                        | --          | --          |  |
| 3.00                      | 2.90        | 2.80        |  |
| 2.98                      | 3.04        | 2.96        |  |
| --                        | --          | --          |  |
| 3.25                      | 3.40        | 3.50        |  |
| 3.80                      | 2.55        | 2.70        |  |
| 3.10                      | 3.00        | 2.85        |  |
| <b>3.23</b>               | <b>3.07</b> | <b>3.09</b> |  |
| 3.80                      | 3.77        | 4.04        |  |
| 2.95                      | 2.55        | 2.70        |  |
| 3.05                      | 3.11        | 3.10        |  |

| Fed's AFE \$ Index |              |              |  |
|--------------------|--------------|--------------|--|
| In 3 Mo.           | In 6 Mo.     | In 12 Mo.    |  |
| 113.0              | 111.7        | 110.1        |  |
| 111.6              | 107.0        | 102.7        |  |
| --                 | --           | --           |  |
| 115.0              | 113.0        | 111.0        |  |
| 114.8              | 114.6        | 113.9        |  |
| --                 | --           | --           |  |
| --                 | --           | --           |  |
| 115.0              | 110.0        | 120.0        |  |
| --                 | --           | --           |  |
| <b>113.9</b>       | <b>111.3</b> | <b>111.5</b> |  |
| 115.0              | 114.6        | 120.0        |  |
| 111.6              | 107.0        | 102.7        |  |
| 114.2              | 112.6        | 110.9        |  |

| Yen per US\$ |              |              |  |
|--------------|--------------|--------------|--|
| In 3 Mo.     | In 6 Mo.     | In 12 Mo.    |  |
| 135.0        | 133.0        | 129.0        |  |
| 128.0        | 125.0        | 118.0        |  |
| 133.6        | 130.0        | 124.6        |  |
| 125.0        | 120.0        | 120.0        |  |
| 135.0        | 130.0        | 127.0        |  |
| 135.1        | 135.8        | 133.5        |  |
| 133.1        | 130.8        | 126.9        |  |
| 130.0        | 130.0        | 130.0        |  |
| 140.0        | 133.9        | 146.1        |  |
| --           | --           | --           |  |
| <b>132.8</b> | <b>129.8</b> | <b>128.3</b> |  |
| 140.0        | 135.8        | 146.1        |  |
| 125.0        | 120.0        | 118.0        |  |
| 131.1        | 129.0        | 125.8        |  |

| US\$ per Pound Sterling |             |             |  |
|-------------------------|-------------|-------------|--|
| In 3 Mo.                | In 6 Mo.    | In 12 Mo.   |  |
| 1.26                    | 1.27        | 1.28        |  |
| 1.24                    | 1.28        | 1.33        |  |
| 1.31                    | 1.40        | 1.46        |  |
| 1.29                    | 1.32        | 1.36        |  |
| 1.22                    | 1.24        | 1.25        |  |
| 1.24                    | 1.26        | 1.26        |  |
| 1.24                    | 1.25        | 1.26        |  |
| 1.25                    | 1.25        | 1.25        |  |
| 1.25                    | 1.21        | 1.07        |  |
| --                      | --          | --          |  |
| <b>1.26</b>             | <b>1.28</b> | <b>1.28</b> |  |
| 1.31                    | 1.40        | 1.46        |  |
| 1.22                    | 1.21        | 1.07        |  |
| 1.25                    | 1.27        | 1.30        |  |

| CHF per US\$ |             |             |  |
|--------------|-------------|-------------|--|
| In 3 Mo.     | In 6 Mo.    | In 12 Mo.   |  |
| 0.87         | 0.78        | 0.85        |  |
| 0.89         | 0.87        | 0.83        |  |
| 0.92         | 0.92        | 0.93        |  |
| 0.90         | 0.88        | 0.86        |  |
| 0.90         | 0.90        | 0.89        |  |
| 0.88         | 0.88        | 0.88        |  |
| 0.91         | 0.91        | 0.93        |  |
| 0.91         | 0.91        | 0.95        |  |
| --           | --          | --          |  |
| <b>0.90</b>  | <b>0.88</b> | <b>0.89</b> |  |
| 0.92         | 0.92        | 0.95        |  |
| 0.87         | 0.78        | 0.83        |  |
| 0.90         | 0.88        | 0.88        |  |

| C\$ per US\$ |             |             |  |
|--------------|-------------|-------------|--|
| In 3 Mo.     | In 6 Mo.    | In 12 Mo.   |  |
| 1.33         | 1.31        | 1.29        |  |
| 1.35         | 1.30        | 1.26        |  |
| 1.32         | 1.29        | 1.27        |  |
| 1.36         | 1.35        | 1.33        |  |
| 1.37         | 1.34        | 1.32        |  |
| 1.36         | 1.37        | 1.37        |  |
| 1.31         | 1.33        | 1.33        |  |
| 1.30         | 1.30        | 1.27        |  |
| 1.35         | 1.35        | 1.35        |  |
| --           | --          | --          |  |
| <b>1.34</b>  | <b>1.33</b> | <b>1.31</b> |  |
| 1.37         | 1.37        | 1.37        |  |
| 1.30         | 1.29        | 1.26        |  |
| 1.34         | 1.33        | 1.31        |  |

## International Interest Rate And Foreign Exchange Rate Forecasts

| Blue Chip Forecasters          | Official Cash Rate |             |             |
|--------------------------------|--------------------|-------------|-------------|
|                                | In 3 Mo.           | In 6 Mo.    | In 12 Mo.   |
| ING Financial Markets          | 4.10               | 4.10        | 3.10        |
| Moody's Analytics              | 3.68               | 3.85        | 3.35        |
| Nomura Securities              | --                 | --          | --          |
| Northern Trust                 | 4.10               | 4.10        | 4.10        |
| Oxford Economics               | 3.84               | 4.10        | 4.10        |
| S&P Global Market Intelligence | --                 | --          | --          |
| Scotiabank                     | --                 | --          | --          |
| TS Lombard                     | 3.85               | 3.85        | 2.85        |
| Wells Fargo                    | 4.35               | 4.35        | 4.00        |
| <b>June Consensus</b>          | <b>3.99</b>        | <b>4.06</b> | <b>3.58</b> |
| High                           | 4.35               | 4.35        | 4.10        |
| Low                            | 3.68               | 3.85        | 2.85        |
| Last Months Avg.               | 3.82               | 3.85        | 3.67        |

| Australia                 |             |             |             |
|---------------------------|-------------|-------------|-------------|
| 10 Yr. Gov't Bond Yield % |             |             |             |
|                           | In 3 Mo.    | In 6 Mo.    | In 12 Mo.   |
|                           | 3.30        | 3.10        | 3.00        |
|                           | 3.52        | 3.91        | 3.98        |
|                           | --          | --          | --          |
|                           | 3.80        | 3.70        | 3.60        |
|                           | 3.39        | 3.52        | 3.51        |
|                           | --          | --          | --          |
|                           | --          | --          | --          |
|                           | 3.73        | 3.10        | 3.25        |
|                           | --          | --          | --          |
|                           | <b>3.55</b> | <b>3.47</b> | <b>3.47</b> |
|                           | 3.80        | 3.91        | 3.98        |
|                           | 3.30        | 3.10        | 3.00        |
|                           | 3.43        | 3.45        | 3.36        |

| US\$ per A\$ |             |             |             |
|--------------|-------------|-------------|-------------|
|              | In 3 Mo.    | In 6 Mo.    | In 12 Mo.   |
|              | 0.68        | 0.71        | 0.75        |
|              | 0.70        | 0.71        | 0.72        |
|              | 0.68        | 0.69        | 0.70        |
|              | 0.64        | 0.66        | 0.68        |
|              | 0.67        | 0.67        | 0.68        |
|              | 0.67        | 0.69        | 0.71        |
|              | 0.69        | 0.69        | 0.70        |
|              | 0.65        | 0.65        | 0.65        |
|              | --          | --          | --          |
|              | <b>0.67</b> | <b>0.68</b> | <b>0.70</b> |
|              | 0.70        | 0.71        | 0.75        |
|              | 0.64        | 0.65        | 0.65        |
|              | 0.68        | 0.69        | 0.70        |

| Blue Chip Forecasters          | Main Refinancing Rate |             |             |
|--------------------------------|-----------------------|-------------|-------------|
|                                | In 3 Mo.              | In 6 Mo.    | In 12 Mo.   |
| BMO Capital Markets            | 4.25                  | 4.25        | 4.00        |
| ING Financial Markets          | 4.00                  | 4.00        | 3.75        |
| Moody's Analytics              | 3.66                  | 4.16        | 4.23        |
| Nomura Securities              | --                    | --          | --          |
| Northern Trust                 | 4.25                  | 4.25        | 4.25        |
| Oxford Economics               | 3.70                  | 4.18        | 4.16        |
| S&P Global Market Intelligence | --                    | --          | --          |
| Scotiabank                     | 4.25                  | 4.25        | 4.00        |
| TS Lombard                     | 3.75                  | 3.62        | 2.35        |
| Wells Fargo                    | 3.50                  | 3.50        | 3.00        |
| <b>June Consensus</b>          | <b>3.92</b>           | <b>4.03</b> | <b>3.72</b> |
| High                           | 4.25                  | 4.25        | 4.25        |
| Low                            | 3.50                  | 3.50        | 2.35        |
| Last Months Avg.               | 3.89                  | 4.01        | 3.96        |

| US\$ per Euro |             |             |             |
|---------------|-------------|-------------|-------------|
|               | In 3 Mo.    | In 6 Mo.    | In 12 Mo.   |
|               | 1.11        | 1.12        | 1.13        |
|               | 1.10        | 1.15        | 1.20        |
|               | 1.09        | 1.10        | 1.14        |
|               | 1.15        | 1.16        | 1.17        |
|               | 1.07        | 1.10        | 1.12        |
|               | 1.09        | 1.10        | 1.11        |
|               | 1.12        | 1.12        | 1.14        |
|               | 1.10        | 1.10        | 1.10        |
|               | 1.10        | 1.10        | 1.02        |
|               | --          | --          | --          |
|               | <b>1.10</b> | <b>1.12</b> | <b>1.13</b> |
|               | 1.15        | 1.16        | 1.20        |
|               | 1.07        | 1.10        | 1.02        |
|               | 1.09        | 1.11        | 1.13        |

## Euro area

| Blue Chip Forecasters | 10 Yr. Gov't Bond Yields % |             |             |             |             |             |             |             |             |             |             |             |
|-----------------------|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                       | Germany                    |             |             | France      |             |             | Italy       |             |             | Spain       |             |             |
|                       | In 3 Mo.                   | In 6 Mo.    | In 12 Mo.   | In 3 Mo.    | In 6 Mo.    | In 12 Mo.   | In 3 Mo.    | In 6 Mo.    | In 12 Mo.   | In 3 Mo.    | In 6 Mo.    | In 12 Mo.   |
| BMO Capital Markets   | 2.20                       | 2.10        | 1.90        | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| ING Financial Markets | 2.30                       | 2.20        | 2.10        | 2.90        | 2.85        | 2.65        | 4.30        | 4.40        | 4.10        | 3.40        | 3.35        | 3.15        |
| Moody's Analytics     | 2.43                       | 2.60        | 2.72        | 2.94        | 2.99        | 3.01        | 4.35        | 4.32        | 4.03        | 3.42        | 3.46        | 3.50        |
| Northern Trust        | 2.60                       | 2.55        | 2.45        | 3.10        | 3.05        | 2.95        | 4.45        | 4.40        | 4.30        | 3.70        | 3.65        | 3.55        |
| Oxford Economics      | 2.31                       | 2.28        | 2.08        | 2.86        | 2.82        | 2.57        | 4.19        | 4.13        | 3.93        | 3.35        | 3.31        | 3.13        |
| TS Lombard            | 3.17                       | 2.92        | 3.10        | 3.52        | 3.27        | 3.45        | 4.47        | 4.22        | 4.40        | 3.92        | 3.67        | 3.85        |
| Wells Fargo           | 2.40                       | 2.35        | 2.25        | --          | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>June Consensus</b> | <b>2.49</b>                | <b>2.43</b> | <b>2.37</b> | <b>3.06</b> | <b>3.00</b> | <b>2.93</b> | <b>4.35</b> | <b>4.29</b> | <b>4.15</b> | <b>3.56</b> | <b>3.49</b> | <b>3.44</b> |
| High                  | 3.17                       | 2.92        | 3.10        | 3.52        | 3.27        | 3.45        | 4.47        | 4.40        | 4.40        | 3.92        | 3.67        | 3.85        |
| Low                   | 2.20                       | 2.10        | 1.90        | 2.86        | 2.82        | 2.57        | 4.19        | 4.13        | 3.93        | 3.35        | 3.31        | 3.13        |
| Last Months Avg.      | 2.42                       | 2.40        | 2.29        | 2.90        | 2.87        | 2.74        | 4.32        | 4.25        | 4.02        | 3.40        | 3.35        | 3.25        |

|                | Consensus Forecasts               |          |          |           |
|----------------|-----------------------------------|----------|----------|-----------|
|                | 10-year Bond Yields vs U.S. Yield |          |          |           |
|                | Current                           | In 3 Mo. | In 6 Mo. | In 12 Mo. |
| Japan          | -3.37                             | -3.07    | -2.93    | -2.77     |
| United Kingdom | 0.59                              | 0.27     | 0.22     | 0.08      |
| Switzerland    | -2.74                             | -2.13    | -2.04    | -1.99     |
| Canada         | -0.47                             | -0.31    | -0.35    | -0.26     |
| Australia      | -0.06                             | 0.00     | 0.04     | 0.12      |
| Germany        | -1.28                             | -1.06    | -1.00    | -0.98     |
| France         | -0.68                             | -0.48    | -0.43    | -0.42     |
| Italy          | 0.57                              | 0.81     | 0.87     | 0.80      |
| Spain          | -0.24                             | 0.01     | 0.06     | 0.09      |

|                | Consensus Forecasts              |          |          |           |
|----------------|----------------------------------|----------|----------|-----------|
|                | Policy Rates vs U.S. Target Rate |          |          |           |
|                | Current                          | In 3 Mo. | In 6 Mo. | In 12 Mo. |
| Japan          | -5.23                            | -5.15    | -4.89    | -4.07     |
| United Kingdom | -0.63                            | -0.49    | -0.36    | 0.09      |
| Switzerland    | -3.63                            | -3.41    | -3.18    | -2.42     |
| Canada         | -0.63                            | -0.55    | -0.59    | -0.48     |
| Australia      | -1.28                            | -1.10    | -0.89    | -0.44     |
| Euro area      | -1.38                            | -1.16    | -0.93    | -0.30     |

12 ■ BLUE CHIP FINANCIAL FORECASTS ■ JUNE 1, 2023

**Special Questions:**

1. a. When will the first fed funds rate cut occur?

|         |     |
|---------|-----|
| Q3 2023 | 9%  |
| Q4 2023 | 27% |
| Q1 2024 | 42% |
| Q2 2024 | 15% |
| Later   | 6%  |

b. What will motivate the first fed funds rate cut the most?

|                                                |     |
|------------------------------------------------|-----|
| A sharp slowdown in the economy                | 28% |
| A meaningful & persistent slowing in inflation | 72% |
| The current tension in regional banks          | 0%  |

c. Has the recent financial market unrest from the failure of three regional banks caused you to move forward your expected date for the first FFR cut?

Yes 15%      No 85%

2. What probability do you attach to a recession beginning in 2023 in the:

|                |     |
|----------------|-----|
| United States  | 55% |
| euro area      | 56% |
| United Kingdom | 60% |

3. a. Do you expect the US unemployment rate to increase in 2023?      Yes 97%      No 3%b. If yes, by how much?      0.8%

4. Has the recent turmoil in the banking sector caused you to lower your outlook for the US and broader world economy?

Yes 47%      No 53%

**Viewpoints:****A Sampling of Views on the Economy, Financial Markets and Government Policy  
Excerpted from Recent Reports Issued by our Blue Chip Panel Members and Others****What's in the Debt Ceiling Deal?**

A debt ceiling resolution has been reached. Over Memorial Day weekend President Joe Biden and Speaker of the House Kevin McCarthy struck an eleventh hour agreement to suspend the debt ceiling through year-end 2024.

The most important macro drivers in the bill are the discretionary spending budget caps for fiscal years 2024 and 2025. Defense discretionary spending will be increased by roughly 3.3% in fiscal year 2024, while nondefense discretionary spending appears to be roughly flat after accounting for anticipated appropriations adjustments. In FY 2025, the budget caps increase 1% for both categories. These figures suggest that base discretionary spending will continue to grow over the next couple of years, albeit at a relatively modest pace. In dollar terms, we estimate that these spending caps imply roughly \$46 billion less in discretionary spending in FY 2024 and \$72 billion less in FY 2025 compared to the Congressional Budget Office's baseline projections.

That said, it is important to note that this slower spending growth is coming off of a relatively high base. Discretionary spending grew rapidly during the pandemic, and even in FY 2023 Congress approved a nearly 10% increase in discretionary spending budget authority. Furthermore, other previously-enacted bills continue to provide a fiscal tailwind, such as the Infrastructure Investment and Jobs Act and the CHIPS Act. The debt ceiling bill also leaves tax policies and most mandatory spending such as Social Security and the major healthcare programs unchanged. Discretionary spending accounts for just one quarter of total federal outlays. Accordingly, this bill presents a small downside risk to our current economic forecast. Incorporating this agreement into our economic forecast will probably reduce real GDP growth by a modest 0.1-0.2 percentage points per year over the next couple of years.

The Congressional Budget Office estimates that the bill will reduce budget deficits by about \$1.5 trillion over the 2023-2033 period relative to its May 2023 projections. Admittedly, CBO projections rely on a host of assumptions about what future Congresses will do, and the actual deficit reduction could be much bigger or smaller than the \$1.5 trillion figure. But setting aside the specific figures, we think this bill marks an important inflection point in federal fiscal policy. The past several years have been marked by highly accommodative federal fiscal policy. This era may be coming to an end as federal fiscal policy is shifting to a more neutral stance. That said, the shift is hardly draconian. As mentioned previously, tax increases or mandatory spending cuts were avoided. And despite the caps, discretionary spending should continue to grow at a modest pace over the next couple years, in contrast to the outright spending cuts seen in the wake of the 2011 debt ceiling episode.

The debt ceiling bill contains numerous other policy changes, such as rescinding some unspent COVID relief money, streamlining some energy project permitting and tweaking work re-

quirements for the Supplemental Assistance Program (SNAP) and Temporary Assistance for Needy Families (TANF). However, the deficit impact from these policies is relatively small, and we doubt they will have a material impact on our U.S. macroeconomic forecast. The bill also codifies the end of the student loan payment moratorium 60 days after June 30 (August 29). This was already the stated intention of the Biden administration, but the debt ceiling bill ensures another extension will not occur without an act of Congress. Critically, the bill does not weigh in on President Biden's sweeping student loan forgiveness plan. The fate of that executive action will be determined by the Supreme Court, potentially as soon as June.

It is important to note that the debt ceiling bill is not the end of the road for the FY 2024 budget process. Now that topline spending levels have been set, Congress must pass the 12 annual appropriation bills before the start of the next fiscal year on October 1. The appropriations process involves allocating the pot of money to all the various discretionary programs and activities funded by the federal government. Imagine a household that has developed a high-level budget for its major spending categories such as rent, groceries, etc., but still has to choose which individual items to purchase at the grocery store. If Congress does not pass the 12 appropriation bills or a continuing resolution (CR) by September 30, a government shutdown would ensue. If a CR is still in effect on or after January 1, the debt ceiling bill stipulates that even lower discretionary budget caps would kick in. This provision is designed to push lawmakers to complete the annual budget process without too much of a delay.

**A Fiscal Cliff Is Coming in 2025**

Assuming a government shutdown is avoided this year and next, the debt ceiling and budget drama should subside until after the 2024 presidential election. However, the next president and Congress will face a long list of fiscal policy items to address in 2025. First, the debt ceiling will once again need to be increased or suspended by the summer/fall of 2025. Second, topline spending levels for FY 2024 and FY 2025 are now set, but starting in FY 2026 the budget caps implied in the debt ceiling bill are non-enforceable. So, Congress and the president will once again need to sort through the appropriate level of discretionary spending. Third, major parts of the 2017 Tax Cuts and Jobs Act (the tax cut bill passed under President Trump) are set to expire at the end of 2025. Generally speaking, most of the individual income tax cuts are set to expire, while most of the business tax cuts were made permanent. Fourth, the Inflation Reduction Act (IRA) passed under President Biden included an extension of more generous subsidies for individuals purchasing health insurance through the Affordable Care Act. These too will expire after 2025. Thus, the next election will have elevated stakes for the federal fiscal policy outlook.

*Michael Pugliese and Karl Vesely (Wells Fargo Economics)*

**Long-Range Survey:**

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2024 through 2029 and averages for the five-year periods 2025-2029 and 2030-2034. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

|                                |                   | Average For The Year     |       |       |       |       |       | Five-Year Averages |           |
|--------------------------------|-------------------|--------------------------|-------|-------|-------|-------|-------|--------------------|-----------|
|                                |                   | 2024                     | 2025  | 2026  | 2027  | 2028  | 2029  | 2025-2029          | 2030-2034 |
| 1. Federal Funds Rate          | CONSENSUS         | 3.9                      | 3.0   | 2.7   | 2.7   | 2.7   | 2.7   | 2.7                | 2.7       |
|                                | Top 10 Average    | 4.6                      | 3.5   | 3.2   | 3.2   | 3.2   | 3.1   | 3.2                | 3.1       |
|                                | Bottom 10 Average | 3.1                      | 2.4   | 2.3   | 2.2   | 2.2   | 2.3   | 2.3                | 2.3       |
| 2. Prime Rate                  | CONSENSUS         | 7.0                      | 6.0   | 5.8   | 5.8   | 5.7   | 5.8   | 5.8                | 5.8       |
|                                | Top 10 Average    | 7.7                      | 6.6   | 6.2   | 6.3   | 6.2   | 6.1   | 6.3                | 6.2       |
|                                | Bottom 10 Average | 6.3                      | 5.5   | 5.4   | 5.3   | 5.3   | 5.4   | 5.4                | 5.4       |
| 3. SOFR                        | CONSENSUS         | 3.8                      | 2.9   | 2.6   | 2.7   | 2.6   | 2.6   | 2.7                | 2.6       |
|                                | Top 10 Average    | 4.5                      | 3.4   | 3.0   | 3.1   | 3.0   | 2.9   | 3.1                | 3.0       |
|                                | Bottom 10 Average | 3.2                      | 2.4   | 2.3   | 2.2   | 2.2   | 2.3   | 2.3                | 2.3       |
| 4. Commercial Paper, 1-Mo      | CONSENSUS         | 3.7                      | 2.9   | 2.7   | 2.8   | 2.8   | 2.8   | 2.8                | 2.8       |
|                                | Top 10 Average    | 4.3                      | 3.3   | 3.0   | 3.1   | 3.0   | 3.0   | 3.1                | 3.0       |
|                                | Bottom 10 Average | 3.3                      | 2.6   | 2.4   | 2.4   | 2.4   | 2.6   | 2.5                | 2.5       |
| 5. Treasury Bill Yield, 3-Mo   | CONSENSUS         | 3.8                      | 2.9   | 2.7   | 2.7   | 2.7   | 2.7   | 2.7                | 2.7       |
|                                | Top 10 Average    | 4.4                      | 3.4   | 3.1   | 3.2   | 3.2   | 3.0   | 3.2                | 3.1       |
|                                | Bottom 10 Average | 3.1                      | 2.3   | 2.3   | 2.3   | 2.3   | 2.3   | 2.3                | 2.3       |
| 6. Treasury Bill Yield, 6-Mo   | CONSENSUS         | 3.8                      | 3.0   | 2.8   | 2.8   | 2.8   | 2.8   | 2.8                | 2.8       |
|                                | Top 10 Average    | 4.4                      | 3.5   | 3.2   | 3.3   | 3.2   | 3.1   | 3.2                | 3.1       |
|                                | Bottom 10 Average | 3.1                      | 2.5   | 2.4   | 2.4   | 2.4   | 2.5   | 2.4                | 2.5       |
| 7. Treasury Bill Yield, 1-Yr   | CONSENSUS         | 3.6                      | 3.0   | 2.9   | 2.9   | 2.9   | 2.9   | 2.9                | 2.9       |
|                                | Top 10 Average    | 4.3                      | 3.5   | 3.3   | 3.4   | 3.3   | 3.2   | 3.3                | 3.3       |
|                                | Bottom 10 Average | 3.0                      | 2.5   | 2.5   | 2.5   | 2.5   | 2.6   | 2.5                | 2.6       |
| 8. Treasury Note Yield, 2-Yr   | CONSENSUS         | 3.4                      | 3.0   | 3.0   | 3.1   | 3.0   | 3.0   | 3.0                | 3.1       |
|                                | Top 10 Average    | 4.0                      | 3.5   | 3.5   | 3.5   | 3.5   | 3.4   | 3.5                | 3.5       |
|                                | Bottom 10 Average | 2.8                      | 2.6   | 2.6   | 2.6   | 2.5   | 2.7   | 2.6                | 2.7       |
| 9. Treasury Note Yield, 5-Yr   | CONSENSUS         | 3.4                      | 3.1   | 3.2   | 3.2   | 3.3   | 3.2   | 3.2                | 3.3       |
|                                | Top 10 Average    | 4.0                      | 3.6   | 3.7   | 3.8   | 3.8   | 3.6   | 3.7                | 3.8       |
|                                | Bottom 10 Average | 2.8                      | 2.7   | 2.7   | 2.7   | 2.8   | 2.8   | 2.7                | 2.8       |
| 10. Treasury Note Yield, 10-Yr | CONSENSUS         | 3.4                      | 3.3   | 3.4   | 3.5   | 3.5   | 3.5   | 3.4                | 3.6       |
|                                | Top 10 Average    | 3.9                      | 3.7   | 4.0   | 4.1   | 4.1   | 4.0   | 4.0                | 4.2       |
|                                | Bottom 10 Average | 3.0                      | 3.0   | 2.9   | 2.9   | 3.0   | 3.0   | 3.0                | 3.1       |
| 11. Treasury Bond Yield, 30-Yr | CONSENSUS         | 3.8                      | 3.6   | 3.7   | 3.8   | 3.9   | 3.8   | 3.8                | 3.9       |
|                                | Top 10 Average    | 4.2                      | 4.0   | 4.2   | 4.3   | 4.3   | 4.2   | 4.2                | 4.5       |
|                                | Bottom 10 Average | 3.4                      | 3.3   | 3.3   | 3.3   | 3.4   | 3.4   | 3.3                | 3.4       |
| 12. Corporate Aaa Bond Yield   | CONSENSUS         | 4.7                      | 4.6   | 4.7   | 4.8   | 4.9   | 4.8   | 4.8                | 5.0       |
|                                | Top 10 Average    | 5.1                      | 4.9   | 5.2   | 5.4   | 5.4   | 5.3   | 5.2                | 5.6       |
|                                | Bottom 10 Average | 4.3                      | 4.3   | 4.2   | 4.3   | 4.3   | 4.3   | 4.3                | 4.3       |
| 13. Corporate Baa Bond Yield   | CONSENSUS         | 5.8                      | 5.6   | 5.7   | 5.8   | 5.8   | 5.8   | 5.7                | 5.9       |
|                                | Top 10 Average    | 6.1                      | 5.9   | 6.1   | 6.3   | 6.3   | 6.2   | 6.1                | 6.5       |
|                                | Bottom 10 Average | 5.3                      | 5.3   | 5.3   | 5.3   | 5.4   | 5.3   | 5.3                | 5.4       |
| 14. State & Local Bonds Yield  | CONSENSUS         | 4.0                      | 3.8   | 4.0   | 4.1   | 4.1   | 4.1   | 4.0                | 4.2       |
|                                | Top 10 Average    | 4.3                      | 4.1   | 4.3   | 4.4   | 4.5   | 4.3   | 4.3                | 4.5       |
|                                | Bottom 10 Average | 3.6                      | 3.6   | 3.6   | 3.7   | 3.7   | 3.7   | 3.7                | 3.8       |
| 15. Home Mortgage Rate         | CONSENSUS         | 5.7                      | 5.4   | 5.4   | 5.4   | 5.5   | 5.4   | 5.4                | 5.5       |
|                                | Top 10 Average    | 6.4                      | 5.9   | 6.0   | 6.1   | 6.1   | 5.9   | 6.0                | 6.1       |
|                                | Bottom 10 Average | 5.1                      | 4.9   | 4.7   | 4.8   | 4.8   | 4.9   | 4.8                | 4.9       |
| A. Fed's AFE Nominal \$ Index  | CONSENSUS         | 113.5                    | 111.8 | 111.8 | 110.9 | 110.1 | 110.1 | 111.0              | 110.0     |
|                                | Top 10 Average    | 115.5                    | 114.2 | 115.1 | 114.7 | 114.3 | 115.2 | 114.7              | 115.3     |
|                                | Bottom 10 Average | 111.5                    | 109.5 | 108.4 | 107.5 | 106.3 | 105.8 | 107.5              | 105.3     |
|                                |                   | Year-Over-Year, % Change |       |       |       |       |       | Five-Year Averages |           |
|                                |                   | 2024                     | 2025  | 2026  | 2027  | 2028  | 2029  | 2025-2029          | 2030-2034 |
| B. Real GDP                    | CONSENSUS         | 1.1                      | 2.1   | 2.2   | 2.1   | 2.0   | 1.9   | 2.1                | 2.0       |
|                                | Top 10 Average    | 2.0                      | 2.5   | 2.7   | 2.5   | 2.3   | 2.1   | 2.4                | 2.3       |
|                                | Bottom 10 Average | 0.4                      | 1.7   | 1.8   | 1.8   | 1.7   | 1.7   | 1.7                | 1.7       |
| C. GDP Chained Price Index     | CONSENSUS         | 2.5                      | 2.3   | 2.2   | 2.2   | 2.1   | 2.1   | 2.2                | 2.2       |
|                                | Top 10 Average    | 3.0                      | 2.7   | 2.5   | 2.5   | 2.3   | 2.3   | 2.5                | 2.4       |
|                                | Bottom 10 Average | 2.1                      | 1.9   | 1.9   | 1.9   | 2.0   | 2.0   | 1.9                | 1.9       |
| D. Consumer Price Index        | CONSENSUS         | 2.6                      | 2.3   | 2.2   | 2.2   | 2.2   | 2.1   | 2.2                | 2.2       |
|                                | Top 10 Average    | 3.0                      | 2.7   | 2.5   | 2.5   | 2.3   | 2.3   | 2.5                | 2.4       |
|                                | Bottom 10 Average | 2.1                      | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0                | 2.0       |
| E. PCE Price Index             | CONSENSUS         | 2.4                      | 2.2   | 2.1   | 2.1   | 2.1   | 2.1   | 2.1                | 2.1       |
|                                | Top 10 Average    | 2.9                      | 2.5   | 2.4   | 2.3   | 2.2   | 2.2   | 2.3                | 2.3       |
|                                | Bottom 10 Average | 2.1                      | 1.9   | 1.9   | 1.9   | 1.9   | 1.9   | 1.9                | 1.9       |

**2023 Historical Data**

| Monthly Indicator                      | Jan   | Feb   | Mar   | Apr   | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
|----------------------------------------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|
| Retail and Food Service Sales (a)      | 2.8   | -0.7  | -0.7  | 0.4   | .... | .... | .... | .... | .... | .... | .... | .... |
| Auto & Light Truck Sales (b)           | 15.95 | 14.92 | 14.84 | 15.91 | .... | .... | .... | .... | .... | .... | .... | .... |
| Personal Income (a, current \$)        | 0.6   | 0.3   | 0.3   | 0.4   | .... | .... | .... | .... | .... | .... | .... | .... |
| Personal Consumption (a, current \$)   | 1.9   | 0.1   | 0.1   | 0.8   | .... | .... | .... | .... | .... | .... | .... | .... |
| Consumer Credit (e)                    | 5.9   | 3.8   | 6.6   | ....  | .... | .... | .... | .... | .... | .... | .... | .... |
| Consumer Sentiment (U. of Mich.)       | 64.9  | 67.0  | 62.0  | 63.5  | 59.2 | .... | .... | .... | .... | .... | .... | .... |
| Household Employment (c)               | 894   | 177   | 577   | 139   | .... | .... | .... | .... | .... | .... | .... | .... |
| Nonfarm Payroll Employment (c)         | 472   | 248   | 165   | 253   | .... | .... | .... | .... | .... | .... | .... | .... |
| Unemployment Rate (%)                  | 3.4   | 3.6   | 3.5   | 3.4   | .... | .... | .... | .... | .... | .... | .... | .... |
| Average Hourly Earnings (All, cur. \$) | 33.02 | 33.11 | 33.20 | 33.36 | .... | .... | .... | .... | .... | .... | .... | .... |
| Average Workweek (All, hrs.)           | 34.6  | 34.5  | 34.4  | 34.4  | .... | .... | .... | .... | .... | .... | .... | .... |
| Industrial Production (d)              | 1.5   | 0.8   | 0.1   | 0.2   | .... | .... | .... | .... | .... | .... | .... | .... |
| Capacity Utilization (%)               | 79.6  | 79.5  | 79.4  | 79.7  | .... | .... | .... | .... | .... | .... | .... | .... |
| ISM Manufacturing Index (g)            | 47.4  | 47.7  | 46.3  | 47.1  | .... | .... | .... | .... | .... | .... | .... | .... |
| ISM Nonmanufacturing Index (g)         | 55.2  | 55.1  | 51.2  | 51.9  | .... | .... | .... | .... | .... | .... | .... | .... |
| Housing Starts (b)                     | 1.340 | 1.436 | 1.371 | 1.401 | .... | .... | .... | .... | .... | .... | .... | .... |
| Housing Permits (b)                    | 1.354 | 1.482 | 1.437 | 1.417 | .... | .... | .... | .... | .... | .... | .... | .... |
| New Home Sales (1-family, c)           | 649   | 631   | 656   | 683   | .... | .... | .... | .... | .... | .... | .... | .... |
| Construction Expenditures (a)          | -0.2  | -0.3  | 0.3   | ....  | .... | .... | .... | .... | .... | .... | .... | .... |
| Consumer Price Index (nsa, d)          | 6.4   | 6.0   | 5.0   | 4.9   | .... | .... | .... | .... | .... | .... | .... | .... |
| CPI ex. Food and Energy (nsa, d)       | 5.6   | 5.5   | 5.6   | 5.5   | .... | .... | .... | .... | .... | .... | .... | .... |
| PCE Chain Price Index (d)              | 5.4   | 5.1   | 4.2   | 4.4   | .... | .... | .... | .... | .... | .... | .... | .... |
| Core PCE Chain Price Index (d)         | 4.7   | 4.7   | 4.6   | 4.7   | .... | .... | .... | .... | .... | .... | .... | .... |
| Producer Price Index (nsa, d)          | 5.7   | 4.8   | 2.7   | 2.3   | .... | .... | .... | .... | .... | .... | .... | .... |
| Durable Goods Orders (a)               | -1.3  | -2.7  | 3.3   | 1.1   | .... | .... | .... | .... | .... | .... | .... | .... |
| Leading Economic Indicators (a)        | -0.5  | -0.6  | -1.2  | -0.6  | .... | .... | .... | .... | .... | .... | .... | .... |
| Balance of Trade & Services (f)        | -68.7 | -70.6 | -64.2 | ....  | .... | .... | .... | .... | .... | .... | .... | .... |
| Federal Funds Rate (%)                 | 4.33  | 4.57  | 4.65  | 4.83  | .... | .... | .... | .... | .... | .... | .... | .... |
| 3-Mo. Treasury Bill Rate (%)           | 4.69  | 4.79  | 4.86  | 5.07  | .... | .... | .... | .... | .... | .... | .... | .... |
| 10-Year Treasury Note Yield (%)        | 3.53  | 3.75  | 3.66  | 3.46  | .... | .... | .... | .... | .... | .... | .... | .... |

**2022 Historical Data**

| Monthly Indicator                      | Jan   | Feb   | Mar    | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct   | Nov   | Dec   |
|----------------------------------------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Retail and Food Service Sales (a)      | 1.4   | 1.4   | 2.1    | 1.2   | 0.0   | 0.6   | -0.5  | 0.7   | 0.0   | 1.0   | -1.3  | -0.7  |
| Auto & Light Truck Sales (b)           | 15.11 | 13.71 | 13.56  | 14.28 | 12.58 | 13.05 | 13.31 | 13.23 | 13.64 | 15.28 | 14.34 | 13.37 |
| Personal Income (a, current \$)        | -0.1  | 0.5   | 0.5    | 0.2   | 0.5   | 0.5   | 0.8   | 0.6   | 0.5   | 0.6   | 0.2   | 0.2   |
| Personal Consumption (a, current \$)   | 1.2   | 0.7   | 1.2    | 0.4   | 0.7   | 1.2   | -0.1  | 0.7   | 0.6   | 0.7   | -0.2  | 0.0   |
| Consumer Credit (e)                    | 4.9   | 8.6   | 11.1   | 7.7   | 7.3   | 9.4   | 7.1   | 7.7   | 7.0   | 9.0   | 8.5   | 4.7   |
| Consumer Sentiment (U. of Mich.)       | 67.2  | 62.8  | 59.4   | 65.2  | 58.4  | 50.0  | 51.5  | 58.2  | 58.6  | 59.9  | 56.8  | 59.7  |
| Household Employment (c)               | 1041  | 468   | 738    | -346  | 317   | -242  | 215   | 422   | 156   | -257  | -66   | 717   |
| Nonfarm Payroll Employment (c)         | 364   | 904   | 414    | 254   | 364   | 370   | 568   | 352   | 350   | 324   | 290   | 239   |
| Unemployment Rate (%)                  | 4.0   | 3.8   | 3.6    | 3.6   | 3.6   | 3.6   | 3.5   | 3.7   | 3.5   | 3.7   | 3.6   | 3.5   |
| Average Hourly Earnings (All, cur. \$) | 31.63 | 31.63 | 31.83  | 31.94 | 32.06 | 32.18 | 32.33 | 32.43 | 32.53 | 32.66 | 32.80 | 32.92 |
| Average Workweek (All, hrs.)           | 34.6  | 34.7  | 34.7   | 34.6  | 34.6  | 34.6  | 34.6  | 34.5  | 34.6  | 34.6  | 34.5  | 34.4  |
| Industrial Production (d)              | 2.3   | 6.6   | 4.4    | 4.6   | 3.7   | 3.2   | 3.0   | 3.1   | 4.5   | 3.1   | 1.9   | 0.6   |
| Capacity Utilization (%)               | 79.4  | 79.9  | 80.5   | 80.7  | 80.6  | 80.5  | 80.7  | 80.7  | 80.8  | 80.6  | 80.3  | 78.9  |
| ISM Manufacturing Index (g)            | 57.6  | 58.4  | 57.0   | 55.9  | 56.1  | 53.1  | 52.7  | 52.9  | 51.0  | 50.0  | 49.0  | 48.4  |
| ISM Nonmanufacturing Index (g)         | 60.4  | 57.2  | 58.4   | 57.5  | 56.4  | 56.0  | 56.4  | 56.1  | 55.9  | 54.5  | 55.5  | 49.2  |
| Housing Starts (b)                     | 1.669 | 1.771 | 1.713  | 1.803 | 1.543 | 1.561 | 1.371 | 1.505 | 1.463 | 1.432 | 1.427 | 1.357 |
| Housing Permits (b)                    | 1.898 | 1.817 | 1.877  | 1.795 | 1.708 | 1.701 | 1.658 | 1.586 | 1.588 | 1.555 | 1.402 | 1.409 |
| New Home Sales (1-family, c)           | 810   | 773   | 707    | 611   | 636   | 563   | 543   | 638   | 567   | 577   | 582   | 636   |
| Construction Expenditures (a)          | 2.7   | 1.5   | 0.9    | 0.7   | 0.7   | 0.6   | 0.8   | -1.1  | 0.5   | 0.0   | 1.8   | -0.1  |
| Consumer Price Index (nsa, d)          | 7.5   | 7.9   | 8.5    | 8.3   | 8.6   | 9.1   | 8.5   | 8.3   | 8.2   | 7.7   | 7.1   | 6.5   |
| CPI ex. Food and Energy (nsa, d)       | 6.0   | 6.4   | 6.5    | 6.2   | 6.0   | 5.9   | 5.9   | 6.3   | 6.6   | 6.3   | 6.0   | 5.7   |
| PCE Chain Price Index (d)              | 6.1   | 6.4   | 6.8    | 6.4   | 6.5   | 7.0   | 6.4   | 6.3   | 6.3   | 6.1   | 5.7   | 5.3   |
| Core PCE Chain Price Index (d)         | 5.2   | 5.4   | 5.4    | 5.0   | 4.9   | 5.0   | 4.7   | 4.9   | 5.2   | 5.1   | 4.8   | 4.6   |
| Producer Price Index (nsa, d)          | 10.1  | 10.4  | 11.7   | 11.2  | 11.1  | 11.2  | 9.7   | 8.7   | 8.5   | 8.2   | 7.4   | 6.4   |
| Durable Goods Orders (a)               | 2.0   | -1.4  | -0.1   | 1.0   | 0.7   | 1.6   | -0.8  | -0.1  | 0.3   | 1.0   | -3.1  | 4.5   |
| Leading Economic Indicators (a)        | -0.5  | 0.3   | 0.0    | -0.6  | -0.9  | -0.7  | -0.6  | -0.3  | -0.5  | -0.9  | -0.9  | -0.7  |
| Balance of Trade & Services (f)        | -87.4 | -87.3 | -106.4 | -86.0 | -85.4 | -80.8 | -69.8 | -64.6 | -72.6 | -77.2 | -60.6 | -67.2 |
| Federal Funds Rate (%)                 | 0.08  | 0.08  | 0.20   | 0.33  | 0.77  | 1.21  | 1.68  | 2.33  | 2.56  | 3.08  | 3.78  | 4.10  |
| 3-Mo. Treasury Bill Rate (%)           | 0.15  | 0.31  | 0.45   | 0.76  | 0.99  | 1.54  | 2.30  | 2.72  | 3.22  | 3.87  | 4.32  | 4.36  |
| 10-Year Treasury Note Yield (%)        | 1.76  | 1.93  | 2.13   | 2.75  | 2.90  | 3.14  | 2.90  | 2.90  | 3.52  | 3.98  | 3.89  | 3.62  |

(a) month-over-month % change; (b) millions, saar; (c) month-over-month change, thousands; (d) year-over-year % change; (e) annualized % change; (f) \$ billions; (g) level. Most series are subject to frequent government revisions. Use with care.

## Calendar of Upcoming Economic Data Releases

| Monday                                                                                                                                                      | Tuesday                                                                                                                                                                                                                                                                                | Wednesday                                                                                                                                                                                        | Thursday                                                                                                                                                                                                                                                                               | Friday                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                             |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                  | <b>June 1</b><br>ADP Employment Report (May)<br>Productivity & Costs (Q1)<br>ISM Manufacturing (May)<br>S&P Global Mfg PMI (May)<br>Construction (Apr)<br>Challenger Employment Report (May)<br>EIA Crude Oil Stocks<br>Weekly Jobless Claims                                          | <b>2</b><br>Employment Situation (May)                                                                                                                                             |
| <b>5</b><br>Manufacturers' Shipments, Inventories & Orders (Apr)<br>ISM Services PMI (May)<br>S&P Global Services PMI (May)<br>BEA Auto & Truck Sales (May) | <b>6</b><br>QFR (Q1)<br>Public Debt (May)<br>Interest Expense on the Public Debt (May)<br>Kansas City Fed Labor Market Conditions Indicators (May)<br>Short-Term Energy Outlook (May)                                                                                                  | <b>7</b><br>International Trade (Apr & Rev)<br>Transportation Services Index (Apr)<br>Consumer Credit (Apr)<br>Treasury Auction Allotments (May)<br>EIA Crude Oil Stocks<br>Mortgage Application | <b>8</b><br>Wholesale Trade (Apr)<br>Financial Account (Q1)<br>Weekly Jobless Claims                                                                                                                                                                                                   | <b>9</b><br>QSS (Q1)<br>Kansas City Financial Stress Index (May)                                                                                                                   |
| <b>12</b><br>Monthly Treasury (May)                                                                                                                         | <b>13</b><br>CPI & Real Earnings (May)<br>Cleveland Fed Median CPI (May)<br>Manpower Survey (Q3)<br>NFIB (May)<br>FOMC Meeting                                                                                                                                                         | <b>14</b><br>Producer Prices (May)<br>FOMC Meeting<br>EIA Crude Oil Stocks<br>Mortgage Application                                                                                               | <b>15</b><br>Import & Export Prices (May)<br>Advance Retail Sales (May)<br>IP & Capacity Utilization (May)<br>MTIS (Apr)<br>Empire State Mfg Survey (Jun)<br>Philadelphia Fed Mfg Business Outlook Survey (Jun)<br>TIC Data (Apr)<br>Weekly Jobless Claims                             | <b>16</b><br>Consumer Sentiment (Jun, Preliminary)<br>ECEC (Q1)<br>Business Leaders Survey (Jun)<br>Livingston Survey (Jun)                                                        |
| <b>19</b><br>Home Builders (Jun)<br><br><b>JUNETEENTH<br/>ALL MARKETS COSED</b>                                                                             | <b>20</b><br>New Residential Construction (May)<br>Philadelphia Fed Nonmanufacturing Business Outlook Survey (Jun)                                                                                                                                                                     | <b>21</b>                                                                                                                                                                                        | <b>22</b><br>Intl Transactions (Q1 & Rev)<br>Existing Home Sales (May)<br>Treasury Auction (Jun)<br>Chicago Fed National Activity Index (May)<br>Kansas City Fed Mfg (Jun)<br>Composite Indexes (May)<br>EIA Crude Oil Stocks<br>Mortgage Application<br>Weekly Jobless Claims         | <b>23</b><br>FRB Philadelphia Coincident Economic Activity Index(May)<br>S&P Global Flash PMI (Jun)                                                                                |
| <b>26</b><br>Texas Manufacturing Outlook Survey (Jun)<br>Dallas Fed Banking Conditions Survey (Jun)<br>Steel Imports for Consumption (May, Preliminary)     | <b>27</b><br>Adv Durable Goods (May)<br>Case-Shiller HPI (Apr)<br>FHFA HPI (Apr)<br>New Residential Sales (May)<br>H.6 Money Stock (May)<br>Final Building Permits (May)<br>Richmond Fed Mfg & Service Sector Surveys(Jun)<br>Texas Service Outlook (Jun)<br>Consumer Confidence (Jun) | <b>28</b><br>International Investment Position (Q1 & Revisions)<br>Advance Trade & Inventories (May)<br>EIA Crude Oil Stocks<br>Mortgage Application                                             | <b>29</b><br>GDP & Corp Profits (Q1, 3rd Estimate)<br>GDP by Industry (Q1)<br>Pending Home Sales (May)<br>Weekly Jobless Claims                                                                                                                                                        | <b>30</b><br>Personal Income (May)<br>Dallas Fed Trimmed-Mean PCE (May)<br>Agricultural Prices (May)<br>Strike Report (Jun)<br>Chicago PMI (Jun)<br>Consumer Sentiment (Jun,Final) |
| <b>July 3</b><br>Construction (May)<br>ISM Manufacturing (Jun)<br>S&P Global Mfg PMI (Jun)                                                                  | <b>4</b><br><br><b>INDEPENDENCE DAY<br/>ALL MARKETS COSED</b>                                                                                                                                                                                                                          | <b>5</b><br>Manufacturers' Shipments, Inventories & Orders (May)                                                                                                                                 | <b>6</b><br>ADP Employment Report (Jun)<br>International Trade (May)<br>ISM Services PMI (Jun)<br>S&P Global Services PMI (May)<br>BEA Auto & Truck Sales (Jun)<br>JOLTS (May)<br>Challenger Employment (Jun)<br>EIA Crude Oil Stocks<br>Mortgage Application<br>Weekly Jobless Claims | <b>7</b><br>Employment Situation (Jun)<br>Public Debt (Jun)<br>Interest Expense on the Public Debt (Jun)                                                                           |

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| Case      | Date      | Federal<br>Funds<br>Rate | 30-Day Avg<br>of 30-Year<br>Treasury<br>Bond Yield |  | Inflation<br>Rate | Auth'd<br>ROE |
|-----------|-----------|--------------------------|----------------------------------------------------|--|-------------------|---------------|
|           |           |                          |                                                    |  |                   |               |
| PU-17-398 | 9/26/2018 | 1.95%                    | 3.09%                                              |  | 2.20%             | 9.77%         |
| Current   | 7/31/2023 | 5.12%                    | 3.92%                                              |  | 4.70%             |               |

FRED Graph Observations  
Federal Reserve Economic Data  
Link: <https://fred.stlouisfed.org>  
Help: <https://fredhelp.stlouisfed.org>  
Economic Research Division  
Federal Reserve Bank of St. Louis

FEDFUNDS Federal Funds Effective Rate, Percent, Monthly, Not Seasonally Adjusted

Frequency: Monthly

| observation_date | FEDFUNDS |                               |       |
|------------------|----------|-------------------------------|-------|
| 2017-01-01       | 0.65     | As of 9/26/2018 Decision Date | 1.95% |
| 2017-02-01       | 0.66     |                               |       |
| 2017-03-01       | 0.79     | Current (as of July 31, 2023) | 5.12% |
| 2017-04-01       | 0.90     |                               |       |
| 2017-05-01       | 0.91     |                               |       |
| 2017-06-01       | 1.04     |                               |       |
| 2017-07-01       | 1.15     |                               |       |
| 2017-08-01       | 1.16     |                               |       |
| 2017-09-01       | 1.15     |                               |       |
| 2017-10-01       | 1.15     |                               |       |
| 2017-11-01       | 1.16     |                               |       |
| 2017-12-01       | 1.30     |                               |       |
| 2018-01-01       | 1.41     |                               |       |
| 2018-02-01       | 1.42     |                               |       |
| 2018-03-01       | 1.51     |                               |       |
| 2018-04-01       | 1.69     |                               |       |
| 2018-05-01       | 1.70     |                               |       |
| 2018-06-01       | 1.82     |                               |       |
| 2018-07-01       | 1.91     |                               |       |
| 2018-08-01       | 1.91     |                               |       |
| 2018-09-01       | 1.95     |                               |       |
| 2018-10-01       | 2.19     |                               |       |
| 2018-11-01       | 2.20     |                               |       |
| 2018-12-01       | 2.27     |                               |       |
| 2019-01-01       | 2.40     |                               |       |
| 2019-02-01       | 2.40     |                               |       |
| 2019-03-01       | 2.41     |                               |       |
| 2019-04-01       | 2.42     |                               |       |
| 2019-05-01       | 2.39     |                               |       |
| 2019-06-01       | 2.38     |                               |       |
| 2019-07-01       | 2.40     |                               |       |
| 2019-08-01       | 2.13     |                               |       |
| 2019-09-01       | 2.04     |                               |       |
| 2019-10-01       | 1.83     |                               |       |
| 2019-11-01       | 1.55     |                               |       |
| 2019-12-01       | 1.55     |                               |       |
| 2020-01-01       | 1.55     |                               |       |
| 2020-02-01       | 1.58     |                               |       |



FEDFUNDS Federal Funds Effective Rate, Percent, Monthly, Not Seasonally Adjusted

Frequency: Monthly

observation\_date

FEDFUNDS

|            |      |
|------------|------|
| 2020-03-01 | 0.65 |
| 2020-04-01 | 0.05 |
| 2020-05-01 | 0.05 |
| 2020-06-01 | 0.08 |
| 2020-07-01 | 0.09 |
| 2020-08-01 | 0.10 |
| 2020-09-01 | 0.09 |
| 2020-10-01 | 0.09 |
| 2020-11-01 | 0.09 |
| 2020-12-01 | 0.09 |
| 2021-01-01 | 0.09 |
| 2021-02-01 | 0.08 |
| 2021-03-01 | 0.07 |
| 2021-04-01 | 0.07 |
| 2021-05-01 | 0.06 |
| 2021-06-01 | 0.08 |
| 2021-07-01 | 0.10 |
| 2021-08-01 | 0.09 |
| 2021-09-01 | 0.08 |
| 2021-10-01 | 0.08 |
| 2021-11-01 | 0.08 |
| 2021-12-01 | 0.08 |
| 2022-01-01 | 0.08 |
| 2022-02-01 | 0.08 |
| 2022-03-01 | 0.20 |
| 2022-04-01 | 0.33 |
| 2022-05-01 | 0.77 |
| 2022-06-01 | 1.21 |
| 2022-07-01 | 1.68 |
| 2022-08-01 | 2.33 |
| 2022-09-01 | 2.56 |
| 2022-10-01 | 3.08 |
| 2022-11-01 | 3.78 |
| 2022-12-01 | 4.10 |
| 2023-01-01 | 4.33 |
| 2023-02-01 | 4.57 |
| 2023-03-01 | 4.65 |
| 2023-04-01 | 4.83 |
| 2023-05-01 | 5.06 |
| 2023-06-01 | 5.08 |
| 2023-07-01 | 5.12 |

FRED Graph Observations  
Federal Reserve Economic Data  
Link: <https://fred.stlouisfed.org>  
Help: <https://fredhelp.stlouisfed.org>  
Economic Research Division  
Federal Reserve Bank of St. Louis

DGS30 Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

| observation_date | DGS30 |       |                                          |       |
|------------------|-------|-------|------------------------------------------|-------|
| 2017-01-03       | 3.04  | 3.04% | 30 days prior to 9/26/2018 Decision Date | 3.09% |
| 2017-01-04       | 3.05  | 3.05% |                                          |       |
| 2017-01-05       | 2.96  | 2.96% | Current (thru 7/31/23)                   | 3.92% |
| 2017-01-06       | 3.00  | 3.00% |                                          |       |
| 2017-01-09       | 2.97  | 2.97% |                                          |       |
| 2017-01-10       | 2.97  | 2.97% |                                          |       |
| 2017-01-11       | 2.96  | 2.96% |                                          |       |
| 2017-01-12       | 3.01  | 3.01% |                                          |       |
| 2017-01-13       | 2.99  | 2.99% |                                          |       |
| 2017-01-16       | 0     |       |                                          |       |
| 2017-01-17       | 2.93  | 2.93% |                                          |       |
| 2017-01-18       | 3.00  | 3.00% |                                          |       |
| 2017-01-19       | 3.04  | 3.04% |                                          |       |
| 2017-01-20       | 3.05  | 3.05% |                                          |       |
| 2017-01-23       | 2.99  | 2.99% |                                          |       |
| 2017-01-24       | 3.05  | 3.05% |                                          |       |
| 2017-01-25       | 3.10  | 3.10% |                                          |       |
| 2017-01-26       | 3.08  | 3.08% |                                          |       |
| 2017-01-27       | 3.06  | 3.06% |                                          |       |
| 2017-01-30       | 3.08  | 3.08% |                                          |       |
| 2017-01-31       | 3.05  | 3.05% |                                          |       |
| 2017-02-01       | 3.08  | 3.08% |                                          |       |
| 2017-02-02       | 3.09  | 3.09% |                                          |       |
| 2017-02-03       | 3.11  | 3.11% |                                          |       |
| 2017-02-06       | 3.05  | 3.05% |                                          |       |
| 2017-02-07       | 3.02  | 3.02% |                                          |       |
| 2017-02-08       | 2.96  | 2.96% |                                          |       |
| 2017-02-09       | 3.02  | 3.02% |                                          |       |
| 2017-02-10       | 3.01  | 3.01% |                                          |       |
| 2017-02-13       | 3.03  | 3.03% |                                          |       |
| 2017-02-14       | 3.07  | 3.07% |                                          |       |
| 2017-02-15       | 3.09  | 3.09% |                                          |       |
| 2017-02-16       | 3.05  | 3.05% |                                          |       |
| 2017-02-17       | 3.03  | 3.03% |                                          |       |
| 2017-02-20       | 0     |       |                                          |       |
| 2017-02-21       | 3.04  | 3.04% |                                          |       |
| 2017-02-22       | 3.04  | 3.04% |                                          |       |
| 2017-02-23       | 3.02  | 3.02% |                                          |       |
| 2017-02-24       | 2.95  | 2.95% |                                          |       |
| 2017-02-27       | 2.98  | 2.98% |                                          |       |
| 2017-02-28       | 2.97  | 2.97% |                                          |       |
| 2017-03-01       | 3.06  | 3.06% |                                          |       |
| 2017-03-02       | 3.09  | 3.09% |                                          |       |
| 2017-03-03       | 3.08  | 3.08% |                                          |       |
| 2017-03-06       | 3.10  | 3.10% |                                          |       |
| 2017-03-07       | 3.11  | 3.11% |                                          |       |
| 2017-03-08       | 3.15  | 3.15% |                                          |       |
| 2017-03-09       | 3.19  | 3.19% |                                          |       |
| 2017-03-10       | 3.16  | 3.16% |                                          |       |
| 2017-03-13       | 3.20  | 3.20% |                                          |       |
| 2017-03-14       | 3.17  | 3.17% |                                          |       |
| 2017-03-15       | 3.11  | 3.11% |                                          |       |
| 2017-03-16       | 3.14  | 3.14% |                                          |       |
| 2017-03-17       | 3.11  | 3.11% |                                          |       |
| 2017-03-20       | 3.08  | 3.08% |                                          |       |
| 2017-03-21       | 3.04  | 3.04% |                                          |       |
| 2017-03-22       | 3.02  | 3.02% |                                          |       |
| 2017-03-23       | 3.02  | 3.02% |                                          |       |
| 2017-03-24       | 3.00  | 3.00% |                                          |       |
| 2017-03-27       | 2.98  | 2.98% |                                          |       |
| 2017-03-28       | 3.02  | 3.02% |                                          |       |
| 2017-03-29       | 2.99  | 2.99% |                                          |       |
| 2017-03-30       | 3.03  | 3.03% |                                          |       |
| 2017-03-31       | 3.02  | 3.02% |                                          |       |
| 2017-04-03       | 2.98  | 2.98% |                                          |       |
| 2017-04-04       | 2.99  | 2.99% |                                          |       |
| 2017-04-05       | 2.98  | 2.98% |                                          |       |
| 2017-04-06       | 2.99  | 2.99% |                                          |       |
| 2017-04-07       | 3.00  | 3.00% |                                          |       |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2017-04-10 | 2.99 | 2.99% |
| 2017-04-11 | 2.93 | 2.93% |
| 2017-04-12 | 2.92 | 2.92% |
| 2017-04-13 | 2.89 | 2.89% |
| 2017-04-14 | 0    |       |
| 2017-04-17 | 2.92 | 2.92% |
| 2017-04-18 | 2.84 | 2.84% |
| 2017-04-19 | 2.87 | 2.87% |
| 2017-04-20 | 2.89 | 2.89% |
| 2017-04-21 | 2.89 | 2.89% |
| 2017-04-24 | 2.93 | 2.93% |
| 2017-04-25 | 2.99 | 2.99% |
| 2017-04-26 | 2.97 | 2.97% |
| 2017-04-27 | 2.96 | 2.96% |
| 2017-04-28 | 2.96 | 2.96% |
| 2017-05-01 | 3.00 | 3.00% |
| 2017-05-02 | 2.97 | 2.97% |
| 2017-05-03 | 2.97 | 2.97% |
| 2017-05-04 | 3.00 | 3.00% |
| 2017-05-05 | 2.99 | 2.99% |
| 2017-05-08 | 3.02 | 3.02% |
| 2017-05-09 | 3.04 | 3.04% |
| 2017-05-10 | 3.03 | 3.03% |
| 2017-05-11 | 3.03 | 3.03% |
| 2017-05-12 | 2.98 | 2.98% |
| 2017-05-15 | 3.00 | 3.00% |
| 2017-05-16 | 2.99 | 2.99% |
| 2017-05-17 | 2.91 | 2.91% |
| 2017-05-18 | 2.90 | 2.90% |
| 2017-05-19 | 2.90 | 2.90% |
| 2017-05-22 | 2.91 | 2.91% |
| 2017-05-23 | 2.95 | 2.95% |
| 2017-05-24 | 2.92 | 2.92% |
| 2017-05-25 | 2.92 | 2.92% |
| 2017-05-26 | 2.92 | 2.92% |
| 2017-05-29 | 0    |       |
| 2017-05-30 | 2.88 | 2.88% |
| 2017-05-31 | 2.87 | 2.87% |
| 2017-06-01 | 2.87 | 2.87% |
| 2017-06-02 | 2.80 | 2.80% |
| 2017-06-05 | 2.84 | 2.84% |
| 2017-06-06 | 2.81 | 2.81% |
| 2017-06-07 | 2.84 | 2.84% |
| 2017-06-08 | 2.85 | 2.85% |
| 2017-06-09 | 2.86 | 2.86% |
| 2017-06-12 | 2.86 | 2.86% |
| 2017-06-13 | 2.87 | 2.87% |
| 2017-06-14 | 2.79 | 2.79% |
| 2017-06-15 | 2.78 | 2.78% |
| 2017-06-16 | 2.78 | 2.78% |
| 2017-06-19 | 2.79 | 2.79% |
| 2017-06-20 | 2.74 | 2.74% |
| 2017-06-21 | 2.73 | 2.73% |
| 2017-06-22 | 2.72 | 2.72% |
| 2017-06-23 | 2.71 | 2.71% |
| 2017-06-26 | 2.70 | 2.70% |
| 2017-06-27 | 2.75 | 2.75% |
| 2017-06-28 | 2.77 | 2.77% |
| 2017-06-29 | 2.82 | 2.82% |
| 2017-06-30 | 2.84 | 2.84% |
| 2017-07-03 | 2.86 | 2.86% |
| 2017-07-04 | 0    |       |
| 2017-07-05 | 2.85 | 2.85% |
| 2017-07-06 | 2.90 | 2.90% |
| 2017-07-07 | 2.93 | 2.93% |
| 2017-07-10 | 2.93 | 2.93% |
| 2017-07-11 | 2.92 | 2.92% |
| 2017-07-12 | 2.89 | 2.89% |
| 2017-07-13 | 2.92 | 2.92% |
| 2017-07-14 | 2.91 | 2.91% |
| 2017-07-17 | 2.89 | 2.89% |
| 2017-07-18 | 2.85 | 2.85% |
| 2017-07-19 | 2.85 | 2.85% |
| 2017-07-20 | 2.83 | 2.83% |
| 2017-07-21 | 2.81 | 2.81% |
| 2017-07-24 | 2.83 | 2.83% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2017-07-25 | 2.91 | 2.91% |
| 2017-07-26 | 2.89 | 2.89% |
| 2017-07-27 | 2.93 | 2.93% |
| 2017-07-28 | 2.89 | 2.89% |
| 2017-07-31 | 2.89 | 2.89% |
| 2017-08-01 | 2.86 | 2.86% |
| 2017-08-02 | 2.85 | 2.85% |
| 2017-08-03 | 2.81 | 2.81% |
| 2017-08-04 | 2.84 | 2.84% |
| 2017-08-07 | 2.84 | 2.84% |
| 2017-08-08 | 2.86 | 2.86% |
| 2017-08-09 | 2.82 | 2.82% |
| 2017-08-10 | 2.79 | 2.79% |
| 2017-08-11 | 2.79 | 2.79% |
| 2017-08-14 | 2.81 | 2.81% |
| 2017-08-15 | 2.84 | 2.84% |
| 2017-08-16 | 2.81 | 2.81% |
| 2017-08-17 | 2.78 | 2.78% |
| 2017-08-18 | 2.78 | 2.78% |
| 2017-08-21 | 2.77 | 2.77% |
| 2017-08-22 | 2.79 | 2.79% |
| 2017-08-23 | 2.75 | 2.75% |
| 2017-08-24 | 2.77 | 2.77% |
| 2017-08-25 | 2.75 | 2.75% |
| 2017-08-28 | 2.76 | 2.76% |
| 2017-08-29 | 2.74 | 2.74% |
| 2017-08-30 | 2.75 | 2.75% |
| 2017-08-31 | 2.73 | 2.73% |
| 2017-09-01 | 2.77 | 2.77% |
| 2017-09-04 | 0    |       |
| 2017-09-05 | 2.69 | 2.69% |
| 2017-09-06 | 2.72 | 2.72% |
| 2017-09-07 | 2.66 | 2.66% |
| 2017-09-08 | 2.67 | 2.67% |
| 2017-09-11 | 2.75 | 2.75% |
| 2017-09-12 | 2.78 | 2.78% |
| 2017-09-13 | 2.79 | 2.79% |
| 2017-09-14 | 2.77 | 2.77% |
| 2017-09-15 | 2.77 | 2.77% |
| 2017-09-18 | 2.80 | 2.80% |
| 2017-09-19 | 2.81 | 2.81% |
| 2017-09-20 | 2.82 | 2.82% |
| 2017-09-21 | 2.80 | 2.80% |
| 2017-09-22 | 2.80 | 2.80% |
| 2017-09-25 | 2.76 | 2.76% |
| 2017-09-26 | 2.78 | 2.78% |
| 2017-09-27 | 2.86 | 2.86% |
| 2017-09-28 | 2.87 | 2.87% |
| 2017-09-29 | 2.86 | 2.86% |
| 2017-10-02 | 2.87 | 2.87% |
| 2017-10-03 | 2.87 | 2.87% |
| 2017-10-04 | 2.87 | 2.87% |
| 2017-10-05 | 2.89 | 2.89% |
| 2017-10-06 | 2.91 | 2.91% |
| 2017-10-09 | 0    |       |
| 2017-10-10 | 2.88 | 2.88% |
| 2017-10-11 | 2.88 | 2.88% |
| 2017-10-12 | 2.86 | 2.86% |
| 2017-10-13 | 2.81 | 2.81% |
| 2017-10-16 | 2.82 | 2.82% |
| 2017-10-17 | 2.80 | 2.80% |
| 2017-10-18 | 2.85 | 2.85% |
| 2017-10-19 | 2.83 | 2.83% |
| 2017-10-20 | 2.89 | 2.89% |
| 2017-10-23 | 2.89 | 2.89% |
| 2017-10-24 | 2.92 | 2.92% |
| 2017-10-25 | 2.95 | 2.95% |
| 2017-10-26 | 2.96 | 2.96% |
| 2017-10-27 | 2.93 | 2.93% |
| 2017-10-30 | 2.88 | 2.88% |
| 2017-10-31 | 2.88 | 2.88% |
| 2017-11-01 | 2.85 | 2.85% |
| 2017-11-02 | 2.83 | 2.83% |
| 2017-11-03 | 2.82 | 2.82% |
| 2017-11-06 | 2.80 | 2.80% |
| 2017-11-07 | 2.77 | 2.77% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2017-11-08 | 2.79 | 2.79% |
| 2017-11-09 | 2.81 | 2.81% |
| 2017-11-10 | 2.88 | 2.88% |
| 2017-11-13 | 2.87 | 2.87% |
| 2017-11-14 | 2.84 | 2.84% |
| 2017-11-15 | 2.77 | 2.77% |
| 2017-11-16 | 2.81 | 2.81% |
| 2017-11-17 | 2.78 | 2.78% |
| 2017-11-20 | 2.78 | 2.78% |
| 2017-11-21 | 2.76 | 2.76% |
| 2017-11-22 | 2.75 | 2.75% |
| 2017-11-23 | 0    |       |
| 2017-11-24 | 2.76 | 2.76% |
| 2017-11-27 | 2.76 | 2.76% |
| 2017-11-28 | 2.77 | 2.77% |
| 2017-11-29 | 2.81 | 2.81% |
| 2017-11-30 | 2.83 | 2.83% |
| 2017-12-01 | 2.76 | 2.76% |
| 2017-12-04 | 2.77 | 2.77% |
| 2017-12-05 | 2.73 | 2.73% |
| 2017-12-06 | 2.71 | 2.71% |
| 2017-12-07 | 2.76 | 2.76% |
| 2017-12-08 | 2.77 | 2.77% |
| 2017-12-11 | 2.77 | 2.77% |
| 2017-12-12 | 2.79 | 2.79% |
| 2017-12-13 | 2.74 | 2.74% |
| 2017-12-14 | 2.71 | 2.71% |
| 2017-12-15 | 2.68 | 2.68% |
| 2017-12-18 | 2.74 | 2.74% |
| 2017-12-19 | 2.82 | 2.82% |
| 2017-12-20 | 2.88 | 2.88% |
| 2017-12-21 | 2.84 | 2.84% |
| 2017-12-22 | 2.83 | 2.83% |
| 2017-12-25 | 0    |       |
| 2017-12-26 | 2.82 | 2.82% |
| 2017-12-27 | 2.75 | 2.75% |
| 2017-12-28 | 2.75 | 2.75% |
| 2017-12-29 | 2.74 | 2.74% |
| 2018-01-01 | 0    |       |
| 2018-01-02 | 2.81 | 2.81% |
| 2018-01-03 | 2.78 | 2.78% |
| 2018-01-04 | 2.79 | 2.79% |
| 2018-01-05 | 2.81 | 2.81% |
| 2018-01-08 | 2.81 | 2.81% |
| 2018-01-09 | 2.88 | 2.88% |
| 2018-01-10 | 2.88 | 2.88% |
| 2018-01-11 | 2.91 | 2.91% |
| 2018-01-12 | 2.85 | 2.85% |
| 2018-01-15 | 0    |       |
| 2018-01-16 | 2.83 | 2.83% |
| 2018-01-17 | 2.84 | 2.84% |
| 2018-01-18 | 2.90 | 2.90% |
| 2018-01-19 | 2.91 | 2.91% |
| 2018-01-22 | 2.93 | 2.93% |
| 2018-01-23 | 2.90 | 2.90% |
| 2018-01-24 | 2.93 | 2.93% |
| 2018-01-25 | 2.89 | 2.89% |
| 2018-01-26 | 2.91 | 2.91% |
| 2018-01-29 | 2.94 | 2.94% |
| 2018-01-30 | 2.98 | 2.98% |
| 2018-01-31 | 2.95 | 2.95% |
| 2018-02-01 | 3.01 | 3.01% |
| 2018-02-02 | 3.08 | 3.08% |
| 2018-02-05 | 3.04 | 3.04% |
| 2018-02-06 | 3.06 | 3.06% |
| 2018-02-07 | 3.12 | 3.12% |
| 2018-02-08 | 3.14 | 3.14% |
| 2018-02-09 | 3.14 | 3.14% |
| 2018-02-12 | 3.14 | 3.14% |
| 2018-02-13 | 3.11 | 3.11% |
| 2018-02-14 | 3.18 | 3.18% |
| 2018-02-15 | 3.15 | 3.15% |
| 2018-02-16 | 3.13 | 3.13% |
| 2018-02-19 | 0    |       |
| 2018-02-20 | 3.15 | 3.15% |
| 2018-02-21 | 3.22 | 3.22% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2018-02-22 | 3.21 | 3.21% |
| 2018-02-23 | 3.16 | 3.16% |
| 2018-02-26 | 3.15 | 3.15% |
| 2018-02-27 | 3.17 | 3.17% |
| 2018-02-28 | 3.13 | 3.13% |
| 2018-03-01 | 3.09 | 3.09% |
| 2018-03-02 | 3.14 | 3.14% |
| 2018-03-05 | 3.16 | 3.16% |
| 2018-03-06 | 3.14 | 3.14% |
| 2018-03-07 | 3.15 | 3.15% |
| 2018-03-08 | 3.13 | 3.13% |
| 2018-03-09 | 3.16 | 3.16% |
| 2018-03-12 | 3.13 | 3.13% |
| 2018-03-13 | 3.10 | 3.10% |
| 2018-03-14 | 3.05 | 3.05% |
| 2018-03-15 | 3.05 | 3.05% |
| 2018-03-16 | 3.08 | 3.08% |
| 2018-03-19 | 3.09 | 3.09% |
| 2018-03-20 | 3.12 | 3.12% |
| 2018-03-21 | 3.12 | 3.12% |
| 2018-03-22 | 3.06 | 3.06% |
| 2018-03-23 | 3.06 | 3.06% |
| 2018-03-26 | 3.08 | 3.08% |
| 2018-03-27 | 3.03 | 3.03% |
| 2018-03-28 | 3.01 | 3.01% |
| 2018-03-29 | 2.97 | 2.97% |
| 2018-03-30 | 0    |       |
| 2018-04-02 | 2.97 | 2.97% |
| 2018-04-03 | 3.02 | 3.02% |
| 2018-04-04 | 3.03 | 3.03% |
| 2018-04-05 | 3.07 | 3.07% |
| 2018-04-06 | 3.01 | 3.01% |
| 2018-04-09 | 3.02 | 3.02% |
| 2018-04-10 | 3.02 | 3.02% |
| 2018-04-11 | 2.99 | 2.99% |
| 2018-04-12 | 3.05 | 3.05% |
| 2018-04-13 | 3.03 | 3.03% |
| 2018-04-16 | 3.03 | 3.03% |
| 2018-04-17 | 3.00 | 3.00% |
| 2018-04-18 | 3.06 | 3.06% |
| 2018-04-19 | 3.11 | 3.11% |
| 2018-04-20 | 3.14 | 3.14% |
| 2018-04-23 | 3.15 | 3.15% |
| 2018-04-24 | 3.18 | 3.18% |
| 2018-04-25 | 3.21 | 3.21% |
| 2018-04-26 | 3.18 | 3.18% |
| 2018-04-27 | 3.13 | 3.13% |
| 2018-04-30 | 3.11 | 3.11% |
| 2018-05-01 | 3.13 | 3.13% |
| 2018-05-02 | 3.14 | 3.14% |
| 2018-05-03 | 3.12 | 3.12% |
| 2018-05-04 | 3.12 | 3.12% |
| 2018-05-07 | 3.12 | 3.12% |
| 2018-05-08 | 3.13 | 3.13% |
| 2018-05-09 | 3.16 | 3.16% |
| 2018-05-10 | 3.12 | 3.12% |
| 2018-05-11 | 3.10 | 3.10% |
| 2018-05-14 | 3.13 | 3.13% |
| 2018-05-15 | 3.20 | 3.20% |
| 2018-05-16 | 3.21 | 3.21% |
| 2018-05-17 | 3.25 | 3.25% |
| 2018-05-18 | 3.20 | 3.20% |
| 2018-05-21 | 3.20 | 3.20% |
| 2018-05-22 | 3.21 | 3.21% |
| 2018-05-23 | 3.17 | 3.17% |
| 2018-05-24 | 3.13 | 3.13% |
| 2018-05-25 | 3.09 | 3.09% |
| 2018-05-28 | 0    |       |
| 2018-05-29 | 2.96 | 2.96% |
| 2018-05-30 | 3.01 | 3.01% |
| 2018-05-31 | 3.00 | 3.00% |
| 2018-06-01 | 3.04 | 3.04% |
| 2018-06-04 | 3.08 | 3.08% |
| 2018-06-05 | 3.07 | 3.07% |
| 2018-06-06 | 3.13 | 3.13% |
| 2018-06-07 | 3.08 | 3.08% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2018-06-08 | 3.08 | 3.08% |
| 2018-06-11 | 3.10 | 3.10% |
| 2018-06-12 | 3.09 | 3.09% |
| 2018-06-13 | 3.10 | 3.10% |
| 2018-06-14 | 3.05 | 3.05% |
| 2018-06-15 | 3.05 | 3.05% |
| 2018-06-18 | 3.05 | 3.05% |
| 2018-06-19 | 3.02 | 3.02% |
| 2018-06-20 | 3.06 | 3.06% |
| 2018-06-21 | 3.04 | 3.04% |
| 2018-06-22 | 3.04 | 3.04% |
| 2018-06-25 | 3.02 | 3.02% |
| 2018-06-26 | 3.03 | 3.03% |
| 2018-06-27 | 2.97 | 2.97% |
| 2018-06-28 | 2.97 | 2.97% |
| 2018-06-29 | 2.98 | 2.98% |
| 2018-07-02 | 2.99 | 2.99% |
| 2018-07-03 | 2.96 | 2.96% |
| 2018-07-04 | 0    |       |
| 2018-07-05 | 2.95 | 2.95% |
| 2018-07-06 | 2.94 | 2.94% |
| 2018-07-09 | 2.96 | 2.96% |
| 2018-07-10 | 2.97 | 2.97% |
| 2018-07-11 | 2.95 | 2.95% |
| 2018-07-12 | 2.95 | 2.95% |
| 2018-07-13 | 2.94 | 2.94% |
| 2018-07-16 | 2.96 | 2.96% |
| 2018-07-17 | 2.97 | 2.97% |
| 2018-07-18 | 2.99 | 2.99% |
| 2018-07-19 | 2.96 | 2.96% |
| 2018-07-20 | 3.03 | 3.03% |
| 2018-07-23 | 3.10 | 3.10% |
| 2018-07-24 | 3.08 | 3.08% |
| 2018-07-25 | 3.06 | 3.06% |
| 2018-07-26 | 3.10 | 3.10% |
| 2018-07-27 | 3.09 | 3.09% |
| 2018-07-30 | 3.11 | 3.11% |
| 2018-07-31 | 3.08 | 3.08% |
| 2018-08-01 | 3.13 | 3.13% |
| 2018-08-02 | 3.12 | 3.12% |
| 2018-08-03 | 3.09 | 3.09% |
| 2018-08-06 | 3.08 | 3.08% |
| 2018-08-07 | 3.12 | 3.12% |
| 2018-08-08 | 3.12 | 3.12% |
| 2018-08-09 | 3.08 | 3.08% |
| 2018-08-10 | 3.03 | 3.03% |
| 2018-08-13 | 3.05 | 3.05% |
| 2018-08-14 | 3.06 | 3.06% |
| 2018-08-15 | 3.03 | 3.03% |
| 2018-08-16 | 3.03 | 3.03% |
| 2018-08-17 | 3.03 | 3.03% |
| 2018-08-20 | 2.99 | 2.99% |
| 2018-08-21 | 3.00 | 3.00% |
| 2018-08-22 | 2.99 | 2.99% |
| 2018-08-23 | 2.97 | 2.97% |
| 2018-08-24 | 2.97 | 2.97% |
| 2018-08-27 | 3.00 | 3.00% |
| 2018-08-28 | 3.03 | 3.03% |
| 2018-08-29 | 3.02 | 3.02% |
| 2018-08-30 | 3.00 | 3.00% |
| 2018-08-31 | 3.02 | 3.02% |
| 2018-09-03 | 0    |       |
| 2018-09-04 | 3.07 | 3.07% |
| 2018-09-05 | 3.08 | 3.08% |
| 2018-09-06 | 3.06 | 3.06% |
| 2018-09-07 | 3.11 | 3.11% |
| 2018-09-10 | 3.09 | 3.09% |
| 2018-09-11 | 3.13 | 3.13% |
| 2018-09-12 | 3.11 | 3.11% |
| 2018-09-13 | 3.11 | 3.11% |
| 2018-09-14 | 3.13 | 3.13% |
| 2018-09-17 | 3.13 | 3.13% |
| 2018-09-18 | 3.20 | 3.20% |
| 2018-09-19 | 3.23 | 3.23% |
| 2018-09-20 | 3.21 | 3.21% |
| 2018-09-21 | 3.20 | 3.20% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2018-09-24 | 3.21 | 3.21% |
| 2018-09-25 | 3.23 | 3.23% |
| 2018-09-26 | 3.19 | 3.19% |
| 2018-09-27 | 3.19 | 3.19% |
| 2018-09-28 | 3.19 | 3.19% |
| 2018-10-01 | 3.24 | 3.24% |
| 2018-10-02 | 3.20 | 3.20% |
| 2018-10-03 | 3.30 | 3.30% |
| 2018-10-04 | 3.35 | 3.35% |
| 2018-10-05 | 3.40 | 3.40% |
| 2018-10-08 | 0    |       |
| 2018-10-09 | 3.37 | 3.37% |
| 2018-10-10 | 3.39 | 3.39% |
| 2018-10-11 | 3.32 | 3.32% |
| 2018-10-12 | 3.32 | 3.32% |
| 2018-10-15 | 3.34 | 3.34% |
| 2018-10-16 | 3.32 | 3.32% |
| 2018-10-17 | 3.35 | 3.35% |
| 2018-10-18 | 3.36 | 3.36% |
| 2018-10-19 | 3.38 | 3.38% |
| 2018-10-22 | 3.38 | 3.38% |
| 2018-10-23 | 3.37 | 3.37% |
| 2018-10-24 | 3.33 | 3.33% |
| 2018-10-25 | 3.35 | 3.35% |
| 2018-10-26 | 3.32 | 3.32% |
| 2018-10-29 | 3.33 | 3.33% |
| 2018-10-30 | 3.36 | 3.36% |
| 2018-10-31 | 3.39 | 3.39% |
| 2018-11-01 | 3.38 | 3.38% |
| 2018-11-02 | 3.46 | 3.46% |
| 2018-11-05 | 3.43 | 3.43% |
| 2018-11-06 | 3.43 | 3.43% |
| 2018-11-07 | 3.43 | 3.43% |
| 2018-11-08 | 3.43 | 3.43% |
| 2018-11-09 | 3.40 | 3.40% |
| 2018-11-12 | 0    |       |
| 2018-11-13 | 3.36 | 3.36% |
| 2018-11-14 | 3.35 | 3.35% |
| 2018-11-15 | 3.36 | 3.36% |
| 2018-11-16 | 3.33 | 3.33% |
| 2018-11-19 | 3.32 | 3.32% |
| 2018-11-20 | 3.31 | 3.31% |
| 2018-11-21 | 3.31 | 3.31% |
| 2018-11-22 | 0    |       |
| 2018-11-23 | 3.31 | 3.31% |
| 2018-11-26 | 3.32 | 3.32% |
| 2018-11-27 | 3.32 | 3.32% |
| 2018-11-28 | 3.34 | 3.34% |
| 2018-11-29 | 3.33 | 3.33% |
| 2018-11-30 | 3.30 | 3.30% |
| 2018-12-03 | 3.27 | 3.27% |
| 2018-12-04 | 3.16 | 3.16% |
| 2018-12-05 | 0    |       |
| 2018-12-06 | 3.14 | 3.14% |
| 2018-12-07 | 3.14 | 3.14% |
| 2018-12-10 | 3.13 | 3.13% |
| 2018-12-11 | 3.13 | 3.13% |
| 2018-12-12 | 3.15 | 3.15% |
| 2018-12-13 | 3.16 | 3.16% |
| 2018-12-14 | 3.14 | 3.14% |
| 2018-12-17 | 3.11 | 3.11% |
| 2018-12-18 | 3.07 | 3.07% |
| 2018-12-19 | 3.00 | 3.00% |
| 2018-12-20 | 3.02 | 3.02% |
| 2018-12-21 | 3.03 | 3.03% |
| 2018-12-24 | 3.00 | 3.00% |
| 2018-12-25 | 0    |       |
| 2018-12-26 | 3.06 | 3.06% |
| 2018-12-27 | 3.05 | 3.05% |
| 2018-12-28 | 3.04 | 3.04% |
| 2018-12-31 | 3.02 | 3.02% |
| 2019-01-01 | 0    |       |
| 2019-01-02 | 2.97 | 2.97% |
| 2019-01-03 | 2.92 | 2.92% |
| 2019-01-04 | 2.98 | 2.98% |
| 2019-01-07 | 2.99 | 2.99% |



DGS30 Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

| observation_date | DGS30 |       |
|------------------|-------|-------|
| 2019-01-08       | 3.00  | 3.00% |
| 2019-01-09       | 3.03  | 3.03% |
| 2019-01-10       | 3.06  | 3.06% |
| 2019-01-11       | 3.04  | 3.04% |
| 2019-01-14       | 3.06  | 3.06% |
| 2019-01-15       | 3.08  | 3.08% |
| 2019-01-16       | 3.07  | 3.07% |
| 2019-01-17       | 3.07  | 3.07% |
| 2019-01-18       | 3.09  | 3.09% |
| 2019-01-21       | 0     |       |
| 2019-01-22       | 3.06  | 3.06% |
| 2019-01-23       | 3.07  | 3.07% |
| 2019-01-24       | 3.04  | 3.04% |
| 2019-01-25       | 3.06  | 3.06% |
| 2019-01-28       | 3.06  | 3.06% |
| 2019-01-29       | 3.04  | 3.04% |
| 2019-01-30       | 3.06  | 3.06% |
| 2019-01-31       | 2.99  | 2.99% |
| 2019-02-01       | 3.03  | 3.03% |
| 2019-02-04       | 3.06  | 3.06% |
| 2019-02-05       | 3.03  | 3.03% |
| 2019-02-06       | 3.03  | 3.03% |
| 2019-02-07       | 3.00  | 3.00% |
| 2019-02-08       | 2.97  | 2.97% |
| 2019-02-11       | 3.00  | 3.00% |
| 2019-02-12       | 3.02  | 3.02% |
| 2019-02-13       | 3.04  | 3.04% |
| 2019-02-14       | 3.01  | 3.01% |
| 2019-02-15       | 3.00  | 3.00% |
| 2019-02-18       | 0     |       |
| 2019-02-19       | 2.99  | 2.99% |
| 2019-02-20       | 3.00  | 3.00% |
| 2019-02-21       | 3.05  | 3.05% |
| 2019-02-22       | 3.02  | 3.02% |
| 2019-02-25       | 3.03  | 3.03% |
| 2019-02-26       | 3.01  | 3.01% |
| 2019-02-27       | 3.07  | 3.07% |
| 2019-02-28       | 3.09  | 3.09% |
| 2019-03-01       | 3.13  | 3.13% |
| 2019-03-04       | 3.09  | 3.09% |
| 2019-03-05       | 3.08  | 3.08% |
| 2019-03-06       | 3.06  | 3.06% |
| 2019-03-07       | 3.03  | 3.03% |
| 2019-03-08       | 3.00  | 3.00% |
| 2019-03-11       | 3.03  | 3.03% |
| 2019-03-12       | 3.00  | 3.00% |
| 2019-03-13       | 3.02  | 3.02% |
| 2019-03-14       | 3.04  | 3.04% |
| 2019-03-15       | 3.02  | 3.02% |
| 2019-03-18       | 3.01  | 3.01% |
| 2019-03-19       | 3.02  | 3.02% |
| 2019-03-20       | 2.98  | 2.98% |
| 2019-03-21       | 2.96  | 2.96% |
| 2019-03-22       | 2.88  | 2.88% |
| 2019-03-25       | 2.87  | 2.87% |
| 2019-03-26       | 2.86  | 2.86% |
| 2019-03-27       | 2.83  | 2.83% |
| 2019-03-28       | 2.81  | 2.81% |
| 2019-03-29       | 2.81  | 2.81% |
| 2019-04-01       | 2.89  | 2.89% |
| 2019-04-02       | 2.88  | 2.88% |
| 2019-04-03       | 2.93  | 2.93% |
| 2019-04-04       | 2.92  | 2.92% |
| 2019-04-05       | 2.91  | 2.91% |
| 2019-04-08       | 2.93  | 2.93% |
| 2019-04-09       | 2.92  | 2.92% |
| 2019-04-10       | 2.90  | 2.90% |
| 2019-04-11       | 2.94  | 2.94% |
| 2019-04-12       | 2.97  | 2.97% |
| 2019-04-15       | 2.96  | 2.96% |
| 2019-04-16       | 2.99  | 2.99% |
| 2019-04-17       | 2.99  | 2.99% |
| 2019-04-18       | 2.96  | 2.96% |
| 2019-04-19       | 0     |       |
| 2019-04-22       | 2.99  | 2.99% |
| 2019-04-23       | 2.98  | 2.98% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2019-04-24 | 2.94 | 2.94% |
| 2019-04-25 | 2.94 | 2.94% |
| 2019-04-26 | 2.92 | 2.92% |
| 2019-04-29 | 2.96 | 2.96% |
| 2019-04-30 | 2.93 | 2.93% |
| 2019-05-01 | 2.92 | 2.92% |
| 2019-05-02 | 2.94 | 2.94% |
| 2019-05-03 | 2.93 | 2.93% |
| 2019-05-06 | 2.91 | 2.91% |
| 2019-05-07 | 2.86 | 2.86% |
| 2019-05-08 | 2.89 | 2.89% |
| 2019-05-09 | 2.87 | 2.87% |
| 2019-05-10 | 2.89 | 2.89% |
| 2019-05-13 | 2.83 | 2.83% |
| 2019-05-14 | 2.86 | 2.86% |
| 2019-05-15 | 2.82 | 2.82% |
| 2019-05-16 | 2.84 | 2.84% |
| 2019-05-17 | 2.82 | 2.82% |
| 2019-05-20 | 2.83 | 2.83% |
| 2019-05-21 | 2.84 | 2.84% |
| 2019-05-22 | 2.82 | 2.82% |
| 2019-05-23 | 2.75 | 2.75% |
| 2019-05-24 | 2.75 | 2.75% |
| 2019-05-27 | 0    |       |
| 2019-05-28 | 2.70 | 2.70% |
| 2019-05-29 | 2.69 | 2.69% |
| 2019-05-30 | 2.65 | 2.65% |
| 2019-05-31 | 2.58 | 2.58% |
| 2019-06-03 | 2.53 | 2.53% |
| 2019-06-04 | 2.60 | 2.60% |
| 2019-06-05 | 2.63 | 2.63% |
| 2019-06-06 | 2.62 | 2.62% |
| 2019-06-07 | 2.57 | 2.57% |
| 2019-06-10 | 2.62 | 2.62% |
| 2019-06-11 | 2.62 | 2.62% |
| 2019-06-12 | 2.62 | 2.62% |
| 2019-06-13 | 2.61 | 2.61% |
| 2019-06-14 | 2.59 | 2.59% |
| 2019-06-17 | 2.58 | 2.58% |
| 2019-06-18 | 2.55 | 2.55% |
| 2019-06-19 | 2.54 | 2.54% |
| 2019-06-20 | 2.53 | 2.53% |
| 2019-06-21 | 2.59 | 2.59% |
| 2019-06-24 | 2.55 | 2.55% |
| 2019-06-25 | 2.53 | 2.53% |
| 2019-06-26 | 2.57 | 2.57% |
| 2019-06-27 | 2.52 | 2.52% |
| 2019-06-28 | 2.52 | 2.52% |
| 2019-07-01 | 2.55 | 2.55% |
| 2019-07-02 | 2.51 | 2.51% |
| 2019-07-03 | 2.47 | 2.47% |
| 2019-07-04 | 0    |       |
| 2019-07-05 | 2.54 | 2.54% |
| 2019-07-08 | 2.53 | 2.53% |
| 2019-07-09 | 2.54 | 2.54% |
| 2019-07-10 | 2.57 | 2.57% |
| 2019-07-11 | 2.65 | 2.65% |
| 2019-07-12 | 2.64 | 2.64% |
| 2019-07-15 | 2.61 | 2.61% |
| 2019-07-16 | 2.63 | 2.63% |
| 2019-07-17 | 2.57 | 2.57% |
| 2019-07-18 | 2.56 | 2.56% |
| 2019-07-19 | 2.57 | 2.57% |
| 2019-07-22 | 2.58 | 2.58% |
| 2019-07-23 | 2.61 | 2.61% |
| 2019-07-24 | 2.58 | 2.58% |
| 2019-07-25 | 2.60 | 2.60% |
| 2019-07-26 | 2.59 | 2.59% |
| 2019-07-29 | 2.59 | 2.59% |
| 2019-07-30 | 2.58 | 2.58% |
| 2019-07-31 | 2.53 | 2.53% |
| 2019-08-01 | 2.44 | 2.44% |
| 2019-08-02 | 2.39 | 2.39% |
| 2019-08-05 | 2.30 | 2.30% |
| 2019-08-06 | 2.25 | 2.25% |
| 2019-08-07 | 2.22 | 2.22% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2019-08-08 | 2.25 | 2.25% |
| 2019-08-09 | 2.26 | 2.26% |
| 2019-08-12 | 2.14 | 2.14% |
| 2019-08-13 | 2.15 | 2.15% |
| 2019-08-14 | 2.03 | 2.03% |
| 2019-08-15 | 1.98 | 1.98% |
| 2019-08-16 | 2.01 | 2.01% |
| 2019-08-19 | 2.08 | 2.08% |
| 2019-08-20 | 2.04 | 2.04% |
| 2019-08-21 | 2.07 | 2.07% |
| 2019-08-22 | 2.11 | 2.11% |
| 2019-08-23 | 2.02 | 2.02% |
| 2019-08-26 | 2.04 | 2.04% |
| 2019-08-27 | 1.97 | 1.97% |
| 2019-08-28 | 1.94 | 1.94% |
| 2019-08-29 | 1.97 | 1.97% |
| 2019-08-30 | 1.96 | 1.96% |
| 2019-09-02 | 0    |       |
| 2019-09-03 | 1.95 | 1.95% |
| 2019-09-04 | 1.97 | 1.97% |
| 2019-09-05 | 2.06 | 2.06% |
| 2019-09-06 | 2.02 | 2.02% |
| 2019-09-09 | 2.11 | 2.11% |
| 2019-09-10 | 2.19 | 2.19% |
| 2019-09-11 | 2.22 | 2.22% |
| 2019-09-12 | 2.22 | 2.22% |
| 2019-09-13 | 2.37 | 2.37% |
| 2019-09-16 | 2.31 | 2.31% |
| 2019-09-17 | 2.27 | 2.27% |
| 2019-09-18 | 2.25 | 2.25% |
| 2019-09-19 | 2.22 | 2.22% |
| 2019-09-20 | 2.17 | 2.17% |
| 2019-09-23 | 2.16 | 2.16% |
| 2019-09-24 | 2.09 | 2.09% |
| 2019-09-25 | 2.18 | 2.18% |
| 2019-09-26 | 2.15 | 2.15% |
| 2019-09-27 | 2.13 | 2.13% |
| 2019-09-30 | 2.12 | 2.12% |
| 2019-10-01 | 2.11 | 2.11% |
| 2019-10-02 | 2.09 | 2.09% |
| 2019-10-03 | 2.04 | 2.04% |
| 2019-10-04 | 2.01 | 2.01% |
| 2019-10-07 | 2.05 | 2.05% |
| 2019-10-08 | 2.04 | 2.04% |
| 2019-10-09 | 2.08 | 2.08% |
| 2019-10-10 | 2.16 | 2.16% |
| 2019-10-11 | 2.22 | 2.22% |
| 2019-10-14 | 0    |       |
| 2019-10-15 | 2.23 | 2.23% |
| 2019-10-16 | 2.23 | 2.23% |
| 2019-10-17 | 2.24 | 2.24% |
| 2019-10-18 | 2.25 | 2.25% |
| 2019-10-21 | 2.28 | 2.28% |
| 2019-10-22 | 2.26 | 2.26% |
| 2019-10-23 | 2.25 | 2.25% |
| 2019-10-24 | 2.26 | 2.26% |
| 2019-10-25 | 2.29 | 2.29% |
| 2019-10-28 | 2.34 | 2.34% |
| 2019-10-29 | 2.33 | 2.33% |
| 2019-10-30 | 2.26 | 2.26% |
| 2019-10-31 | 2.17 | 2.17% |
| 2019-11-01 | 2.21 | 2.21% |
| 2019-11-04 | 2.27 | 2.27% |
| 2019-11-05 | 2.34 | 2.34% |
| 2019-11-06 | 2.30 | 2.30% |
| 2019-11-07 | 2.40 | 2.40% |
| 2019-11-08 | 2.43 | 2.43% |
| 2019-11-11 | 0    |       |
| 2019-11-12 | 2.39 | 2.39% |
| 2019-11-13 | 2.36 | 2.36% |
| 2019-11-14 | 2.31 | 2.31% |
| 2019-11-15 | 2.31 | 2.31% |
| 2019-11-18 | 2.30 | 2.30% |
| 2019-11-19 | 2.26 | 2.26% |
| 2019-11-20 | 2.20 | 2.20% |
| 2019-11-21 | 2.24 | 2.24% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2019-11-22 | 2.22 | 2.22% |
| 2019-11-25 | 2.21 | 2.21% |
| 2019-11-26 | 2.18 | 2.18% |
| 2019-11-27 | 2.19 | 2.19% |
| 2019-11-28 | 0    |       |
| 2019-11-29 | 2.21 | 2.21% |
| 2019-12-02 | 2.28 | 2.28% |
| 2019-12-03 | 2.17 | 2.17% |
| 2019-12-04 | 2.22 | 2.22% |
| 2019-12-05 | 2.24 | 2.24% |
| 2019-12-06 | 2.29 | 2.29% |
| 2019-12-09 | 2.27 | 2.27% |
| 2019-12-10 | 2.26 | 2.26% |
| 2019-12-11 | 2.23 | 2.23% |
| 2019-12-12 | 2.32 | 2.32% |
| 2019-12-13 | 2.26 | 2.26% |
| 2019-12-16 | 2.30 | 2.30% |
| 2019-12-17 | 2.31 | 2.31% |
| 2019-12-18 | 2.35 | 2.35% |
| 2019-12-19 | 2.35 | 2.35% |
| 2019-12-20 | 2.34 | 2.34% |
| 2019-12-23 | 2.35 | 2.35% |
| 2019-12-24 | 2.33 | 2.33% |
| 2019-12-25 | 0    |       |
| 2019-12-26 | 2.33 | 2.33% |
| 2019-12-27 | 2.32 | 2.32% |
| 2019-12-30 | 2.34 | 2.34% |
| 2019-12-31 | 2.39 | 2.39% |
| 2020-01-01 | 0    |       |
| 2020-01-02 | 2.33 | 2.33% |
| 2020-01-03 | 2.26 | 2.26% |
| 2020-01-06 | 2.28 | 2.28% |
| 2020-01-07 | 2.31 | 2.31% |
| 2020-01-08 | 2.35 | 2.35% |
| 2020-01-09 | 2.38 | 2.38% |
| 2020-01-10 | 2.28 | 2.28% |
| 2020-01-13 | 2.30 | 2.30% |
| 2020-01-14 | 2.27 | 2.27% |
| 2020-01-15 | 2.23 | 2.23% |
| 2020-01-16 | 2.26 | 2.26% |
| 2020-01-17 | 2.29 | 2.29% |
| 2020-01-20 | 0    |       |
| 2020-01-21 | 2.23 | 2.23% |
| 2020-01-22 | 2.22 | 2.22% |
| 2020-01-23 | 2.18 | 2.18% |
| 2020-01-24 | 2.14 | 2.14% |
| 2020-01-27 | 2.05 | 2.05% |
| 2020-01-28 | 2.10 | 2.10% |
| 2020-01-29 | 2.05 | 2.05% |
| 2020-01-30 | 2.04 | 2.04% |
| 2020-01-31 | 1.99 | 1.99% |
| 2020-02-03 | 2.01 | 2.01% |
| 2020-02-04 | 2.08 | 2.08% |
| 2020-02-05 | 2.14 | 2.14% |
| 2020-02-06 | 2.11 | 2.11% |
| 2020-02-07 | 2.05 | 2.05% |
| 2020-02-10 | 2.03 | 2.03% |
| 2020-02-11 | 2.05 | 2.05% |
| 2020-02-12 | 2.09 | 2.09% |
| 2020-02-13 | 2.07 | 2.07% |
| 2020-02-14 | 2.04 | 2.04% |
| 2020-02-17 | 0    |       |
| 2020-02-18 | 2.00 | 2.00% |
| 2020-02-19 | 2.01 | 2.01% |
| 2020-02-20 | 1.97 | 1.97% |
| 2020-02-21 | 1.90 | 1.90% |
| 2020-02-24 | 1.84 | 1.84% |
| 2020-02-25 | 1.80 | 1.80% |
| 2020-02-26 | 1.81 | 1.81% |
| 2020-02-27 | 1.79 | 1.79% |
| 2020-02-28 | 1.65 | 1.65% |
| 2020-03-02 | 1.66 | 1.66% |
| 2020-03-03 | 1.64 | 1.64% |
| 2020-03-04 | 1.67 | 1.67% |
| 2020-03-05 | 1.56 | 1.56% |
| 2020-03-06 | 1.25 | 1.25% |

DGS30 Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

| observation_date | DGS30 |       |
|------------------|-------|-------|
| 2020-03-09       | 0.99  | 0.99% |
| 2020-03-10       | 1.28  | 1.28% |
| 2020-03-11       | 1.30  | 1.30% |
| 2020-03-12       | 1.49  | 1.49% |
| 2020-03-13       | 1.56  | 1.56% |
| 2020-03-16       | 1.34  | 1.34% |
| 2020-03-17       | 1.63  | 1.63% |
| 2020-03-18       | 1.77  | 1.77% |
| 2020-03-19       | 1.78  | 1.78% |
| 2020-03-20       | 1.55  | 1.55% |
| 2020-03-23       | 1.33  | 1.33% |
| 2020-03-24       | 1.39  | 1.39% |
| 2020-03-25       | 1.45  | 1.45% |
| 2020-03-26       | 1.42  | 1.42% |
| 2020-03-27       | 1.29  | 1.29% |
| 2020-03-30       | 1.31  | 1.31% |
| 2020-03-31       | 1.35  | 1.35% |
| 2020-04-01       | 1.27  | 1.27% |
| 2020-04-02       | 1.26  | 1.26% |
| 2020-04-03       | 1.24  | 1.24% |
| 2020-04-06       | 1.27  | 1.27% |
| 2020-04-07       | 1.32  | 1.32% |
| 2020-04-08       | 1.37  | 1.37% |
| 2020-04-09       | 1.35  | 1.35% |
| 2020-04-10       | 0     |       |
| 2020-04-13       | 1.39  | 1.39% |
| 2020-04-14       | 1.41  | 1.41% |
| 2020-04-15       | 1.27  | 1.27% |
| 2020-04-16       | 1.21  | 1.21% |
| 2020-04-17       | 1.27  | 1.27% |
| 2020-04-20       | 1.23  | 1.23% |
| 2020-04-21       | 1.17  | 1.17% |
| 2020-04-22       | 1.22  | 1.22% |
| 2020-04-23       | 1.18  | 1.18% |
| 2020-04-24       | 1.17  | 1.17% |
| 2020-04-27       | 1.25  | 1.25% |
| 2020-04-28       | 1.20  | 1.20% |
| 2020-04-29       | 1.24  | 1.24% |
| 2020-04-30       | 1.28  | 1.28% |
| 2020-05-01       | 1.27  | 1.27% |
| 2020-05-04       | 1.29  | 1.29% |
| 2020-05-05       | 1.32  | 1.32% |
| 2020-05-06       | 1.41  | 1.41% |
| 2020-05-07       | 1.31  | 1.31% |
| 2020-05-08       | 1.39  | 1.39% |
| 2020-05-11       | 1.43  | 1.43% |
| 2020-05-12       | 1.38  | 1.38% |
| 2020-05-13       | 1.35  | 1.35% |
| 2020-05-14       | 1.30  | 1.30% |
| 2020-05-15       | 1.32  | 1.32% |
| 2020-05-18       | 1.44  | 1.44% |
| 2020-05-19       | 1.43  | 1.43% |
| 2020-05-20       | 1.40  | 1.40% |
| 2020-05-21       | 1.40  | 1.40% |
| 2020-05-22       | 1.37  | 1.37% |
| 2020-05-25       | 0     |       |
| 2020-05-26       | 1.43  | 1.43% |
| 2020-05-27       | 1.44  | 1.44% |
| 2020-05-28       | 1.47  | 1.47% |
| 2020-05-29       | 1.41  | 1.41% |
| 2020-06-01       | 1.46  | 1.46% |
| 2020-06-02       | 1.48  | 1.48% |
| 2020-06-03       | 1.56  | 1.56% |
| 2020-06-04       | 1.61  | 1.61% |
| 2020-06-05       | 1.68  | 1.68% |
| 2020-06-08       | 1.65  | 1.65% |
| 2020-06-09       | 1.59  | 1.59% |
| 2020-06-10       | 1.53  | 1.53% |
| 2020-06-11       | 1.41  | 1.41% |
| 2020-06-12       | 1.45  | 1.45% |
| 2020-06-15       | 1.45  | 1.45% |
| 2020-06-16       | 1.54  | 1.54% |
| 2020-06-17       | 1.52  | 1.52% |
| 2020-06-18       | 1.47  | 1.47% |
| 2020-06-19       | 1.47  | 1.47% |
| 2020-06-22       | 1.46  | 1.46% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2020-06-23 | 1.49 | 1.49% |
| 2020-06-24 | 1.44 | 1.44% |
| 2020-06-25 | 1.43 | 1.43% |
| 2020-06-26 | 1.37 | 1.37% |
| 2020-06-29 | 1.39 | 1.39% |
| 2020-06-30 | 1.41 | 1.41% |
| 2020-07-01 | 1.43 | 1.43% |
| 2020-07-02 | 1.43 | 1.43% |
| 2020-07-03 | 0    |       |
| 2020-07-06 | 1.45 | 1.45% |
| 2020-07-07 | 1.38 | 1.38% |
| 2020-07-08 | 1.39 | 1.39% |
| 2020-07-09 | 1.32 | 1.32% |
| 2020-07-10 | 1.33 | 1.33% |
| 2020-07-13 | 1.33 | 1.33% |
| 2020-07-14 | 1.30 | 1.30% |
| 2020-07-15 | 1.33 | 1.33% |
| 2020-07-16 | 1.31 | 1.31% |
| 2020-07-17 | 1.33 | 1.33% |
| 2020-07-20 | 1.32 | 1.32% |
| 2020-07-21 | 1.31 | 1.31% |
| 2020-07-22 | 1.29 | 1.29% |
| 2020-07-23 | 1.24 | 1.24% |
| 2020-07-24 | 1.23 | 1.23% |
| 2020-07-27 | 1.25 | 1.25% |
| 2020-07-28 | 1.22 | 1.22% |
| 2020-07-29 | 1.24 | 1.24% |
| 2020-07-30 | 1.20 | 1.20% |
| 2020-07-31 | 1.20 | 1.20% |
| 2020-08-03 | 1.23 | 1.23% |
| 2020-08-04 | 1.19 | 1.19% |
| 2020-08-05 | 1.22 | 1.22% |
| 2020-08-06 | 1.20 | 1.20% |
| 2020-08-07 | 1.23 | 1.23% |
| 2020-08-10 | 1.25 | 1.25% |
| 2020-08-11 | 1.32 | 1.32% |
| 2020-08-12 | 1.37 | 1.37% |
| 2020-08-13 | 1.42 | 1.42% |
| 2020-08-14 | 1.45 | 1.45% |
| 2020-08-17 | 1.43 | 1.43% |
| 2020-08-18 | 1.40 | 1.40% |
| 2020-08-19 | 1.42 | 1.42% |
| 2020-08-20 | 1.38 | 1.38% |
| 2020-08-21 | 1.35 | 1.35% |
| 2020-08-24 | 1.35 | 1.35% |
| 2020-08-25 | 1.39 | 1.39% |
| 2020-08-26 | 1.41 | 1.41% |
| 2020-08-27 | 1.50 | 1.50% |
| 2020-08-28 | 1.52 | 1.52% |
| 2020-08-31 | 1.49 | 1.49% |
| 2020-09-01 | 1.43 | 1.43% |
| 2020-09-02 | 1.38 | 1.38% |
| 2020-09-03 | 1.34 | 1.34% |
| 2020-09-04 | 1.46 | 1.46% |
| 2020-09-07 | 0    |       |
| 2020-09-08 | 1.43 | 1.43% |
| 2020-09-09 | 1.45 | 1.45% |
| 2020-09-10 | 1.43 | 1.43% |
| 2020-09-11 | 1.42 | 1.42% |
| 2020-09-14 | 1.42 | 1.42% |
| 2020-09-15 | 1.43 | 1.43% |
| 2020-09-16 | 1.45 | 1.45% |
| 2020-09-17 | 1.43 | 1.43% |
| 2020-09-18 | 1.45 | 1.45% |
| 2020-09-21 | 1.43 | 1.43% |
| 2020-09-22 | 1.42 | 1.42% |
| 2020-09-23 | 1.42 | 1.42% |
| 2020-09-24 | 1.40 | 1.40% |
| 2020-09-25 | 1.40 | 1.40% |
| 2020-09-28 | 1.42 | 1.42% |
| 2020-09-29 | 1.41 | 1.41% |
| 2020-09-30 | 1.46 | 1.46% |
| 2020-10-01 | 1.45 | 1.45% |
| 2020-10-02 | 1.48 | 1.48% |
| 2020-10-05 | 1.57 | 1.57% |
| 2020-10-06 | 1.56 | 1.56% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2020-10-07 | 1.60 | 1.60% |
| 2020-10-08 | 1.57 | 1.57% |
| 2020-10-09 | 1.58 | 1.58% |
| 2020-10-12 | 0    |       |
| 2020-10-13 | 1.52 | 1.52% |
| 2020-10-14 | 1.50 | 1.50% |
| 2020-10-15 | 1.52 | 1.52% |
| 2020-10-16 | 1.52 | 1.52% |
| 2020-10-19 | 1.55 | 1.55% |
| 2020-10-20 | 1.60 | 1.60% |
| 2020-10-21 | 1.62 | 1.62% |
| 2020-10-22 | 1.67 | 1.67% |
| 2020-10-23 | 1.64 | 1.64% |
| 2020-10-26 | 1.59 | 1.59% |
| 2020-10-27 | 1.57 | 1.57% |
| 2020-10-28 | 1.56 | 1.56% |
| 2020-10-29 | 1.62 | 1.62% |
| 2020-10-30 | 1.65 | 1.65% |
| 2020-11-02 | 1.63 | 1.63% |
| 2020-11-03 | 1.66 | 1.66% |
| 2020-11-04 | 1.55 | 1.55% |
| 2020-11-05 | 1.54 | 1.54% |
| 2020-11-06 | 1.60 | 1.60% |
| 2020-11-09 | 1.73 | 1.73% |
| 2020-11-10 | 1.75 | 1.75% |
| 2020-11-11 | 0    |       |
| 2020-11-12 | 1.64 | 1.64% |
| 2020-11-13 | 1.65 | 1.65% |
| 2020-11-16 | 1.66 | 1.66% |
| 2020-11-17 | 1.62 | 1.62% |
| 2020-11-18 | 1.62 | 1.62% |
| 2020-11-19 | 1.58 | 1.58% |
| 2020-11-20 | 1.53 | 1.53% |
| 2020-11-23 | 1.56 | 1.56% |
| 2020-11-24 | 1.60 | 1.60% |
| 2020-11-25 | 1.62 | 1.62% |
| 2020-11-26 | 0    |       |
| 2020-11-27 | 1.57 | 1.57% |
| 2020-11-30 | 1.58 | 1.58% |
| 2020-12-01 | 1.66 | 1.66% |
| 2020-12-02 | 1.70 | 1.70% |
| 2020-12-03 | 1.67 | 1.67% |
| 2020-12-04 | 1.73 | 1.73% |
| 2020-12-07 | 1.69 | 1.69% |
| 2020-12-08 | 1.67 | 1.67% |
| 2020-12-09 | 1.69 | 1.69% |
| 2020-12-10 | 1.65 | 1.65% |
| 2020-12-11 | 1.63 | 1.63% |
| 2020-12-14 | 1.63 | 1.63% |
| 2020-12-15 | 1.65 | 1.65% |
| 2020-12-16 | 1.66 | 1.66% |
| 2020-12-17 | 1.68 | 1.68% |
| 2020-12-18 | 1.70 | 1.70% |
| 2020-12-21 | 1.68 | 1.68% |
| 2020-12-22 | 1.65 | 1.65% |
| 2020-12-23 | 1.70 | 1.70% |
| 2020-12-24 | 1.66 | 1.66% |
| 2020-12-25 | 0    |       |
| 2020-12-28 | 1.67 | 1.67% |
| 2020-12-29 | 1.67 | 1.67% |
| 2020-12-30 | 1.66 | 1.66% |
| 2020-12-31 | 1.65 | 1.65% |
| 2021-01-01 | 0    |       |
| 2021-01-04 | 1.66 | 1.66% |
| 2021-01-05 | 1.70 | 1.70% |
| 2021-01-06 | 1.81 | 1.81% |
| 2021-01-07 | 1.85 | 1.85% |
| 2021-01-08 | 1.87 | 1.87% |
| 2021-01-11 | 1.88 | 1.88% |
| 2021-01-12 | 1.88 | 1.88% |
| 2021-01-13 | 1.82 | 1.82% |
| 2021-01-14 | 1.88 | 1.88% |
| 2021-01-15 | 1.85 | 1.85% |
| 2021-01-18 | 0    |       |
| 2021-01-19 | 1.84 | 1.84% |
| 2021-01-20 | 1.84 | 1.84% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2021-01-21 | 1.87 | 1.87% |
| 2021-01-22 | 1.85 | 1.85% |
| 2021-01-25 | 1.80 | 1.80% |
| 2021-01-26 | 1.80 | 1.80% |
| 2021-01-27 | 1.79 | 1.79% |
| 2021-01-28 | 1.81 | 1.81% |
| 2021-01-29 | 1.87 | 1.87% |
| 2021-02-01 | 1.84 | 1.84% |
| 2021-02-02 | 1.87 | 1.87% |
| 2021-02-03 | 1.92 | 1.92% |
| 2021-02-04 | 1.93 | 1.93% |
| 2021-02-05 | 1.97 | 1.97% |
| 2021-02-08 | 1.96 | 1.96% |
| 2021-02-09 | 1.95 | 1.95% |
| 2021-02-10 | 1.92 | 1.92% |
| 2021-02-11 | 1.94 | 1.94% |
| 2021-02-12 | 2.01 | 2.01% |
| 2021-02-15 | 0    |       |
| 2021-02-16 | 2.08 | 2.08% |
| 2021-02-17 | 2.06 | 2.06% |
| 2021-02-18 | 2.08 | 2.08% |
| 2021-02-19 | 2.14 | 2.14% |
| 2021-02-22 | 2.19 | 2.19% |
| 2021-02-23 | 2.21 | 2.21% |
| 2021-02-24 | 2.24 | 2.24% |
| 2021-02-25 | 2.33 | 2.33% |
| 2021-02-26 | 2.17 | 2.17% |
| 2021-03-01 | 2.23 | 2.23% |
| 2021-03-02 | 2.21 | 2.21% |
| 2021-03-03 | 2.25 | 2.25% |
| 2021-03-04 | 2.30 | 2.30% |
| 2021-03-05 | 2.28 | 2.28% |
| 2021-03-08 | 2.31 | 2.31% |
| 2021-03-09 | 2.26 | 2.26% |
| 2021-03-10 | 2.24 | 2.24% |
| 2021-03-11 | 2.29 | 2.29% |
| 2021-03-12 | 2.40 | 2.40% |
| 2021-03-15 | 2.37 | 2.37% |
| 2021-03-16 | 2.38 | 2.38% |
| 2021-03-17 | 2.42 | 2.42% |
| 2021-03-18 | 2.45 | 2.45% |
| 2021-03-19 | 2.45 | 2.45% |
| 2021-03-22 | 2.38 | 2.38% |
| 2021-03-23 | 2.34 | 2.34% |
| 2021-03-24 | 2.31 | 2.31% |
| 2021-03-25 | 2.34 | 2.34% |
| 2021-03-26 | 2.37 | 2.37% |
| 2021-03-29 | 2.43 | 2.43% |
| 2021-03-30 | 2.38 | 2.38% |
| 2021-03-31 | 2.41 | 2.41% |
| 2021-04-01 | 2.34 | 2.34% |
| 2021-04-02 | 2.35 | 2.35% |
| 2021-04-05 | 2.36 | 2.36% |
| 2021-04-06 | 2.32 | 2.32% |
| 2021-04-07 | 2.35 | 2.35% |
| 2021-04-08 | 2.32 | 2.32% |
| 2021-04-09 | 2.34 | 2.34% |
| 2021-04-12 | 2.34 | 2.34% |
| 2021-04-13 | 2.32 | 2.32% |
| 2021-04-14 | 2.32 | 2.32% |
| 2021-04-15 | 2.23 | 2.23% |
| 2021-04-16 | 2.26 | 2.26% |
| 2021-04-19 | 2.29 | 2.29% |
| 2021-04-20 | 2.27 | 2.27% |
| 2021-04-21 | 2.26 | 2.26% |
| 2021-04-22 | 2.24 | 2.24% |
| 2021-04-23 | 2.25 | 2.25% |
| 2021-04-26 | 2.24 | 2.24% |
| 2021-04-27 | 2.29 | 2.29% |
| 2021-04-28 | 2.29 | 2.29% |
| 2021-04-29 | 2.31 | 2.31% |
| 2021-04-30 | 2.30 | 2.30% |
| 2021-05-03 | 2.30 | 2.30% |
| 2021-05-04 | 2.27 | 2.27% |
| 2021-05-05 | 2.25 | 2.25% |
| 2021-05-06 | 2.24 | 2.24% |



DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2021-05-07 | 2.28 | 2.28% |
| 2021-05-10 | 2.32 | 2.32% |
| 2021-05-11 | 2.35 | 2.35% |
| 2021-05-12 | 2.40 | 2.40% |
| 2021-05-13 | 2.39 | 2.39% |
| 2021-05-14 | 2.35 | 2.35% |
| 2021-05-17 | 2.36 | 2.36% |
| 2021-05-18 | 2.37 | 2.37% |
| 2021-05-19 | 2.38 | 2.38% |
| 2021-05-20 | 2.34 | 2.34% |
| 2021-05-21 | 2.33 | 2.33% |
| 2021-05-24 | 2.31 | 2.31% |
| 2021-05-25 | 2.26 | 2.26% |
| 2021-05-26 | 2.27 | 2.27% |
| 2021-05-27 | 2.29 | 2.29% |
| 2021-05-28 | 2.26 | 2.26% |
| 2021-05-31 | 0    |       |
| 2021-06-01 | 2.30 | 2.30% |
| 2021-06-02 | 2.28 | 2.28% |
| 2021-06-03 | 2.30 | 2.30% |
| 2021-06-04 | 2.24 | 2.24% |
| 2021-06-07 | 2.25 | 2.25% |
| 2021-06-08 | 2.21 | 2.21% |
| 2021-06-09 | 2.17 | 2.17% |
| 2021-06-10 | 2.15 | 2.15% |
| 2021-06-11 | 2.15 | 2.15% |
| 2021-06-14 | 2.19 | 2.19% |
| 2021-06-15 | 2.20 | 2.20% |
| 2021-06-16 | 2.20 | 2.20% |
| 2021-06-17 | 2.11 | 2.11% |
| 2021-06-18 | 2.01 | 2.01% |
| 2021-06-21 | 2.11 | 2.11% |
| 2021-06-22 | 2.10 | 2.10% |
| 2021-06-23 | 2.11 | 2.11% |
| 2021-06-24 | 2.10 | 2.10% |
| 2021-06-25 | 2.16 | 2.16% |
| 2021-06-28 | 2.10 | 2.10% |
| 2021-06-29 | 2.10 | 2.10% |
| 2021-06-30 | 2.06 | 2.06% |
| 2021-07-01 | 2.07 | 2.07% |
| 2021-07-02 | 2.05 | 2.05% |
| 2021-07-05 | 0    |       |
| 2021-07-06 | 2.00 | 2.00% |
| 2021-07-07 | 1.94 | 1.94% |
| 2021-07-08 | 1.91 | 1.91% |
| 2021-07-09 | 1.99 | 1.99% |
| 2021-07-12 | 2.00 | 2.00% |
| 2021-07-13 | 2.04 | 2.04% |
| 2021-07-14 | 1.98 | 1.98% |
| 2021-07-15 | 1.92 | 1.92% |
| 2021-07-16 | 1.93 | 1.93% |
| 2021-07-19 | 1.81 | 1.81% |
| 2021-07-20 | 1.88 | 1.88% |
| 2021-07-21 | 1.94 | 1.94% |
| 2021-07-22 | 1.90 | 1.90% |
| 2021-07-23 | 1.92 | 1.92% |
| 2021-07-26 | 1.93 | 1.93% |
| 2021-07-27 | 1.89 | 1.89% |
| 2021-07-28 | 1.90 | 1.90% |
| 2021-07-29 | 1.91 | 1.91% |
| 2021-07-30 | 1.89 | 1.89% |
| 2021-08-02 | 1.86 | 1.86% |
| 2021-08-03 | 1.85 | 1.85% |
| 2021-08-04 | 1.83 | 1.83% |
| 2021-08-05 | 1.86 | 1.86% |
| 2021-08-06 | 1.94 | 1.94% |
| 2021-08-09 | 1.96 | 1.96% |
| 2021-08-10 | 1.99 | 1.99% |
| 2021-08-11 | 1.99 | 1.99% |
| 2021-08-12 | 2.03 | 2.03% |
| 2021-08-13 | 1.94 | 1.94% |
| 2021-08-16 | 1.92 | 1.92% |
| 2021-08-17 | 1.92 | 1.92% |
| 2021-08-18 | 1.91 | 1.91% |
| 2021-08-19 | 1.88 | 1.88% |
| 2021-08-20 | 1.87 | 1.87% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2021-08-23 | 1.87 | 1.87% |
| 2021-08-24 | 1.91 | 1.91% |
| 2021-08-25 | 1.96 | 1.96% |
| 2021-08-26 | 1.94 | 1.94% |
| 2021-08-27 | 1.91 | 1.91% |
| 2021-08-30 | 1.90 | 1.90% |
| 2021-08-31 | 1.92 | 1.92% |
| 2021-09-01 | 1.92 | 1.92% |
| 2021-09-02 | 1.90 | 1.90% |
| 2021-09-03 | 1.94 | 1.94% |
| 2021-09-06 | 0    |       |
| 2021-09-07 | 1.99 | 1.99% |
| 2021-09-08 | 1.95 | 1.95% |
| 2021-09-09 | 1.90 | 1.90% |
| 2021-09-10 | 1.94 | 1.94% |
| 2021-09-13 | 1.91 | 1.91% |
| 2021-09-14 | 1.85 | 1.85% |
| 2021-09-15 | 1.87 | 1.87% |
| 2021-09-16 | 1.88 | 1.88% |
| 2021-09-17 | 1.91 | 1.91% |
| 2021-09-20 | 1.85 | 1.85% |
| 2021-09-21 | 1.86 | 1.86% |
| 2021-09-22 | 1.84 | 1.84% |
| 2021-09-23 | 1.92 | 1.92% |
| 2021-09-24 | 1.99 | 1.99% |
| 2021-09-27 | 1.99 | 1.99% |
| 2021-09-28 | 2.07 | 2.07% |
| 2021-09-29 | 2.09 | 2.09% |
| 2021-09-30 | 2.08 | 2.08% |
| 2021-10-01 | 2.04 | 2.04% |
| 2021-10-04 | 2.05 | 2.05% |
| 2021-10-05 | 2.10 | 2.10% |
| 2021-10-06 | 2.08 | 2.08% |
| 2021-10-07 | 2.13 | 2.13% |
| 2021-10-08 | 2.16 | 2.16% |
| 2021-10-11 | 0    |       |
| 2021-10-12 | 2.10 | 2.10% |
| 2021-10-13 | 2.05 | 2.05% |
| 2021-10-14 | 2.02 | 2.02% |
| 2021-10-15 | 2.05 | 2.05% |
| 2021-10-18 | 2.01 | 2.01% |
| 2021-10-19 | 2.09 | 2.09% |
| 2021-10-20 | 2.12 | 2.12% |
| 2021-10-21 | 2.13 | 2.13% |
| 2021-10-22 | 2.08 | 2.08% |
| 2021-10-25 | 2.09 | 2.09% |
| 2021-10-26 | 2.05 | 2.05% |
| 2021-10-27 | 1.95 | 1.95% |
| 2021-10-28 | 1.96 | 1.96% |
| 2021-10-29 | 1.93 | 1.93% |
| 2021-11-01 | 1.98 | 1.98% |
| 2021-11-02 | 1.96 | 1.96% |
| 2021-11-03 | 2.00 | 2.00% |
| 2021-11-04 | 1.96 | 1.96% |
| 2021-11-05 | 1.87 | 1.87% |
| 2021-11-08 | 1.89 | 1.89% |
| 2021-11-09 | 1.83 | 1.83% |
| 2021-11-10 | 1.92 | 1.92% |
| 2021-11-11 | 0    |       |
| 2021-11-12 | 1.95 | 1.95% |
| 2021-11-15 | 2.01 | 2.01% |
| 2021-11-16 | 2.02 | 2.02% |
| 2021-11-17 | 2.00 | 2.00% |
| 2021-11-18 | 1.97 | 1.97% |
| 2021-11-19 | 1.91 | 1.91% |
| 2021-11-22 | 1.98 | 1.98% |
| 2021-11-23 | 2.02 | 2.02% |
| 2021-11-24 | 1.96 | 1.96% |
| 2021-11-25 | 0    |       |
| 2021-11-26 | 1.83 | 1.83% |
| 2021-11-29 | 1.87 | 1.87% |
| 2021-11-30 | 1.78 | 1.78% |
| 2021-12-01 | 1.77 | 1.77% |
| 2021-12-02 | 1.76 | 1.76% |
| 2021-12-03 | 1.69 | 1.69% |
| 2021-12-06 | 1.75 | 1.75% |

DGS30 Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

| observation_date | DGS30 |       |
|------------------|-------|-------|
| 2021-12-07       | 1.80  | 1.80% |
| 2021-12-08       | 1.87  | 1.87% |
| 2021-12-09       | 1.87  | 1.87% |
| 2021-12-10       | 1.88  | 1.88% |
| 2021-12-13       | 1.81  | 1.81% |
| 2021-12-14       | 1.82  | 1.82% |
| 2021-12-15       | 1.86  | 1.86% |
| 2021-12-16       | 1.87  | 1.87% |
| 2021-12-17       | 1.82  | 1.82% |
| 2021-12-20       | 1.85  | 1.85% |
| 2021-12-21       | 1.89  | 1.89% |
| 2021-12-22       | 1.86  | 1.86% |
| 2021-12-23       | 1.91  | 1.91% |
| 2021-12-24       | 0     |       |
| 2021-12-27       | 1.88  | 1.88% |
| 2021-12-28       | 1.90  | 1.90% |
| 2021-12-29       | 1.96  | 1.96% |
| 2021-12-30       | 1.93  | 1.93% |
| 2021-12-31       | 1.90  | 1.90% |
| 2022-01-03       | 2.01  | 2.01% |
| 2022-01-04       | 2.07  | 2.07% |
| 2022-01-05       | 2.09  | 2.09% |
| 2022-01-06       | 2.09  | 2.09% |
| 2022-01-07       | 2.11  | 2.11% |
| 2022-01-10       | 2.11  | 2.11% |
| 2022-01-11       | 2.08  | 2.08% |
| 2022-01-12       | 2.08  | 2.08% |
| 2022-01-13       | 2.05  | 2.05% |
| 2022-01-14       | 2.12  | 2.12% |
| 2022-01-17       | 0     |       |
| 2022-01-18       | 2.18  | 2.18% |
| 2022-01-19       | 2.14  | 2.14% |
| 2022-01-20       | 2.14  | 2.14% |
| 2022-01-21       | 2.07  | 2.07% |
| 2022-01-24       | 2.10  | 2.10% |
| 2022-01-25       | 2.12  | 2.12% |
| 2022-01-26       | 2.16  | 2.16% |
| 2022-01-27       | 2.09  | 2.09% |
| 2022-01-28       | 2.07  | 2.07% |
| 2022-01-31       | 2.11  | 2.11% |
| 2022-02-01       | 2.12  | 2.12% |
| 2022-02-02       | 2.11  | 2.11% |
| 2022-02-03       | 2.14  | 2.14% |
| 2022-02-04       | 2.23  | 2.23% |
| 2022-02-07       | 2.22  | 2.22% |
| 2022-02-08       | 2.25  | 2.25% |
| 2022-02-09       | 2.25  | 2.25% |
| 2022-02-10       | 2.30  | 2.30% |
| 2022-02-11       | 2.24  | 2.24% |
| 2022-02-14       | 2.29  | 2.29% |
| 2022-02-15       | 2.37  | 2.37% |
| 2022-02-16       | 2.34  | 2.34% |
| 2022-02-17       | 2.31  | 2.31% |
| 2022-02-18       | 2.24  | 2.24% |
| 2022-02-21       | 0     |       |
| 2022-02-22       | 2.24  | 2.24% |
| 2022-02-23       | 2.29  | 2.29% |
| 2022-02-24       | 2.28  | 2.28% |
| 2022-02-25       | 2.29  | 2.29% |
| 2022-02-28       | 2.17  | 2.17% |
| 2022-03-01       | 2.11  | 2.11% |
| 2022-03-02       | 2.24  | 2.24% |
| 2022-03-03       | 2.24  | 2.24% |
| 2022-03-04       | 2.16  | 2.16% |
| 2022-03-07       | 2.19  | 2.19% |
| 2022-03-08       | 2.24  | 2.24% |
| 2022-03-09       | 2.29  | 2.29% |
| 2022-03-10       | 2.38  | 2.38% |
| 2022-03-11       | 2.36  | 2.36% |
| 2022-03-14       | 2.47  | 2.47% |
| 2022-03-15       | 2.49  | 2.49% |
| 2022-03-16       | 2.46  | 2.46% |
| 2022-03-17       | 2.50  | 2.50% |
| 2022-03-18       | 2.42  | 2.42% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2022-03-21 | 2.55 | 2.55% |
| 2022-03-22 | 2.60 | 2.60% |
| 2022-03-23 | 2.52 | 2.52% |
| 2022-03-24 | 2.51 | 2.51% |
| 2022-03-25 | 2.60 | 2.60% |
| 2022-03-28 | 2.57 | 2.57% |
| 2022-03-29 | 2.53 | 2.53% |
| 2022-03-30 | 2.48 | 2.48% |
| 2022-03-31 | 2.44 | 2.44% |
| 2022-04-01 | 2.44 | 2.44% |
| 2022-04-04 | 2.48 | 2.48% |
| 2022-04-05 | 2.57 | 2.57% |
| 2022-04-06 | 2.63 | 2.63% |
| 2022-04-07 | 2.69 | 2.69% |
| 2022-04-08 | 2.76 | 2.76% |
| 2022-04-11 | 2.84 | 2.84% |
| 2022-04-12 | 2.82 | 2.82% |
| 2022-04-13 | 2.81 | 2.81% |
| 2022-04-14 | 2.92 | 2.92% |
| 2022-04-15 | 0    |       |
| 2022-04-18 | 2.95 | 2.95% |
| 2022-04-19 | 3.01 | 3.01% |
| 2022-04-20 | 2.90 | 2.90% |
| 2022-04-21 | 2.94 | 2.94% |
| 2022-04-22 | 2.95 | 2.95% |
| 2022-04-25 | 2.88 | 2.88% |
| 2022-04-26 | 2.86 | 2.86% |
| 2022-04-27 | 2.91 | 2.91% |
| 2022-04-28 | 2.92 | 2.92% |
| 2022-04-29 | 2.96 | 2.96% |
| 2022-05-02 | 3.07 | 3.07% |
| 2022-05-03 | 3.03 | 3.03% |
| 2022-05-04 | 3.01 | 3.01% |
| 2022-05-05 | 3.15 | 3.15% |
| 2022-05-06 | 3.23 | 3.23% |
| 2022-05-09 | 3.19 | 3.19% |
| 2022-05-10 | 3.12 | 3.12% |
| 2022-05-11 | 3.05 | 3.05% |
| 2022-05-12 | 3.00 | 3.00% |
| 2022-05-13 | 3.10 | 3.10% |
| 2022-05-16 | 3.09 | 3.09% |
| 2022-05-17 | 3.17 | 3.17% |
| 2022-05-18 | 3.07 | 3.07% |
| 2022-05-19 | 3.05 | 3.05% |
| 2022-05-20 | 2.99 | 2.99% |
| 2022-05-23 | 3.08 | 3.08% |
| 2022-05-24 | 2.98 | 2.98% |
| 2022-05-25 | 2.97 | 2.97% |
| 2022-05-26 | 2.99 | 2.99% |
| 2022-05-27 | 2.97 | 2.97% |
| 2022-05-30 | 0    |       |
| 2022-05-31 | 3.07 | 3.07% |
| 2022-06-01 | 3.09 | 3.09% |
| 2022-06-02 | 3.09 | 3.09% |
| 2022-06-03 | 3.11 | 3.11% |
| 2022-06-06 | 3.19 | 3.19% |
| 2022-06-07 | 3.13 | 3.13% |
| 2022-06-08 | 3.18 | 3.18% |
| 2022-06-09 | 3.18 | 3.18% |
| 2022-06-10 | 3.20 | 3.20% |
| 2022-06-13 | 3.42 | 3.42% |
| 2022-06-14 | 3.45 | 3.45% |
| 2022-06-15 | 3.39 | 3.39% |
| 2022-06-16 | 3.35 | 3.35% |
| 2022-06-17 | 3.30 | 3.30% |
| 2022-06-20 | 0    |       |
| 2022-06-21 | 3.39 | 3.39% |
| 2022-06-22 | 3.25 | 3.25% |
| 2022-06-23 | 3.21 | 3.21% |
| 2022-06-24 | 3.26 | 3.26% |
| 2022-06-27 | 3.31 | 3.31% |
| 2022-06-28 | 3.30 | 3.30% |
| 2022-06-29 | 3.22 | 3.22% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date

DGS30

|            |      |       |
|------------|------|-------|
| 2022-06-30 | 3.14 | 3.14% |
| 2022-07-01 | 3.11 | 3.11% |
| 2022-07-04 | 0    |       |
| 2022-07-05 | 3.05 | 3.05% |
| 2022-07-06 | 3.14 | 3.14% |
| 2022-07-07 | 3.20 | 3.20% |
| 2022-07-08 | 3.27 | 3.27% |
| 2022-07-11 | 3.18 | 3.18% |
| 2022-07-12 | 3.13 | 3.13% |
| 2022-07-13 | 3.08 | 3.08% |
| 2022-07-14 | 3.11 | 3.11% |
| 2022-07-15 | 3.10 | 3.10% |
| 2022-07-18 | 3.14 | 3.14% |
| 2022-07-19 | 3.17 | 3.17% |
| 2022-07-20 | 3.17 | 3.17% |
| 2022-07-21 | 3.08 | 3.08% |
| 2022-07-22 | 3.00 | 3.00% |
| 2022-07-25 | 3.04 | 3.04% |
| 2022-07-26 | 3.03 | 3.03% |
| 2022-07-27 | 3.03 | 3.03% |
| 2022-07-28 | 3.02 | 3.02% |
| 2022-07-29 | 3.00 | 3.00% |
| 2022-08-01 | 2.92 | 2.92% |
| 2022-08-02 | 3.00 | 3.00% |
| 2022-08-03 | 2.96 | 2.96% |
| 2022-08-04 | 2.97 | 2.97% |
| 2022-08-05 | 3.06 | 3.06% |
| 2022-08-08 | 3.00 | 3.00% |
| 2022-08-09 | 3.01 | 3.01% |
| 2022-08-10 | 3.04 | 3.04% |
| 2022-08-11 | 3.15 | 3.15% |
| 2022-08-12 | 3.12 | 3.12% |
| 2022-08-15 | 3.10 | 3.10% |
| 2022-08-16 | 3.11 | 3.11% |
| 2022-08-17 | 3.15 | 3.15% |
| 2022-08-18 | 3.14 | 3.14% |
| 2022-08-19 | 3.22 | 3.22% |
| 2022-08-22 | 3.24 | 3.24% |
| 2022-08-23 | 3.26 | 3.26% |
| 2022-08-24 | 3.32 | 3.32% |
| 2022-08-25 | 3.25 | 3.25% |
| 2022-08-26 | 3.21 | 3.21% |
| 2022-08-29 | 3.25 | 3.25% |
| 2022-08-30 | 3.23 | 3.23% |
| 2022-08-31 | 3.27 | 3.27% |
| 2022-09-01 | 3.37 | 3.37% |
| 2022-09-02 | 3.35 | 3.35% |
| 2022-09-05 | 0    |       |
| 2022-09-06 | 3.49 | 3.49% |
| 2022-09-07 | 3.42 | 3.42% |
| 2022-09-08 | 3.45 | 3.45% |
| 2022-09-09 | 3.47 | 3.47% |
| 2022-09-12 | 3.53 | 3.53% |
| 2022-09-13 | 3.51 | 3.51% |
| 2022-09-14 | 3.47 | 3.47% |
| 2022-09-15 | 3.48 | 3.48% |
| 2022-09-16 | 3.52 | 3.52% |
| 2022-09-19 | 3.52 | 3.52% |
| 2022-09-20 | 3.59 | 3.59% |
| 2022-09-21 | 3.50 | 3.50% |
| 2022-09-22 | 3.65 | 3.65% |
| 2022-09-23 | 3.61 | 3.61% |
| 2022-09-26 | 3.72 | 3.72% |
| 2022-09-27 | 3.87 | 3.87% |
| 2022-09-28 | 3.70 | 3.70% |
| 2022-09-29 | 3.71 | 3.71% |
| 2022-09-30 | 3.79 | 3.79% |
| 2022-10-03 | 3.73 | 3.73% |
| 2022-10-04 | 3.70 | 3.70% |
| 2022-10-05 | 3.78 | 3.78% |
| 2022-10-06 | 3.81 | 3.81% |
| 2022-10-07 | 3.86 | 3.86% |
| 2022-10-10 | 0    |       |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2022-10-11 | 3.92 | 3.92% |
| 2022-10-12 | 3.90 | 3.90% |
| 2022-10-13 | 3.97 | 3.97% |
| 2022-10-14 | 3.99 | 3.99% |
| 2022-10-17 | 4.04 | 4.04% |
| 2022-10-18 | 4.04 | 4.04% |
| 2022-10-19 | 4.15 | 4.15% |
| 2022-10-20 | 4.24 | 4.24% |
| 2022-10-21 | 4.33 | 4.33% |
| 2022-10-24 | 4.40 | 4.40% |
| 2022-10-25 | 4.26 | 4.26% |
| 2022-10-26 | 4.19 | 4.19% |
| 2022-10-27 | 4.12 | 4.12% |
| 2022-10-28 | 4.15 | 4.15% |
| 2022-10-31 | 4.22 | 4.22% |
| 2022-11-01 | 4.14 | 4.14% |
| 2022-11-02 | 4.15 | 4.15% |
| 2022-11-03 | 4.18 | 4.18% |
| 2022-11-04 | 4.27 | 4.27% |
| 2022-11-07 | 4.34 | 4.34% |
| 2022-11-08 | 4.28 | 4.28% |
| 2022-11-09 | 4.31 | 4.31% |
| 2022-11-10 | 4.03 | 4.03% |
| 2022-11-11 | 0    |       |
| 2022-11-14 | 4.07 | 4.07% |
| 2022-11-15 | 3.98 | 3.98% |
| 2022-11-16 | 3.85 | 3.85% |
| 2022-11-17 | 3.89 | 3.89% |
| 2022-11-18 | 3.92 | 3.92% |
| 2022-11-21 | 3.91 | 3.91% |
| 2022-11-22 | 3.83 | 3.83% |
| 2022-11-23 | 3.74 | 3.74% |
| 2022-11-24 | 0    |       |
| 2022-11-25 | 3.74 | 3.74% |
| 2022-11-28 | 3.74 | 3.74% |
| 2022-11-29 | 3.81 | 3.81% |
| 2022-11-30 | 3.80 | 3.80% |
| 2022-12-01 | 3.64 | 3.64% |
| 2022-12-02 | 3.56 | 3.56% |
| 2022-12-05 | 3.62 | 3.62% |
| 2022-12-06 | 3.52 | 3.52% |
| 2022-12-07 | 3.42 | 3.42% |
| 2022-12-08 | 3.44 | 3.44% |
| 2022-12-09 | 3.56 | 3.56% |
| 2022-12-12 | 3.57 | 3.57% |
| 2022-12-13 | 3.53 | 3.53% |
| 2022-12-14 | 3.52 | 3.52% |
| 2022-12-15 | 3.48 | 3.48% |
| 2022-12-16 | 3.53 | 3.53% |
| 2022-12-19 | 3.62 | 3.62% |
| 2022-12-20 | 3.74 | 3.74% |
| 2022-12-21 | 3.74 | 3.74% |
| 2022-12-22 | 3.73 | 3.73% |
| 2022-12-23 | 3.82 | 3.82% |
| 2022-12-26 | 0    |       |
| 2022-12-27 | 3.93 | 3.93% |
| 2022-12-28 | 3.98 | 3.98% |
| 2022-12-29 | 3.92 | 3.92% |
| 2022-12-30 | 3.97 | 3.97% |
| 2023-01-02 | 0    |       |
| 2023-01-03 | 3.88 | 3.88% |
| 2023-01-04 | 3.81 | 3.81% |
| 2023-01-05 | 3.78 | 3.78% |
| 2023-01-06 | 3.67 | 3.67% |
| 2023-01-09 | 3.66 | 3.66% |
| 2023-01-10 | 3.74 | 3.74% |
| 2023-01-11 | 3.67 | 3.67% |
| 2023-01-12 | 3.56 | 3.56% |
| 2023-01-13 | 3.61 | 3.61% |
| 2023-01-16 | 0    |       |
| 2023-01-17 | 3.64 | 3.64% |
| 2023-01-18 | 3.54 | 3.54% |
| 2023-01-19 | 3.57 | 3.57% |

DGS30

Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date      DGS30

|            |      |       |
|------------|------|-------|
| 2023-01-20 | 3.66 | 3.66% |
| 2023-01-23 | 3.69 | 3.69% |
| 2023-01-24 | 3.62 | 3.62% |
| 2023-01-25 | 3.62 | 3.62% |
| 2023-01-26 | 3.62 | 3.62% |
| 2023-01-27 | 3.64 | 3.64% |
| 2023-01-30 | 3.66 | 3.66% |
| 2023-01-31 | 3.65 | 3.65% |
| 2023-02-01 | 3.55 | 3.55% |
| 2023-02-02 | 3.55 | 3.55% |
| 2023-02-03 | 3.63 | 3.63% |
| 2023-02-06 | 3.67 | 3.67% |
| 2023-02-07 | 3.72 | 3.72% |
| 2023-02-08 | 3.70 | 3.70% |
| 2023-02-09 | 3.75 | 3.75% |
| 2023-02-10 | 3.83 | 3.83% |
| 2023-02-13 | 3.79 | 3.79% |
| 2023-02-14 | 3.81 | 3.81% |
| 2023-02-15 | 3.85 | 3.85% |
| 2023-02-16 | 3.92 | 3.92% |
| 2023-02-17 | 3.88 | 3.88% |
| 2023-02-20 | 0    |       |
| 2023-02-21 | 3.98 | 3.98% |
| 2023-02-22 | 3.94 | 3.94% |
| 2023-02-23 | 3.88 | 3.88% |
| 2023-02-24 | 3.93 | 3.93% |
| 2023-02-27 | 3.93 | 3.93% |
| 2023-02-28 | 3.93 | 3.93% |
| 2023-03-01 | 3.97 | 3.97% |
| 2023-03-02 | 4.03 | 4.03% |
| 2023-03-03 | 3.90 | 3.90% |
| 2023-03-06 | 3.92 | 3.92% |
| 2023-03-07 | 3.88 | 3.88% |
| 2023-03-08 | 3.88 | 3.88% |
| 2023-03-09 | 3.88 | 3.88% |
| 2023-03-10 | 3.70 | 3.70% |
| 2023-03-13 | 3.70 | 3.70% |
| 2023-03-14 | 3.77 | 3.77% |
| 2023-03-15 | 3.70 | 3.70% |
| 2023-03-16 | 3.71 | 3.71% |
| 2023-03-17 | 3.60 | 3.60% |
| 2023-03-20 | 3.65 | 3.65% |
| 2023-03-21 | 3.73 | 3.73% |
| 2023-03-22 | 3.68 | 3.68% |
| 2023-03-23 | 3.66 | 3.66% |
| 2023-03-24 | 3.64 | 3.64% |
| 2023-03-27 | 3.77 | 3.77% |
| 2023-03-28 | 3.77 | 3.77% |
| 2023-03-29 | 3.78 | 3.78% |
| 2023-03-30 | 3.74 | 3.74% |
| 2023-03-31 | 3.67 | 3.67% |
| 2023-04-03 | 3.64 | 3.64% |
| 2023-04-04 | 3.60 | 3.60% |
| 2023-04-05 | 3.56 | 3.56% |
| 2023-04-06 | 3.54 | 3.54% |
| 2023-04-07 | 3.61 | 3.61% |
| 2023-04-10 | 3.62 | 3.62% |
| 2023-04-11 | 3.62 | 3.62% |
| 2023-04-12 | 3.64 | 3.64% |
| 2023-04-13 | 3.69 | 3.69% |
| 2023-04-14 | 3.74 | 3.74% |
| 2023-04-17 | 3.81 | 3.81% |
| 2023-04-18 | 3.79 | 3.79% |
| 2023-04-19 | 3.79 | 3.79% |
| 2023-04-20 | 3.75 | 3.75% |
| 2023-04-21 | 3.78 | 3.78% |
| 2023-04-24 | 3.73 | 3.73% |
| 2023-04-25 | 3.65 | 3.65% |
| 2023-04-26 | 3.70 | 3.70% |
| 2023-04-27 | 3.76 | 3.76% |
| 2023-04-28 | 3.67 | 3.67% |
| 2023-05-01 | 3.84 | 3.84% |
| 2023-05-02 | 3.72 | 3.72% |

DGS30 Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, Percent, Daily, Not Seasonally Adjusted

Frequency: Daily

observation\_date DGS30

|            |      |       |
|------------|------|-------|
| 2023-05-03 | 3.70 | 3.70% |
| 2023-05-04 | 3.73 | 3.73% |
| 2023-05-05 | 3.76 | 3.76% |
| 2023-05-08 | 3.84 | 3.84% |
| 2023-05-09 | 3.85 | 3.85% |
| 2023-05-10 | 3.80 | 3.80% |
| 2023-05-11 | 3.73 | 3.73% |
| 2023-05-12 | 3.78 | 3.78% |
| 2023-05-15 | 3.84 | 3.84% |
| 2023-05-16 | 3.87 | 3.87% |
| 2023-05-17 | 3.88 | 3.88% |
| 2023-05-18 | 3.91 | 3.91% |
| 2023-05-19 | 3.95 | 3.95% |
| 2023-05-22 | 3.97 | 3.97% |
| 2023-05-23 | 3.96 | 3.96% |
| 2023-05-24 | 3.97 | 3.97% |
| 2023-05-25 | 4.01 | 4.01% |
| 2023-05-26 | 3.96 | 3.96% |
| 2023-05-29 | 0    |       |
| 2023-05-30 | 3.90 | 3.90% |
| 2023-05-31 | 3.85 | 3.85% |
| 2023-06-01 | 3.84 | 3.84% |
| 2023-06-02 | 3.88 | 3.88% |
| 2023-06-05 | 3.89 | 3.89% |
| 2023-06-06 | 3.87 | 3.87% |
| 2023-06-07 | 3.95 | 3.95% |
| 2023-06-08 | 3.89 | 3.89% |
| 2023-06-09 | 3.89 | 3.89% |
| 2023-06-12 | 3.87 | 3.87% |
| 2023-06-13 | 3.94 | 3.94% |
| 2023-06-14 | 3.90 | 3.90% |
| 2023-06-15 | 3.85 | 3.85% |
| 2023-06-16 | 3.86 | 3.86% |
| 2023-06-19 | 3.86 | 3.86% |
| 2023-06-20 | 3.83 | 3.83% |
| 2023-06-21 | 3.81 | 3.81% |
| 2023-06-22 | 3.88 | 3.88% |
| 2023-06-23 | 3.82 | 3.82% |
| 2023-06-26 | 3.83 | 3.83% |
| 2023-06-27 | 3.84 | 3.84% |
| 2023-06-28 | 3.81 | 3.81% |
| 2023-06-29 | 3.92 | 3.92% |
| 2023-06-30 | 3.85 | 3.85% |
| 2023-07-03 | 3.87 | 3.87% |
| 2023-07-04 | 3.87 | 3.87% |
| 2023-07-05 | 3.95 | 3.95% |
| 2023-07-06 | 4.01 | 4.01% |
| 2023-07-07 | 4.05 | 4.05% |
| 2023-07-10 | 4.05 | 4.05% |
| 2023-07-11 | 4.03 | 4.03% |
| 2023-07-12 | 3.96 | 3.96% |
| 2023-07-13 | 3.90 | 3.90% |
| 2023-07-14 | 3.93 | 3.93% |
| 2023-07-17 | 3.94 | 3.94% |
| 2023-07-18 | 3.91 | 3.91% |
| 2023-07-19 | 3.84 | 3.84% |
| 2023-07-20 | 3.91 | 3.91% |
| 2023-07-21 | 3.91 | 3.91% |
| 2023-07-24 | 3.92 | 3.92% |
| 2023-07-25 | 3.95 | 3.95% |
| 2023-07-26 | 3.94 | 3.94% |
| 2023-07-27 | 4.06 | 4.06% |
| 2023-07-28 | 4.03 | 4.03% |
| 2023-07-31 | 4.02 | 4.02% |



**CPI for All Urban Consumers (CPI-U)****Original Data Value**

Series Id: CUSR0000SA0L1E

Seasonally Adjusted

Series Title: All items less food and energy in U.S. city average, all

Area: U.S. city average

Item: All items less food and energy

Base Period: 1982-84=100

Years: 2006 to 2023

| Year | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     | HALF1 | HALF2 |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|-------|
|      | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11      | 12      |       |       |
| 2006 | 203.2   | 203.6   | 204.3   | 204.8   | 205.4   | 205.9   | 206.3   | 206.8   | 207.2   | 207.6   | 207.8   | 208.1   |       |       |
| 2007 | 208.6   | 209.135 | 209.418 | 209.747 | 210.058 | 210.392 | 210.773 | 211.119 | 211.554 | 212.077 | 212.66  | 213.168 |       |       |
| 2008 | 213.771 | 213.939 | 214.42  | 214.56  | 214.936 | 215.424 | 215.965 | 216.393 | 216.713 | 216.788 | 216.947 | 216.925 |       |       |
| 2009 | 217.346 | 217.792 | 218.253 | 218.706 | 218.904 | 219.112 | 219.263 | 219.496 | 219.92  | 220.501 | 220.666 | 220.881 |       |       |
| 2010 | 220.633 | 220.731 | 220.783 | 220.822 | 220.962 | 221.194 | 221.363 | 221.509 | 221.711 | 221.83  | 222.149 | 222.343 |       |       |
| 2011 | 222.803 | 223.213 | 223.454 | 223.727 | 224.175 | 224.697 | 225.218 | 225.862 | 226.118 | 226.506 | 226.899 | 227.405 |       |       |
| 2012 | 227.877 | 228.034 | 228.478 | 228.905 | 229.224 | 229.623 | 229.97  | 230.233 | 230.659 | 231.024 | 231.33  | 231.725 |       |       |
| 2013 | 232.229 | 232.569 | 232.794 | 232.832 | 232.996 | 233.35  | 233.88  | 234.336 | 234.7   | 234.921 | 235.359 | 235.759 |       |       |
| 2014 | 235.961 | 236.185 | 236.625 | 237.072 | 237.529 | 237.837 | 238.195 | 238.405 | 238.786 | 239.191 | 239.458 | 239.584 |       |       |
| 2015 | 239.811 | 240.172 | 240.755 | 241.346 | 241.688 | 242.064 | 242.565 | 242.817 | 243.316 | 243.768 | 244.241 | 244.547 |       |       |
| 2016 | 244.955 | 245.51  | 245.913 | 246.551 | 247.137 | 247.54  | 247.829 | 248.423 | 248.842 | 249.142 | 249.481 | 249.92  |       |       |
| 2017 | 250.467 | 250.998 | 250.944 | 251.227 | 251.43  | 251.746 | 251.985 | 252.535 | 252.812 | 253.526 | 253.816 | 254.344 |       |       |
| 2018 | 255.204 | 255.711 | 256.271 | 256.63  | 257.145 | 257.399 | 257.699 | 257.891 | 258.368 | 258.917 | 259.439 | 260.063 |       |       |
| 2019 | 260.686 | 261.067 | 261.537 | 261.976 | 262.304 | 262.859 | 263.313 | 263.975 | 264.425 | 264.94  | 265.484 | 265.924 |       |       |
| 2020 | 266.626 | 267.283 | 267.09  | 265.771 | 265.574 | 265.952 | 267.352 | 268.469 | 268.938 | 269.236 | 269.901 | 270.267 |       |       |
| 2021 | 270.383 | 270.727 | 271.526 | 273.615 | 275.654 | 277.676 | 278.522 | 279.057 | 279.755 | 281.588 | 283.34  | 285.193 |       |       |
| 2022 | 286.792 | 288.147 | 289.046 | 290.41  | 292.251 | 294.017 | 294.925 | 296.639 | 298.339 | 299.333 | 300.261 | 301.46  |       |       |
| 2023 | 302.702 | 304.07  | 305.24  | 306.489 | 307.824 | 308.309 | 308.801 |         |         |         |         |         |       |       |

**Job Openings and Labor Turnover Survey****Original Data Value**

Series Id: JTS000000000000000UOR

Seasonally adjusted

Industry: Total nonfarm

State/Region: Total US

Area: All areas

Data Element: Unemployed persons per job opening ratio

Size Class: All size classes

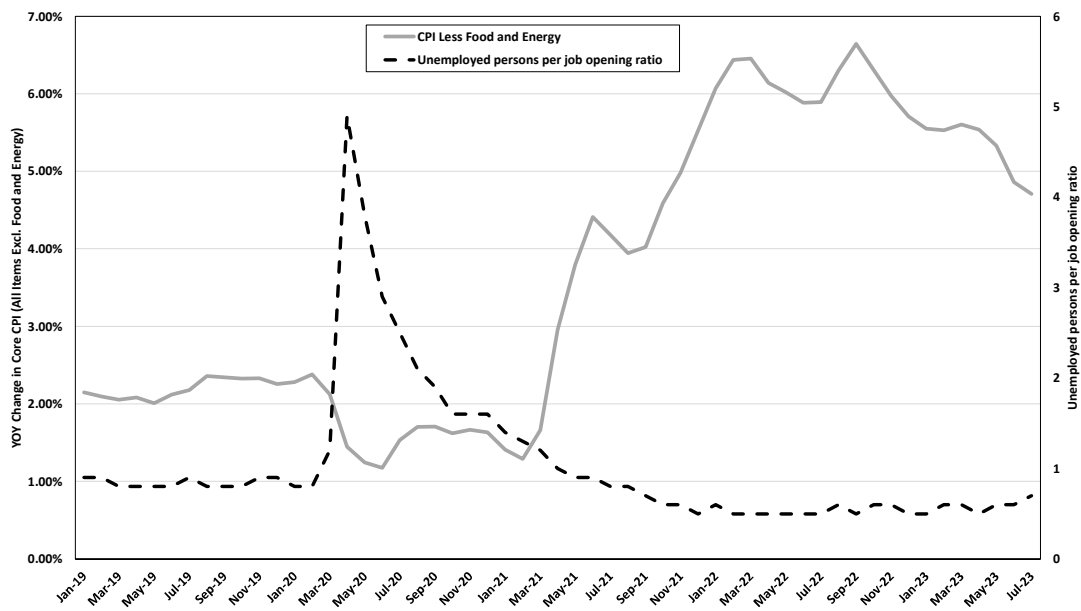
Rate/Level: Rate

Years: 2006 to 2023

| Year | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | HALF1 | HALF2 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|
|      | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |       |       |
| 2006 | 1.6 | 1.7 | 1.5 | 1.5 | 1.6 | 1.5 | 1.6 | 1.5 | 1.4 | 1.5 | 1.5 | 1.5 |       |       |
| 2007 | 1.5 | 1.5 | 1.4 | 1.5 | 1.5 | 1.4 | 1.6 | 1.6 | 1.5 | 1.6 | 1.6 | 1.7 |       |       |
| 2008 | 1.7 | 1.8 | 1.9 | 1.9 | 2.0 | 2.2 | 2.4 | 2.6 | 2.9 | 3.0 | 3.3 | 3.6 |       |       |
| 2009 | 4.4 | 4.5 | 5.3 | 6.0 | 5.7 | 5.9 | 6.5 | 6.3 | 6.0 | 6.4 | 6.1 | 5.9 |       |       |
| 2010 | 5.3 | 5.7 | 5.7 | 4.9 | 5.0 | 5.2 | 4.7 | 4.9 | 5.0 | 4.5 | 4.7 | 4.7 |       |       |
| 2011 | 4.5 | 4.3 | 4.2 | 4.3 | 4.4 | 4.0 | 3.8 | 4.2 | 3.7 | 3.8 | 3.7 | 3.5 |       |       |
| 2012 | 3.3 | 3.5 | 3.2 | 3.3 | 3.3 | 3.2 | 3.4 | 3.3 | 3.1 | 3.2 | 3.1 | 3.1 |       |       |
| 2013 | 3.2 | 3.0 | 2.9 | 2.9 | 2.8 | 2.8 | 2.9 | 2.8 | 2.7 | 2.6 | 2.6 | 2.5 |       |       |
| 2014 | 2.5 | 2.4 | 2.4 | 2.1 | 2.1 | 1.9 | 2.0 | 1.8 | 1.9 | 1.8 | 1.9 | 1.7 |       |       |
| 2015 | 1.7 | 1.6 | 1.6 | 1.5 | 1.6 | 1.6 | 1.3 | 1.5 | 1.4 | 1.4 | 1.4 | 1.4 |       |       |
| 2016 | 1.3 | 1.3 | 1.3 | 1.4 | 1.3 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 | 1.3 | 1.3 |       |       |
| 2017 | 1.3 | 1.2 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 1.1 | 1.0 |       |       |
| 2018 | 1.0 | 1.0 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.9 | 0.8 | 0.9 |       |       |
| 2019 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 |       |       |
| 2020 | 0.8 | 0.8 | 1.2 | 4.9 | 3.8 | 2.9 | 2.5 | 2.1 | 1.9 | 1.6 | 1.6 | 1.6 |       |       |
| 2021 | 1.4 | 1.3 | 1.2 | 1.0 | 0.9 | 0.9 | 0.8 | 0.8 | 0.7 | 0.6 | 0.6 | 0.5 |       |       |
| 2022 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.5 | 0.6 | 0.6 | 0.5 |       |       |
| 2023 | 0.5 | 0.6 | 0.6 | 0.5 | 0.6 | 0.6 | 0.7 |     |     |     |     |     |       |       |

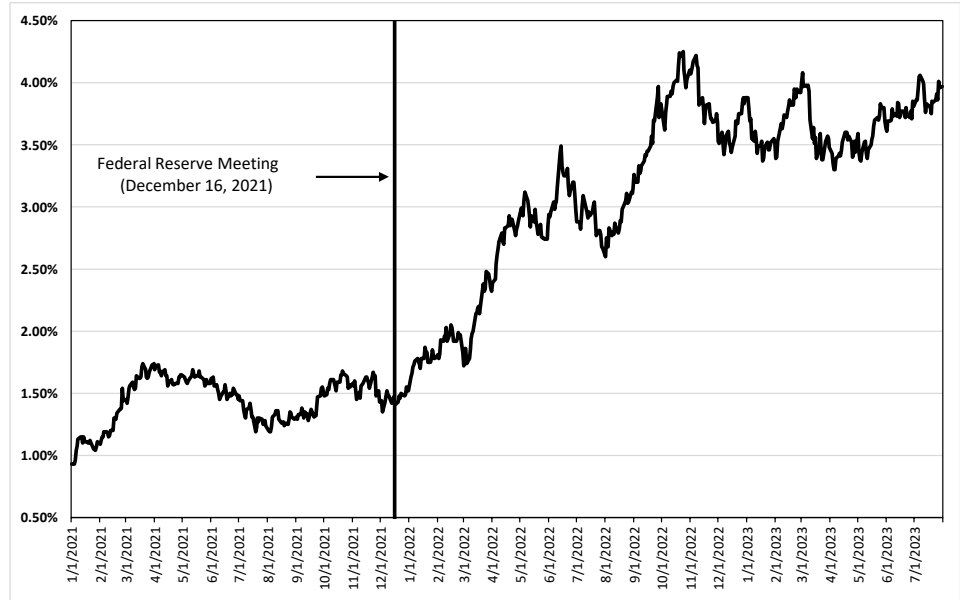
| Date   | Month | Year | Core CPI | YOY % Change | Unemployed<br>persons per job<br>opening ratio |
|--------|-------|------|----------|--------------|------------------------------------------------|
| Jan-06 | 1     | 2006 | 203.2    |              | 1.6                                            |
| Feb-06 | 2     | 2006 | 203.6    |              | 1.7                                            |
| Mar-06 | 3     | 2006 | 204.3    |              | 1.5                                            |
| Apr-06 | 4     | 2006 | 204.8    |              | 1.5                                            |
| May-06 | 5     | 2006 | 205.4    |              | 1.6                                            |
| Jun-06 | 6     | 2006 | 205.9    |              | 1.5                                            |
| Jul-06 | 7     | 2006 | 206.3    |              | 1.6                                            |
| Aug-06 | 8     | 2006 | 206.8    |              | 1.5                                            |
| Sep-06 | 9     | 2006 | 207.2    |              | 1.4                                            |
| Oct-06 | 10    | 2006 | 207.6    |              | 1.5                                            |
| Nov-06 | 11    | 2006 | 207.8    |              | 1.5                                            |
| Dec-06 | 12    | 2006 | 208.1    |              | 1.5                                            |
| Jan-07 | 1     | 2007 | 208.6    | 2.66%        | 1.5                                            |
| Feb-07 | 2     | 2007 | 209.135  | 2.72%        | 1.5                                            |
| Mar-07 | 3     | 2007 | 209.418  | 2.51%        | 1.4                                            |
| Apr-07 | 4     | 2007 | 209.747  | 2.42%        | 1.5                                            |
| May-07 | 5     | 2007 | 210.058  | 2.27%        | 1.5                                            |
| Jun-07 | 6     | 2007 | 210.392  | 2.18%        | 1.4                                            |
| Jul-07 | 7     | 2007 | 210.773  | 2.17%        | 1.6                                            |
| Aug-07 | 8     | 2007 | 211.119  | 2.09%        | 1.6                                            |
| Sep-07 | 9     | 2007 | 211.554  | 2.10%        | 1.5                                            |
| Oct-07 | 10    | 2007 | 212.077  | 2.16%        | 1.6                                            |
| Nov-07 | 11    | 2007 | 212.66   | 2.34%        | 1.6                                            |
| Dec-07 | 12    | 2007 | 213.168  | 2.44%        | 1.7                                            |
| Jan-08 | 1     | 2008 | 213.771  | 2.48%        | 1.7                                            |
| Feb-08 | 2     | 2008 | 213.939  | 2.30%        | 1.8                                            |
| Mar-08 | 3     | 2008 | 214.42   | 2.39%        | 1.9                                            |
| Apr-08 | 4     | 2008 | 214.56   | 2.29%        | 1.9                                            |
| May-08 | 5     | 2008 | 214.936  | 2.32%        | 2                                              |
| Jun-08 | 6     | 2008 | 215.424  | 2.39%        | 2.2                                            |
| Jul-08 | 7     | 2008 | 215.965  | 2.46%        | 2.4                                            |
| Aug-08 | 8     | 2008 | 216.393  | 2.50%        | 2.6                                            |
| Sep-08 | 9     | 2008 | 216.713  | 2.44%        | 2.9                                            |
| Oct-08 | 10    | 2008 | 216.788  | 2.22%        | 3                                              |
| Nov-08 | 11    | 2008 | 216.947  | 2.02%        | 3.3                                            |
| Dec-08 | 12    | 2008 | 216.925  | 1.76%        | 3.6                                            |
| Jan-09 | 1     | 2009 | 217.346  | 1.67%        | 4.4                                            |
| Feb-09 | 2     | 2009 | 217.792  | 1.80%        | 4.5                                            |
| Mar-09 | 3     | 2009 | 218.253  | 1.79%        | 5.3                                            |
| Apr-09 | 4     | 2009 | 218.706  | 1.93%        | 6                                              |
| May-09 | 5     | 2009 | 218.904  | 1.85%        | 5.7                                            |
| Jun-09 | 6     | 2009 | 219.112  | 1.71%        | 5.9                                            |
| Jul-09 | 7     | 2009 | 219.263  | 1.53%        | 6.5                                            |
| Aug-09 | 8     | 2009 | 219.496  | 1.43%        | 6.3                                            |
| Sep-09 | 9     | 2009 | 219.92   | 1.48%        | 6                                              |
| Oct-09 | 10    | 2009 | 220.501  | 1.71%        | 6.4                                            |
| Nov-09 | 11    | 2009 | 220.666  | 1.71%        | 6.1                                            |
| Dec-09 | 12    | 2009 | 220.881  | 1.82%        | 5.9                                            |
| Jan-10 | 1     | 2010 | 220.633  | 1.51%        | 5.3                                            |
| Feb-10 | 2     | 2010 | 220.731  | 1.35%        | 5.7                                            |
| Mar-10 | 3     | 2010 | 220.783  | 1.16%        | 5.7                                            |
| Apr-10 | 4     | 2010 | 220.822  | 0.97%        | 4.9                                            |
| May-10 | 5     | 2010 | 220.962  | 0.94%        | 5                                              |
| Jun-10 | 6     | 2010 | 221.194  | 0.95%        | 5.2                                            |
| Jul-10 | 7     | 2010 | 221.363  | 0.96%        | 4.7                                            |
| Aug-10 | 8     | 2010 | 221.509  | 0.92%        | 4.9                                            |
| Sep-10 | 9     | 2010 | 221.711  | 0.81%        | 5                                              |
| Oct-10 | 10    | 2010 | 221.83   | 0.60%        | 4.5                                            |
| Nov-10 | 11    | 2010 | 222.149  | 0.67%        | 4.7                                            |
| Dec-10 | 12    | 2010 | 222.343  | 0.66%        | 4.7                                            |
| Jan-11 | 1     | 2011 | 222.803  | 0.98%        | 4.5                                            |
| Feb-11 | 2     | 2011 | 223.213  | 1.12%        | 4.3                                            |
| Mar-11 | 3     | 2011 | 223.454  | 1.21%        | 4.2                                            |
| Apr-11 | 4     | 2011 | 223.727  | 1.32%        | 4.3                                            |
| May-11 | 5     | 2011 | 224.175  | 1.45%        | 4.4                                            |
| Jun-11 | 6     | 2011 | 224.697  | 1.58%        | 4                                              |
| Jul-11 | 7     | 2011 | 225.218  | 1.74%        | 3.8                                            |
| Aug-11 | 8     | 2011 | 225.862  | 1.97%        | 4.2                                            |
| Sep-11 | 9     | 2011 | 226.118  | 1.99%        | 3.7                                            |
| Oct-11 | 10    | 2011 | 226.506  | 2.11%        | 3.8                                            |
| Nov-11 | 11    | 2011 | 226.899  | 2.14%        | 3.7                                            |
| Dec-11 | 12    | 2011 | 227.405  | 2.28%        | 3.5                                            |
| Jan-12 | 1     | 2012 | 227.877  | 2.28%        | 3.3                                            |
| Feb-12 | 2     | 2012 | 228.034  | 2.16%        | 3.5                                            |
| Mar-12 | 3     | 2012 | 228.478  | 2.25%        | 3.2                                            |
| Apr-12 | 4     | 2012 | 228.905  | 2.31%        | 3.3                                            |
| May-12 | 5     | 2012 | 229.224  | 2.25%        | 3.3                                            |
| Jun-12 | 6     | 2012 | 229.623  | 2.19%        | 3.2                                            |
| Jul-12 | 7     | 2012 | 229.97   | 2.11%        | 3.4                                            |
| Aug-12 | 8     | 2012 | 230.233  | 1.94%        | 3.3                                            |
| Sep-12 | 9     | 2012 | 230.659  | 2.01%        | 3.1                                            |
| Oct-12 | 10    | 2012 | 231.024  | 1.99%        | 3.2                                            |
| Nov-12 | 11    | 2012 | 231.33   | 1.95%        | 3.1                                            |
| Dec-12 | 12    | 2012 | 231.725  | 1.90%        | 3.1                                            |
| Jan-13 | 1     | 2013 | 232.229  | 1.91%        | 3.2                                            |
| Feb-13 | 2     | 2013 | 232.569  | 1.99%        | 3                                              |
| Mar-13 | 3     | 2013 | 232.794  | 1.89%        | 2.9                                            |
| Apr-13 | 4     | 2013 | 232.832  | 1.72%        | 2.9                                            |
| May-13 | 5     | 2013 | 232.996  | 1.65%        | 2.8                                            |
| Jun-13 | 6     | 2013 | 233.35   | 1.62%        | 2.8                                            |
| Jul-13 | 7     | 2013 | 233.88   | 1.70%        | 2.9                                            |
| Aug-13 | 8     | 2013 | 234.336  | 1.78%        | 2.8                                            |
| Sep-13 | 9     | 2013 | 234.7    | 1.75%        | 2.7                                            |
| Oct-13 | 10    | 2013 | 234.921  | 1.69%        | 2.6                                            |
| Nov-13 | 11    | 2013 | 235.359  | 1.74%        | 2.6                                            |
| Dec-13 | 12    | 2013 | 235.759  | 1.74%        | 2.5                                            |
| Jan-14 | 1     | 2014 | 235.961  | 1.61%        | 2.5                                            |
| Feb-14 | 2     | 2014 | 236.185  | 1.55%        | 2.4                                            |
| Mar-14 | 3     | 2014 | 236.625  | 1.65%        | 2.4                                            |
| Apr-14 | 4     | 2014 | 237.072  | 1.82%        | 2.1                                            |
| May-14 | 5     | 2014 | 237.529  | 1.95%        | 2.1                                            |
| Jun-14 | 6     | 2014 | 237.837  | 1.92%        | 1.9                                            |
| Jul-14 | 7     | 2014 | 238.195  | 1.84%        | 2                                              |
| Aug-14 | 8     | 2014 | 238.405  | 1.74%        | 1.8                                            |
| Sep-14 | 9     | 2014 | 238.786  | 1.74%        | 1.9                                            |
| Oct-14 | 10    | 2014 | 239.191  | 1.82%        | 1.8                                            |
| Nov-14 | 11    | 2014 | 239.458  | 1.74%        | 1.9                                            |
| Dec-14 | 12    | 2014 | 239.584  | 1.62%        | 1.7                                            |
| Jan-15 | 1     | 2015 | 239.811  | 1.63%        | 1.7                                            |
| Feb-15 | 2     | 2015 | 240.172  | 1.69%        | 1.6                                            |

| Date   | Month | Year | Core CPI | YOY % Change | Unemployed<br>persons per job<br>opening ratio |
|--------|-------|------|----------|--------------|------------------------------------------------|
| Mar-15 | 3     | 2015 | 240.755  | 1.75%        | 1.6                                            |
| Apr-15 | 4     | 2015 | 241.346  | 1.80%        | 1.5                                            |
| May-15 | 5     | 2015 | 241.688  | 1.75%        | 1.6                                            |
| Jun-15 | 6     | 2015 | 242.064  | 1.78%        | 1.6                                            |
| Jul-15 | 7     | 2015 | 242.565  | 1.83%        | 1.3                                            |
| Aug-15 | 8     | 2015 | 242.817  | 1.85%        | 1.5                                            |
| Sep-15 | 9     | 2015 | 243.316  | 1.90%        | 1.4                                            |
| Oct-15 | 10    | 2015 | 243.768  | 1.91%        | 1.4                                            |
| Nov-15 | 11    | 2015 | 244.241  | 2.00%        | 1.4                                            |
| Dec-15 | 12    | 2015 | 244.547  | 2.07%        | 1.4                                            |
| Jan-16 | 1     | 2016 | 244.955  | 2.15%        | 1.3                                            |
| Feb-16 | 2     | 2016 | 245.51   | 2.22%        | 1.3                                            |
| Mar-16 | 3     | 2016 | 245.913  | 2.14%        | 1.3                                            |
| Apr-16 | 4     | 2016 | 246.551  | 2.16%        | 1.4                                            |
| May-16 | 5     | 2016 | 247.137  | 2.25%        | 1.3                                            |
| Jun-16 | 6     | 2016 | 247.54   | 2.26%        | 1.3                                            |
| Jul-16 | 7     | 2016 | 247.829  | 2.17%        | 1.3                                            |
| Aug-16 | 8     | 2016 | 248.423  | 2.31%        | 1.4                                            |
| Sep-16 | 9     | 2016 | 248.842  | 2.27%        | 1.4                                            |
| Oct-16 | 10    | 2016 | 249.142  | 2.20%        | 1.4                                            |
| Nov-16 | 11    | 2016 | 249.481  | 2.15%        | 1.3                                            |
| Dec-16 | 12    | 2016 | 249.92   | 2.20%        | 1.3                                            |
| Jan-17 | 1     | 2017 | 250.467  | 2.25%        | 1.3                                            |
| Feb-17 | 2     | 2017 | 250.998  | 2.24%        | 1.2                                            |
| Mar-17 | 3     | 2017 | 250.944  | 2.05%        | 1.2                                            |
| Apr-17 | 4     | 2017 | 251.227  | 1.90%        | 1.2                                            |
| May-17 | 5     | 2017 | 251.43   | 1.74%        | 1.2                                            |
| Jun-17 | 6     | 2017 | 251.746  | 1.70%        | 1.1                                            |
| Jul-17 | 7     | 2017 | 251.985  | 1.68%        | 1.1                                            |
| Aug-17 | 8     | 2017 | 252.535  | 1.66%        | 1.1                                            |
| Sep-17 | 9     | 2017 | 252.812  | 1.60%        | 1.1                                            |
| Oct-17 | 10    | 2017 | 253.526  | 1.76%        | 1                                              |
| Nov-17 | 11    | 2017 | 253.816  | 1.74%        | 1.1                                            |
| Dec-17 | 12    | 2017 | 254.344  | 1.77%        | 1                                              |
| Jan-18 | 1     | 2018 | 255.204  | 1.89%        | 1                                              |
| Feb-18 | 2     | 2018 | 255.711  | 1.88%        | 1                                              |
| Mar-18 | 3     | 2018 | 256.271  | 2.12%        | 0.9                                            |
| Apr-18 | 4     | 2018 | 256.63   | 2.15%        | 0.9                                            |
| May-18 | 5     | 2018 | 257.145  | 2.27%        | 0.9                                            |
| Jun-18 | 6     | 2018 | 257.399  | 2.25%        | 0.9                                            |
| Jul-18 | 7     | 2018 | 257.699  | 2.27%        | 0.9                                            |
| Aug-18 | 8     | 2018 | 257.891  | 2.12%        | 0.9                                            |
| Sep-18 | 9     | 2018 | 258.368  | 2.20%        | 0.8                                            |
| Oct-18 | 10    | 2018 | 258.917  | 2.13%        | 0.9                                            |
| Nov-18 | 11    | 2018 | 259.439  | 2.22%        | 0.8                                            |
| Dec-18 | 12    | 2018 | 260.063  | 2.25%        | 0.9                                            |
| Jan-19 | 1     | 2019 | 260.686  | 2.15%        | 0.9                                            |
| Feb-19 | 2     | 2019 | 261.067  | 2.09%        | 0.9                                            |
| Mar-19 | 3     | 2019 | 261.537  | 2.05%        | 0.8                                            |
| Apr-19 | 4     | 2019 | 261.976  | 2.08%        | 0.8                                            |
| May-19 | 5     | 2019 | 262.304  | 2.01%        | 0.8                                            |
| Jun-19 | 6     | 2019 | 262.859  | 2.12%        | 0.8                                            |
| Jul-19 | 7     | 2019 | 263.313  | 2.18%        | 0.9                                            |
| Aug-19 | 8     | 2019 | 263.975  | 2.36%        | 0.8                                            |
| Sep-19 | 9     | 2019 | 264.425  | 2.34%        | 0.8                                            |
| Oct-19 | 10    | 2019 | 264.94   | 2.33%        | 0.8                                            |
| Nov-19 | 11    | 2019 | 265.484  | 2.33%        | 0.9                                            |
| Dec-19 | 12    | 2019 | 265.924  | 2.25%        | 0.9                                            |
| Jan-20 | 1     | 2020 | 266.626  | 2.28%        | 0.8                                            |
| Feb-20 | 2     | 2020 | 267.283  | 2.38%        | 0.8                                            |
| Mar-20 | 3     | 2020 | 267.09   | 2.12%        | 1.2                                            |
| Apr-20 | 4     | 2020 | 265.771  | 1.45%        | 4.9                                            |
| May-20 | 5     | 2020 | 265.574  | 1.25%        | 3.8                                            |
| Jun-20 | 6     | 2020 | 265.952  | 1.18%        | 2.9                                            |
| Jul-20 | 7     | 2020 | 267.352  | 1.53%        | 2.5                                            |
| Aug-20 | 8     | 2020 | 268.469  | 1.70%        | 2.1                                            |
| Sep-20 | 9     | 2020 | 268.938  | 1.71%        | 1.9                                            |
| Oct-20 | 10    | 2020 | 269.236  | 1.62%        | 1.6                                            |
| Nov-20 | 11    | 2020 | 269.901  | 1.66%        | 1.6                                            |
| Dec-20 | 12    | 2020 | 270.267  | 1.63%        | 1.6                                            |
| Jan-21 | 1     | 2021 | 270.383  | 1.41%        | 1.4                                            |
| Feb-21 | 2     | 2021 | 270.727  | 1.29%        | 1.3                                            |
| Mar-21 | 3     | 2021 | 271.526  | 1.66%        | 1.2                                            |
| Apr-21 | 4     | 2021 | 273.615  | 2.95%        | 1                                              |
| May-21 | 5     | 2021 | 275.654  | 3.80%        | 0.9                                            |
| Jun-21 | 6     | 2021 | 277.676  | 4.41%        | 0.9                                            |
| Jul-21 | 7     | 2021 | 278.522  | 4.18%        | 0.8                                            |
| Aug-21 | 8     | 2021 | 279.057  | 3.94%        | 0.8                                            |
| Sep-21 | 9     | 2021 | 279.755  | 4.02%        | 0.7                                            |
| Oct-21 | 10    | 2021 | 281.588  | 4.59%        | 0.6                                            |
| Nov-21 | 11    | 2021 | 283.34   | 4.98%        | 0.6                                            |
| Dec-21 | 12    | 2021 | 285.193  | 5.52%        | 0.5                                            |
| Jan-22 | 1     | 2022 | 286.792  | 6.07%        | 0.6                                            |
| Feb-22 | 2     | 2022 | 288.147  | 6.43%        | 0.5                                            |
| Mar-22 | 3     | 2022 | 289.046  | 6.45%        | 0.5                                            |
| Apr-22 | 4     | 2022 | 290.41   | 6.14%        | 0.5                                            |
| May-22 | 5     | 2022 | 292.251  | 6.02%        | 0.5                                            |
| Jun-22 | 6     | 2022 | 294.017  | 5.88%        | 0.5                                            |
| Jul-22 | 7     | 2022 | 294.925  | 5.89%        | 0.5                                            |
| Aug-22 | 8     | 2022 | 296.639  | 6.30%        | 0.6                                            |
| Sep-22 | 9     | 2022 | 298.339  | 6.64%        | 0.5                                            |
| Oct-22 | 10    | 2022 | 299.333  | 6.30%        | 0.6                                            |
| Nov-22 | 11    | 2022 | 300.261  | 5.97%        | 0.6                                            |
| Dec-22 | 12    | 2022 | 301.46   | 5.70%        | 0.5                                            |
| Jan-23 | 1     | 2023 | 302.702  | 5.55%        | 0.5                                            |
| Feb-23 | 2     | 2023 | 304.07   | 5.53%        | 0.6                                            |
| Mar-23 | 3     | 2023 | 305.24   | 5.60%        | 0.6                                            |
| Apr-23 | 4     | 2023 | 306.489  | 5.54%        | 0.5                                            |
| May-23 | 5     | 2023 | 307.824  | 5.33%        | 0.6                                            |
| Jun-23 | 6     | 2023 | 308.309  | 4.86%        | 0.6                                            |
| Jul-23 | 7     | 2023 | 308.801  | 4.70%        | 0.7                                            |



=SNL("Markets.Range", \$B\$2:\$B\$3, "01/01/2021", "4/30/2023", "Options:Curr=USD,Mag=Standard,ConvMethod=Recommended,Pad=Off,Dates=Before,Sort=Asc")  
10y US T-Note

|           | YIELD |       |
|-----------|-------|-------|
| 1/1/2021  | 0.93  | 0.93% |
| 1/4/2021  | 0.93  | 0.93% |
| 1/5/2021  | 0.96  | 0.96% |
| 1/6/2021  | 1.04  | 1.04% |
| 1/7/2021  | 1.08  | 1.08% |
| 1/8/2021  | 1.13  | 1.13% |
| 1/11/2021 | 1.15  | 1.15% |
| 1/12/2021 | 1.15  | 1.15% |
| 1/13/2021 | 1.10  | 1.10% |
| 1/14/2021 | 1.15  | 1.15% |
| 1/15/2021 | 1.11  | 1.11% |
| 1/18/2021 | 1.11  | 1.11% |
| 1/19/2021 | 1.10  | 1.10% |
| 1/20/2021 | 1.10  | 1.10% |
| 1/21/2021 | 1.12  | 1.12% |
| 1/22/2021 | 1.10  | 1.10% |
| 1/25/2021 | 1.05  | 1.05% |
| 1/26/2021 | 1.05  | 1.05% |
| 1/27/2021 | 1.04  | 1.04% |
| 1/28/2021 | 1.07  | 1.07% |
| 1/29/2021 | 1.11  | 1.11% |
| 2/1/2021  | 1.09  | 1.09% |
| 2/2/2021  | 1.12  | 1.12% |
| 2/3/2021  | 1.15  | 1.15% |
| 2/4/2021  | 1.15  | 1.15% |
| 2/5/2021  | 1.19  | 1.19% |
| 2/8/2021  | 1.19  | 1.19% |
| 2/9/2021  | 1.18  | 1.18% |
| 2/10/2021 | 1.15  | 1.15% |
| 2/11/2021 | 1.16  | 1.16% |
| 2/12/2021 | 1.20  | 1.20% |
| 2/15/2021 | 1.20  | 1.20% |
| 2/16/2021 | 1.30  | 1.30% |
| 2/17/2021 | 1.29  | 1.29% |
| 2/18/2021 | 1.29  | 1.29% |
| 2/19/2021 | 1.34  | 1.34% |
| 2/22/2021 | 1.37  | 1.37% |
| 2/23/2021 | 1.37  | 1.37% |
| 2/24/2021 | 1.38  | 1.38% |
| 2/25/2021 | 1.54  | 1.54% |
| 2/26/2021 | 1.44  | 1.44% |
| 3/1/2021  | 1.45  | 1.45% |
| 3/2/2021  | 1.42  | 1.42% |
| 3/3/2021  | 1.47  | 1.47% |
| 3/4/2021  | 1.54  | 1.54% |
| 3/5/2021  | 1.56  | 1.56% |
| 3/8/2021  | 1.59  | 1.59% |
| 3/9/2021  | 1.55  | 1.55% |
| 3/10/2021 | 1.53  | 1.53% |
| 3/11/2021 | 1.54  | 1.54% |
| 3/12/2021 | 1.64  | 1.64% |
| 3/15/2021 | 1.62  | 1.62% |
| 3/16/2021 | 1.62  | 1.62% |
| 3/17/2021 | 1.63  | 1.63% |
| 3/18/2021 | 1.71  | 1.71% |
| 3/19/2021 | 1.74  | 1.74% |
| 3/22/2021 | 1.69  | 1.69% |
| 3/23/2021 | 1.63  | 1.63% |
| 3/24/2021 | 1.62  | 1.62% |
| 3/25/2021 | 1.63  | 1.63% |
| 3/26/2021 | 1.67  | 1.67% |
| 3/29/2021 | 1.73  | 1.73% |
| 3/30/2021 | 1.73  | 1.73% |
| 3/31/2021 | 1.74  | 1.74% |
| 4/1/2021  | 1.69  | 1.69% |
| 4/2/2021  | 1.72  | 1.72% |
| 4/5/2021  | 1.73  | 1.73% |
| 4/6/2021  | 1.67  | 1.67% |
| 4/7/2021  | 1.68  | 1.68% |
| 4/8/2021  | 1.64  | 1.64% |
| 4/9/2021  | 1.67  | 1.67% |
| 4/12/2021 | 1.69  | 1.69% |
| 4/13/2021 | 1.64  | 1.64% |
| 4/14/2021 | 1.64  | 1.64% |
| 4/15/2021 | 1.56  | 1.56% |



Date Y-Axis  
12/16/2021 0%  
12/16/2021 5%

| 10y US T-Note |       |       |
|---------------|-------|-------|
|               | YIELD |       |
| 4/16/2021     | 1.59  | 1.59% |
| 4/19/2021     | 1.61  | 1.61% |
| 4/20/2021     | 1.58  | 1.58% |
| 4/21/2021     | 1.57  | 1.57% |
| 4/22/2021     | 1.57  | 1.57% |
| 4/23/2021     | 1.58  | 1.58% |
| 4/26/2021     | 1.58  | 1.58% |
| 4/27/2021     | 1.63  | 1.63% |
| 4/28/2021     | 1.63  | 1.63% |
| 4/29/2021     | 1.65  | 1.65% |
| 4/30/2021     | 1.65  | 1.65% |
| 5/3/2021      | 1.63  | 1.63% |
| 5/4/2021      | 1.61  | 1.61% |
| 5/5/2021      | 1.59  | 1.59% |
| 5/6/2021      | 1.58  | 1.58% |
| 5/7/2021      | 1.60  | 1.60% |
| 5/10/2021     | 1.63  | 1.63% |
| 5/11/2021     | 1.64  | 1.64% |
| 5/12/2021     | 1.69  | 1.69% |
| 5/13/2021     | 1.66  | 1.66% |
| 5/14/2021     | 1.63  | 1.63% |
| 5/17/2021     | 1.64  | 1.64% |
| 5/18/2021     | 1.64  | 1.64% |
| 5/19/2021     | 1.68  | 1.68% |
| 5/20/2021     | 1.63  | 1.63% |
| 5/21/2021     | 1.63  | 1.63% |
| 5/24/2021     | 1.61  | 1.61% |
| 5/25/2021     | 1.56  | 1.56% |
| 5/26/2021     | 1.58  | 1.58% |
| 5/27/2021     | 1.61  | 1.61% |
| 5/28/2021     | 1.58  | 1.58% |
| 5/31/2021     | 1.58  | 1.58% |
| 6/1/2021      | 1.62  | 1.62% |
| 6/2/2021      | 1.59  | 1.59% |
| 6/3/2021      | 1.63  | 1.63% |
| 6/4/2021      | 1.56  | 1.56% |
| 6/7/2021      | 1.57  | 1.57% |
| 6/8/2021      | 1.53  | 1.53% |
| 6/9/2021      | 1.50  | 1.50% |
| 6/10/2021     | 1.45  | 1.45% |
| 6/11/2021     | 1.47  | 1.47% |
| 6/14/2021     | 1.51  | 1.51% |
| 6/15/2021     | 1.51  | 1.51% |
| 6/16/2021     | 1.57  | 1.57% |
| 6/17/2021     | 1.52  | 1.52% |
| 6/18/2021     | 1.45  | 1.45% |
| 6/21/2021     | 1.50  | 1.50% |
| 6/22/2021     | 1.48  | 1.48% |
| 6/23/2021     | 1.50  | 1.50% |
| 6/24/2021     | 1.49  | 1.49% |
| 6/25/2021     | 1.54  | 1.54% |
| 6/28/2021     | 1.49  | 1.49% |
| 6/29/2021     | 1.49  | 1.49% |
| 6/30/2021     | 1.45  | 1.45% |
| 7/1/2021      | 1.48  | 1.48% |
| 7/2/2021      | 1.44  | 1.44% |
| 7/5/2021      | 1.44  | 1.44% |
| 7/6/2021      | 1.37  | 1.37% |
| 7/7/2021      | 1.33  | 1.33% |
| 7/8/2021      | 1.30  | 1.30% |
| 7/9/2021      | 1.37  | 1.37% |
| 7/12/2021     | 1.38  | 1.38% |
| 7/13/2021     | 1.42  | 1.42% |
| 7/14/2021     | 1.37  | 1.37% |
| 7/15/2021     | 1.31  | 1.31% |
| 7/16/2021     | 1.31  | 1.31% |
| 7/19/2021     | 1.19  | 1.19% |
| 7/20/2021     | 1.23  | 1.23% |
| 7/21/2021     | 1.30  | 1.30% |
| 7/22/2021     | 1.27  | 1.27% |
| 7/23/2021     | 1.30  | 1.30% |
| 7/26/2021     | 1.29  | 1.29% |
| 7/27/2021     | 1.25  | 1.25% |
| 7/28/2021     | 1.26  | 1.26% |
| 7/29/2021     | 1.28  | 1.28% |
| 7/30/2021     | 1.24  | 1.24% |

| 10y US T-Note |       |       |
|---------------|-------|-------|
|               | YIELD |       |
| 8/2/2021      | 1.20  | 1.20% |
| 8/3/2021      | 1.19  | 1.19% |
| 8/4/2021      | 1.19  | 1.19% |
| 8/5/2021      | 1.23  | 1.23% |
| 8/6/2021      | 1.31  | 1.31% |
| 8/9/2021      | 1.33  | 1.33% |
| 8/10/2021     | 1.36  | 1.36% |
| 8/11/2021     | 1.35  | 1.35% |
| 8/12/2021     | 1.36  | 1.36% |
| 8/13/2021     | 1.29  | 1.29% |
| 8/16/2021     | 1.26  | 1.26% |
| 8/17/2021     | 1.26  | 1.26% |
| 8/18/2021     | 1.27  | 1.27% |
| 8/19/2021     | 1.24  | 1.24% |
| 8/20/2021     | 1.26  | 1.26% |
| 8/23/2021     | 1.25  | 1.25% |
| 8/24/2021     | 1.29  | 1.29% |
| 8/25/2021     | 1.35  | 1.35% |
| 8/26/2021     | 1.34  | 1.34% |
| 8/27/2021     | 1.31  | 1.31% |
| 8/30/2021     | 1.29  | 1.29% |
| 8/31/2021     | 1.30  | 1.30% |
| 9/1/2021      | 1.31  | 1.31% |
| 9/2/2021      | 1.29  | 1.29% |
| 9/3/2021      | 1.33  | 1.33% |
| 9/6/2021      | 1.33  | 1.33% |
| 9/7/2021      | 1.38  | 1.38% |
| 9/8/2021      | 1.35  | 1.35% |
| 9/9/2021      | 1.30  | 1.30% |
| 9/10/2021     | 1.35  | 1.35% |
| 9/13/2021     | 1.33  | 1.33% |
| 9/14/2021     | 1.28  | 1.28% |
| 9/15/2021     | 1.31  | 1.31% |
| 9/16/2021     | 1.34  | 1.34% |
| 9/17/2021     | 1.37  | 1.37% |
| 9/20/2021     | 1.31  | 1.31% |
| 9/21/2021     | 1.33  | 1.33% |
| 9/22/2021     | 1.32  | 1.32% |
| 9/23/2021     | 1.41  | 1.41% |
| 9/24/2021     | 1.47  | 1.47% |
| 9/27/2021     | 1.48  | 1.48% |
| 9/28/2021     | 1.54  | 1.54% |
| 9/29/2021     | 1.55  | 1.55% |
| 9/30/2021     | 1.52  | 1.52% |
| 10/1/2021     | 1.48  | 1.48% |
| 10/4/2021     | 1.49  | 1.49% |
| 10/5/2021     | 1.54  | 1.54% |
| 10/6/2021     | 1.53  | 1.53% |
| 10/7/2021     | 1.58  | 1.58% |
| 10/8/2021     | 1.61  | 1.61% |
| 10/11/2021    | 1.61  | 1.61% |
| 10/12/2021    | 1.59  | 1.59% |
| 10/13/2021    | 1.56  | 1.56% |
| 10/14/2021    | 1.52  | 1.52% |
| 10/15/2021    | 1.59  | 1.59% |
| 10/18/2021    | 1.59  | 1.59% |
| 10/19/2021    | 1.65  | 1.65% |
| 10/20/2021    | 1.65  | 1.65% |
| 10/21/2021    | 1.68  | 1.68% |
| 10/22/2021    | 1.66  | 1.66% |
| 10/25/2021    | 1.64  | 1.64% |
| 10/26/2021    | 1.63  | 1.63% |
| 10/27/2021    | 1.54  | 1.54% |
| 10/28/2021    | 1.57  | 1.57% |
| 10/29/2021    | 1.55  | 1.55% |
| 11/1/2021     | 1.58  | 1.58% |
| 11/2/2021     | 1.56  | 1.56% |
| 11/3/2021     | 1.60  | 1.60% |
| 11/4/2021     | 1.53  | 1.53% |
| 11/5/2021     | 1.45  | 1.45% |
| 11/8/2021     | 1.51  | 1.51% |
| 11/9/2021     | 1.46  | 1.46% |
| 11/10/2021    | 1.56  | 1.56% |
| 11/12/2021    | 1.58  | 1.58% |
| 11/15/2021    | 1.63  | 1.63% |
| 11/16/2021    | 1.63  | 1.63% |

| 10y US T-Note |       |       |
|---------------|-------|-------|
|               | YIELD |       |
| 11/17/2021    | 1.60  | 1.60% |
| 11/18/2021    | 1.59  | 1.59% |
| 11/19/2021    | 1.54  | 1.54% |
| 11/22/2021    | 1.63  | 1.63% |
| 11/23/2021    | 1.67  | 1.67% |
| 11/24/2021    | 1.64  | 1.64% |
| 11/25/2021    | 1.64  | 1.64% |
| 11/26/2021    | 1.48  | 1.48% |
| 11/29/2021    | 1.52  | 1.52% |
| 11/30/2021    | 1.43  | 1.43% |
| 12/1/2021     | 1.43  | 1.43% |
| 12/2/2021     | 1.44  | 1.44% |
| 12/3/2021     | 1.35  | 1.35% |
| 12/6/2021     | 1.43  | 1.43% |
| 12/7/2021     | 1.48  | 1.48% |
| 12/8/2021     | 1.52  | 1.52% |
| 12/9/2021     | 1.49  | 1.49% |
| 12/10/2021    | 1.48  | 1.48% |
| 12/13/2021    | 1.42  | 1.42% |
| 12/14/2021    | 1.44  | 1.44% |
| 12/15/2021    | 1.47  | 1.47% |
| 12/16/2021    | 1.44  | 1.44% |
| 12/17/2021    | 1.41  | 1.41% |
| 12/20/2021    | 1.43  | 1.43% |
| 12/21/2021    | 1.48  | 1.48% |
| 12/22/2021    | 1.46  | 1.46% |
| 12/23/2021    | 1.50  | 1.50% |
| 12/27/2021    | 1.48  | 1.48% |
| 12/28/2021    | 1.49  | 1.49% |
| 12/29/2021    | 1.55  | 1.55% |
| 12/30/2021    | 1.52  | 1.52% |
| 12/31/2021    | 1.52  | 1.52% |
| 1/3/2022      | 1.63  | 1.63% |
| 1/4/2022      | 1.66  | 1.66% |
| 1/5/2022      | 1.71  | 1.71% |
| 1/6/2022      | 1.73  | 1.73% |
| 1/7/2022      | 1.76  | 1.76% |
| 1/10/2022     | 1.78  | 1.78% |
| 1/11/2022     | 1.75  | 1.75% |
| 1/12/2022     | 1.74  | 1.74% |
| 1/13/2022     | 1.70  | 1.70% |
| 1/14/2022     | 1.78  | 1.78% |
| 1/17/2022     | 1.78  | 1.78% |
| 1/18/2022     | 1.87  | 1.87% |
| 1/19/2022     | 1.83  | 1.83% |
| 1/20/2022     | 1.83  | 1.83% |
| 1/21/2022     | 1.75  | 1.75% |
| 1/24/2022     | 1.75  | 1.75% |
| 1/25/2022     | 1.78  | 1.78% |
| 1/26/2022     | 1.85  | 1.85% |
| 1/27/2022     | 1.81  | 1.81% |
| 1/28/2022     | 1.78  | 1.78% |
| 1/31/2022     | 1.79  | 1.79% |
| 2/1/2022      | 1.81  | 1.81% |
| 2/2/2022      | 1.78  | 1.78% |
| 2/3/2022      | 1.82  | 1.82% |
| 2/4/2022      | 1.93  | 1.93% |
| 2/7/2022      | 1.92  | 1.92% |
| 2/8/2022      | 1.96  | 1.96% |
| 2/9/2022      | 1.94  | 1.94% |
| 2/10/2022     | 2.03  | 2.03% |
| 2/11/2022     | 1.92  | 1.92% |
| 2/14/2022     | 1.98  | 1.98% |
| 2/15/2022     | 2.05  | 2.05% |
| 2/16/2022     | 2.03  | 2.03% |
| 2/17/2022     | 1.97  | 1.97% |
| 2/18/2022     | 1.92  | 1.92% |
| 2/21/2022     | 1.92  | 1.92% |
| 2/22/2022     | 1.94  | 1.94% |
| 2/23/2022     | 1.99  | 1.99% |
| 2/24/2022     | 1.96  | 1.96% |
| 2/25/2022     | 1.97  | 1.97% |
| 2/28/2022     | 1.83  | 1.83% |
| 3/1/2022      | 1.72  | 1.72% |
| 3/2/2022      | 1.86  | 1.86% |
| 3/3/2022      | 1.86  | 1.86% |



| 10y US T-Note |       |       |
|---------------|-------|-------|
|               | YIELD |       |
| 3/4/2022      | 1.74  | 1.74% |
| 3/7/2022      | 1.78  | 1.78% |
| 3/8/2022      | 1.86  | 1.86% |
| 3/9/2022      | 1.94  | 1.94% |
| 3/10/2022     | 1.98  | 1.98% |
| 3/11/2022     | 2.00  | 2.00% |
| 3/14/2022     | 2.14  | 2.14% |
| 3/15/2022     | 2.15  | 2.15% |
| 3/16/2022     | 2.19  | 2.19% |
| 3/17/2022     | 2.20  | 2.20% |
| 3/18/2022     | 2.14  | 2.14% |
| 3/21/2022     | 2.32  | 2.32% |
| 3/22/2022     | 2.38  | 2.38% |
| 3/23/2022     | 2.32  | 2.32% |
| 3/24/2022     | 2.34  | 2.34% |
| 3/25/2022     | 2.48  | 2.48% |
| 3/28/2022     | 2.46  | 2.46% |
| 3/29/2022     | 2.41  | 2.41% |
| 3/30/2022     | 2.35  | 2.35% |
| 3/31/2022     | 2.32  | 2.32% |
| 4/1/2022      | 2.39  | 2.39% |
| 4/4/2022      | 2.42  | 2.42% |
| 4/5/2022      | 2.54  | 2.54% |
| 4/6/2022      | 2.61  | 2.61% |
| 4/7/2022      | 2.66  | 2.66% |
| 4/8/2022      | 2.72  | 2.72% |
| 4/11/2022     | 2.79  | 2.79% |
| 4/12/2022     | 2.72  | 2.72% |
| 4/13/2022     | 2.70  | 2.70% |
| 4/14/2022     | 2.83  | 2.83% |
| 4/15/2022     | 2.83  | 2.83% |
| 4/18/2022     | 2.85  | 2.85% |
| 4/19/2022     | 2.93  | 2.93% |
| 4/20/2022     | 2.85  | 2.85% |
| 4/21/2022     | 2.90  | 2.90% |
| 4/22/2022     | 2.90  | 2.90% |
| 4/25/2022     | 2.81  | 2.81% |
| 4/26/2022     | 2.77  | 2.77% |
| 4/27/2022     | 2.82  | 2.82% |
| 4/28/2022     | 2.85  | 2.85% |
| 4/29/2022     | 2.89  | 2.89% |
| 5/2/2022      | 2.99  | 2.99% |
| 5/3/2022      | 2.97  | 2.97% |
| 5/4/2022      | 2.93  | 2.93% |
| 5/5/2022      | 3.05  | 3.05% |
| 5/6/2022      | 3.12  | 3.12% |
| 5/9/2022      | 3.05  | 3.05% |
| 5/10/2022     | 2.99  | 2.99% |
| 5/11/2022     | 2.91  | 2.91% |
| 5/12/2022     | 2.84  | 2.84% |
| 5/13/2022     | 2.93  | 2.93% |
| 5/16/2022     | 2.88  | 2.88% |
| 5/17/2022     | 2.98  | 2.98% |
| 5/18/2022     | 2.88  | 2.88% |
| 5/19/2022     | 2.84  | 2.84% |
| 5/20/2022     | 2.78  | 2.78% |
| 5/23/2022     | 2.86  | 2.86% |
| 5/24/2022     | 2.76  | 2.76% |
| 5/25/2022     | 2.75  | 2.75% |
| 5/26/2022     | 2.75  | 2.75% |
| 5/27/2022     | 2.74  | 2.74% |
| 5/30/2022     | 2.74  | 2.74% |
| 5/31/2022     | 2.85  | 2.85% |
| 6/1/2022      | 2.94  | 2.94% |
| 6/2/2022      | 2.92  | 2.92% |
| 6/3/2022      | 2.96  | 2.96% |
| 6/6/2022      | 3.04  | 3.04% |
| 6/7/2022      | 2.98  | 2.98% |
| 6/8/2022      | 3.03  | 3.03% |
| 6/9/2022      | 3.04  | 3.04% |
| 6/10/2022     | 3.15  | 3.15% |
| 6/13/2022     | 3.43  | 3.43% |
| 6/14/2022     | 3.49  | 3.49% |
| 6/15/2022     | 3.33  | 3.33% |
| 6/16/2022     | 3.28  | 3.28% |
| 6/17/2022     | 3.25  | 3.25% |

| 10y US T-Note |       |       |
|---------------|-------|-------|
|               | YIELD |       |
| 6/20/2022     | 3.25  | 3.25% |
| 6/21/2022     | 3.31  | 3.31% |
| 6/22/2022     | 3.16  | 3.16% |
| 6/23/2022     | 3.09  | 3.09% |
| 6/24/2022     | 3.13  | 3.13% |
| 6/27/2022     | 3.20  | 3.20% |
| 6/28/2022     | 3.20  | 3.20% |
| 6/29/2022     | 3.10  | 3.10% |
| 6/30/2022     | 2.98  | 2.98% |
| 7/1/2022      | 2.88  | 2.88% |
| 7/4/2022      | 2.88  | 2.88% |
| 7/5/2022      | 2.82  | 2.82% |
| 7/6/2022      | 2.93  | 2.93% |
| 7/7/2022      | 3.01  | 3.01% |
| 7/8/2022      | 3.09  | 3.09% |
| 7/11/2022     | 2.99  | 2.99% |
| 7/12/2022     | 2.96  | 2.96% |
| 7/13/2022     | 2.91  | 2.91% |
| 7/14/2022     | 2.96  | 2.96% |
| 7/15/2022     | 2.93  | 2.93% |
| 7/18/2022     | 2.96  | 2.96% |
| 7/19/2022     | 3.01  | 3.01% |
| 7/20/2022     | 3.04  | 3.04% |
| 7/21/2022     | 2.91  | 2.91% |
| 7/22/2022     | 2.77  | 2.77% |
| 7/25/2022     | 2.81  | 2.81% |
| 7/26/2022     | 2.81  | 2.81% |
| 7/27/2022     | 2.78  | 2.78% |
| 7/28/2022     | 2.68  | 2.68% |
| 7/29/2022     | 2.67  | 2.67% |
| 8/1/2022      | 2.60  | 2.60% |
| 8/2/2022      | 2.75  | 2.75% |
| 8/3/2022      | 2.73  | 2.73% |
| 8/4/2022      | 2.68  | 2.68% |
| 8/5/2022      | 2.83  | 2.83% |
| 8/8/2022      | 2.77  | 2.77% |
| 8/9/2022      | 2.80  | 2.80% |
| 8/10/2022     | 2.78  | 2.78% |
| 8/11/2022     | 2.87  | 2.87% |
| 8/12/2022     | 2.84  | 2.84% |
| 8/15/2022     | 2.79  | 2.79% |
| 8/16/2022     | 2.82  | 2.82% |
| 8/17/2022     | 2.89  | 2.89% |
| 8/18/2022     | 2.88  | 2.88% |
| 8/19/2022     | 2.98  | 2.98% |
| 8/22/2022     | 3.03  | 3.03% |
| 8/23/2022     | 3.05  | 3.05% |
| 8/24/2022     | 3.11  | 3.11% |
| 8/25/2022     | 3.03  | 3.03% |
| 8/26/2022     | 3.04  | 3.04% |
| 8/29/2022     | 3.12  | 3.12% |
| 8/30/2022     | 3.11  | 3.11% |
| 8/31/2022     | 3.15  | 3.15% |
| 9/1/2022      | 3.26  | 3.26% |
| 9/2/2022      | 3.20  | 3.20% |
| 9/5/2022      | 3.20  | 3.20% |
| 9/6/2022      | 3.33  | 3.33% |
| 9/7/2022      | 3.27  | 3.27% |
| 9/8/2022      | 3.29  | 3.29% |
| 9/9/2022      | 3.33  | 3.33% |
| 9/12/2022     | 3.37  | 3.37% |
| 9/13/2022     | 3.42  | 3.42% |
| 9/14/2022     | 3.41  | 3.41% |
| 9/15/2022     | 3.45  | 3.45% |
| 9/16/2022     | 3.45  | 3.45% |
| 9/19/2022     | 3.49  | 3.49% |
| 9/20/2022     | 3.57  | 3.57% |
| 9/21/2022     | 3.51  | 3.51% |
| 9/22/2022     | 3.70  | 3.70% |
| 9/23/2022     | 3.69  | 3.69% |
| 9/26/2022     | 3.88  | 3.88% |
| 9/27/2022     | 3.97  | 3.97% |
| 9/28/2022     | 3.72  | 3.72% |
| 9/29/2022     | 3.76  | 3.76% |
| 9/30/2022     | 3.83  | 3.83% |
| 10/3/2022     | 3.67  | 3.67% |

| 10y US T-Note |       |       |
|---------------|-------|-------|
|               | YIELD |       |
| 10/4/2022     | 3.62  | 3.62% |
| 10/5/2022     | 3.76  | 3.76% |
| 10/6/2022     | 3.83  | 3.83% |
| 10/7/2022     | 3.89  | 3.89% |
| 10/10/2022    | 3.89  | 3.89% |
| 10/11/2022    | 3.93  | 3.93% |
| 10/12/2022    | 3.91  | 3.91% |
| 10/13/2022    | 3.97  | 3.97% |
| 10/14/2022    | 4.00  | 4.00% |
| 10/17/2022    | 4.02  | 4.02% |
| 10/18/2022    | 4.01  | 4.01% |
| 10/19/2022    | 4.14  | 4.14% |
| 10/20/2022    | 4.24  | 4.24% |
| 10/21/2022    | 4.21  | 4.21% |
| 10/24/2022    | 4.25  | 4.25% |
| 10/25/2022    | 4.10  | 4.10% |
| 10/26/2022    | 4.04  | 4.04% |
| 10/27/2022    | 3.96  | 3.96% |
| 10/28/2022    | 4.02  | 4.02% |
| 10/31/2022    | 4.10  | 4.10% |
| 11/1/2022     | 4.07  | 4.07% |
| 11/2/2022     | 4.10  | 4.10% |
| 11/3/2022     | 4.14  | 4.14% |
| 11/4/2022     | 4.17  | 4.17% |
| 11/7/2022     | 4.22  | 4.22% |
| 11/8/2022     | 4.14  | 4.14% |
| 11/9/2022     | 4.12  | 4.12% |
| 11/10/2022    | 3.82  | 3.82% |
| 11/14/2022    | 3.88  | 3.88% |
| 11/15/2022    | 3.80  | 3.80% |
| 11/16/2022    | 3.67  | 3.67% |
| 11/17/2022    | 3.77  | 3.77% |
| 11/18/2022    | 3.82  | 3.82% |
| 11/21/2022    | 3.83  | 3.83% |
| 11/22/2022    | 3.76  | 3.76% |
| 11/23/2022    | 3.71  | 3.71% |
| 11/24/2022    | 3.71  | 3.71% |
| 11/25/2022    | 3.68  | 3.68% |
| 11/28/2022    | 3.69  | 3.69% |
| 11/29/2022    | 3.75  | 3.75% |
| 11/30/2022    | 3.68  | 3.68% |
| 12/1/2022     | 3.53  | 3.53% |
| 12/2/2022     | 3.51  | 3.51% |
| 12/5/2022     | 3.60  | 3.60% |
| 12/6/2022     | 3.51  | 3.51% |
| 12/7/2022     | 3.42  | 3.42% |
| 12/8/2022     | 3.48  | 3.48% |
| 12/9/2022     | 3.57  | 3.57% |
| 12/12/2022    | 3.61  | 3.61% |
| 12/13/2022    | 3.51  | 3.51% |
| 12/14/2022    | 3.49  | 3.49% |
| 12/15/2022    | 3.44  | 3.44% |
| 12/16/2022    | 3.48  | 3.48% |
| 12/19/2022    | 3.57  | 3.57% |
| 12/20/2022    | 3.69  | 3.69% |
| 12/21/2022    | 3.68  | 3.68% |
| 12/22/2022    | 3.67  | 3.67% |
| 12/23/2022    | 3.75  | 3.75% |
| 12/26/2022    | 3.75  | 3.75% |
| 12/27/2022    | 3.84  | 3.84% |
| 12/28/2022    | 3.88  | 3.88% |
| 12/29/2022    | 3.83  | 3.83% |
| 12/30/2022    | 3.88  | 3.88% |
| 1/2/2023      | 3.88  | 3.88% |
| 1/3/2023      | 3.79  | 3.79% |
| 1/4/2023      | 3.69  | 3.69% |
| 1/5/2023      | 3.71  | 3.71% |
| 1/6/2023      | 3.55  | 3.55% |
| 1/9/2023      | 3.53  | 3.53% |
| 1/10/2023     | 3.61  | 3.61% |
| 1/11/2023     | 3.54  | 3.54% |
| 1/12/2023     | 3.43  | 3.43% |
| 1/13/2023     | 3.49  | 3.49% |
| 1/16/2023     | 3.49  | 3.49% |
| 1/17/2023     | 3.53  | 3.53% |
| 1/18/2023     | 3.37  | 3.37% |

| 10y US T-Note |       |       |
|---------------|-------|-------|
|               | YIELD |       |
| 1/19/2023     | 3.39  | 3.39% |
| 1/20/2023     | 3.48  | 3.48% |
| 1/23/2023     | 3.52  | 3.52% |
| 1/24/2023     | 3.46  | 3.46% |
| 1/25/2023     | 3.46  | 3.46% |
| 1/26/2023     | 3.49  | 3.49% |
| 1/27/2023     | 3.52  | 3.52% |
| 1/30/2023     | 3.55  | 3.55% |
| 1/31/2023     | 3.52  | 3.52% |
| 2/1/2023      | 3.39  | 3.39% |
| 2/2/2023      | 3.40  | 3.40% |
| 2/3/2023      | 3.53  | 3.53% |
| 2/6/2023      | 3.63  | 3.63% |
| 2/7/2023      | 3.67  | 3.67% |
| 2/8/2023      | 3.63  | 3.63% |
| 2/9/2023      | 3.67  | 3.67% |
| 2/10/2023     | 3.74  | 3.74% |
| 2/13/2023     | 3.72  | 3.72% |
| 2/14/2023     | 3.77  | 3.77% |
| 2/15/2023     | 3.81  | 3.81% |
| 2/16/2023     | 3.86  | 3.86% |
| 2/17/2023     | 3.82  | 3.82% |
| 2/20/2023     | 3.82  | 3.82% |
| 2/21/2023     | 3.95  | 3.95% |
| 2/22/2023     | 3.93  | 3.93% |
| 2/23/2023     | 3.88  | 3.88% |
| 2/24/2023     | 3.95  | 3.95% |
| 2/27/2023     | 3.92  | 3.92% |
| 2/28/2023     | 3.92  | 3.92% |
| 3/1/2023      | 4.01  | 4.01% |
| 3/2/2023      | 4.08  | 4.08% |
| 3/3/2023      | 3.97  | 3.97% |
| 3/6/2023      | 3.98  | 3.98% |
| 3/7/2023      | 3.97  | 3.97% |
| 3/8/2023      | 3.98  | 3.98% |
| 3/9/2023      | 3.93  | 3.93% |
| 3/10/2023     | 3.70  | 3.70% |
| 3/13/2023     | 3.55  | 3.55% |
| 3/14/2023     | 3.64  | 3.64% |
| 3/15/2023     | 3.51  | 3.51% |
| 3/16/2023     | 3.56  | 3.56% |
| 3/17/2023     | 3.39  | 3.39% |
| 3/20/2023     | 3.47  | 3.47% |
| 3/21/2023     | 3.59  | 3.59% |
| 3/22/2023     | 3.48  | 3.48% |
| 3/23/2023     | 3.38  | 3.38% |
| 3/24/2023     | 3.38  | 3.38% |
| 3/27/2023     | 3.53  | 3.53% |
| 3/28/2023     | 3.55  | 3.55% |
| 3/29/2023     | 3.57  | 3.57% |
| 3/30/2023     | 3.55  | 3.55% |
| 3/31/2023     | 3.48  | 3.48% |
| 4/3/2023      | 3.43  | 3.43% |
| 4/4/2023      | 3.35  | 3.35% |
| 4/5/2023      | 3.30  | 3.30% |
| 4/6/2023      | 3.30  | 3.30% |
| 4/7/2023      | 3.39  | 3.39% |
| 4/10/2023     | 3.41  | 3.41% |
| 4/11/2023     | 3.43  | 3.43% |
| 4/12/2023     | 3.41  | 3.41% |
| 4/13/2023     | 3.45  | 3.45% |
| 4/14/2023     | 3.52  | 3.52% |
| 4/17/2023     | 3.60  | 3.60% |
| 4/18/2023     | 3.58  | 3.58% |
| 4/19/2023     | 3.60  | 3.60% |
| 4/20/2023     | 3.54  | 3.54% |
| 4/21/2023     | 3.57  | 3.57% |
| 4/24/2023     | 3.52  | 3.52% |
| 4/25/2023     | 3.40  | 3.40% |
| 4/26/2023     | 3.43  | 3.43% |
| 4/27/2023     | 3.53  | 3.53% |
| 4/28/2023     | 3.44  | 3.44% |
| 5/1/2023      | 3.59  | 3.59% |
| 5/2/2023      | 3.44  | 3.44% |
| 5/3/2023      | 3.38  | 3.38% |
| 5/4/2023      | 3.37  | 3.37% |

| 10y US T-Note |       |       |
|---------------|-------|-------|
|               | YIELD |       |
| 5/5/2023      | 3.44  | 3.44% |
| 5/8/2023      | 3.52  | 3.52% |
| 5/9/2023      | 3.53  | 3.53% |
| 5/10/2023     | 3.43  | 3.43% |
| 5/11/2023     | 3.39  | 3.39% |
| 5/12/2023     | 3.46  | 3.46% |
| 5/15/2023     | 3.50  | 3.50% |
| 5/16/2023     | 3.54  | 3.54% |
| 5/17/2023     | 3.57  | 3.57% |
| 5/18/2023     | 3.65  | 3.65% |
| 5/19/2023     | 3.70  | 3.70% |
| 5/22/2023     | 3.72  | 3.72% |
| 5/23/2023     | 3.70  | 3.70% |
| 5/24/2023     | 3.73  | 3.73% |
| 5/25/2023     | 3.83  | 3.83% |
| 5/26/2023     | 3.80  | 3.80% |
| 5/29/2023     | 3.80  | 3.80% |
| 5/30/2023     | 3.69  | 3.69% |
| 5/31/2023     | 3.64  | 3.64% |
| 6/1/2023      | 3.61  | 3.61% |
| 6/2/2023      | 3.69  | 3.69% |
| 6/5/2023      | 3.69  | 3.69% |
| 6/6/2023      | 3.70  | 3.70% |
| 6/7/2023      | 3.79  | 3.79% |
| 6/8/2023      | 3.73  | 3.73% |
| 6/9/2023      | 3.75  | 3.75% |
| 6/12/2023     | 3.73  | 3.73% |
| 6/13/2023     | 3.84  | 3.84% |
| 6/14/2023     | 3.83  | 3.83% |
| 6/15/2023     | 3.72  | 3.72% |
| 6/16/2023     | 3.77  | 3.77% |
| 6/19/2023     | 3.77  | 3.77% |
| 6/20/2023     | 3.74  | 3.74% |
| 6/21/2023     | 3.72  | 3.72% |
| 6/22/2023     | 3.80  | 3.80% |
| 6/23/2023     | 3.74  | 3.74% |
| 6/26/2023     | 3.72  | 3.72% |
| 6/27/2023     | 3.77  | 3.77% |
| 6/28/2023     | 3.71  | 3.71% |
| 6/29/2023     | 3.85  | 3.85% |
| 6/30/2023     | 3.81  | 3.81% |
| 7/3/2023      | 3.86  | 3.86% |
| 7/4/2023      | 3.86  | 3.86% |
| 7/5/2023      | 3.95  | 3.95% |
| 7/6/2023      | 4.05  | 4.05% |
| 7/7/2023      | 4.06  | 4.06% |
| 7/10/2023     | 4.01  | 4.01% |
| 7/11/2023     | 3.99  | 3.99% |
| 7/12/2023     | 3.86  | 3.86% |
| 7/13/2023     | 3.76  | 3.76% |
| 7/14/2023     | 3.83  | 3.83% |
| 7/17/2023     | 3.81  | 3.81% |
| 7/18/2023     | 3.80  | 3.80% |
| 7/19/2023     | 3.75  | 3.75% |
| 7/20/2023     | 3.85  | 3.85% |
| 7/21/2023     | 3.84  | 3.84% |
| 7/24/2023     | 3.86  | 3.86% |
| 7/25/2023     | 3.91  | 3.91% |
| 7/26/2023     | 3.86  | 3.86% |
| 7/27/2023     | 4.01  | 4.01% |
| 7/28/2023     | 3.96  | 3.96% |
| 7/31/2023     | 3.97  | 3.97% |

| Bloomberg                          |      | =SNL("Markets.Range", \$G\$2:\$G\$3, "01/01/2010", "1/31/2023",<br>"Options:Curr=USD,Mag=Standard,ConvMethod=Recommended,P<br>ad=Off,Dates=Before,Sort=Asc") |      |
|------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note                                                                                                                                                |      |
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD                                                                                                                                                        |      |
| 1/4/2010                           | 4.22 | 1/1/2010                                                                                                                                                     | 3.85 |
| 1/5/2010                           | 4.27 | 1/4/2010                                                                                                                                                     | 3.85 |
| 1/6/2010                           | 4.25 | 1/5/2010                                                                                                                                                     | 3.77 |
| 1/7/2010                           | 4.27 | 1/6/2010                                                                                                                                                     | 3.85 |
| 1/8/2010                           | 4.28 | 1/7/2010                                                                                                                                                     | 3.85 |
| 1/11/2010                          | 4.23 | 1/8/2010                                                                                                                                                     | 3.83 |
| 1/12/2010                          | 4.25 | 1/11/2010                                                                                                                                                    | 3.85 |
| 1/13/2010                          | 4.21 | 1/12/2010                                                                                                                                                    | 3.74 |
| 1/14/2010                          | 4.22 | 1/13/2010                                                                                                                                                    | 3.80 |
| 1/15/2010                          | 4.25 | 1/14/2010                                                                                                                                                    | 3.76 |
| 1/19/2010                          | 4.20 | 1/15/2010                                                                                                                                                    | 3.70 |
| 1/20/2010                          | 4.25 | 1/18/2010                                                                                                                                                    | 3.70 |
| 1/21/2010                          | 4.31 | 1/19/2010                                                                                                                                                    | 3.73 |
| 1/22/2010                          | 4.40 | 1/20/2010                                                                                                                                                    | 3.68 |
| 1/25/2010                          | 4.38 | 1/21/2010                                                                                                                                                    | 3.62 |
| 1/26/2010                          | 4.36 | 1/22/2010                                                                                                                                                    | 3.62 |
| 1/27/2010                          | 4.38 | 1/25/2010                                                                                                                                                    | 3.66 |
| 1/28/2010                          | 4.44 | 1/26/2010                                                                                                                                                    | 3.65 |
| 1/29/2010                          | 4.38 | 1/27/2010                                                                                                                                                    | 3.66 |
| 2/1/2010                           | 4.35 | 1/28/2010                                                                                                                                                    | 3.68 |
| 2/2/2010                           | 4.31 | 1/29/2010                                                                                                                                                    | 3.63 |
| 2/3/2010                           | 4.35 | 2/1/2010                                                                                                                                                     | 3.68 |
| 2/4/2010                           | 4.47 | 2/2/2010                                                                                                                                                     | 3.67 |
| 2/5/2010                           | 4.48 | 2/3/2010                                                                                                                                                     | 3.73 |
| 2/8/2010                           | 4.53 | 2/4/2010                                                                                                                                                     | 3.62 |
| 2/9/2010                           | 4.49 | 2/5/2010                                                                                                                                                     | 3.59 |
| 2/10/2010                          | 4.52 | 2/8/2010                                                                                                                                                     | 3.62 |
| 2/11/2010                          | 4.50 | 2/9/2010                                                                                                                                                     | 3.67 |
| 2/12/2010                          | 4.53 | 2/10/2010                                                                                                                                                    | 3.72 |
| 2/16/2010                          | 4.44 | 2/11/2010                                                                                                                                                    | 3.73 |
| 2/17/2010                          | 4.45 | 2/12/2010                                                                                                                                                    | 3.69 |
| 2/18/2010                          | 4.43 | 2/15/2010                                                                                                                                                    | 3.69 |
| 2/19/2010                          | 4.37 | 2/16/2010                                                                                                                                                    | 3.66 |
| 2/22/2010                          | 4.40 | 2/17/2010                                                                                                                                                    | 3.74 |
| 2/23/2010                          | 4.43 | 2/18/2010                                                                                                                                                    | 3.79 |
| 2/24/2010                          | 4.44 | 2/19/2010                                                                                                                                                    | 3.78 |
| 2/25/2010                          | 4.45 | 2/22/2010                                                                                                                                                    | 3.80 |
| 2/26/2010                          | 4.48 | 2/23/2010                                                                                                                                                    | 3.69 |
| 3/1/2010                           | 4.42 | 2/24/2010                                                                                                                                                    | 3.70 |
| 3/2/2010                           | 4.40 | 2/25/2010                                                                                                                                                    | 3.64 |
| 3/3/2010                           | 4.41 | 2/26/2010                                                                                                                                                    | 3.61 |
| 3/4/2010                           | 4.40 | 3/1/2010                                                                                                                                                     | 3.61 |
| 3/5/2010                           | 4.36 | 3/2/2010                                                                                                                                                     | 3.62 |
| 3/8/2010                           | 4.36 | 3/3/2010                                                                                                                                                     | 3.63 |
| 3/9/2010                           | 4.37 | 3/4/2010                                                                                                                                                     | 3.61 |
| 3/10/2010                          | 4.37 | 3/5/2010                                                                                                                                                     | 3.69 |
| 3/11/2010                          | 4.36 | 3/8/2010                                                                                                                                                     | 3.72 |
| 3/12/2010                          | 4.39 | 3/9/2010                                                                                                                                                     | 3.71 |
| 3/15/2010                          | 4.36 | 3/10/2010                                                                                                                                                    | 3.73 |
| 3/16/2010                          | 4.31 | 3/11/2010                                                                                                                                                    | 3.73 |
| 3/17/2010                          | 4.30 | 3/12/2010                                                                                                                                                    | 3.71 |
| 3/18/2010                          | 4.31 | 3/15/2010                                                                                                                                                    | 3.71 |
| 3/19/2010                          | 4.32 | 3/16/2010                                                                                                                                                    | 3.66 |
| 3/22/2010                          | 4.35 | 3/17/2010                                                                                                                                                    | 3.65 |
| 3/23/2010                          | 4.34 | 3/18/2010                                                                                                                                                    | 3.68 |
| 3/24/2010                          | 4.38 | 3/19/2010                                                                                                                                                    | 3.70 |
| 3/25/2010                          | 4.41 | 3/22/2010                                                                                                                                                    | 3.67 |
| 3/26/2010                          | 4.40 | 3/23/2010                                                                                                                                                    | 3.69 |
| 3/29/2010                          | 4.35 | 3/24/2010                                                                                                                                                    | 3.84 |
| 3/30/2010                          | 4.36 | 3/25/2010                                                                                                                                                    | 3.91 |
| 3/31/2010                          | 4.37 | 3/26/2010                                                                                                                                                    | 3.86 |
| 4/1/2010                           | 4.32 | 3/29/2010                                                                                                                                                    | 3.88 |
| 4/5/2010                           | 4.29 | 3/30/2010                                                                                                                                                    | 3.88 |
| 4/6/2010                           | 4.25 | 3/31/2010                                                                                                                                                    | 3.84 |
| 4/7/2010                           | 4.29 | 4/1/2010                                                                                                                                                     | 3.89 |
| 4/8/2010                           | 4.32 | 4/2/2010                                                                                                                                                     | 3.96 |
| 4/9/2010                           | 4.30 | 4/5/2010                                                                                                                                                     | 4.01 |
| 4/12/2010                          | 4.28 | 4/6/2010                                                                                                                                                     | 3.98 |
| 4/13/2010                          | 4.30 | 4/7/2010                                                                                                                                                     | 3.89 |
| 4/14/2010                          | 4.29 | 4/8/2010                                                                                                                                                     | 3.91 |
| 4/15/2010                          | 4.30 | 4/9/2010                                                                                                                                                     | 3.90 |
| 4/16/2010                          | 4.35 | 4/12/2010                                                                                                                                                    | 3.87 |
| 4/19/2010                          | 4.34 | 4/13/2010                                                                                                                                                    | 3.84 |
| 4/20/2010                          | 4.29 | 4/14/2010                                                                                                                                                    | 3.88 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 4/21/2010                          | 4.29 | 4/15/2010     | 3.86 |
| 4/22/2010                          | 4.27 | 4/16/2010     | 3.79 |
| 4/23/2010                          | 4.24 | 4/19/2010     | 3.83 |
| 4/26/2010                          | 4.25 | 4/20/2010     | 3.82 |
| 4/27/2010                          | 4.33 | 4/21/2010     | 3.77 |
| 4/28/2010                          | 4.29 | 4/22/2010     | 3.80 |
| 4/29/2010                          | 4.29 | 4/23/2010     | 3.84 |
| 4/30/2010                          | 4.27 | 4/26/2010     | 3.83 |
| 5/3/2010                           | 4.22 | 4/27/2010     | 3.71 |
| 5/4/2010                           | 4.30 | 4/28/2010     | 3.80 |
| 5/5/2010                           | 4.33 | 4/29/2010     | 3.76 |
| 5/6/2010                           | 4.45 | 4/30/2010     | 3.69 |
| 5/7/2010                           | 4.48 | 5/3/2010      | 3.72 |
| 5/10/2010                          | 4.35 | 5/4/2010      | 3.63 |
| 5/11/2010                          | 4.34 | 5/5/2010      | 3.58 |
| 5/12/2010                          | 4.31 | 5/6/2010      | 3.41 |
| 5/13/2010                          | 4.33 | 5/7/2010      | 3.45 |
| 5/14/2010                          | 4.37 | 5/10/2010     | 3.57 |
| 5/17/2010                          | 4.37 | 5/11/2010     | 3.56 |
| 5/18/2010                          | 4.41 | 5/12/2010     | 3.56 |
| 5/19/2010                          | 4.46 | 5/13/2010     | 3.55 |
| 5/20/2010                          | 4.60 | 5/14/2010     | 3.44 |
| 5/21/2010                          | 4.58 | 5/17/2010     | 3.47 |
| 5/24/2010                          | 4.62 | 5/18/2010     | 3.38 |
| 5/25/2010                          | 4.65 | 5/19/2010     | 3.36 |
| 5/26/2010                          | 4.66 | 5/20/2010     | 3.25 |
| 5/27/2010                          | 4.57 | 5/21/2010     | 3.20 |
| 5/28/2010                          | 4.57 | 5/24/2010     | 3.23 |
| 6/1/2010                           | 4.68 | 5/25/2010     | 3.18 |
| 6/2/2010                           | 4.58 | 5/26/2010     | 3.21 |
| 6/3/2010                           | 4.54 | 5/27/2010     | 3.34 |
| 6/4/2010                           | 4.68 | 5/28/2010     | 3.31 |
| 6/7/2010                           | 4.65 | 5/31/2010     | 3.31 |
| 6/8/2010                           | 4.59 | 6/1/2010      | 3.29 |
| 6/9/2010                           | 4.63 | 6/2/2010      | 3.35 |
| 6/10/2010                          | 4.50 | 6/3/2010      | 3.39 |
| 6/11/2010                          | 4.51 | 6/4/2010      | 3.20 |
| 6/14/2010                          | 4.49 | 6/7/2010      | 3.17 |
| 6/15/2010                          | 4.40 | 6/8/2010      | 3.18 |
| 6/16/2010                          | 4.37 | 6/9/2010      | 3.20 |
| 6/17/2010                          | 4.34 | 6/10/2010     | 3.33 |
| 6/18/2010                          | 4.34 | 6/11/2010     | 3.24 |
| 6/21/2010                          | 4.37 | 6/14/2010     | 3.28 |
| 6/22/2010                          | 4.48 | 6/15/2010     | 3.32 |
| 6/23/2010                          | 4.53 | 6/16/2010     | 3.27 |
| 6/24/2010                          | 4.55 | 6/17/2010     | 3.21 |
| 6/25/2010                          | 4.54 | 6/18/2010     | 3.24 |
| 6/28/2010                          | 4.51 | 6/21/2010     | 3.26 |
| 6/29/2010                          | 4.61 | 6/22/2010     | 3.18 |
| 6/30/2010                          | 4.64 | 6/23/2010     | 3.13 |
| 7/1/2010                           | 4.74 | 6/24/2010     | 3.14 |
| 7/2/2010                           | 4.73 | 6/25/2010     | 3.12 |
| 7/6/2010                           | 4.68 | 6/28/2010     | 3.05 |
| 7/7/2010                           | 4.54 | 6/29/2010     | 2.97 |
| 7/8/2010                           | 4.50 | 6/30/2010     | 2.97 |
| 7/9/2010                           | 4.48 | 7/1/2010      | 2.96 |
| 7/12/2010                          | 4.46 | 7/2/2010      | 3.00 |
| 7/13/2010                          | 4.45 | 7/5/2010      | 3.00 |
| 7/14/2010                          | 4.44 | 7/6/2010      | 2.95 |
| 7/15/2010                          | 4.42 | 7/7/2010      | 3.00 |
| 7/16/2010                          | 4.49 | 7/8/2010      | 3.04 |
| 7/19/2010                          | 4.42 | 7/9/2010      | 3.07 |
| 7/20/2010                          | 4.39 | 7/12/2010     | 3.08 |
| 7/21/2010                          | 4.45 | 7/13/2010     | 3.15 |
| 7/22/2010                          | 4.38 | 7/14/2010     | 3.07 |
| 7/23/2010                          | 4.37 | 7/15/2010     | 3.00 |
| 7/26/2010                          | 4.35 | 7/16/2010     | 2.96 |
| 7/27/2010                          | 4.28 | 7/19/2010     | 2.99 |
| 7/28/2010                          | 4.30 | 7/20/2010     | 2.98 |
| 7/29/2010                          | 4.38 | 7/21/2010     | 2.90 |
| 7/30/2010                          | 4.40 | 7/22/2010     | 2.96 |
| 8/2/2010                           | 4.32 | 7/23/2010     | 3.02 |
| 8/3/2010                           | 4.33 | 7/26/2010     | 3.03 |
| 8/4/2010                           | 4.33 | 7/27/2010     | 3.08 |
| 8/5/2010                           | 4.33 | 7/28/2010     | 3.03 |
| 8/6/2010                           | 4.32 | 7/29/2010     | 3.03 |
| 8/9/2010                           | 4.30 | 7/30/2010     | 2.94 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 8/10/2010                          | 4.29 | 8/2/2010      | 2.99 |
| 8/11/2010                          | 4.38 | 8/3/2010      | 2.94 |
| 8/12/2010                          | 4.40 | 8/4/2010      | 2.98 |
| 8/13/2010                          | 4.39 | 8/5/2010      | 2.94 |
| 8/16/2010                          | 4.38 | 8/6/2010      | 2.86 |
| 8/17/2010                          | 4.35 | 8/9/2010      | 2.86 |
| 8/18/2010                          | 4.37 | 8/10/2010     | 2.79 |
| 8/19/2010                          | 4.43 | 8/11/2010     | 2.72 |
| 8/20/2010                          | 4.42 | 8/12/2010     | 2.74 |
| 8/23/2010                          | 4.40 | 8/13/2010     | 2.68 |
| 8/24/2010                          | 4.38 | 8/16/2010     | 2.58 |
| 8/25/2010                          | 4.40 | 8/17/2010     | 2.64 |
| 8/26/2010                          | 4.42 | 8/18/2010     | 2.64 |
| 8/27/2010                          | 4.34 | 8/19/2010     | 2.58 |
| 8/30/2010                          | 4.40 | 8/20/2010     | 2.62 |
| 8/31/2010                          | 4.38 | 8/23/2010     | 2.60 |
| 9/1/2010                           | 4.31 | 8/24/2010     | 2.50 |
| 9/2/2010                           | 4.32 | 8/25/2010     | 2.54 |
| 9/3/2010                           | 4.29 | 8/26/2010     | 2.50 |
| 9/7/2010                           | 4.32 | 8/27/2010     | 2.66 |
| 9/8/2010                           | 4.34 | 8/30/2010     | 2.54 |
| 9/9/2010                           | 4.31 | 8/31/2010     | 2.47 |
| 9/10/2010                          | 4.33 | 9/1/2010      | 2.58 |
| 9/13/2010                          | 4.31 | 9/2/2010      | 2.63 |
| 9/14/2010                          | 4.32 | 9/3/2010      | 2.72 |
| 9/15/2010                          | 4.34 | 9/6/2010      | 2.72 |
| 9/16/2010                          | 4.36 | 9/7/2010      | 2.61 |
| 9/17/2010                          | 4.37 | 9/8/2010      | 2.66 |
| 9/20/2010                          | 4.31 | 9/9/2010      | 2.77 |
| 9/21/2010                          | 4.34 | 9/10/2010     | 2.81 |
| 9/22/2010                          | 4.31 | 9/13/2010     | 2.74 |
| 9/23/2010                          | 4.35 | 9/14/2010     | 2.68 |
| 9/24/2010                          | 4.28 | 9/15/2010     | 2.74 |
| 9/27/2010                          | 4.28 | 9/16/2010     | 2.77 |
| 9/28/2010                          | 4.27 | 9/17/2010     | 2.75 |
| 9/29/2010                          | 4.29 | 9/20/2010     | 2.72 |
| 9/30/2010                          | 4.31 | 9/21/2010     | 2.61 |
| 10/1/2010                          | 4.28 | 9/22/2010     | 2.56 |
| 10/4/2010                          | 4.29 | 9/23/2010     | 2.56 |
| 10/5/2010                          | 4.24 | 9/24/2010     | 2.62 |
| 10/6/2010                          | 4.26 | 9/27/2010     | 2.54 |
| 10/7/2010                          | 4.26 | 9/28/2010     | 2.48 |
| 10/8/2010                          | 4.25 | 9/29/2010     | 2.52 |
| 10/11/2010                         | 4.25 | 9/30/2010     | 2.53 |
| 10/12/2010                         | 4.26 | 10/1/2010     | 2.54 |
| 10/13/2010                         | 4.25 | 10/4/2010     | 2.50 |
| 10/14/2010                         | 4.25 | 10/5/2010     | 2.50 |
| 10/15/2010                         | 4.24 | 10/6/2010     | 2.41 |
| 10/18/2010                         | 4.20 | 10/7/2010     | 2.41 |
| 10/19/2010                         | 4.23 | 10/8/2010     | 2.41 |
| 10/20/2010                         | 4.19 | 10/12/2010    | 2.44 |
| 10/21/2010                         | 4.22 | 10/13/2010    | 2.46 |
| 10/22/2010                         | 4.24 | 10/14/2010    | 2.52 |
| 10/25/2010                         | 4.25 | 10/15/2010    | 2.59 |
| 10/26/2010                         | 4.26 | 10/18/2010    | 2.52 |
| 10/27/2010                         | 4.28 | 10/19/2010    | 2.50 |
| 10/28/2010                         | 4.28 | 10/20/2010    | 2.51 |
| 10/29/2010                         | 4.27 | 10/21/2010    | 2.57 |
| 11/1/2010                          | 4.31 | 10/22/2010    | 2.59 |
| 11/2/2010                          | 4.26 | 10/25/2010    | 2.59 |
| 11/3/2010                          | 4.27 | 10/26/2010    | 2.67 |
| 11/4/2010                          | 4.23 | 10/27/2010    | 2.75 |
| 11/5/2010                          | 4.23 | 10/28/2010    | 2.69 |
| 11/8/2010                          | 4.26 | 10/29/2010    | 2.63 |
| 11/9/2010                          | 4.30 | 11/1/2010     | 2.66 |
| 11/10/2010                         | 4.32 | 11/2/2010     | 2.63 |
| 11/11/2010                         | 4.32 | 11/3/2010     | 2.67 |
| 11/12/2010                         | 4.36 | 11/4/2010     | 2.53 |
| 11/15/2010                         | 4.35 | 11/5/2010     | 2.58 |
| 11/16/2010                         | 4.40 | 11/8/2010     | 2.60 |
| 11/17/2010                         | 4.40 | 11/9/2010     | 2.72 |
| 11/18/2010                         | 4.38 | 11/10/2010    | 2.65 |
| 11/19/2010                         | 4.39 | 11/11/2010    | 2.65 |
| 11/22/2010                         | 4.38 | 11/12/2010    | 2.76 |
| 11/23/2010                         | 4.43 | 11/15/2010    | 2.92 |
| 11/24/2010                         | 4.41 | 11/16/2010    | 2.85 |
| 11/26/2010                         | 4.44 | 11/17/2010    | 2.89 |



| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 11/29/2010                         | 4.46 | 11/18/2010    | 2.90 |
| 11/30/2010                         | 4.46 | 11/19/2010    | 2.88 |
| 12/1/2010                          | 4.41 | 11/22/2010    | 2.80 |
| 12/2/2010                          | 4.40 | 11/23/2010    | 2.77 |
| 12/3/2010                          | 4.38 | 11/24/2010    | 2.93 |
| 12/6/2010                          | 4.41 | 11/25/2010    | 2.93 |
| 12/7/2010                          | 4.43 | 11/26/2010    | 2.87 |
| 12/8/2010                          | 4.45 | 11/29/2010    | 2.84 |
| 12/9/2010                          | 4.43 | 11/30/2010    | 2.81 |
| 12/10/2010                         | 4.42 | 12/1/2010     | 2.97 |
| 12/13/2010                         | 4.40 | 12/2/2010     | 3.01 |
| 12/14/2010                         | 4.38 | 12/3/2010     | 3.03 |
| 12/15/2010                         | 4.42 | 12/6/2010     | 2.95 |
| 12/16/2010                         | 4.38 | 12/7/2010     | 3.15 |
| 12/17/2010                         | 4.37 | 12/8/2010     | 3.26 |
| 12/20/2010                         | 4.36 | 12/9/2010     | 3.23 |
| 12/21/2010                         | 4.36 | 12/10/2010    | 3.32 |
| 12/22/2010                         | 4.34 | 12/13/2010    | 3.29 |
| 12/23/2010                         | 4.34 | 12/14/2010    | 3.49 |
| 12/27/2010                         | 4.34 | 12/15/2010    | 3.53 |
| 12/28/2010                         | 4.33 | 12/16/2010    | 3.47 |
| 12/29/2010                         | 4.34 | 12/17/2010    | 3.33 |
| 12/30/2010                         | 4.35 | 12/20/2010    | 3.36 |
| 12/31/2010                         | 4.35 | 12/21/2010    | 3.35 |
| 1/3/2011                           | 4.33 | 12/22/2010    | 3.36 |
| 1/4/2011                           | 4.31 | 12/23/2010    | 3.41 |
| 1/5/2011                           | 4.34 | 12/24/2010    | 3.41 |
| 1/6/2011                           | 4.34 | 12/27/2010    | 3.36 |
| 1/7/2011                           | 4.32 | 12/28/2010    | 3.50 |
| 1/10/2011                          | 4.34 | 12/29/2010    | 3.35 |
| 1/11/2011                          | 4.34 | 12/30/2010    | 3.38 |
| 1/12/2011                          | 4.32 | 12/31/2010    | 3.30 |
| 1/13/2011                          | 4.32 | 1/3/2011      | 3.36 |
| 1/14/2011                          | 4.30 | 1/4/2011      | 3.36 |
| 1/18/2011                          | 4.29 | 1/5/2011      | 3.50 |
| 1/19/2011                          | 4.29 | 1/6/2011      | 3.44 |
| 1/20/2011                          | 4.27 | 1/7/2011      | 3.34 |
| 1/21/2011                          | 4.27 | 1/10/2011     | 3.32 |
| 1/24/2011                          | 4.25 | 1/11/2011     | 3.37 |
| 1/25/2011                          | 4.25 | 1/12/2011     | 3.40 |
| 1/26/2011                          | 4.27 | 1/13/2011     | 3.34 |
| 1/27/2011                          | 4.26 | 1/14/2011     | 3.35 |
| 1/28/2011                          | 4.31 | 1/17/2011     | 3.35 |
| 1/31/2011                          | 4.31 | 1/18/2011     | 3.39 |
| 2/1/2011                           | 4.26 | 1/19/2011     | 3.37 |
| 2/2/2011                           | 4.28 | 1/20/2011     | 3.47 |
| 2/3/2011                           | 4.28 | 1/21/2011     | 3.44 |
| 2/4/2011                           | 4.31 | 1/24/2011     | 3.43 |
| 2/7/2011                           | 4.28 | 1/25/2011     | 3.35 |
| 2/8/2011                           | 4.29 | 1/26/2011     | 3.45 |
| 2/9/2011                           | 4.30 | 1/27/2011     | 3.42 |
| 2/10/2011                          | 4.30 | 1/28/2011     | 3.36 |
| 2/11/2011                          | 4.30 | 1/31/2011     | 3.42 |
| 2/14/2011                          | 4.34 | 2/1/2011      | 3.48 |
| 2/15/2011                          | 4.32 | 2/2/2011      | 3.52 |
| 2/16/2011                          | 4.34 | 2/3/2011      | 3.58 |
| 2/17/2011                          | 4.33 | 2/4/2011      | 3.68 |
| 2/18/2011                          | 4.33 | 2/7/2011      | 3.68 |
| 2/22/2011                          | 4.34 | 2/8/2011      | 3.75 |
| 2/23/2011                          | 4.36 | 2/9/2011      | 3.65 |
| 2/24/2011                          | 4.37 | 2/10/2011     | 3.70 |
| 2/25/2011                          | 4.35 | 2/11/2011     | 3.64 |
| 2/28/2011                          | 4.34 | 2/14/2011     | 3.62 |
| 3/1/2011                           | 4.32 | 2/15/2011     | 3.61 |
| 3/2/2011                           | 4.32 | 2/16/2011     | 3.62 |
| 3/3/2011                           | 4.28 | 2/17/2011     | 3.58 |
| 3/4/2011                           | 4.31 | 2/18/2011     | 3.59 |
| 3/7/2011                           | 4.29 | 2/21/2011     | 3.59 |
| 3/8/2011                           | 4.25 | 2/22/2011     | 3.46 |
| 3/9/2011                           | 4.20 | 2/23/2011     | 3.49 |
| 3/10/2011                          | 4.26 | 2/24/2011     | 3.46 |
| 3/11/2011                          | 4.24 | 2/25/2011     | 3.42 |
| 3/14/2011                          | 4.30 | 2/28/2011     | 3.42 |
| 3/15/2011                          | 4.39 | 3/1/2011      | 3.41 |
| 3/16/2011                          | 4.47 | 3/2/2011      | 3.46 |
| 3/17/2011                          | 4.46 | 3/3/2011      | 3.58 |
| 3/18/2011                          | 4.44 | 3/4/2011      | 3.49 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 3/21/2011                          | 4.39 | 3/7/2011      | 3.51 |
| 3/22/2011                          | 4.38 | 3/8/2011      | 3.56 |
| 3/23/2011                          | 4.39 | 3/9/2011      | 3.48 |
| 3/24/2011                          | 4.37 | 3/10/2011     | 3.37 |
| 3/25/2011                          | 4.37 | 3/11/2011     | 3.40 |
| 3/28/2011                          | 4.38 | 3/14/2011     | 3.36 |
| 3/29/2011                          | 4.35 | 3/15/2011     | 3.33 |
| 3/30/2011                          | 4.29 | 3/16/2011     | 3.22 |
| 3/31/2011                          | 4.31 | 3/17/2011     | 3.25 |
| 4/1/2011                           | 4.28 | 3/18/2011     | 3.28 |
| 4/4/2011                           | 4.28 | 3/21/2011     | 3.34 |
| 4/5/2011                           | 4.29 | 3/22/2011     | 3.34 |
| 4/6/2011                           | 4.26 | 3/23/2011     | 3.36 |
| 4/7/2011                           | 4.28 | 3/24/2011     | 3.42 |
| 4/8/2011                           | 4.29 | 3/25/2011     | 3.46 |
| 4/11/2011                          | 4.35 | 3/28/2011     | 3.47 |
| 4/12/2011                          | 4.36 | 3/29/2011     | 3.50 |
| 4/13/2011                          | 4.35 | 3/30/2011     | 3.47 |
| 4/14/2011                          | 4.33 | 3/31/2011     | 3.47 |
| 4/15/2011                          | 4.28 | 4/1/2011      | 3.46 |
| 4/18/2011                          | 4.32 | 4/4/2011      | 3.45 |
| 4/19/2011                          | 4.32 | 4/5/2011      | 3.50 |
| 4/20/2011                          | 4.27 | 4/6/2011      | 3.56 |
| 4/21/2011                          | 4.26 | 4/7/2011      | 3.58 |
| 4/25/2011                          | 4.26 | 4/8/2011      | 3.59 |
| 4/26/2011                          | 4.22 | 4/11/2011     | 3.59 |
| 4/27/2011                          | 4.19 | 4/12/2011     | 3.52 |
| 4/28/2011                          | 4.17 | 4/13/2011     | 3.49 |
| 4/29/2011                          | 4.16 | 4/14/2011     | 3.51 |
| 5/2/2011                           | 4.16 | 4/15/2011     | 3.43 |
| 5/3/2011                           | 4.13 | 4/18/2011     | 3.40 |
| 5/4/2011                           | 4.14 | 4/19/2011     | 3.39 |
| 5/5/2011                           | 4.17 | 4/20/2011     | 3.43 |
| 5/6/2011                           | 4.16 | 4/21/2011     | 3.42 |
| 5/9/2011                           | 4.15 | 4/22/2011     | 3.42 |
| 5/10/2011                          | 4.09 | 4/25/2011     | 3.39 |
| 5/11/2011                          | 4.10 | 4/26/2011     | 3.34 |
| 5/12/2011                          | 4.07 | 4/27/2011     | 3.39 |
| 5/13/2011                          | 4.09 | 4/28/2011     | 3.34 |
| 5/16/2011                          | 4.09 | 4/29/2011     | 3.32 |
| 5/17/2011                          | 4.06 | 5/2/2011      | 3.31 |
| 5/18/2011                          | 4.07 | 5/3/2011      | 3.28 |
| 5/19/2011                          | 4.07 | 5/4/2011      | 3.25 |
| 5/20/2011                          | 4.07 | 5/5/2011      | 3.18 |
| 5/23/2011                          | 4.12 | 5/6/2011      | 3.19 |
| 5/24/2011                          | 4.12 | 5/9/2011      | 3.17 |
| 5/25/2011                          | 4.14 | 5/10/2011     | 3.23 |
| 5/26/2011                          | 4.14 | 5/11/2011     | 3.19 |
| 5/27/2011                          | 4.14 | 5/12/2011     | 3.22 |
| 5/31/2011                          | 4.11 | 5/13/2011     | 3.18 |
| 6/1/2011                           | 4.16 | 5/16/2011     | 3.15 |
| 6/2/2011                           | 4.17 | 5/17/2011     | 3.12 |
| 6/3/2011                           | 4.20 | 5/18/2011     | 3.18 |
| 6/6/2011                           | 4.22 | 5/19/2011     | 3.17 |
| 6/7/2011                           | 4.22 | 5/20/2011     | 3.15 |
| 6/8/2011                           | 4.21 | 5/23/2011     | 3.13 |
| 6/9/2011                           | 4.21 | 5/24/2011     | 3.12 |
| 6/10/2011                          | 4.24 | 5/25/2011     | 3.13 |
| 6/13/2011                          | 4.22 | 5/26/2011     | 3.07 |
| 6/14/2011                          | 4.20 | 5/27/2011     | 3.07 |
| 6/15/2011                          | 4.25 | 5/30/2011     | 3.07 |
| 6/16/2011                          | 4.22 | 5/31/2011     | 3.05 |
| 6/17/2011                          | 4.20 | 6/1/2011      | 2.96 |
| 6/20/2011                          | 4.18 | 6/2/2011      | 3.04 |
| 6/21/2011                          | 4.17 | 6/3/2011      | 2.99 |
| 6/22/2011                          | 4.21 | 6/6/2011      | 3.01 |
| 6/23/2011                          | 4.24 | 6/7/2011      | 3.01 |
| 6/24/2011                          | 4.24 | 6/8/2011      | 2.98 |
| 6/27/2011                          | 4.20 | 6/9/2011      | 3.01 |
| 6/28/2011                          | 4.18 | 6/10/2011     | 2.99 |
| 6/29/2011                          | 4.17 | 6/13/2011     | 3.00 |
| 6/30/2011                          | 4.15 | 6/14/2011     | 3.11 |
| 7/1/2011                           | 4.10 | 6/15/2011     | 2.98 |
| 7/5/2011                           | 4.12 | 6/16/2011     | 2.93 |
| 7/6/2011                           | 4.12 | 6/17/2011     | 2.94 |
| 7/7/2011                           | 4.10 | 6/20/2011     | 2.97 |
| 7/8/2011                           | 4.12 | 6/21/2011     | 2.99 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 7/11/2011                          | 4.16 | 6/22/2011     | 3.01 |
| 7/12/2011                          | 4.14 | 6/23/2011     | 2.93 |
| 7/13/2011                          | 4.15 | 6/24/2011     | 2.88 |
| 7/14/2011                          | 4.17 | 6/27/2011     | 2.95 |
| 7/15/2011                          | 4.17 | 6/28/2011     | 3.05 |
| 7/18/2011                          | 4.21 | 6/29/2011     | 3.14 |
| 7/19/2011                          | 4.17 | 6/30/2011     | 3.18 |
| 7/20/2011                          | 4.15 | 7/1/2011      | 3.22 |
| 7/21/2011                          | 4.08 | 7/4/2011      | 3.22 |
| 7/22/2011                          | 4.11 | 7/5/2011      | 3.16 |
| 7/25/2011                          | 4.10 | 7/6/2011      | 3.12 |
| 7/26/2011                          | 4.11 | 7/7/2011      | 3.17 |
| 7/27/2011                          | 4.13 | 7/8/2011      | 3.03 |
| 7/28/2011                          | 4.16 | 7/11/2011     | 2.94 |
| 7/29/2011                          | 4.20 | 7/12/2011     | 2.92 |
| 8/1/2011                           | 4.19 | 7/13/2011     | 2.92 |
| 8/2/2011                           | 4.26 | 7/14/2011     | 2.98 |
| 8/3/2011                           | 4.27 | 7/15/2011     | 2.94 |
| 8/4/2011                           | 4.41 | 7/18/2011     | 2.94 |
| 8/5/2011                           | 4.37 | 7/19/2011     | 2.91 |
| 8/8/2011                           | 4.63 | 7/20/2011     | 2.96 |
| 8/9/2011                           | 4.49 | 7/21/2011     | 3.03 |
| 8/10/2011                          | 4.59 | 7/22/2011     | 2.99 |
| 8/11/2011                          | 4.4  | 7/25/2011     | 3.03 |
| 8/12/2011                          | 4.43 | 7/26/2011     | 2.99 |
| 8/15/2011                          | 4.28 | 7/27/2011     | 3.01 |
| 8/16/2011                          | 4.29 | 7/28/2011     | 2.98 |
| 8/17/2011                          | 4.26 | 7/29/2011     | 2.82 |
| 8/18/2011                          | 4.31 | 8/1/2011      | 2.77 |
| 8/19/2011                          | 4.35 | 8/2/2011      | 2.66 |
| 8/22/2011                          | 4.35 | 8/3/2011      | 2.64 |
| 8/23/2011                          | 4.27 | 8/4/2011      | 2.47 |
| 8/24/2011                          | 4.2  | 8/5/2011      | 2.58 |
| 8/25/2011                          | 4.26 | 8/8/2011      | 2.40 |
| 8/26/2011                          | 4.27 | 8/9/2011      | 2.20 |
| 8/29/2011                          | 4.19 | 8/10/2011     | 2.17 |
| 8/30/2011                          | 4.19 | 8/11/2011     | 2.34 |
| 8/31/2011                          | 4.16 | 8/12/2011     | 2.24 |
| 9/1/2011                           | 4.18 | 8/15/2011     | 2.29 |
| 9/2/2011                           | 4.23 | 8/16/2011     | 2.23 |
| 9/6/2011                           | 4.26 | 8/17/2011     | 2.17 |
| 9/7/2011                           | 4.22 | 8/18/2011     | 2.08 |
| 9/8/2011                           | 4.22 | 8/19/2011     | 2.07 |
| 9/9/2011                           | 4.31 | 8/22/2011     | 2.10 |
| 9/12/2011                          | 4.27 | 8/23/2011     | 2.15 |
| 9/13/2011                          | 4.25 | 8/24/2011     | 2.29 |
| 9/14/2011                          | 4.22 | 8/25/2011     | 2.23 |
| 9/15/2011                          | 4.16 | 8/26/2011     | 2.19 |
| 9/16/2011                          | 4.12 | 8/29/2011     | 2.28 |
| 9/19/2011                          | 4.14 | 8/30/2011     | 2.19 |
| 9/20/2011                          | 4.08 | 8/31/2011     | 2.23 |
| 9/21/2011                          | 4.16 | 9/1/2011      | 2.15 |
| 9/22/2011                          | 4.23 | 9/2/2011      | 2.02 |
| 9/23/2011                          | 4.19 | 9/5/2011      | 2.02 |
| 9/26/2011                          | 4.16 | 9/6/2011      | 1.98 |
| 9/27/2011                          | 4.15 | 9/7/2011      | 2.05 |
| 9/28/2011                          | 4.19 | 9/8/2011      | 2.00 |
| 9/29/2011                          | 4.13 | 9/9/2011      | 1.93 |
| 9/30/2011                          | 4.17 | 9/12/2011     | 1.94 |
| 10/3/2011                          | 4.27 | 9/13/2011     | 2.00 |
| 10/4/2011                          | 4.29 | 9/14/2011     | 2.03 |
| 10/5/2011                          | 4.29 | 9/15/2011     | 2.09 |
| 10/6/2011                          | 4.22 | 9/16/2011     | 2.08 |
| 10/7/2011                          | 4.21 | 9/19/2011     | 1.97 |
| 10/10/2011                         | 4.12 | 9/20/2011     | 1.95 |
| 10/11/2011                         | 4.17 | 9/21/2011     | 1.88 |
| 10/12/2011                         | 4.17 | 9/22/2011     | 1.72 |
| 10/13/2011                         | 4.17 | 9/23/2011     | 1.84 |
| 10/14/2011                         | 4.14 | 9/26/2011     | 1.91 |
| 10/17/2011                         | 4.15 | 9/27/2011     | 2.00 |
| 10/18/2011                         | 4.12 | 9/28/2011     | 2.03 |
| 10/19/2011                         | 4.11 | 9/29/2011     | 1.99 |
| 10/20/2011                         | 4.09 | 9/30/2011     | 1.92 |
| 10/21/2011                         | 4.02 | 10/3/2011     | 1.80 |
| 10/24/2011                         | 4.04 | 10/4/2011     | 1.81 |
| 10/25/2011                         | 4.09 | 10/5/2011     | 1.92 |
| 10/26/2011                         | 4.06 | 10/6/2011     | 2.01 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 10/27/2011                         | 3.98 | 10/7/2011     | 2.10 |
| 10/28/2011                         | 4.01 | 10/11/2011    | 2.18 |
| 10/31/2011                         | 4.03 | 10/12/2011    | 2.24 |
| 11/1/2011                          | 4.11 | 10/13/2011    | 2.19 |
| 11/2/2011                          | 4.05 | 10/14/2011    | 2.26 |
| 11/3/2011                          | 4.01 | 10/17/2011    | 2.18 |
| 11/4/2011                          | 4.03 | 10/18/2011    | 2.19 |
| 11/7/2011                          | 4    | 10/19/2011    | 2.18 |
| 11/8/2011                          | 3.99 | 10/20/2011    | 2.20 |
| 11/9/2011                          | 4.08 | 10/21/2011    | 2.23 |
| 11/10/2011                         | 4.05 | 10/24/2011    | 2.25 |
| 11/11/2011                         | 4    | 10/25/2011    | 2.14 |
| 11/14/2011                         | 4.05 | 10/26/2011    | 2.23 |
| 11/15/2011                         | 4.04 | 10/27/2011    | 2.42 |
| 11/16/2011                         | 4.09 | 10/28/2011    | 2.34 |
| 11/17/2011                         | 4.12 | 10/31/2011    | 2.17 |
| 11/18/2011                         | 4.09 | 11/1/2011     | 2.01 |
| 11/21/2011                         | 4.14 | 11/2/2011     | 2.03 |
| 11/22/2011                         | 4.2  | 11/3/2011     | 2.09 |
| 11/23/2011                         | 4.27 | 11/4/2011     | 2.06 |
| 11/25/2011                         | 4.25 | 11/7/2011     | 2.04 |
| 11/28/2011                         | 4.19 | 11/8/2011     | 2.10 |
| 11/29/2011                         | 4.14 | 11/9/2011     | 2.00 |
| 11/30/2011                         | 4.04 | 11/10/2011    | 2.04 |
| 12/1/2011                          | 4.05 | 11/14/2011    | 2.04 |
| 12/2/2011                          | 4.09 | 11/15/2011    | 2.06 |
| 12/5/2011                          | 4.06 | 11/16/2011    | 2.01 |
| 12/6/2011                          | 4.05 | 11/17/2011    | 1.96 |
| 12/7/2011                          | 4.06 | 11/18/2011    | 2.01 |
| 12/8/2011                          | 4.12 | 11/21/2011    | 1.97 |
| 12/9/2011                          | 4.06 | 11/22/2011    | 1.94 |
| 12/12/2011                         | 4.1  | 11/23/2011    | 1.89 |
| 12/13/2011                         | 4.08 | 11/24/2011    | 1.89 |
| 12/14/2011                         | 4.12 | 11/25/2011    | 1.97 |
| 12/15/2011                         | 4.06 | 11/28/2011    | 1.97 |
| 12/16/2011                         | 4.07 | 11/29/2011    | 2.00 |
| 12/19/2011                         | 4.11 | 11/30/2011    | 2.08 |
| 12/20/2011                         | 4.03 | 12/1/2011     | 2.11 |
| 12/21/2011                         | 3.97 | 12/2/2011     | 2.05 |
| 12/22/2011                         | 3.97 | 12/5/2011     | 2.04 |
| 12/23/2011                         | 3.92 | 12/6/2011     | 2.08 |
| 12/27/2011                         | 3.89 | 12/7/2011     | 2.02 |
| 12/28/2011                         | 3.91 | 12/8/2011     | 1.99 |
| 12/29/2011                         | 3.88 | 12/9/2011     | 2.07 |
| 12/30/2011                         | 3.91 | 12/12/2011    | 2.03 |
| 1/3/2012                           | 3.97 | 12/13/2011    | 1.96 |
| 1/4/2012                           | 4    | 12/14/2011    | 1.92 |
| 1/5/2012                           | 3.99 | 12/15/2011    | 1.92 |
| 1/6/2012                           | 4.01 | 12/16/2011    | 1.86 |
| 1/9/2012                           | 4.01 | 12/19/2011    | 1.82 |
| 1/10/2012                          | 4    | 12/20/2011    | 1.94 |
| 1/11/2012                          | 4.02 | 12/21/2011    | 1.98 |
| 1/12/2012                          | 4.03 | 12/22/2011    | 1.97 |
| 1/13/2012                          | 4.03 | 12/23/2011    | 2.03 |
| 1/17/2012                          | 4.03 | 12/26/2011    | 2.03 |
| 1/18/2012                          | 4.03 | 12/27/2011    | 2.02 |
| 1/19/2012                          | 4.07 | 12/28/2011    | 1.93 |
| 1/20/2012                          | 4.06 | 12/29/2011    | 1.91 |
| 1/23/2012                          | 4.04 | 12/30/2011    | 1.89 |
| 1/24/2012                          | 4.08 | 1/2/2012      | 1.89 |
| 1/25/2012                          | 4.01 | 1/3/2012      | 1.97 |
| 1/26/2012                          | 4    | 1/4/2012      | 2.00 |
| 1/27/2012                          | 4.06 | 1/5/2012      | 2.02 |
| 1/30/2012                          | 4.08 | 1/6/2012      | 1.98 |
| 1/31/2012                          | 4.06 | 1/9/2012      | 1.98 |
| 2/1/2012                           | 4.04 | 1/10/2012     | 2.00 |
| 2/2/2012                           | 4.06 | 1/11/2012     | 1.93 |
| 2/3/2012                           | 4.1  | 1/12/2012     | 1.94 |
| 2/6/2012                           | 4.12 | 1/13/2012     | 1.89 |
| 2/7/2012                           | 4.09 | 1/16/2012     | 1.89 |
| 2/8/2012                           | 4.09 | 1/17/2012     | 1.87 |
| 2/9/2012                           | 4.1  | 1/18/2012     | 1.92 |
| 2/10/2012                          | 4.11 | 1/19/2012     | 2.01 |
| 2/13/2012                          | 4.12 | 1/20/2012     | 2.05 |
| 2/14/2012                          | 4.12 | 1/23/2012     | 2.09 |
| 2/15/2012                          | 4.14 | 1/24/2012     | 2.08 |
| 2/16/2012                          | 4.09 | 1/25/2012     | 2.01 |

| S&P 500 Utilities (S5UTIL Index)<br>Dividend Yield (NET_AGGTE_DVD_YLD) |      | 10y US T-Note<br>YIELD |      |
|------------------------------------------------------------------------|------|------------------------|------|
| 2/17/2012                                                              | 4.1  | 1/26/2012              | 1.96 |
| 2/21/2012                                                              | 4.11 | 1/27/2012              | 1.93 |
| 2/22/2012                                                              | 4.1  | 1/30/2012              | 1.87 |
| 2/23/2012                                                              | 4.11 | 1/31/2012              | 1.83 |
| 2/24/2012                                                              | 4.09 | 2/1/2012               | 1.87 |
| 2/27/2012                                                              | 4.1  | 2/2/2012               | 1.86 |
| 2/28/2012                                                              | 4.12 | 2/3/2012               | 1.97 |
| 2/29/2012                                                              | 4.13 | 2/6/2012               | 1.93 |
| 3/1/2012                                                               | 4.12 | 2/7/2012               | 2.00 |
| 3/2/2012                                                               | 4.12 | 2/8/2012               | 2.01 |
| 3/5/2012                                                               | 4.11 | 2/9/2012               | 2.04 |
| 3/6/2012                                                               | 4.13 | 2/10/2012              | 1.96 |
| 3/7/2012                                                               | 4.14 | 2/13/2012              | 1.99 |
| 3/8/2012                                                               | 4.12 | 2/14/2012              | 1.92 |
| 3/9/2012                                                               | 4.1  | 2/15/2012              | 1.93 |
| 3/12/2012                                                              | 4.06 | 2/16/2012              | 1.99 |
| 3/13/2012                                                              | 3.99 | 2/17/2012              | 2.01 |
| 3/14/2012                                                              | 4.08 | 2/20/2012              | 2.01 |
| 3/15/2012                                                              | 4.09 | 2/21/2012              | 2.05 |
| 3/16/2012                                                              | 4.1  | 2/22/2012              | 2.01 |
| 3/19/2012                                                              | 4.12 | 2/23/2012              | 1.99 |
| 3/20/2012                                                              | 4.11 | 2/24/2012              | 1.98 |
| 3/21/2012                                                              | 4.12 | 2/27/2012              | 1.92 |
| 3/22/2012                                                              | 4.13 | 2/28/2012              | 1.94 |
| 3/23/2012                                                              | 4.13 | 2/29/2012              | 1.98 |
| 3/26/2012                                                              | 4.09 | 3/1/2012               | 2.03 |
| 3/27/2012                                                              | 4.08 | 3/2/2012               | 1.99 |
| 3/28/2012                                                              | 4.11 | 3/5/2012               | 2.00 |
| 3/29/2012                                                              | 4.1  | 3/6/2012               | 1.96 |
| 3/30/2012                                                              | 4.07 | 3/7/2012               | 1.98 |
| 4/2/2012                                                               | 4.06 | 3/8/2012               | 2.03 |
| 4/3/2012                                                               | 4.05 | 3/9/2012               | 2.04 |
| 4/4/2012                                                               | 4.06 | 3/12/2012              | 2.04 |
| 4/5/2012                                                               | 4.09 | 3/13/2012              | 2.14 |
| 4/9/2012                                                               | 4.11 | 3/14/2012              | 2.29 |
| 4/10/2012                                                              | 4.16 | 3/15/2012              | 2.29 |
| 4/11/2012                                                              | 4.15 | 3/16/2012              | 2.31 |
| 4/12/2012                                                              | 4.13 | 3/19/2012              | 2.39 |
| 4/13/2012                                                              | 4.15 | 3/20/2012              | 2.38 |
| 4/16/2012                                                              | 4.11 | 3/21/2012              | 2.31 |
| 4/17/2012                                                              | 4.08 | 3/22/2012              | 2.29 |
| 4/18/2012                                                              | 4.09 | 3/23/2012              | 2.25 |
| 4/19/2012                                                              | 4.11 | 3/26/2012              | 2.26 |
| 4/20/2012                                                              | 4.06 | 3/27/2012              | 2.20 |
| 4/23/2012                                                              | 4.09 | 3/28/2012              | 2.21 |
| 4/24/2012                                                              | 4.06 | 3/29/2012              | 2.18 |
| 4/25/2012                                                              | 4.04 | 3/30/2012              | 2.23 |
| 4/26/2012                                                              | 4.01 | 4/2/2012               | 2.22 |
| 4/27/2012                                                              | 4    | 4/3/2012               | 2.30 |
| 4/30/2012                                                              | 3.99 | 4/4/2012               | 2.25 |
| 5/1/2012                                                               | 3.97 | 4/5/2012               | 2.19 |
| 5/2/2012                                                               | 4    | 4/6/2012               | 2.07 |
| 5/3/2012                                                               | 4.02 | 4/9/2012               | 2.06 |
| 5/4/2012                                                               | 4.02 | 4/10/2012              | 2.01 |
| 5/7/2012                                                               | 4.03 | 4/11/2012              | 2.05 |
| 5/8/2012                                                               | 4.02 | 4/12/2012              | 2.08 |
| 5/9/2012                                                               | 4.02 | 4/13/2012              | 2.02 |
| 5/10/2012                                                              | 3.98 | 4/16/2012              | 2.00 |
| 5/11/2012                                                              | 3.96 | 4/17/2012              | 2.03 |
| 5/14/2012                                                              | 3.97 | 4/18/2012              | 2.00 |
| 5/15/2012                                                              | 3.99 | 4/19/2012              | 1.98 |
| 5/16/2012                                                              | 4    | 4/20/2012              | 1.99 |
| 5/17/2012                                                              | 4.02 | 4/23/2012              | 1.96 |
| 5/18/2012                                                              | 4.02 | 4/24/2012              | 2.00 |
| 5/21/2012                                                              | 4.02 | 4/25/2012              | 2.01 |
| 5/22/2012                                                              | 3.99 | 4/26/2012              | 1.98 |
| 5/23/2012                                                              | 4.02 | 4/27/2012              | 1.96 |
| 5/24/2012                                                              | 4    | 4/30/2012              | 1.95 |
| 5/25/2012                                                              | 3.99 | 5/1/2012               | 1.98 |
| 5/29/2012                                                              | 3.97 | 5/2/2012               | 1.96 |
| 5/30/2012                                                              | 4.01 | 5/3/2012               | 1.96 |
| 5/31/2012                                                              | 3.99 | 5/4/2012               | 1.91 |
| 6/1/2012                                                               | 4.01 | 5/7/2012               | 1.92 |
| 6/4/2012                                                               | 4    | 5/8/2012               | 1.88 |
| 6/5/2012                                                               | 3.98 | 5/9/2012               | 1.87 |
| 6/6/2012                                                               | 3.94 | 5/10/2012              | 1.89 |
| 6/7/2012                                                               | 3.91 | 5/11/2012              | 1.84 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 6/8/2012                           | 3.89 | 5/14/2012     | 1.78 |
| 6/11/2012                          | 3.9  | 5/15/2012     | 1.76 |
| 6/12/2012                          | 3.9  | 5/16/2012     | 1.76 |
| 6/13/2012                          | 3.9  | 5/17/2012     | 1.70 |
| 6/14/2012                          | 3.87 | 5/18/2012     | 1.71 |
| 6/15/2012                          | 3.85 | 5/21/2012     | 1.75 |
| 6/18/2012                          | 3.84 | 5/22/2012     | 1.79 |
| 6/19/2012                          | 3.85 | 5/23/2012     | 1.73 |
| 6/20/2012                          | 3.89 | 5/24/2012     | 1.77 |
| 6/21/2012                          | 3.93 | 5/25/2012     | 1.75 |
| 6/22/2012                          | 3.92 | 5/28/2012     | 1.75 |
| 6/25/2012                          | 3.94 | 5/29/2012     | 1.74 |
| 6/26/2012                          | 3.93 | 5/30/2012     | 1.63 |
| 6/27/2012                          | 3.89 | 5/31/2012     | 1.59 |
| 6/28/2012                          | 3.88 | 6/1/2012      | 1.47 |
| 6/29/2012                          | 3.86 | 6/4/2012      | 1.53 |
| 7/2/2012                           | 3.87 | 6/5/2012      | 1.57 |
| 7/3/2012                           | 3.88 | 6/6/2012      | 1.66 |
| 7/5/2012                           | 3.9  | 6/7/2012      | 1.66 |
| 7/6/2012                           | 3.91 | 6/8/2012      | 1.65 |
| 7/9/2012                           | 3.92 | 6/11/2012     | 1.60 |
| 7/10/2012                          | 3.91 | 6/12/2012     | 1.67 |
| 7/11/2012                          | 3.89 | 6/13/2012     | 1.61 |
| 7/12/2012                          | 3.89 | 6/14/2012     | 1.64 |
| 7/13/2012                          | 3.85 | 6/15/2012     | 1.60 |
| 7/16/2012                          | 3.86 | 6/18/2012     | 1.59 |
| 7/17/2012                          | 3.85 | 6/19/2012     | 1.64 |
| 7/18/2012                          | 3.83 | 6/20/2012     | 1.65 |
| 7/19/2012                          | 3.83 | 6/21/2012     | 1.63 |
| 7/20/2012                          | 3.82 | 6/22/2012     | 1.69 |
| 7/23/2012                          | 3.85 | 6/25/2012     | 1.63 |
| 7/24/2012                          | 3.88 | 6/26/2012     | 1.66 |
| 7/25/2012                          | 3.89 | 6/27/2012     | 1.65 |
| 7/26/2012                          | 3.82 | 6/28/2012     | 1.60 |
| 7/27/2012                          | 3.78 | 6/29/2012     | 1.67 |
| 7/30/2012                          | 3.77 | 7/2/2012      | 1.61 |
| 7/31/2012                          | 3.8  | 7/3/2012      | 1.65 |
| 8/1/2012                           | 3.83 | 7/4/2012      | 1.65 |
| 8/2/2012                           | 3.87 | 7/5/2012      | 1.62 |
| 8/3/2012                           | 3.82 | 7/6/2012      | 1.57 |
| 8/6/2012                           | 3.83 | 7/9/2012      | 1.53 |
| 8/7/2012                           | 3.87 | 7/10/2012     | 1.53 |
| 8/8/2012                           | 3.87 | 7/11/2012     | 1.54 |
| 8/9/2012                           | 3.87 | 7/12/2012     | 1.50 |
| 8/10/2012                          | 3.86 | 7/13/2012     | 1.52 |
| 8/13/2012                          | 3.87 | 7/16/2012     | 1.50 |
| 8/14/2012                          | 3.88 | 7/17/2012     | 1.53 |
| 8/15/2012                          | 3.9  | 7/18/2012     | 1.52 |
| 8/16/2012                          | 3.91 | 7/19/2012     | 1.54 |
| 8/17/2012                          | 3.92 | 7/20/2012     | 1.49 |
| 8/20/2012                          | 3.92 | 7/23/2012     | 1.47 |
| 8/21/2012                          | 3.94 | 7/24/2012     | 1.44 |
| 8/22/2012                          | 3.95 | 7/25/2012     | 1.43 |
| 8/23/2012                          | 3.99 | 7/26/2012     | 1.45 |
| 8/24/2012                          | 3.97 | 7/27/2012     | 1.58 |
| 8/27/2012                          | 3.97 | 7/30/2012     | 1.53 |
| 8/28/2012                          | 3.97 | 7/31/2012     | 1.51 |
| 8/29/2012                          | 4    | 8/1/2012      | 1.56 |
| 8/30/2012                          | 4.02 | 8/2/2012      | 1.51 |
| 8/31/2012                          | 4.02 | 8/3/2012      | 1.60 |
| 9/4/2012                           | 4.01 | 8/6/2012      | 1.59 |
| 9/5/2012                           | 4.03 | 8/7/2012      | 1.66 |
| 9/6/2012                           | 3.99 | 8/8/2012      | 1.68 |
| 9/7/2012                           | 4    | 8/9/2012      | 1.69 |
| 9/10/2012                          | 4.01 | 8/10/2012     | 1.65 |
| 9/11/2012                          | 4.02 | 8/13/2012     | 1.65 |
| 9/12/2012                          | 4.04 | 8/14/2012     | 1.73 |
| 9/13/2012                          | 3.98 | 8/15/2012     | 1.80 |
| 9/14/2012                          | 4.01 | 8/16/2012     | 1.83 |
| 9/17/2012                          | 4.04 | 8/17/2012     | 1.81 |
| 9/18/2012                          | 4.06 | 8/20/2012     | 1.82 |
| 9/19/2012                          | 4.05 | 8/21/2012     | 1.80 |
| 9/20/2012                          | 4.03 | 8/22/2012     | 1.71 |
| 9/21/2012                          | 4.03 | 8/23/2012     | 1.68 |
| 9/24/2012                          | 4    | 8/24/2012     | 1.68 |
| 9/25/2012                          | 4.01 | 8/27/2012     | 1.65 |
| 9/26/2012                          | 4    | 8/28/2012     | 1.64 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 9/27/2012                          | 4.02 | 8/29/2012     | 1.66 |
| 9/28/2012                          | 4    | 8/30/2012     | 1.63 |
| 10/1/2012                          | 4.02 | 8/31/2012     | 1.57 |
| 10/2/2012                          | 4    | 9/3/2012      | 1.57 |
| 10/3/2012                          | 3.98 | 9/4/2012      | 1.59 |
| 10/4/2012                          | 3.96 | 9/5/2012      | 1.60 |
| 10/5/2012                          | 3.96 | 9/6/2012      | 1.68 |
| 10/8/2012                          | 3.96 | 9/7/2012      | 1.67 |
| 10/9/2012                          | 3.96 | 9/10/2012     | 1.68 |
| 10/10/2012                         | 3.97 | 9/11/2012     | 1.70 |
| 10/11/2012                         | 3.97 | 9/12/2012     | 1.77 |
| 10/12/2012                         | 3.99 | 9/13/2012     | 1.75 |
| 10/15/2012                         | 3.97 | 9/14/2012     | 1.88 |
| 10/16/2012                         | 3.96 | 9/17/2012     | 1.85 |
| 10/17/2012                         | 3.91 | 9/18/2012     | 1.82 |
| 10/18/2012                         | 3.9  | 9/19/2012     | 1.79 |
| 10/19/2012                         | 3.92 | 9/20/2012     | 1.80 |
| 10/22/2012                         | 3.94 | 9/21/2012     | 1.77 |
| 10/23/2012                         | 3.97 | 9/24/2012     | 1.74 |
| 10/24/2012                         | 4    | 9/25/2012     | 1.70 |
| 10/25/2012                         | 3.98 | 9/26/2012     | 1.64 |
| 10/26/2012                         | 3.99 | 9/27/2012     | 1.66 |
| 10/31/2012                         | 3.96 | 9/28/2012     | 1.65 |
| 11/1/2012                          | 4.01 | 10/1/2012     | 1.64 |
| 11/2/2012                          | 4.04 | 10/2/2012     | 1.64 |
| 11/5/2012                          | 4.11 | 10/3/2012     | 1.64 |
| 11/6/2012                          | 4.11 | 10/4/2012     | 1.70 |
| 11/7/2012                          | 4.2  | 10/5/2012     | 1.75 |
| 11/8/2012                          | 4.21 | 10/9/2012     | 1.74 |
| 11/9/2012                          | 4.24 | 10/10/2012    | 1.72 |
| 11/12/2012                         | 4.28 | 10/11/2012    | 1.70 |
| 11/13/2012                         | 4.26 | 10/12/2012    | 1.69 |
| 11/14/2012                         | 4.32 | 10/15/2012    | 1.70 |
| 11/15/2012                         | 4.34 | 10/16/2012    | 1.75 |
| 11/16/2012                         | 4.3  | 10/17/2012    | 1.83 |
| 11/19/2012                         | 4.3  | 10/18/2012    | 1.86 |
| 11/20/2012                         | 4.31 | 10/19/2012    | 1.79 |
| 11/21/2012                         | 4.33 | 10/22/2012    | 1.83 |
| 11/23/2012                         | 4.34 | 10/23/2012    | 1.79 |
| 11/26/2012                         | 4.28 | 10/24/2012    | 1.80 |
| 11/27/2012                         | 4.27 | 10/25/2012    | 1.86 |
| 11/28/2012                         | 4.27 | 10/26/2012    | 1.78 |
| 11/29/2012                         | 4.25 | 10/29/2012    | 1.74 |
| 11/30/2012                         | 4.2  | 10/30/2012    | 1.74 |
| 12/3/2012                          | 4.23 | 10/31/2012    | 1.72 |
| 12/4/2012                          | 4.25 | 11/1/2012     | 1.75 |
| 12/5/2012                          | 4.19 | 11/2/2012     | 1.75 |
| 12/6/2012                          | 4.2  | 11/5/2012     | 1.72 |
| 12/7/2012                          | 4.2  | 11/6/2012     | 1.78 |
| 12/10/2012                         | 4.2  | 11/7/2012     | 1.68 |
| 12/11/2012                         | 4.19 | 11/8/2012     | 1.62 |
| 12/12/2012                         | 4.19 | 11/9/2012     | 1.61 |
| 12/13/2012                         | 4.21 | 11/13/2012    | 1.59 |
| 12/14/2012                         | 4.23 | 11/14/2012    | 1.59 |
| 12/17/2012                         | 4.17 | 11/15/2012    | 1.58 |
| 12/18/2012                         | 4.12 | 11/16/2012    | 1.58 |
| 12/19/2012                         | 4.15 | 11/19/2012    | 1.61 |
| 12/20/2012                         | 4.13 | 11/20/2012    | 1.66 |
| 12/21/2012                         | 4.16 | 11/21/2012    | 1.69 |
| 12/24/2012                         | 4.17 | 11/22/2012    | 1.69 |
| 12/26/2012                         | 4.22 | 11/23/2012    | 1.70 |
| 12/27/2012                         | 4.23 | 11/26/2012    | 1.66 |
| 12/28/2012                         | 4.27 | 11/27/2012    | 1.64 |
| 12/31/2012                         | 4.21 | 11/28/2012    | 1.63 |
| 1/2/2013                           | 4.14 | 11/29/2012    | 1.62 |
| 1/3/2013                           | 4.14 | 11/30/2012    | 1.62 |
| 1/4/2013                           | 4.11 | 12/3/2012     | 1.63 |
| 1/7/2013                           | 4.16 | 12/4/2012     | 1.62 |
| 1/8/2013                           | 4.17 | 12/5/2012     | 1.60 |
| 1/9/2013                           | 4.18 | 12/6/2012     | 1.59 |
| 1/10/2013                          | 4.16 | 12/7/2012     | 1.64 |
| 1/11/2013                          | 4.16 | 12/10/2012    | 1.63 |
| 1/14/2013                          | 4.16 | 12/11/2012    | 1.66 |
| 1/15/2013                          | 4.15 | 12/12/2012    | 1.72 |
| 1/16/2013                          | 4.17 | 12/13/2012    | 1.74 |
| 1/17/2013                          | 4.15 | 12/14/2012    | 1.72 |
| 1/18/2013                          | 4.12 | 12/17/2012    | 1.78 |

| S&P 500 Utilities (S5UTIL Index)<br>Dividend Yield (NET_AGGTE_DVD_YLD) |      | 10y US T-Note<br>YIELD |      |
|------------------------------------------------------------------------|------|------------------------|------|
| 1/22/2013                                                              | 4.09 | 12/18/2012             | 1.84 |
| 1/23/2013                                                              | 4.1  | 12/19/2012             | 1.82 |
| 1/24/2013                                                              | 4.08 | 12/20/2012             | 1.81 |
| 1/25/2013                                                              | 4.06 | 12/21/2012             | 1.77 |
| 1/28/2013                                                              | 4.06 | 12/24/2012             | 1.79 |
| 1/29/2013                                                              | 4.03 | 12/25/2012             | 1.79 |
| 1/30/2013                                                              | 4.05 | 12/26/2012             | 1.77 |
| 1/31/2013                                                              | 4.04 | 12/27/2012             | 1.74 |
| 2/1/2013                                                               | 4.03 | 12/28/2012             | 1.73 |
| 2/4/2013                                                               | 4.06 | 12/31/2012             | 1.78 |
| 2/5/2013                                                               | 4.05 | 1/1/2013               | 1.78 |
| 2/6/2013                                                               | 4.04 | 1/2/2013               | 1.86 |
| 2/7/2013                                                               | 4.04 | 1/3/2013               | 1.92 |
| 2/8/2013                                                               | 4.04 | 1/4/2013               | 1.93 |
| 2/11/2013                                                              | 4.03 | 1/7/2013               | 1.92 |
| 2/12/2013                                                              | 4.02 | 1/8/2013               | 1.89 |
| 2/13/2013                                                              | 4.03 | 1/9/2013               | 1.88 |
| 2/14/2013                                                              | 4.14 | 1/10/2013              | 1.91 |
| 2/15/2013                                                              | 4.13 | 1/11/2013              | 1.89 |
| 2/19/2013                                                              | 4.09 | 1/14/2013              | 1.89 |
| 2/20/2013                                                              | 4.1  | 1/15/2013              | 1.86 |
| 2/21/2013                                                              | 4.12 | 1/16/2013              | 1.84 |
| 2/22/2013                                                              | 4.07 | 1/17/2013              | 1.89 |
| 2/25/2013                                                              | 4.12 | 1/18/2013              | 1.87 |
| 2/26/2013                                                              | 4.11 | 1/21/2013              | 1.87 |
| 2/27/2013                                                              | 4.08 | 1/22/2013              | 1.86 |
| 2/28/2013                                                              | 4.07 | 1/23/2013              | 1.86 |
| 3/1/2013                                                               | 4.06 | 1/24/2013              | 1.88 |
| 3/4/2013                                                               | 4.02 | 1/25/2013              | 1.98 |
| 3/5/2013                                                               | 4    | 1/28/2013              | 2.00 |
| 3/6/2013                                                               | 4.01 | 1/29/2013              | 2.03 |
| 3/7/2013                                                               | 4.03 | 1/30/2013              | 2.03 |
| 3/8/2013                                                               | 4.02 | 1/31/2013              | 2.02 |
| 3/11/2013                                                              | 4    | 2/1/2013               | 2.04 |
| 3/12/2013                                                              | 4.02 | 2/4/2013               | 2.00 |
| 3/13/2013                                                              | 4    | 2/5/2013               | 2.04 |
| 3/14/2013                                                              | 4    | 2/6/2013               | 2.00 |
| 3/15/2013                                                              | 3.97 | 2/7/2013               | 1.99 |
| 3/18/2013                                                              | 3.99 | 2/8/2013               | 1.99 |
| 3/19/2013                                                              | 3.98 | 2/11/2013              | 1.99 |
| 3/20/2013                                                              | 3.95 | 2/12/2013              | 2.02 |
| 3/21/2013                                                              | 3.97 | 2/13/2013              | 2.05 |
| 3/22/2013                                                              | 3.97 | 2/14/2013              | 2.00 |
| 3/25/2013                                                              | 3.98 | 2/15/2013              | 2.01 |
| 3/26/2013                                                              | 3.94 | 2/18/2013              | 2.01 |
| 3/27/2013                                                              | 3.93 | 2/19/2013              | 2.03 |
| 3/28/2013                                                              | 3.88 | 2/20/2013              | 2.02 |
| 4/1/2013                                                               | 3.89 | 2/21/2013              | 1.99 |
| 4/2/2013                                                               | 3.87 | 2/22/2013              | 1.97 |
| 4/3/2013                                                               | 3.88 | 2/25/2013              | 1.88 |
| 4/4/2013                                                               | 3.85 | 2/26/2013              | 1.88 |
| 4/5/2013                                                               | 3.83 | 2/27/2013              | 1.91 |
| 4/8/2013                                                               | 3.8  | 2/28/2013              | 1.89 |
| 4/9/2013                                                               | 3.81 | 3/1/2013               | 1.86 |
| 4/10/2013                                                              | 3.78 | 3/4/2013               | 1.88 |
| 4/11/2013                                                              | 3.77 | 3/5/2013               | 1.90 |
| 4/12/2013                                                              | 3.76 | 3/6/2013               | 1.95 |
| 4/15/2013                                                              | 3.82 | 3/7/2013               | 2.00 |
| 4/16/2013                                                              | 3.77 | 3/8/2013               | 2.06 |
| 4/17/2013                                                              | 3.79 | 3/11/2013              | 2.07 |
| 4/18/2013                                                              | 3.78 | 3/12/2013              | 2.03 |
| 4/19/2013                                                              | 3.72 | 3/13/2013              | 2.04 |
| 4/22/2013                                                              | 3.73 | 3/14/2013              | 2.04 |
| 4/23/2013                                                              | 3.72 | 3/15/2013              | 2.01 |
| 4/24/2013                                                              | 3.71 | 3/18/2013              | 1.96 |
| 4/25/2013                                                              | 3.7  | 3/19/2013              | 1.92 |
| 4/26/2013                                                              | 3.71 | 3/20/2013              | 1.96 |
| 4/29/2013                                                              | 3.69 | 3/21/2013              | 1.95 |
| 4/30/2013                                                              | 3.68 | 3/22/2013              | 1.93 |
| 5/1/2013                                                               | 3.71 | 3/25/2013              | 1.93 |
| 5/2/2013                                                               | 3.73 | 3/26/2013              | 1.92 |
| 5/3/2013                                                               | 3.73 | 3/27/2013              | 1.87 |
| 5/6/2013                                                               | 3.79 | 3/28/2013              | 1.87 |
| 5/7/2013                                                               | 3.75 | 3/29/2013              | 1.87 |
| 5/8/2013                                                               | 3.79 | 4/1/2013               | 1.86 |
| 5/9/2013                                                               | 3.85 | 4/2/2013               | 1.88 |
| 5/10/2013                                                              | 3.84 | 4/3/2013               | 1.83 |



| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 5/13/2013                          | 3.85 | 4/4/2013      | 1.78 |
| 5/14/2013                          | 3.83 | 4/5/2013      | 1.72 |
| 5/15/2013                          | 3.8  | 4/8/2013      | 1.76 |
| 5/16/2013                          | 3.83 | 4/9/2013      | 1.78 |
| 5/17/2013                          | 3.79 | 4/10/2013     | 1.84 |
| 5/20/2013                          | 3.81 | 4/11/2013     | 1.82 |
| 5/21/2013                          | 3.81 | 4/12/2013     | 1.75 |
| 5/22/2013                          | 3.87 | 4/15/2013     | 1.72 |
| 5/23/2013                          | 3.9  | 4/16/2013     | 1.75 |
| 5/24/2013                          | 3.94 | 4/17/2013     | 1.73 |
| 5/28/2013                          | 3.99 | 4/18/2013     | 1.72 |
| 5/29/2013                          | 4.05 | 4/19/2013     | 1.73 |
| 5/30/2013                          | 4.05 | 4/22/2013     | 1.72 |
| 5/31/2013                          | 4.07 | 4/23/2013     | 1.74 |
| 6/3/2013                           | 4.07 | 4/24/2013     | 1.73 |
| 6/4/2013                           | 4.08 | 4/25/2013     | 1.74 |
| 6/5/2013                           | 4.13 | 4/26/2013     | 1.70 |
| 6/6/2013                           | 4.08 | 4/29/2013     | 1.70 |
| 6/7/2013                           | 4.05 | 4/30/2013     | 1.70 |
| 6/10/2013                          | 4.06 | 5/1/2013      | 1.66 |
| 6/11/2013                          | 4.08 | 5/2/2013      | 1.66 |
| 6/12/2013                          | 4.13 | 5/3/2013      | 1.78 |
| 6/13/2013                          | 4.06 | 5/6/2013      | 1.80 |
| 6/14/2013                          | 4.06 | 5/7/2013      | 1.82 |
| 6/17/2013                          | 4.05 | 5/8/2013      | 1.81 |
| 6/18/2013                          | 4.02 | 5/9/2013      | 1.81 |
| 6/19/2013                          | 4.11 | 5/10/2013     | 1.90 |
| 6/20/2013                          | 4.23 | 5/13/2013     | 1.92 |
| 6/21/2013                          | 4.18 | 5/14/2013     | 1.96 |
| 6/24/2013                          | 4.18 | 5/15/2013     | 1.94 |
| 6/25/2013                          | 4.13 | 5/16/2013     | 1.87 |
| 6/26/2013                          | 4.08 | 5/17/2013     | 1.95 |
| 6/27/2013                          | 4.08 | 5/20/2013     | 1.97 |
| 6/28/2013                          | 4.06 | 5/21/2013     | 1.94 |
| 7/1/2013                           | 4.12 | 5/22/2013     | 2.03 |
| 7/2/2013                           | 4.12 | 5/23/2013     | 2.02 |
| 7/3/2013                           | 4.12 | 5/24/2013     | 2.01 |
| 7/5/2013                           | 4.14 | 5/27/2013     | 2.01 |
| 7/8/2013                           | 4.09 | 5/28/2013     | 2.15 |
| 7/9/2013                           | 4.06 | 5/29/2013     | 2.13 |
| 7/10/2013                          | 4.04 | 5/30/2013     | 2.13 |
| 7/11/2013                          | 3.97 | 5/31/2013     | 2.16 |
| 7/12/2013                          | 3.96 | 6/3/2013      | 2.13 |
| 7/15/2013                          | 3.9  | 6/4/2013      | 2.14 |
| 7/16/2013                          | 3.92 | 6/5/2013      | 2.10 |
| 7/17/2013                          | 3.92 | 6/6/2013      | 2.08 |
| 7/18/2013                          | 3.88 | 6/7/2013      | 2.17 |
| 7/19/2013                          | 3.89 | 6/10/2013     | 2.22 |
| 7/22/2013                          | 3.89 | 6/11/2013     | 2.20 |
| 7/23/2013                          | 3.88 | 6/12/2013     | 2.25 |
| 7/24/2013                          | 3.94 | 6/13/2013     | 2.19 |
| 7/25/2013                          | 3.9  | 6/14/2013     | 2.14 |
| 7/26/2013                          | 3.89 | 6/17/2013     | 2.19 |
| 7/29/2013                          | 3.88 | 6/18/2013     | 2.20 |
| 7/30/2013                          | 3.88 | 6/19/2013     | 2.33 |
| 7/31/2013                          | 3.91 | 6/20/2013     | 2.41 |
| 8/1/2013                           | 3.88 | 6/21/2013     | 2.52 |
| 8/2/2013                           | 3.89 | 6/24/2013     | 2.57 |
| 8/5/2013                           | 3.92 | 6/25/2013     | 2.60 |
| 8/6/2013                           | 3.94 | 6/26/2013     | 2.55 |
| 8/7/2013                           | 3.92 | 6/27/2013     | 2.49 |
| 8/8/2013                           | 3.91 | 6/28/2013     | 2.52 |
| 8/9/2013                           | 3.93 | 7/1/2013      | 2.50 |
| 8/12/2013                          | 3.96 | 7/2/2013      | 2.48 |
| 8/13/2013                          | 3.95 | 7/3/2013      | 2.52 |
| 8/14/2013                          | 3.98 | 7/4/2013      | 2.52 |
| 8/15/2013                          | 4.04 | 7/5/2013      | 2.73 |
| 8/16/2013                          | 4.08 | 7/8/2013      | 2.65 |
| 8/19/2013                          | 4.12 | 7/9/2013      | 2.65 |
| 8/20/2013                          | 4.08 | 7/10/2013     | 2.70 |
| 8/21/2013                          | 4.13 | 7/11/2013     | 2.60 |
| 8/22/2013                          | 4.1  | 7/12/2013     | 2.61 |
| 8/23/2013                          | 4.07 | 7/15/2013     | 2.57 |
| 8/26/2013                          | 4.1  | 7/16/2013     | 2.55 |
| 8/27/2013                          | 4.1  | 7/17/2013     | 2.52 |
| 8/28/2013                          | 4.1  | 7/18/2013     | 2.56 |
| 8/29/2013                          | 4.12 | 7/19/2013     | 2.50 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 8/30/2013                          | 4.12 | 7/22/2013     | 2.50 |
| 9/3/2013                           | 4.17 | 7/23/2013     | 2.53 |
| 9/4/2013                           | 4.18 | 7/24/2013     | 2.61 |
| 9/5/2013                           | 4.19 | 7/25/2013     | 2.61 |
| 9/6/2013                           | 4.17 | 7/26/2013     | 2.58 |
| 9/9/2013                           | 4.15 | 7/29/2013     | 2.61 |
| 9/10/2013                          | 4.12 | 7/30/2013     | 2.63 |
| 9/11/2013                          | 4.16 | 7/31/2013     | 2.60 |
| 9/12/2013                          | 4.18 | 8/1/2013      | 2.74 |
| 9/13/2013                          | 4.15 | 8/2/2013      | 2.63 |
| 9/16/2013                          | 4.14 | 8/5/2013      | 2.67 |
| 9/17/2013                          | 4.12 | 8/6/2013      | 2.67 |
| 9/18/2013                          | 4    | 8/7/2013      | 2.61 |
| 9/19/2013                          | 4.01 | 8/8/2013      | 2.58 |
| 9/20/2013                          | 4.07 | 8/9/2013      | 2.57 |
| 9/23/2013                          | 4.03 | 8/12/2013     | 2.61 |
| 9/24/2013                          | 4.03 | 8/13/2013     | 2.71 |
| 9/25/2013                          | 4.06 | 8/14/2013     | 2.71 |
| 9/26/2013                          | 4.07 | 8/15/2013     | 2.77 |
| 9/27/2013                          | 4.1  | 8/16/2013     | 2.84 |
| 9/30/2013                          | 4.1  | 8/19/2013     | 2.88 |
| 10/1/2013                          | 4.09 | 8/20/2013     | 2.82 |
| 10/2/2013                          | 4.08 | 8/21/2013     | 2.87 |
| 10/3/2013                          | 4.13 | 8/22/2013     | 2.90 |
| 10/4/2013                          | 4.12 | 8/23/2013     | 2.82 |
| 10/7/2013                          | 4.14 | 8/26/2013     | 2.79 |
| 10/8/2013                          | 4.11 | 8/27/2013     | 2.72 |
| 10/9/2013                          | 4.1  | 8/28/2013     | 2.78 |
| 10/10/2013                         | 4.04 | 8/29/2013     | 2.75 |
| 10/11/2013                         | 4.02 | 8/30/2013     | 2.78 |
| 10/14/2013                         | 4.04 | 9/2/2013      | 2.78 |
| 10/15/2013                         | 4.1  | 9/3/2013      | 2.86 |
| 10/16/2013                         | 4.06 | 9/4/2013      | 2.90 |
| 10/17/2013                         | 3.99 | 9/5/2013      | 2.98 |
| 10/18/2013                         | 3.98 | 9/6/2013      | 2.94 |
| 10/21/2013                         | 3.99 | 9/9/2013      | 2.90 |
| 10/22/2013                         | 3.94 | 9/10/2013     | 2.96 |
| 10/23/2013                         | 3.94 | 9/11/2013     | 2.93 |
| 10/24/2013                         | 3.95 | 9/12/2013     | 2.92 |
| 10/25/2013                         | 3.9  | 9/13/2013     | 2.90 |
| 10/28/2013                         | 3.91 | 9/16/2013     | 2.88 |
| 10/29/2013                         | 3.91 | 9/17/2013     | 2.86 |
| 10/30/2013                         | 3.94 | 9/18/2013     | 2.69 |
| 10/31/2013                         | 3.96 | 9/19/2013     | 2.76 |
| 11/1/2013                          | 3.94 | 9/20/2013     | 2.75 |
| 11/4/2013                          | 3.93 | 9/23/2013     | 2.72 |
| 11/5/2013                          | 3.96 | 9/24/2013     | 2.67 |
| 11/6/2013                          | 3.91 | 9/25/2013     | 2.63 |
| 11/7/2013                          | 3.95 | 9/26/2013     | 2.66 |
| 11/8/2013                          | 3.96 | 9/27/2013     | 2.64 |
| 11/11/2013                         | 3.95 | 9/30/2013     | 2.64 |
| 11/12/2013                         | 4    | 10/1/2013     | 2.66 |
| 11/13/2013                         | 3.95 | 10/2/2013     | 2.63 |
| 11/14/2013                         | 3.92 | 10/3/2013     | 2.62 |
| 11/15/2013                         | 3.89 | 10/4/2013     | 2.66 |
| 11/18/2013                         | 3.9  | 10/7/2013     | 2.65 |
| 11/19/2013                         | 3.92 | 10/8/2013     | 2.66 |
| 11/20/2013                         | 3.97 | 10/9/2013     | 2.68 |
| 11/21/2013                         | 3.96 | 10/10/2013    | 2.71 |
| 11/22/2013                         | 3.96 | 10/11/2013    | 2.70 |
| 11/25/2013                         | 3.98 | 10/15/2013    | 2.75 |
| 11/26/2013                         | 4.02 | 10/16/2013    | 2.69 |
| 11/27/2013                         | 4.04 | 10/17/2013    | 2.61 |
| 11/29/2013                         | 4.04 | 10/18/2013    | 2.60 |
| 12/2/2013                          | 4.05 | 10/21/2013    | 2.63 |
| 12/3/2013                          | 4.03 | 10/22/2013    | 2.54 |
| 12/4/2013                          | 4.03 | 10/23/2013    | 2.51 |
| 12/5/2013                          | 4.06 | 10/24/2013    | 2.53 |
| 12/6/2013                          | 4.01 | 10/25/2013    | 2.53 |
| 12/9/2013                          | 4.03 | 10/28/2013    | 2.54 |
| 12/10/2013                         | 4.07 | 10/29/2013    | 2.53 |
| 12/11/2013                         | 4.11 | 10/30/2013    | 2.55 |
| 12/12/2013                         | 4.11 | 10/31/2013    | 2.57 |
| 12/13/2013                         | 4.11 | 11/1/2013     | 2.65 |
| 12/16/2013                         | 4.08 | 11/4/2013     | 2.63 |
| 12/17/2013                         | 4.09 | 11/5/2013     | 2.69 |
| 12/18/2013                         | 4.04 | 11/6/2013     | 2.67 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 12/19/2013                         | 4.07 | 11/7/2013     | 2.63 |
| 12/20/2013                         | 4.03 | 11/8/2013     | 2.77 |
| 12/23/2013                         | 4.05 | 11/12/2013    | 2.80 |
| 12/24/2013                         | 4.03 | 11/13/2013    | 2.75 |
| 12/26/2013                         | 4.05 | 11/14/2013    | 2.69 |
| 12/27/2013                         | 4.04 | 11/15/2013    | 2.71 |
| 12/30/2013                         | 4.03 | 11/18/2013    | 2.67 |
| 12/31/2013                         | 4.02 | 11/19/2013    | 2.71 |
| 1/2/2014                           | 4.09 | 11/20/2013    | 2.80 |
| 1/3/2014                           | 4.1  | 11/21/2013    | 2.79 |
| 1/6/2014                           | 4.1  | 11/22/2013    | 2.75 |
| 1/7/2014                           | 4.06 | 11/25/2013    | 2.74 |
| 1/8/2014                           | 4.08 | 11/26/2013    | 2.71 |
| 1/9/2014                           | 4.06 | 11/27/2013    | 2.74 |
| 1/10/2014                          | 4    | 11/28/2013    | 2.74 |
| 1/13/2014                          | 4.04 | 11/29/2013    | 2.75 |
| 1/14/2014                          | 4.03 | 12/2/2013     | 2.81 |
| 1/15/2014                          | 4.04 | 12/3/2013     | 2.79 |
| 1/16/2014                          | 4.02 | 12/4/2013     | 2.84 |
| 1/17/2014                          | 4.02 | 12/5/2013     | 2.88 |
| 1/21/2014                          | 3.97 | 12/6/2013     | 2.88 |
| 1/22/2014                          | 3.97 | 12/9/2013     | 2.86 |
| 1/23/2014                          | 3.98 | 12/10/2013    | 2.81 |
| 1/24/2014                          | 4.02 | 12/11/2013    | 2.86 |
| 1/27/2014                          | 4.02 | 12/12/2013    | 2.89 |
| 1/28/2014                          | 4    | 12/13/2013    | 2.88 |
| 1/29/2014                          | 4    | 12/16/2013    | 2.89 |
| 1/30/2014                          | 3.95 | 12/17/2013    | 2.85 |
| 1/31/2014                          | 3.92 | 12/18/2013    | 2.89 |
| 2/3/2014                           | 4    | 12/19/2013    | 2.94 |
| 2/4/2014                           | 4.03 | 12/20/2013    | 2.89 |
| 2/5/2014                           | 4.03 | 12/23/2013    | 2.94 |
| 2/6/2014                           | 4.01 | 12/24/2013    | 2.99 |
| 2/7/2014                           | 3.99 | 12/25/2013    | 2.99 |
| 2/10/2014                          | 3.96 | 12/26/2013    | 3.00 |
| 2/11/2014                          | 3.92 | 12/27/2013    | 3.02 |
| 2/12/2014                          | 3.9  | 12/30/2013    | 2.99 |
| 2/13/2014                          | 3.85 | 12/31/2013    | 3.04 |
| 2/14/2014                          | 3.83 | 1/1/2014      | 3.04 |
| 2/18/2014                          | 3.82 | 1/2/2014      | 3.00 |
| 2/19/2014                          | 3.84 | 1/3/2014      | 3.01 |
| 2/20/2014                          | 3.81 | 1/6/2014      | 2.98 |
| 2/21/2014                          | 3.8  | 1/7/2014      | 2.96 |
| 2/24/2014                          | 3.81 | 1/8/2014      | 3.01 |
| 2/25/2014                          | 3.82 | 1/9/2014      | 2.97 |
| 2/26/2014                          | 3.85 | 1/10/2014     | 2.88 |
| 2/27/2014                          | 3.86 | 1/13/2014     | 2.84 |
| 2/28/2014                          | 3.83 | 1/14/2014     | 2.77 |
| 3/3/2014                           | 3.87 | 1/15/2014     | 2.90 |
| 3/4/2014                           | 3.84 | 1/16/2014     | 2.86 |
| 3/5/2014                           | 3.87 | 1/17/2014     | 2.84 |
| 3/6/2014                           | 3.89 | 1/20/2014     | 2.84 |
| 3/7/2014                           | 3.88 | 1/21/2014     | 2.85 |
| 3/10/2014                          | 3.89 | 1/22/2014     | 2.87 |
| 3/11/2014                          | 3.9  | 1/23/2014     | 2.79 |
| 3/12/2014                          | 3.85 | 1/24/2014     | 2.75 |
| 3/13/2014                          | 3.82 | 1/27/2014     | 2.78 |
| 3/14/2014                          | 3.8  | 1/28/2014     | 2.77 |
| 3/17/2014                          | 3.78 | 1/29/2014     | 2.69 |
| 3/18/2014                          | 3.79 | 1/30/2014     | 2.72 |
| 3/19/2014                          | 3.84 | 1/31/2014     | 2.67 |
| 3/20/2014                          | 3.84 | 2/3/2014      | 2.61 |
| 3/21/2014                          | 3.81 | 2/4/2014      | 2.64 |
| 3/24/2014                          | 3.8  | 2/5/2014      | 2.70 |
| 3/25/2014                          | 3.79 | 2/6/2014      | 2.73 |
| 3/26/2014                          | 3.8  | 2/7/2014      | 2.71 |
| 3/27/2014                          | 3.77 | 2/10/2014     | 2.70 |
| 3/28/2014                          | 3.77 | 2/11/2014     | 2.75 |
| 3/31/2014                          | 3.73 | 2/12/2014     | 2.80 |
| 4/1/2014                           | 3.75 | 2/13/2014     | 2.73 |
| 4/2/2014                           | 3.76 | 2/14/2014     | 2.75 |
| 4/3/2014                           | 3.75 | 2/17/2014     | 2.75 |
| 4/4/2014                           | 3.73 | 2/18/2014     | 2.71 |
| 4/7/2014                           | 3.73 | 2/19/2014     | 2.73 |
| 4/8/2014                           | 3.68 | 2/20/2014     | 2.76 |
| 4/9/2014                           | 3.69 | 2/21/2014     | 2.73 |
| 4/10/2014                          | 3.7  | 2/24/2014     | 2.75 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 4/11/2014                          | 3.71 | 2/25/2014     | 2.70 |
| 4/14/2014                          | 3.68 | 2/26/2014     | 2.67 |
| 4/15/2014                          | 3.63 | 2/27/2014     | 2.65 |
| 4/16/2014                          | 3.61 | 2/28/2014     | 2.66 |
| 4/17/2014                          | 3.65 | 3/3/2014      | 2.60 |
| 4/21/2014                          | 3.65 | 3/4/2014      | 2.70 |
| 4/22/2014                          | 3.65 | 3/5/2014      | 2.70 |
| 4/23/2014                          | 3.65 | 3/6/2014      | 2.74 |
| 4/24/2014                          | 3.63 | 3/7/2014      | 2.80 |
| 4/25/2014                          | 3.58 | 3/10/2014     | 2.79 |
| 4/28/2014                          | 3.57 | 3/11/2014     | 2.77 |
| 4/29/2014                          | 3.59 | 3/12/2014     | 2.73 |
| 4/30/2014                          | 3.58 | 3/13/2014     | 2.66 |
| 5/1/2014                           | 3.57 | 3/14/2014     | 2.65 |
| 5/2/2014                           | 3.64 | 3/17/2014     | 2.70 |
| 5/5/2014                           | 3.6  | 3/18/2014     | 2.68 |
| 5/6/2014                           | 3.62 | 3/19/2014     | 2.78 |
| 5/7/2014                           | 3.56 | 3/20/2014     | 2.79 |
| 5/8/2014                           | 3.6  | 3/21/2014     | 2.75 |
| 5/9/2014                           | 3.66 | 3/24/2014     | 2.74 |
| 5/12/2014                          | 3.69 | 3/25/2014     | 2.75 |
| 5/13/2014                          | 3.69 | 3/26/2014     | 2.71 |
| 5/14/2014                          | 3.68 | 3/27/2014     | 2.69 |
| 5/15/2014                          | 3.69 | 3/28/2014     | 2.73 |
| 5/16/2014                          | 3.68 | 3/31/2014     | 2.73 |
| 5/19/2014                          | 3.74 | 4/1/2014      | 2.77 |
| 5/20/2014                          | 3.74 | 4/2/2014      | 2.82 |
| 5/21/2014                          | 3.74 | 4/3/2014      | 2.80 |
| 5/22/2014                          | 3.71 | 4/4/2014      | 2.74 |
| 5/23/2014                          | 3.72 | 4/7/2014      | 2.71 |
| 5/27/2014                          | 3.69 | 4/8/2014      | 2.69 |
| 5/28/2014                          | 3.68 | 4/9/2014      | 2.71 |
| 5/29/2014                          | 3.68 | 4/10/2014     | 2.65 |
| 5/30/2014                          | 3.65 | 4/11/2014     | 2.63 |
| 6/2/2014                           | 3.65 | 4/14/2014     | 2.65 |
| 6/3/2014                           | 3.64 | 4/15/2014     | 2.64 |
| 6/4/2014                           | 3.64 | 4/16/2014     | 2.65 |
| 6/5/2014                           | 3.61 | 4/17/2014     | 2.73 |
| 6/6/2014                           | 3.62 | 4/18/2014     | 2.73 |
| 6/9/2014                           | 3.65 | 4/21/2014     | 2.73 |
| 6/10/2014                          | 3.66 | 4/22/2014     | 2.73 |
| 6/11/2014                          | 3.71 | 4/23/2014     | 2.70 |
| 6/12/2014                          | 3.7  | 4/24/2014     | 2.70 |
| 6/13/2014                          | 3.67 | 4/25/2014     | 2.68 |
| 6/16/2014                          | 3.65 | 4/28/2014     | 2.70 |
| 6/17/2014                          | 3.66 | 4/29/2014     | 2.71 |
| 6/18/2014                          | 3.58 | 4/30/2014     | 2.67 |
| 6/19/2014                          | 3.55 | 5/1/2014      | 2.63 |
| 6/20/2014                          | 3.57 | 5/2/2014      | 2.60 |
| 6/23/2014                          | 3.58 | 5/5/2014      | 2.63 |
| 6/24/2014                          | 3.57 | 5/6/2014      | 2.61 |
| 6/25/2014                          | 3.55 | 5/7/2014      | 2.62 |
| 6/26/2014                          | 3.55 | 5/8/2014      | 2.61 |
| 6/27/2014                          | 3.53 | 5/9/2014      | 2.62 |
| 6/30/2014                          | 3.51 | 5/12/2014     | 2.66 |
| 7/1/2014                           | 3.54 | 5/13/2014     | 2.61 |
| 7/2/2014                           | 3.61 | 5/14/2014     | 2.54 |
| 7/3/2014                           | 3.65 | 5/15/2014     | 2.50 |
| 7/7/2014                           | 3.64 | 5/16/2014     | 2.52 |
| 7/8/2014                           | 3.61 | 5/19/2014     | 2.54 |
| 7/9/2014                           | 3.62 | 5/20/2014     | 2.52 |
| 7/10/2014                          | 3.6  | 5/21/2014     | 2.54 |
| 7/11/2014                          | 3.62 | 5/22/2014     | 2.56 |
| 7/14/2014                          | 3.67 | 5/23/2014     | 2.54 |
| 7/15/2014                          | 3.65 | 5/26/2014     | 2.54 |
| 7/16/2014                          | 3.63 | 5/27/2014     | 2.52 |
| 7/17/2014                          | 3.67 | 5/28/2014     | 2.44 |
| 7/18/2014                          | 3.63 | 5/29/2014     | 2.45 |
| 7/21/2014                          | 3.64 | 5/30/2014     | 2.48 |
| 7/22/2014                          | 3.64 | 6/2/2014      | 2.54 |
| 7/23/2014                          | 3.64 | 6/3/2014      | 2.60 |
| 7/24/2014                          | 3.63 | 6/4/2014      | 2.61 |
| 7/25/2014                          | 3.66 | 6/5/2014      | 2.59 |
| 7/28/2014                          | 3.6  | 6/6/2014      | 2.60 |
| 7/29/2014                          | 3.64 | 6/9/2014      | 2.62 |
| 7/30/2014                          | 3.71 | 6/10/2014     | 2.64 |
| 7/31/2014                          | 3.78 | 6/11/2014     | 2.65 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 8/1/2014                           | 3.76 | 6/12/2014     | 2.58 |
| 8/4/2014                           | 3.78 | 6/13/2014     | 2.60 |
| 8/5/2014                           | 3.81 | 6/16/2014     | 2.61 |
| 8/6/2014                           | 3.87 | 6/17/2014     | 2.66 |
| 8/7/2014                           | 3.82 | 6/18/2014     | 2.61 |
| 8/8/2014                           | 3.75 | 6/19/2014     | 2.64 |
| 8/11/2014                          | 3.76 | 6/20/2014     | 2.63 |
| 8/12/2014                          | 3.77 | 6/23/2014     | 2.63 |
| 8/13/2014                          | 3.77 | 6/24/2014     | 2.59 |
| 8/14/2014                          | 3.73 | 6/25/2014     | 2.57 |
| 8/15/2014                          | 3.72 | 6/26/2014     | 2.53 |
| 8/18/2014                          | 3.73 | 6/27/2014     | 2.54 |
| 8/19/2014                          | 3.68 | 6/30/2014     | 2.53 |
| 8/20/2014                          | 3.67 | 7/1/2014      | 2.58 |
| 8/21/2014                          | 3.66 | 7/2/2014      | 2.64 |
| 8/22/2014                          | 3.67 | 7/3/2014      | 2.65 |
| 8/25/2014                          | 3.65 | 7/4/2014      | 2.65 |
| 8/26/2014                          | 3.69 | 7/7/2014      | 2.63 |
| 8/27/2014                          | 3.67 | 7/8/2014      | 2.58 |
| 8/28/2014                          | 3.64 | 7/9/2014      | 2.57 |
| 8/29/2014                          | 3.62 | 7/10/2014     | 2.55 |
| 9/2/2014                           | 3.65 | 7/11/2014     | 2.53 |
| 9/3/2014                           | 3.64 | 7/14/2014     | 2.55 |
| 9/4/2014                           | 3.64 | 7/15/2014     | 2.56 |
| 9/5/2014                           | 3.59 | 7/16/2014     | 2.55 |
| 9/8/2014                           | 3.62 | 7/17/2014     | 2.47 |
| 9/9/2014                           | 3.66 | 7/18/2014     | 2.50 |
| 9/10/2014                          | 3.68 | 7/21/2014     | 2.49 |
| 9/11/2014                          | 3.65 | 7/22/2014     | 2.48 |
| 9/12/2014                          | 3.72 | 7/23/2014     | 2.48 |
| 9/15/2014                          | 3.7  | 7/24/2014     | 2.52 |
| 9/16/2014                          | 3.66 | 7/25/2014     | 2.48 |
| 9/17/2014                          | 3.67 | 7/28/2014     | 2.50 |
| 9/18/2014                          | 3.69 | 7/29/2014     | 2.47 |
| 9/19/2014                          | 3.66 | 7/30/2014     | 2.57 |
| 9/22/2014                          | 3.69 | 7/31/2014     | 2.58 |
| 9/23/2014                          | 3.7  | 8/1/2014      | 2.52 |
| 9/24/2014                          | 3.72 | 8/4/2014      | 2.51 |
| 9/25/2014                          | 3.74 | 8/5/2014      | 2.49 |
| 9/26/2014                          | 3.73 | 8/6/2014      | 2.49 |
| 9/29/2014                          | 3.71 | 8/7/2014      | 2.43 |
| 9/30/2014                          | 3.71 | 8/8/2014      | 2.44 |
| 10/1/2014                          | 3.69 | 8/11/2014     | 2.44 |
| 10/2/2014                          | 3.69 | 8/12/2014     | 2.46 |
| 10/3/2014                          | 3.67 | 8/13/2014     | 2.43 |
| 10/6/2014                          | 3.67 | 8/14/2014     | 2.40 |
| 10/7/2014                          | 3.67 | 8/15/2014     | 2.34 |
| 10/8/2014                          | 3.59 | 8/18/2014     | 2.39 |
| 10/9/2014                          | 3.65 | 8/19/2014     | 2.40 |
| 10/10/2014                         | 3.63 | 8/20/2014     | 2.43 |
| 10/13/2014                         | 3.64 | 8/21/2014     | 2.41 |
| 10/14/2014                         | 3.6  | 8/22/2014     | 2.40 |
| 10/15/2014                         | 3.65 | 8/25/2014     | 2.39 |
| 10/16/2014                         | 3.65 | 8/26/2014     | 2.39 |
| 10/17/2014                         | 3.63 | 8/27/2014     | 2.37 |
| 10/20/2014                         | 3.58 | 8/28/2014     | 2.34 |
| 10/21/2014                         | 3.56 | 8/29/2014     | 2.35 |
| 10/22/2014                         | 3.54 | 9/1/2014      | 2.35 |
| 10/23/2014                         | 3.54 | 9/2/2014      | 2.42 |
| 10/24/2014                         | 3.5  | 9/3/2014      | 2.41 |
| 10/27/2014                         | 3.51 | 9/4/2014      | 2.45 |
| 10/28/2014                         | 3.48 | 9/5/2014      | 2.46 |
| 10/29/2014                         | 3.51 | 9/8/2014      | 2.48 |
| 10/30/2014                         | 3.44 | 9/9/2014      | 2.50 |
| 10/31/2014                         | 3.44 | 9/10/2014     | 2.54 |
| 11/3/2014                          | 3.42 | 9/11/2014     | 2.54 |
| 11/4/2014                          | 3.44 | 9/12/2014     | 2.62 |
| 11/5/2014                          | 3.35 | 9/15/2014     | 2.60 |
| 11/6/2014                          | 3.41 | 9/16/2014     | 2.60 |
| 11/7/2014                          | 3.38 | 9/17/2014     | 2.62 |
| 11/10/2014                         | 3.36 | 9/18/2014     | 2.63 |
| 11/11/2014                         | 3.37 | 9/19/2014     | 2.59 |
| 11/12/2014                         | 3.45 | 9/22/2014     | 2.57 |
| 11/13/2014                         | 3.47 | 9/23/2014     | 2.54 |
| 11/14/2014                         | 3.49 | 9/24/2014     | 2.57 |
| 11/17/2014                         | 3.44 | 9/25/2014     | 2.52 |
| 11/18/2014                         | 3.43 | 9/26/2014     | 2.54 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 11/19/2014                         | 3.43 | 9/29/2014     | 2.50 |
| 11/20/2014                         | 3.44 | 9/30/2014     | 2.52 |
| 11/21/2014                         | 3.43 | 10/1/2014     | 2.42 |
| 11/24/2014                         | 3.46 | 10/2/2014     | 2.44 |
| 11/25/2014                         | 3.47 | 10/3/2014     | 2.45 |
| 11/26/2014                         | 3.45 | 10/6/2014     | 2.43 |
| 11/28/2014                         | 3.42 | 10/7/2014     | 2.36 |
| 12/1/2014                          | 3.41 | 10/8/2014     | 2.35 |
| 12/2/2014                          | 3.39 | 10/9/2014     | 2.34 |
| 12/3/2014                          | 3.4  | 10/10/2014    | 2.31 |
| 12/4/2014                          | 3.4  | 10/14/2014    | 2.21 |
| 12/5/2014                          | 3.43 | 10/15/2014    | 2.15 |
| 12/8/2014                          | 3.41 | 10/16/2014    | 2.17 |
| 12/9/2014                          | 3.39 | 10/17/2014    | 2.22 |
| 12/10/2014                         | 3.43 | 10/20/2014    | 2.20 |
| 12/11/2014                         | 3.4  | 10/21/2014    | 2.23 |
| 12/12/2014                         | 3.43 | 10/22/2014    | 2.25 |
| 12/15/2014                         | 3.47 | 10/23/2014    | 2.29 |
| 12/16/2014                         | 3.47 | 10/24/2014    | 2.29 |
| 12/17/2014                         | 3.41 | 10/27/2014    | 2.27 |
| 12/18/2014                         | 3.34 | 10/28/2014    | 2.30 |
| 12/19/2014                         | 3.34 | 10/29/2014    | 2.34 |
| 12/22/2014                         | 3.33 | 10/30/2014    | 2.32 |
| 12/23/2014                         | 3.32 | 10/31/2014    | 2.35 |
| 12/24/2014                         | 3.26 | 11/3/2014     | 2.36 |
| 12/26/2014                         | 3.23 | 11/4/2014     | 2.35 |
| 12/29/2014                         | 3.19 | 11/5/2014     | 2.36 |
| 12/30/2014                         | 3.26 | 11/6/2014     | 2.39 |
| 12/31/2014                         | 3.32 | 11/7/2014     | 2.32 |
| 1/2/2015                           | 3.3  | 11/10/2014    | 2.38 |
| 1/5/2015                           | 3.35 | 11/12/2014    | 2.37 |
| 1/6/2015                           | 3.34 | 11/13/2014    | 2.35 |
| 1/7/2015                           | 3.31 | 11/14/2014    | 2.32 |
| 1/8/2015                           | 3.29 | 11/17/2014    | 2.34 |
| 1/9/2015                           | 3.31 | 11/18/2014    | 2.32 |
| 1/12/2015                          | 3.32 | 11/19/2014    | 2.36 |
| 1/13/2015                          | 3.31 | 11/20/2014    | 2.34 |
| 1/14/2015                          | 3.28 | 11/21/2014    | 2.31 |
| 1/15/2015                          | 3.25 | 11/24/2014    | 2.30 |
| 1/16/2015                          | 3.23 | 11/25/2014    | 2.27 |
| 1/20/2015                          | 3.22 | 11/26/2014    | 2.24 |
| 1/21/2015                          | 3.19 | 11/27/2014    | 2.24 |
| 1/22/2015                          | 3.2  | 11/28/2014    | 2.18 |
| 1/23/2015                          | 3.19 | 12/1/2014     | 2.22 |
| 1/26/2015                          | 3.19 | 12/2/2014     | 2.28 |
| 1/27/2015                          | 3.19 | 12/3/2014     | 2.29 |
| 1/28/2015                          | 3.22 | 12/4/2014     | 2.25 |
| 1/29/2015                          | 3.18 | 12/5/2014     | 2.31 |
| 1/30/2015                          | 3.25 | 12/8/2014     | 2.26 |
| 2/2/2015                           | 3.24 | 12/9/2014     | 2.22 |
| 2/3/2015                           | 3.23 | 12/10/2014    | 2.18 |
| 2/4/2015                           | 3.27 | 12/11/2014    | 2.19 |
| 2/5/2015                           | 3.24 | 12/12/2014    | 2.10 |
| 2/6/2015                           | 3.38 | 12/15/2014    | 2.12 |
| 2/9/2015                           | 3.42 | 12/16/2014    | 2.07 |
| 2/10/2015                          | 3.35 | 12/17/2014    | 2.14 |
| 2/11/2015                          | 3.43 | 12/18/2014    | 2.22 |
| 2/12/2015                          | 3.45 | 12/19/2014    | 2.17 |
| 2/13/2015                          | 3.51 | 12/22/2014    | 2.17 |
| 2/17/2015                          | 3.51 | 12/23/2014    | 2.26 |
| 2/18/2015                          | 3.43 | 12/24/2014    | 2.27 |
| 2/19/2015                          | 3.47 | 12/25/2014    | 2.27 |
| 2/20/2015                          | 3.47 | 12/26/2014    | 2.25 |
| 2/23/2015                          | 3.44 | 12/29/2014    | 2.22 |
| 2/24/2015                          | 3.42 | 12/30/2014    | 2.20 |
| 2/25/2015                          | 3.49 | 12/31/2014    | 2.17 |
| 2/26/2015                          | 3.52 | 1/1/2015      | 2.17 |
| 2/27/2015                          | 3.52 | 1/2/2015      | 2.12 |
| 3/2/2015                           | 3.59 | 1/5/2015      | 2.04 |
| 3/3/2015                           | 3.56 | 1/6/2015      | 1.97 |
| 3/4/2015                           | 3.59 | 1/7/2015      | 1.96 |
| 3/5/2015                           | 3.56 | 1/8/2015      | 2.03 |
| 3/6/2015                           | 3.68 | 1/9/2015      | 1.98 |
| 3/9/2015                           | 3.67 | 1/12/2015     | 1.92 |
| 3/10/2015                          | 3.68 | 1/13/2015     | 1.91 |
| 3/11/2015                          | 3.7  | 1/14/2015     | 1.86 |
| 3/12/2015                          | 3.63 | 1/15/2015     | 1.77 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 3/13/2015                          | 3.67 | 1/16/2015     | 1.83 |
| 3/16/2015                          | 3.61 | 1/19/2015     | 1.83 |
| 3/17/2015                          | 3.62 | 1/20/2015     | 1.82 |
| 3/18/2015                          | 3.52 | 1/21/2015     | 1.87 |
| 3/19/2015                          | 3.56 | 1/22/2015     | 1.90 |
| 3/20/2015                          | 3.53 | 1/23/2015     | 1.81 |
| 3/23/2015                          | 3.52 | 1/26/2015     | 1.83 |
| 3/24/2015                          | 3.56 | 1/27/2015     | 1.83 |
| 3/25/2015                          | 3.61 | 1/28/2015     | 1.73 |
| 3/26/2015                          | 3.64 | 1/29/2015     | 1.77 |
| 3/27/2015                          | 3.62 | 1/30/2015     | 1.68 |
| 3/30/2015                          | 3.58 | 2/2/2015      | 1.68 |
| 3/31/2015                          | 3.58 | 2/3/2015      | 1.79 |
| 4/1/2015                           | 3.57 | 2/4/2015      | 1.81 |
| 4/2/2015                           | 3.56 | 2/5/2015      | 1.83 |
| 4/6/2015                           | 3.52 | 2/6/2015      | 1.95 |
| 4/7/2015                           | 3.56 | 2/9/2015      | 1.96 |
| 4/8/2015                           | 3.57 | 2/10/2015     | 2.01 |
| 4/9/2015                           | 3.59 | 2/11/2015     | 2.00 |
| 4/10/2015                          | 3.56 | 2/12/2015     | 1.99 |
| 4/13/2015                          | 3.6  | 2/13/2015     | 2.02 |
| 4/14/2015                          | 3.57 | 2/16/2015     | 2.02 |
| 4/15/2015                          | 3.57 | 2/17/2015     | 2.14 |
| 4/16/2015                          | 3.59 | 2/18/2015     | 2.07 |
| 4/17/2015                          | 3.6  | 2/19/2015     | 2.11 |
| 4/20/2015                          | 3.55 | 2/20/2015     | 2.13 |
| 4/21/2015                          | 3.58 | 2/23/2015     | 2.06 |
| 4/22/2015                          | 3.57 | 2/24/2015     | 1.99 |
| 4/23/2015                          | 3.55 | 2/25/2015     | 1.96 |
| 4/24/2015                          | 3.52 | 2/26/2015     | 2.03 |
| 4/27/2015                          | 3.56 | 2/27/2015     | 2.00 |
| 4/28/2015                          | 3.54 | 3/2/2015      | 2.08 |
| 4/29/2015                          | 3.55 | 3/3/2015      | 2.12 |
| 4/30/2015                          | 3.6  | 3/4/2015      | 2.12 |
| 5/1/2015                           | 3.58 | 3/5/2015      | 2.11 |
| 5/4/2015                           | 3.56 | 3/6/2015      | 2.24 |
| 5/5/2015                           | 3.64 | 3/9/2015      | 2.20 |
| 5/6/2015                           | 3.66 | 3/10/2015     | 2.14 |
| 5/7/2015                           | 3.65 | 3/11/2015     | 2.11 |
| 5/8/2015                           | 3.62 | 3/12/2015     | 2.10 |
| 5/11/2015                          | 3.65 | 3/13/2015     | 2.13 |
| 5/12/2015                          | 3.66 | 3/16/2015     | 2.10 |
| 5/13/2015                          | 3.7  | 3/17/2015     | 2.06 |
| 5/14/2015                          | 3.66 | 3/18/2015     | 1.93 |
| 5/15/2015                          | 3.62 | 3/19/2015     | 1.98 |
| 5/18/2015                          | 3.61 | 3/20/2015     | 1.93 |
| 5/19/2015                          | 3.6  | 3/23/2015     | 1.92 |
| 5/20/2015                          | 3.59 | 3/24/2015     | 1.88 |
| 5/21/2015                          | 3.6  | 3/25/2015     | 1.93 |
| 5/22/2015                          | 3.6  | 3/26/2015     | 2.01 |
| 5/26/2015                          | 3.63 | 3/27/2015     | 1.95 |
| 5/27/2015                          | 3.63 | 3/30/2015     | 1.96 |
| 5/28/2015                          | 3.62 | 3/31/2015     | 1.94 |
| 5/29/2015                          | 3.62 | 4/1/2015      | 1.87 |
| 6/1/2015                           | 3.62 | 4/2/2015      | 1.92 |
| 6/2/2015                           | 3.68 | 4/3/2015      | 1.85 |
| 6/3/2015                           | 3.73 | 4/6/2015      | 1.92 |
| 6/4/2015                           | 3.74 | 4/7/2015      | 1.89 |
| 6/5/2015                           | 3.79 | 4/8/2015      | 1.92 |
| 6/8/2015                           | 3.82 | 4/9/2015      | 1.97 |
| 6/9/2015                           | 3.82 | 4/10/2015     | 1.96 |
| 6/10/2015                          | 3.8  | 4/13/2015     | 1.94 |
| 6/11/2015                          | 3.78 | 4/14/2015     | 1.90 |
| 6/12/2015                          | 3.81 | 4/15/2015     | 1.91 |
| 6/15/2015                          | 3.82 | 4/16/2015     | 1.90 |
| 6/16/2015                          | 3.81 | 4/17/2015     | 1.87 |
| 6/17/2015                          | 3.77 | 4/20/2015     | 1.90 |
| 6/18/2015                          | 3.72 | 4/21/2015     | 1.92 |
| 6/19/2015                          | 3.76 | 4/22/2015     | 1.99 |
| 6/22/2015                          | 3.76 | 4/23/2015     | 1.96 |
| 6/23/2015                          | 3.81 | 4/24/2015     | 1.93 |
| 6/24/2015                          | 3.84 | 4/27/2015     | 1.94 |
| 6/25/2015                          | 3.87 | 4/28/2015     | 2.00 |
| 6/26/2015                          | 3.86 | 4/29/2015     | 2.06 |
| 6/29/2015                          | 3.88 | 4/30/2015     | 2.05 |
| 6/30/2015                          | 3.87 | 5/1/2015      | 2.12 |
| 7/1/2015                           | 3.85 | 5/4/2015      | 2.16 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 7/2/2015                           | 3.86 | 5/5/2015      | 2.19 |
| 7/6/2015                           | 3.85 | 5/6/2015      | 2.25 |
| 7/7/2015                           | 3.76 | 5/7/2015      | 2.18 |
| 7/8/2015                           | 3.78 | 5/8/2015      | 2.16 |
| 7/9/2015                           | 3.82 | 5/11/2015     | 2.28 |
| 7/10/2015                          | 3.8  | 5/12/2015     | 2.28 |
| 7/13/2015                          | 3.8  | 5/13/2015     | 2.27 |
| 7/14/2015                          | 3.8  | 5/14/2015     | 2.23 |
| 7/15/2015                          | 3.79 | 5/15/2015     | 2.14 |
| 7/16/2015                          | 3.73 | 5/18/2015     | 2.23 |
| 7/17/2015                          | 3.77 | 5/19/2015     | 2.27 |
| 7/20/2015                          | 3.79 | 5/20/2015     | 2.26 |
| 7/21/2015                          | 3.82 | 5/21/2015     | 2.19 |
| 7/22/2015                          | 3.8  | 5/22/2015     | 2.21 |
| 7/23/2015                          | 3.86 | 5/25/2015     | 2.21 |
| 7/24/2015                          | 3.86 | 5/26/2015     | 2.14 |
| 7/27/2015                          | 3.81 | 5/27/2015     | 2.14 |
| 7/28/2015                          | 3.79 | 5/28/2015     | 2.13 |
| 7/29/2015                          | 3.77 | 5/29/2015     | 2.12 |
| 7/30/2015                          | 3.75 | 6/1/2015      | 2.19 |
| 7/31/2015                          | 3.72 | 6/2/2015      | 2.27 |
| 8/3/2015                           | 3.7  | 6/3/2015      | 2.38 |
| 8/4/2015                           | 3.76 | 6/4/2015      | 2.31 |
| 8/5/2015                           | 3.75 | 6/5/2015      | 2.41 |
| 8/6/2015                           | 3.73 | 6/8/2015      | 2.39 |
| 8/7/2015                           | 3.69 | 6/9/2015      | 2.42 |
| 8/10/2015                          | 3.7  | 6/10/2015     | 2.50 |
| 8/11/2015                          | 3.69 | 6/11/2015     | 2.39 |
| 8/12/2015                          | 3.63 | 6/12/2015     | 2.39 |
| 8/13/2015                          | 3.63 | 6/15/2015     | 2.36 |
| 8/14/2015                          | 3.6  | 6/16/2015     | 2.32 |
| 8/17/2015                          | 3.59 | 6/17/2015     | 2.32 |
| 8/18/2015                          | 3.6  | 6/18/2015     | 2.35 |
| 8/19/2015                          | 3.58 | 6/19/2015     | 2.26 |
| 8/20/2015                          | 3.6  | 6/22/2015     | 2.37 |
| 8/21/2015                          | 3.65 | 6/23/2015     | 2.42 |
| 8/24/2015                          | 3.79 | 6/24/2015     | 2.38 |
| 8/25/2015                          | 3.91 | 6/25/2015     | 2.40 |
| 8/26/2015                          | 3.86 | 6/26/2015     | 2.49 |
| 8/27/2015                          | 3.81 | 6/29/2015     | 2.33 |
| 8/28/2015                          | 3.82 | 6/30/2015     | 2.35 |
| 8/31/2015                          | 3.89 | 7/1/2015      | 2.43 |
| 9/1/2015                           | 3.99 | 7/2/2015      | 2.40 |
| 9/2/2015                           | 3.99 | 7/3/2015      | 2.40 |
| 9/3/2015                           | 3.97 | 7/6/2015      | 2.30 |
| 9/4/2015                           | 4.03 | 7/7/2015      | 2.27 |
| 9/8/2015                           | 3.95 | 7/8/2015      | 2.22 |
| 9/9/2015                           | 4.01 | 7/9/2015      | 2.32 |
| 9/10/2015                          | 4.01 | 7/10/2015     | 2.42 |
| 9/11/2015                          | 3.98 | 7/13/2015     | 2.44 |
| 9/14/2015                          | 3.97 | 7/14/2015     | 2.41 |
| 9/15/2015                          | 3.95 | 7/15/2015     | 2.36 |
| 9/16/2015                          | 3.92 | 7/16/2015     | 2.36 |
| 9/17/2015                          | 3.87 | 7/17/2015     | 2.34 |
| 9/18/2015                          | 3.89 | 7/20/2015     | 2.38 |
| 9/21/2015                          | 3.87 | 7/21/2015     | 2.35 |
| 9/22/2015                          | 3.92 | 7/22/2015     | 2.33 |
| 9/23/2015                          | 3.91 | 7/23/2015     | 2.28 |
| 9/24/2015                          | 3.88 | 7/24/2015     | 2.27 |
| 9/25/2015                          | 3.84 | 7/27/2015     | 2.23 |
| 9/28/2015                          | 3.87 | 7/28/2015     | 2.26 |
| 9/29/2015                          | 3.86 | 7/29/2015     | 2.29 |
| 9/30/2015                          | 3.8  | 7/30/2015     | 2.28 |
| 10/1/2015                          | 3.84 | 7/31/2015     | 2.20 |
| 10/2/2015                          | 3.79 | 8/3/2015      | 2.16 |
| 10/5/2015                          | 3.74 | 8/4/2015      | 2.23 |
| 10/6/2015                          | 3.77 | 8/5/2015      | 2.28 |
| 10/7/2015                          | 3.78 | 8/6/2015      | 2.23 |
| 10/8/2015                          | 3.74 | 8/7/2015      | 2.18 |
| 10/9/2015                          | 3.75 | 8/10/2015     | 2.24 |
| 10/12/2015                         | 3.72 | 8/11/2015     | 2.15 |
| 10/13/2015                         | 3.73 | 8/12/2015     | 2.14 |
| 10/14/2015                         | 3.73 | 8/13/2015     | 2.19 |
| 10/15/2015                         | 3.68 | 8/14/2015     | 2.20 |
| 10/16/2015                         | 3.67 | 8/17/2015     | 2.16 |
| 10/19/2015                         | 3.67 | 8/18/2015     | 2.20 |
| 10/20/2015                         | 3.66 | 8/19/2015     | 2.12 |



| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 10/21/2015                         | 3.66 | 8/20/2015     | 2.09 |
| 10/22/2015                         | 3.62 | 8/21/2015     | 2.05 |
| 10/23/2015                         | 3.69 | 8/24/2015     | 2.01 |
| 10/26/2015                         | 3.7  | 8/25/2015     | 2.12 |
| 10/27/2015                         | 3.71 | 8/26/2015     | 2.18 |
| 10/28/2015                         | 3.75 | 8/27/2015     | 2.18 |
| 10/29/2015                         | 3.78 | 8/28/2015     | 2.19 |
| 10/30/2015                         | 3.76 | 8/31/2015     | 2.21 |
| 11/2/2015                          | 3.75 | 9/1/2015      | 2.17 |
| 11/3/2015                          | 3.74 | 9/2/2015      | 2.20 |
| 11/4/2015                          | 3.73 | 9/3/2015      | 2.18 |
| 11/5/2015                          | 3.76 | 9/4/2015      | 2.13 |
| 11/6/2015                          | 3.9  | 9/7/2015      | 2.13 |
| 11/9/2015                          | 3.89 | 9/8/2015      | 2.20 |
| 11/10/2015                         | 3.88 | 9/9/2015      | 2.21 |
| 11/11/2015                         | 3.84 | 9/10/2015     | 2.23 |
| 11/12/2015                         | 3.89 | 9/11/2015     | 2.20 |
| 11/13/2015                         | 3.9  | 9/14/2015     | 2.18 |
| 11/16/2015                         | 3.84 | 9/15/2015     | 2.28 |
| 11/17/2015                         | 3.91 | 9/16/2015     | 2.30 |
| 11/18/2015                         | 3.88 | 9/17/2015     | 2.21 |
| 11/19/2015                         | 3.85 | 9/18/2015     | 2.13 |
| 11/20/2015                         | 3.83 | 9/21/2015     | 2.20 |
| 11/23/2015                         | 3.87 | 9/22/2015     | 2.14 |
| 11/24/2015                         | 3.89 | 9/23/2015     | 2.16 |
| 11/25/2015                         | 3.91 | 9/24/2015     | 2.13 |
| 11/27/2015                         | 3.9  | 9/25/2015     | 2.17 |
| 11/30/2015                         | 3.89 | 9/28/2015     | 2.10 |
| 12/1/2015                          | 3.86 | 9/29/2015     | 2.05 |
| 12/2/2015                          | 3.95 | 9/30/2015     | 2.06 |
| 12/3/2015                          | 3.98 | 10/1/2015     | 2.05 |
| 12/4/2015                          | 3.92 | 10/2/2015     | 1.99 |
| 12/7/2015                          | 3.91 | 10/5/2015     | 2.07 |
| 12/8/2015                          | 3.92 | 10/6/2015     | 2.05 |
| 12/9/2015                          | 3.92 | 10/7/2015     | 2.08 |
| 12/10/2015                         | 3.99 | 10/8/2015     | 2.12 |
| 12/11/2015                         | 4    | 10/9/2015     | 2.12 |
| 12/14/2015                         | 3.98 | 10/12/2015    | 2.12 |
| 12/15/2015                         | 3.95 | 10/13/2015    | 2.06 |
| 12/16/2015                         | 3.85 | 10/14/2015    | 1.99 |
| 12/17/2015                         | 3.85 | 10/15/2015    | 2.04 |
| 12/18/2015                         | 3.9  | 10/16/2015    | 2.04 |
| 12/21/2015                         | 3.89 | 10/19/2015    | 2.04 |
| 12/22/2015                         | 3.87 | 10/20/2015    | 2.08 |
| 12/23/2015                         | 3.81 | 10/21/2015    | 2.04 |
| 12/24/2015                         | 3.81 | 10/22/2015    | 2.04 |
| 12/28/2015                         | 3.81 | 10/23/2015    | 2.09 |
| 12/29/2015                         | 3.79 | 10/26/2015    | 2.07 |
| 12/30/2015                         | 3.8  | 10/27/2015    | 2.05 |
| 12/31/2015                         | 3.84 | 10/28/2015    | 2.10 |
| 1/4/2016                           | 3.85 | 10/29/2015    | 2.19 |
| 1/5/2016                           | 3.82 | 10/30/2015    | 2.16 |
| 1/6/2016                           | 3.82 | 11/2/2015     | 2.20 |
| 1/7/2016                           | 3.85 | 11/3/2015     | 2.23 |
| 1/8/2016                           | 3.85 | 11/4/2015     | 2.25 |
| 1/11/2016                          | 3.83 | 11/5/2015     | 2.26 |
| 1/12/2016                          | 3.85 | 11/6/2015     | 2.34 |
| 1/13/2016                          | 3.85 | 11/9/2015     | 2.36 |
| 1/14/2016                          | 3.79 | 11/10/2015    | 2.32 |
| 1/15/2016                          | 3.82 | 11/11/2015    | 2.32 |
| 1/19/2016                          | 3.77 | 11/12/2015    | 2.32 |
| 1/20/2016                          | 3.86 | 11/13/2015    | 2.28 |
| 1/21/2016                          | 3.86 | 11/16/2015    | 2.27 |
| 1/22/2016                          | 3.79 | 11/17/2015    | 2.25 |
| 1/25/2016                          | 3.82 | 11/18/2015    | 2.27 |
| 1/26/2016                          | 3.8  | 11/19/2015    | 2.24 |
| 1/27/2016                          | 3.79 | 11/20/2015    | 2.26 |
| 1/28/2016                          | 3.73 | 11/23/2015    | 2.25 |
| 1/29/2016                          | 3.66 | 11/24/2015    | 2.24 |
| 2/1/2016                           | 3.62 | 11/25/2015    | 2.23 |
| 2/2/2016                           | 3.61 | 11/26/2015    | 2.23 |
| 2/3/2016                           | 3.57 | 11/27/2015    | 2.22 |
| 2/4/2016                           | 3.57 | 11/30/2015    | 2.21 |
| 2/5/2016                           | 3.56 | 12/1/2015     | 2.15 |
| 2/8/2016                           | 3.58 | 12/2/2015     | 2.18 |
| 2/9/2016                           | 3.57 | 12/3/2015     | 2.33 |
| 2/10/2016                          | 3.59 | 12/4/2015     | 2.28 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 2/11/2016                          | 3.66 | 12/7/2015     | 2.23 |
| 2/12/2016                          | 3.67 | 12/8/2015     | 2.24 |
| 2/16/2016                          | 3.65 | 12/9/2015     | 2.22 |
| 2/17/2016                          | 3.66 | 12/10/2015    | 2.24 |
| 2/18/2016                          | 3.6  | 12/11/2015    | 2.13 |
| 2/19/2016                          | 3.62 | 12/14/2015    | 2.23 |
| 2/22/2016                          | 3.58 | 12/15/2015    | 2.28 |
| 2/23/2016                          | 3.58 | 12/16/2015    | 2.30 |
| 2/24/2016                          | 3.57 | 12/17/2015    | 2.24 |
| 2/25/2016                          | 3.54 | 12/18/2015    | 2.19 |
| 2/26/2016                          | 3.64 | 12/21/2015    | 2.20 |
| 2/29/2016                          | 3.63 | 12/22/2015    | 2.24 |
| 3/1/2016                           | 3.65 | 12/23/2015    | 2.27 |
| 3/2/2016                           | 3.64 | 12/24/2015    | 2.25 |
| 3/3/2016                           | 3.62 | 12/25/2015    | 2.25 |
| 3/4/2016                           | 3.54 | 12/28/2015    | 2.24 |
| 3/7/2016                           | 3.52 | 12/29/2015    | 2.32 |
| 3/8/2016                           | 3.5  | 12/30/2015    | 2.31 |
| 3/9/2016                           | 3.48 | 12/31/2015    | 2.27 |
| 3/10/2016                          | 3.48 | 1/1/2016      | 2.27 |
| 3/11/2016                          | 3.47 | 1/4/2016      | 2.24 |
| 3/14/2016                          | 3.47 | 1/5/2016      | 2.25 |
| 3/15/2016                          | 3.46 | 1/6/2016      | 2.18 |
| 3/16/2016                          | 3.43 | 1/7/2016      | 2.16 |
| 3/17/2016                          | 3.39 | 1/8/2016      | 2.13 |
| 3/18/2016                          | 3.41 | 1/11/2016     | 2.17 |
| 3/21/2016                          | 3.42 | 1/12/2016     | 2.12 |
| 3/22/2016                          | 3.43 | 1/13/2016     | 2.08 |
| 3/23/2016                          | 3.41 | 1/14/2016     | 2.10 |
| 3/24/2016                          | 3.4  | 1/15/2016     | 2.03 |
| 3/28/2016                          | 3.41 | 1/18/2016     | 2.03 |
| 3/29/2016                          | 3.37 | 1/19/2016     | 2.06 |
| 3/30/2016                          | 3.37 | 1/20/2016     | 2.01 |
| 3/31/2016                          | 3.35 | 1/21/2016     | 2.02 |
| 4/1/2016                           | 3.34 | 1/22/2016     | 2.07 |
| 4/4/2016                           | 3.35 | 1/25/2016     | 2.03 |
| 4/5/2016                           | 3.41 | 1/26/2016     | 2.01 |
| 4/6/2016                           | 3.42 | 1/27/2016     | 2.02 |
| 4/7/2016                           | 3.42 | 1/28/2016     | 2.00 |
| 4/8/2016                           | 3.4  | 1/29/2016     | 1.94 |
| 4/11/2016                          | 3.42 | 2/1/2016      | 1.97 |
| 4/12/2016                          | 3.39 | 2/2/2016      | 1.87 |
| 4/13/2016                          | 3.42 | 2/3/2016      | 1.88 |
| 4/14/2016                          | 3.42 | 2/4/2016      | 1.87 |
| 4/15/2016                          | 3.4  | 2/5/2016      | 1.86 |
| 4/18/2016                          | 3.39 | 2/8/2016      | 1.75 |
| 4/19/2016                          | 3.38 | 2/9/2016      | 1.74 |
| 4/20/2016                          | 3.47 | 2/10/2016     | 1.71 |
| 4/21/2016                          | 3.54 | 2/11/2016     | 1.63 |
| 4/22/2016                          | 3.51 | 2/12/2016     | 1.74 |
| 4/25/2016                          | 3.5  | 2/15/2016     | 1.74 |
| 4/26/2016                          | 3.5  | 2/16/2016     | 1.78 |
| 4/27/2016                          | 3.44 | 2/17/2016     | 1.81 |
| 4/28/2016                          | 3.44 | 2/18/2016     | 1.75 |
| 4/29/2016                          | 3.42 | 2/19/2016     | 1.76 |
| 5/2/2016                           | 3.4  | 2/22/2016     | 1.77 |
| 5/3/2016                           | 3.4  | 2/23/2016     | 1.74 |
| 5/4/2016                           | 3.36 | 2/24/2016     | 1.75 |
| 5/5/2016                           | 3.38 | 2/25/2016     | 1.71 |
| 5/6/2016                           | 3.4  | 2/26/2016     | 1.76 |
| 5/9/2016                           | 3.38 | 2/29/2016     | 1.74 |
| 5/10/2016                          | 3.38 | 3/1/2016      | 1.83 |
| 5/11/2016                          | 3.39 | 3/2/2016      | 1.84 |
| 5/12/2016                          | 3.38 | 3/3/2016      | 1.83 |
| 5/13/2016                          | 3.39 | 3/4/2016      | 1.88 |
| 5/16/2016                          | 3.39 | 3/7/2016      | 1.91 |
| 5/17/2016                          | 3.45 | 3/8/2016      | 1.83 |
| 5/18/2016                          | 3.52 | 3/9/2016      | 1.90 |
| 5/19/2016                          | 3.49 | 3/10/2016     | 1.93 |
| 5/20/2016                          | 3.48 | 3/11/2016     | 1.98 |
| 5/23/2016                          | 3.51 | 3/14/2016     | 1.97 |
| 5/24/2016                          | 3.47 | 3/15/2016     | 1.97 |
| 5/25/2016                          | 3.48 | 3/16/2016     | 1.94 |
| 5/26/2016                          | 3.46 | 3/17/2016     | 1.91 |
| 5/27/2016                          | 3.45 | 3/18/2016     | 1.88 |
| 5/31/2016                          | 3.43 | 3/21/2016     | 1.92 |
| 6/1/2016                           | 3.42 | 3/22/2016     | 1.94 |

| S&P 500 Utilities (S5UTIL Index)   |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 6/2/2016                           | 3.43 | 3/23/2016     | 1.88 |
| 6/3/2016                           | 3.37 | 3/24/2016     | 1.91 |
| 6/6/2016                           | 3.38 | 3/25/2016     | 1.91 |
| 6/7/2016                           | 3.38 | 3/28/2016     | 1.89 |
| 6/8/2016                           | 3.36 | 3/29/2016     | 1.81 |
| 6/9/2016                           | 3.34 | 3/30/2016     | 1.83 |
| 6/10/2016                          | 3.34 | 3/31/2016     | 1.78 |
| 6/13/2016                          | 3.35 | 4/1/2016      | 1.79 |
| 6/14/2016                          | 3.33 | 4/4/2016      | 1.78 |
| 6/15/2016                          | 3.36 | 4/5/2016      | 1.73 |
| 6/16/2016                          | 3.34 | 4/6/2016      | 1.76 |
| 6/17/2016                          | 3.33 | 4/7/2016      | 1.70 |
| 6/20/2016                          | 3.34 | 4/8/2016      | 1.72 |
| 6/21/2016                          | 3.34 | 4/11/2016     | 1.73 |
| 6/22/2016                          | 3.35 | 4/12/2016     | 1.79 |
| 6/23/2016                          | 3.34 | 4/13/2016     | 1.77 |
| 6/24/2016                          | 3.34 | 4/14/2016     | 1.80 |
| 6/27/2016                          | 3.29 | 4/15/2016     | 1.76 |
| 6/28/2016                          | 3.29 | 4/18/2016     | 1.78 |
| 6/29/2016                          | 3.28 | 4/19/2016     | 1.79 |
| 6/30/2016                          | 3.21 | 4/20/2016     | 1.85 |
| 7/1/2016                           | 3.21 | 4/21/2016     | 1.88 |
| 7/5/2016                           | 3.19 | 4/22/2016     | 1.89 |
| 7/6/2016                           | 3.18 | 4/25/2016     | 1.91 |
| 7/7/2016                           | 3.24 | 4/26/2016     | 1.94 |
| 7/8/2016                           | 3.2  | 4/27/2016     | 1.87 |
| 7/11/2016                          | 3.21 | 4/28/2016     | 1.84 |
| 7/12/2016                          | 3.25 | 4/29/2016     | 1.83 |
| 7/13/2016                          | 3.23 | 5/2/2016      | 1.88 |
| 7/14/2016                          | 3.25 | 5/3/2016      | 1.81 |
| 7/15/2016                          | 3.24 | 5/4/2016      | 1.79 |
| 7/18/2016                          | 3.23 | 5/5/2016      | 1.76 |
| 7/19/2016                          | 3.24 | 5/6/2016      | 1.79 |
| 7/20/2016                          | 3.25 | 5/9/2016      | 1.77 |
| 7/21/2016                          | 3.23 | 5/10/2016     | 1.77 |
| 7/22/2016                          | 3.19 | 5/11/2016     | 1.73 |
| 7/25/2016                          | 3.2  | 5/12/2016     | 1.75 |
| 7/26/2016                          | 3.23 | 5/13/2016     | 1.71 |
| 7/27/2016                          | 3.26 | 5/16/2016     | 1.75 |
| 7/28/2016                          | 3.25 | 5/17/2016     | 1.76 |
| 7/29/2016                          | 3.23 | 5/18/2016     | 1.87 |
| 8/1/2016                           | 3.23 | 5/19/2016     | 1.85 |
| 8/2/2016                           | 3.25 | 5/20/2016     | 1.85 |
| 8/3/2016                           | 3.27 | 5/23/2016     | 1.84 |
| 8/4/2016                           | 3.27 | 5/24/2016     | 1.86 |
| 8/5/2016                           | 3.32 | 5/25/2016     | 1.87 |
| 8/8/2016                           | 3.32 | 5/26/2016     | 1.83 |
| 8/9/2016                           | 3.33 | 5/27/2016     | 1.85 |
| 8/10/2016                          | 3.35 | 5/30/2016     | 1.85 |
| 8/11/2016                          | 3.35 | 5/31/2016     | 1.84 |
| 8/12/2016                          | 3.34 | 6/1/2016      | 1.85 |
| 8/15/2016                          | 3.4  | 6/2/2016      | 1.81 |
| 8/16/2016                          | 3.44 | 6/3/2016      | 1.71 |
| 8/17/2016                          | 3.39 | 6/6/2016      | 1.73 |
| 8/18/2016                          | 3.35 | 6/7/2016      | 1.72 |
| 8/19/2016                          | 3.39 | 6/8/2016      | 1.71 |
| 8/22/2016                          | 3.38 | 6/9/2016      | 1.68 |
| 8/23/2016                          | 3.4  | 6/10/2016     | 1.64 |
| 8/24/2016                          | 3.4  | 6/13/2016     | 1.62 |
| 8/25/2016                          | 3.39 | 6/14/2016     | 1.62 |
| 8/26/2016                          | 3.48 | 6/15/2016     | 1.60 |
| 8/29/2016                          | 3.45 | 6/16/2016     | 1.57 |
| 8/30/2016                          | 3.48 | 6/17/2016     | 1.62 |
| 8/31/2016                          | 3.48 | 6/20/2016     | 1.67 |
| 9/1/2016                           | 3.49 | 6/21/2016     | 1.71 |
| 9/2/2016                           | 3.45 | 6/22/2016     | 1.69 |
| 9/6/2016                           | 3.41 | 6/23/2016     | 1.74 |
| 9/7/2016                           | 3.42 | 6/24/2016     | 1.57 |
| 9/8/2016                           | 3.41 | 6/27/2016     | 1.46 |
| 9/9/2016                           | 3.54 | 6/28/2016     | 1.46 |
| 9/12/2016                          | 3.48 | 6/29/2016     | 1.50 |
| 9/13/2016                          | 3.53 | 6/30/2016     | 1.49 |
| 9/14/2016                          | 3.51 | 7/1/2016      | 1.46 |
| 9/15/2016                          | 3.49 | 7/4/2016      | 1.46 |
| 9/16/2016                          | 3.46 | 7/5/2016      | 1.37 |
| 9/19/2016                          | 3.43 | 7/6/2016      | 1.38 |
| 9/20/2016                          | 3.43 | 7/7/2016      | 1.40 |

| S&P 500 Utilities (\$\$UTIL Index)<br>Dividend Yield (NET_AGGTE_DVD_YLD) |      | 10y US T-Note<br>YIELD |      |
|--------------------------------------------------------------------------|------|------------------------|------|
| 9/21/2016                                                                | 3.36 | 7/8/2016               | 1.37 |
| 9/22/2016                                                                | 3.34 | 7/11/2016              | 1.43 |
| 9/23/2016                                                                | 3.35 | 7/12/2016              | 1.53 |
| 9/26/2016                                                                | 3.36 | 7/13/2016              | 1.48 |
| 9/27/2016                                                                | 3.4  | 7/14/2016              | 1.53 |
| 9/28/2016                                                                | 3.42 | 7/15/2016              | 1.60 |
| 9/29/2016                                                                | 3.47 | 7/18/2016              | 1.59 |
| 9/30/2016                                                                | 3.49 | 7/19/2016              | 1.56 |
| 10/3/2016                                                                | 3.54 | 7/20/2016              | 1.59 |
| 10/4/2016                                                                | 3.62 | 7/21/2016              | 1.57 |
| 10/5/2016                                                                | 3.63 | 7/22/2016              | 1.57 |
| 10/6/2016                                                                | 3.63 | 7/25/2016              | 1.58 |
| 10/7/2016                                                                | 3.63 | 7/26/2016              | 1.57 |
| 10/10/2016                                                               | 3.6  | 7/27/2016              | 1.52 |
| 10/11/2016                                                               | 3.64 | 7/28/2016              | 1.52 |
| 10/12/2016                                                               | 3.61 | 7/29/2016              | 1.46 |
| 10/13/2016                                                               | 3.56 | 8/1/2016               | 1.51 |
| 10/14/2016                                                               | 3.58 | 8/2/2016               | 1.55 |
| 10/17/2016                                                               | 3.56 | 8/3/2016               | 1.55 |
| 10/18/2016                                                               | 3.53 | 8/4/2016               | 1.51 |
| 10/19/2016                                                               | 3.54 | 8/5/2016               | 1.59 |
| 10/20/2016                                                               | 3.54 | 8/8/2016               | 1.59 |
| 10/21/2016                                                               | 3.56 | 8/9/2016               | 1.55 |
| 10/24/2016                                                               | 3.55 | 8/10/2016              | 1.50 |
| 10/25/2016                                                               | 3.53 | 8/11/2016              | 1.57 |
| 10/26/2016                                                               | 3.52 | 8/12/2016              | 1.51 |
| 10/27/2016                                                               | 3.54 | 8/15/2016              | 1.55 |
| 10/28/2016                                                               | 3.53 | 8/16/2016              | 1.57 |
| 10/31/2016                                                               | 3.46 | 8/17/2016              | 1.56 |
| 11/1/2016                                                                | 3.52 | 8/18/2016              | 1.53 |
| 11/2/2016                                                                | 3.57 | 8/19/2016              | 1.58 |
| 11/3/2016                                                                | 3.56 | 8/22/2016              | 1.55 |
| 11/4/2016                                                                | 3.57 | 8/23/2016              | 1.55 |
| 11/7/2016                                                                | 3.51 | 8/24/2016              | 1.56 |
| 11/8/2016                                                                | 3.49 | 8/25/2016              | 1.58 |
| 11/9/2016                                                                | 3.62 | 8/26/2016              | 1.62 |
| 11/10/2016                                                               | 3.71 | 8/29/2016              | 1.57 |
| 11/11/2016                                                               | 3.73 | 8/30/2016              | 1.57 |
| 11/14/2016                                                               | 3.74 | 8/31/2016              | 1.58 |
| 11/15/2016                                                               | 3.68 | 9/1/2016               | 1.57 |
| 11/16/2016                                                               | 3.71 | 9/2/2016               | 1.60 |
| 11/17/2016                                                               | 3.72 | 9/5/2016               | 1.60 |
| 11/18/2016                                                               | 3.73 | 9/6/2016               | 1.55 |
| 11/21/2016                                                               | 3.69 | 9/7/2016               | 1.54 |
| 11/22/2016                                                               | 3.69 | 9/8/2016               | 1.61 |
| 11/23/2016                                                               | 3.72 | 9/9/2016               | 1.67 |
| 11/25/2016                                                               | 3.67 | 9/12/2016              | 1.68 |
| 11/28/2016                                                               | 3.6  | 9/13/2016              | 1.73 |
| 11/29/2016                                                               | 3.59 | 9/14/2016              | 1.70 |
| 11/30/2016                                                               | 3.71 | 9/15/2016              | 1.71 |
| 12/1/2016                                                                | 3.74 | 9/16/2016              | 1.70 |
| 12/2/2016                                                                | 3.71 | 9/19/2016              | 1.70 |
| 12/5/2016                                                                | 3.7  | 9/20/2016              | 1.69 |
| 12/6/2016                                                                | 3.71 | 9/21/2016              | 1.66 |
| 12/7/2016                                                                | 3.67 | 9/22/2016              | 1.63 |
| 12/8/2016                                                                | 3.66 | 9/23/2016              | 1.62 |
| 12/9/2016                                                                | 3.62 | 9/26/2016              | 1.59 |
| 12/12/2016                                                               | 3.59 | 9/27/2016              | 1.56 |
| 12/13/2016                                                               | 3.55 | 9/28/2016              | 1.57 |
| 12/14/2016                                                               | 3.62 | 9/29/2016              | 1.56 |
| 12/15/2016                                                               | 3.61 | 9/30/2016              | 1.60 |
| 12/16/2016                                                               | 3.56 | 10/3/2016              | 1.63 |
| 12/19/2016                                                               | 3.55 | 10/4/2016              | 1.69 |
| 12/20/2016                                                               | 3.54 | 10/5/2016              | 1.72 |
| 12/21/2016                                                               | 3.56 | 10/6/2016              | 1.75 |
| 12/22/2016                                                               | 3.55 | 10/7/2016              | 1.73 |
| 12/23/2016                                                               | 3.55 | 10/10/2016             | 1.73 |
| 12/27/2016                                                               | 3.55 | 10/11/2016             | 1.77 |
| 12/28/2016                                                               | 3.59 | 10/12/2016             | 1.79 |
| 12/29/2016                                                               | 3.55 | 10/13/2016             | 1.75 |
| 12/30/2016                                                               | 3.56 | 10/14/2016             | 1.80 |
| 1/3/2017                                                                 | 3.57 | 10/17/2016             | 1.77 |
| 1/4/2017                                                                 | 3.56 | 10/18/2016             | 1.75 |
| 1/5/2017                                                                 | 3.56 | 10/19/2016             | 1.76 |
| 1/6/2017                                                                 | 3.55 | 10/20/2016             | 1.76 |
| 1/9/2017                                                                 | 3.59 | 10/21/2016             | 1.74 |
| 1/10/2017                                                                | 3.6  | 10/24/2016             | 1.77 |

| S&P 500 Utilities (\$\$UTIL Index)<br>Dividend Yield (NET_AGGTE_DVD_YLD) |      | 10y US T-Note<br>YIELD |      |
|--------------------------------------------------------------------------|------|------------------------|------|
| 1/11/2017                                                                | 3.57 | 10/25/2016             | 1.77 |
| 1/12/2017                                                                | 3.56 | 10/26/2016             | 1.79 |
| 1/13/2017                                                                | 3.57 | 10/27/2016             | 1.85 |
| 1/17/2017                                                                | 3.53 | 10/28/2016             | 1.86 |
| 1/18/2017                                                                | 3.53 | 10/31/2016             | 1.84 |
| 1/19/2017                                                                | 3.57 | 11/1/2016              | 1.83 |
| 1/20/2017                                                                | 3.56 | 11/2/2016              | 1.81 |
| 1/23/2017                                                                | 3.58 | 11/3/2016              | 1.82 |
| 1/24/2017                                                                | 3.58 | 11/4/2016              | 1.79 |
| 1/25/2017                                                                | 3.58 | 11/7/2016              | 1.83 |
| 1/26/2017                                                                | 3.58 | 11/8/2016              | 1.88 |
| 1/27/2017                                                                | 3.58 | 11/9/2016              | 2.07 |
| 1/30/2017                                                                | 3.57 | 11/10/2016             | 2.15 |
| 1/31/2017                                                                | 3.52 | 11/11/2016             | 2.15 |
| 2/1/2017                                                                 | 3.58 | 11/14/2016             | 2.23 |
| 2/2/2017                                                                 | 3.55 | 11/15/2016             | 2.23 |
| 2/3/2017                                                                 | 3.54 | 11/16/2016             | 2.22 |
| 2/6/2017                                                                 | 3.55 | 11/17/2016             | 2.29 |
| 2/7/2017                                                                 | 3.54 | 11/18/2016             | 2.34 |
| 2/8/2017                                                                 | 3.51 | 11/21/2016             | 2.33 |
| 2/9/2017                                                                 | 3.54 | 11/22/2016             | 2.31 |
| 2/10/2017                                                                | 3.52 | 11/23/2016             | 2.36 |
| 2/13/2017                                                                | 3.51 | 11/24/2016             | 2.36 |
| 2/14/2017                                                                | 3.54 | 11/25/2016             | 2.36 |
| 2/15/2017                                                                | 3.55 | 11/28/2016             | 2.32 |
| 2/16/2017                                                                | 3.52 | 11/29/2016             | 2.30 |
| 2/17/2017                                                                | 3.52 | 11/30/2016             | 2.37 |
| 2/21/2017                                                                | 3.48 | 12/1/2016              | 2.45 |
| 2/22/2017                                                                | 3.47 | 12/2/2016              | 2.40 |
| 2/23/2017                                                                | 3.43 | 12/5/2016              | 2.39 |
| 2/24/2017                                                                | 3.4  | 12/6/2016              | 2.39 |
| 2/27/2017                                                                | 3.41 | 12/7/2016              | 2.34 |
| 2/28/2017                                                                | 3.38 | 12/8/2016              | 2.40 |
| 3/1/2017                                                                 | 3.42 | 12/9/2016              | 2.47 |
| 3/2/2017                                                                 | 3.4  | 12/12/2016             | 2.49 |
| 3/3/2017                                                                 | 3.41 | 12/13/2016             | 2.48 |
| 3/6/2017                                                                 | 3.42 | 12/14/2016             | 2.54 |
| 3/7/2017                                                                 | 3.42 | 12/15/2016             | 2.60 |
| 3/8/2017                                                                 | 3.47 | 12/16/2016             | 2.60 |
| 3/9/2017                                                                 | 3.48 | 12/19/2016             | 2.54 |
| 3/10/2017                                                                | 3.46 | 12/20/2016             | 2.57 |
| 3/13/2017                                                                | 3.45 | 12/21/2016             | 2.55 |
| 3/14/2017                                                                | 3.45 | 12/22/2016             | 2.55 |
| 3/15/2017                                                                | 3.4  | 12/23/2016             | 2.55 |
| 3/16/2017                                                                | 3.44 | 12/26/2016             | 2.55 |
| 3/17/2017                                                                | 3.42 | 12/27/2016             | 2.57 |
| 3/20/2017                                                                | 3.44 | 12/28/2016             | 2.51 |
| 3/21/2017                                                                | 3.4  | 12/29/2016             | 2.49 |
| 3/22/2017                                                                | 3.38 | 12/30/2016             | 2.45 |
| 3/23/2017                                                                | 3.39 | 1/2/2017               | 2.45 |
| 3/24/2017                                                                | 3.38 | 1/3/2017               | 2.45 |
| 3/27/2017                                                                | 3.39 | 1/4/2017               | 2.46 |
| 3/28/2017                                                                | 3.39 | 1/5/2017               | 2.37 |
| 3/29/2017                                                                | 3.41 | 1/6/2017               | 2.42 |
| 3/30/2017                                                                | 3.44 | 1/9/2017               | 2.38 |
| 3/31/2017                                                                | 3.43 | 1/10/2017              | 2.38 |
| 4/3/2017                                                                 | 3.43 | 1/11/2017              | 2.38 |
| 4/4/2017                                                                 | 3.42 | 1/12/2017              | 2.36 |
| 4/5/2017                                                                 | 3.4  | 1/13/2017              | 2.40 |
| 4/6/2017                                                                 | 3.4  | 1/16/2017              | 2.40 |
| 4/7/2017                                                                 | 3.42 | 1/17/2017              | 2.33 |
| 4/10/2017                                                                | 3.41 | 1/18/2017              | 2.42 |
| 4/11/2017                                                                | 3.41 | 1/19/2017              | 2.47 |
| 4/12/2017                                                                | 3.39 | 1/20/2017              | 2.48 |
| 4/13/2017                                                                | 3.4  | 1/23/2017              | 2.41 |
| 4/17/2017                                                                | 3.39 | 1/24/2017              | 2.47 |
| 4/18/2017                                                                | 3.38 | 1/25/2017              | 2.53 |
| 4/19/2017                                                                | 3.4  | 1/26/2017              | 2.51 |
| 4/20/2017                                                                | 3.42 | 1/27/2017              | 2.49 |
| 4/21/2017                                                                | 3.4  | 1/30/2017              | 2.49 |
| 4/24/2017                                                                | 3.38 | 1/31/2017              | 2.45 |
| 4/25/2017                                                                | 3.38 | 2/1/2017               | 2.48 |
| 4/26/2017                                                                | 3.4  | 2/2/2017               | 2.48 |
| 4/27/2017                                                                | 3.39 | 2/3/2017               | 2.49 |
| 4/28/2017                                                                | 3.41 | 2/6/2017               | 2.42 |
| 5/1/2017                                                                 | 3.43 | 2/7/2017               | 2.40 |
| 5/2/2017                                                                 | 3.42 | 2/8/2017               | 2.34 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 5/3/2017                           | 3.44 | 2/9/2017      | 2.40 |
| 5/4/2017                           | 3.42 | 2/10/2017     | 2.41 |
| 5/5/2017                           | 3.41 | 2/13/2017     | 2.43 |
| 5/8/2017                           | 3.41 | 2/14/2017     | 2.47 |
| 5/9/2017                           | 3.44 | 2/15/2017     | 2.51 |
| 5/10/2017                          | 3.44 | 2/16/2017     | 2.45 |
| 5/11/2017                          | 3.44 | 2/17/2017     | 2.42 |
| 5/12/2017                          | 3.42 | 2/20/2017     | 2.42 |
| 5/15/2017                          | 3.41 | 2/21/2017     | 2.43 |
| 5/16/2017                          | 3.44 | 2/22/2017     | 2.42 |
| 5/17/2017                          | 3.43 | 2/23/2017     | 2.38 |
| 5/18/2017                          | 3.42 | 2/24/2017     | 2.31 |
| 5/19/2017                          | 3.41 | 2/27/2017     | 2.36 |
| 5/22/2017                          | 3.38 | 2/28/2017     | 2.36 |
| 5/23/2017                          | 3.37 | 3/1/2017      | 2.46 |
| 5/24/2017                          | 3.35 | 3/2/2017      | 2.49 |
| 5/25/2017                          | 3.33 | 3/3/2017      | 2.49 |
| 5/26/2017                          | 3.34 | 3/6/2017      | 2.49 |
| 5/30/2017                          | 3.33 | 3/7/2017      | 2.52 |
| 5/31/2017                          | 3.32 | 3/8/2017      | 2.57 |
| 6/1/2017                           | 3.29 | 3/9/2017      | 2.60 |
| 6/2/2017                           | 3.29 | 3/10/2017     | 2.58 |
| 6/5/2017                           | 3.3  | 3/13/2017     | 2.62 |
| 6/6/2017                           | 3.31 | 3/14/2017     | 2.60 |
| 6/7/2017                           | 3.3  | 3/15/2017     | 2.51 |
| 6/8/2017                           | 3.33 | 3/16/2017     | 2.53 |
| 6/9/2017                           | 3.33 | 3/17/2017     | 2.50 |
| 6/12/2017                          | 3.34 | 3/20/2017     | 2.47 |
| 6/13/2017                          | 3.34 | 3/21/2017     | 2.43 |
| 6/14/2017                          | 3.32 | 3/22/2017     | 2.40 |
| 6/15/2017                          | 3.3  | 3/23/2017     | 2.41 |
| 6/16/2017                          | 3.28 | 3/24/2017     | 2.40 |
| 6/19/2017                          | 3.3  | 3/27/2017     | 2.38 |
| 6/20/2017                          | 3.3  | 3/28/2017     | 2.42 |
| 6/21/2017                          | 3.32 | 3/29/2017     | 2.39 |
| 6/22/2017                          | 3.33 | 3/30/2017     | 2.42 |
| 6/23/2017                          | 3.34 | 3/31/2017     | 2.40 |
| 6/26/2017                          | 3.32 | 4/3/2017      | 2.35 |
| 6/27/2017                          | 3.36 | 4/4/2017      | 2.36 |
| 6/28/2017                          | 3.4  | 4/5/2017      | 2.34 |
| 6/29/2017                          | 3.43 | 4/6/2017      | 2.34 |
| 6/30/2017                          | 3.43 | 4/7/2017      | 2.38 |
| 7/3/2017                           | 3.45 | 4/10/2017     | 2.37 |
| 7/5/2017                           | 3.46 | 4/11/2017     | 2.32 |
| 7/6/2017                           | 3.47 | 4/12/2017     | 2.28 |
| 7/7/2017                           | 3.46 | 4/13/2017     | 2.24 |
| 7/10/2017                          | 3.47 | 4/14/2017     | 2.24 |
| 7/11/2017                          | 3.47 | 4/17/2017     | 2.26 |
| 7/12/2017                          | 3.44 | 4/18/2017     | 2.18 |
| 7/13/2017                          | 3.45 | 4/19/2017     | 2.21 |
| 7/14/2017                          | 3.44 | 4/20/2017     | 2.24 |
| 7/17/2017                          | 3.42 | 4/21/2017     | 2.24 |
| 7/18/2017                          | 3.41 | 4/24/2017     | 2.28 |
| 7/19/2017                          | 3.4  | 4/25/2017     | 2.35 |
| 7/20/2017                          | 3.37 | 4/26/2017     | 2.32 |
| 7/21/2017                          | 3.35 | 4/27/2017     | 2.30 |
| 7/24/2017                          | 3.38 | 4/28/2017     | 2.29 |
| 7/25/2017                          | 3.4  | 5/1/2017      | 2.33 |
| 7/26/2017                          | 3.37 | 5/2/2017      | 2.29 |
| 7/27/2017                          | 3.36 | 5/3/2017      | 2.33 |
| 7/28/2017                          | 3.37 | 5/4/2017      | 2.36 |
| 7/31/2017                          | 3.35 | 5/5/2017      | 2.36 |
| 8/1/2017                           | 3.34 | 5/8/2017      | 2.39 |
| 8/2/2017                           | 3.32 | 5/9/2017      | 2.42 |
| 8/3/2017                           | 3.31 | 5/10/2017     | 2.41 |
| 8/4/2017                           | 3.32 | 5/11/2017     | 2.39 |
| 8/7/2017                           | 3.31 | 5/12/2017     | 2.33 |
| 8/8/2017                           | 3.31 | 5/15/2017     | 2.34 |
| 8/9/2017                           | 3.32 | 5/16/2017     | 2.33 |
| 8/10/2017                          | 3.32 | 5/17/2017     | 2.22 |
| 8/11/2017                          | 3.34 | 5/18/2017     | 2.23 |
| 8/14/2017                          | 3.32 | 5/19/2017     | 2.23 |
| 8/15/2017                          | 3.3  | 5/22/2017     | 2.25 |
| 8/16/2017                          | 3.3  | 5/23/2017     | 2.29 |
| 8/17/2017                          | 3.33 | 5/24/2017     | 2.26 |
| 8/18/2017                          | 3.3  | 5/25/2017     | 2.25 |
| 8/21/2017                          | 3.29 | 5/26/2017     | 2.25 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 8/22/2017                          | 3.29 | 5/29/2017     | 2.25 |
| 8/23/2017                          | 3.29 | 5/30/2017     | 2.21 |
| 8/24/2017                          | 3.29 | 5/31/2017     | 2.21 |
| 8/25/2017                          | 3.28 | 6/1/2017      | 2.21 |
| 8/28/2017                          | 3.27 | 6/2/2017      | 2.15 |
| 8/29/2017                          | 3.28 | 6/5/2017      | 2.18 |
| 8/30/2017                          | 3.3  | 6/6/2017      | 2.14 |
| 8/31/2017                          | 3.3  | 6/7/2017      | 2.18 |
| 9/1/2017                           | 3.31 | 6/8/2017      | 2.19 |
| 9/5/2017                           | 3.3  | 6/9/2017      | 2.21 |
| 9/6/2017                           | 3.31 | 6/12/2017     | 2.21 |
| 9/7/2017                           | 3.29 | 6/13/2017     | 2.21 |
| 9/8/2017                           | 3.28 | 6/14/2017     | 2.15 |
| 9/11/2017                          | 3.25 | 6/15/2017     | 2.16 |
| 9/12/2017                          | 3.31 | 6/16/2017     | 2.16 |
| 9/13/2017                          | 3.32 | 6/19/2017     | 2.19 |
| 9/14/2017                          | 3.3  | 6/20/2017     | 2.16 |
| 9/15/2017                          | 3.3  | 6/21/2017     | 2.16 |
| 9/18/2017                          | 3.33 | 6/22/2017     | 2.15 |
| 9/19/2017                          | 3.34 | 6/23/2017     | 2.15 |
| 9/20/2017                          | 3.36 | 6/26/2017     | 2.14 |
| 9/21/2017                          | 3.37 | 6/27/2017     | 2.21 |
| 9/22/2017                          | 3.39 | 6/28/2017     | 2.22 |
| 9/25/2017                          | 3.37 | 6/29/2017     | 2.27 |
| 9/26/2017                          | 3.37 | 6/30/2017     | 2.31 |
| 9/27/2017                          | 3.42 | 7/3/2017      | 2.35 |
| 9/28/2017                          | 3.41 | 7/4/2017      | 2.35 |
| 9/29/2017                          | 3.42 | 7/5/2017      | 2.33 |
| 10/2/2017                          | 3.41 | 7/6/2017      | 2.37 |
| 10/3/2017                          | 3.42 | 7/7/2017      | 2.39 |
| 10/4/2017                          | 3.39 | 7/10/2017     | 2.38 |
| 10/5/2017                          | 3.39 | 7/11/2017     | 2.37 |
| 10/6/2017                          | 3.39 | 7/12/2017     | 2.33 |
| 10/9/2017                          | 3.39 | 7/13/2017     | 2.35 |
| 10/10/2017                         | 3.36 | 7/14/2017     | 2.33 |
| 10/11/2017                         | 3.34 | 7/17/2017     | 2.31 |
| 10/12/2017                         | 3.32 | 7/18/2017     | 2.27 |
| 10/13/2017                         | 3.35 | 7/19/2017     | 2.27 |
| 10/16/2017                         | 3.35 | 7/20/2017     | 2.27 |
| 10/17/2017                         | 3.33 | 7/21/2017     | 2.24 |
| 10/18/2017                         | 3.34 | 7/24/2017     | 2.26 |
| 10/19/2017                         | 3.31 | 7/25/2017     | 2.33 |
| 10/20/2017                         | 3.3  | 7/26/2017     | 2.29 |
| 10/23/2017                         | 3.3  | 7/27/2017     | 2.32 |
| 10/24/2017                         | 3.3  | 7/28/2017     | 2.30 |
| 10/25/2017                         | 3.31 | 7/31/2017     | 2.30 |
| 10/26/2017                         | 3.31 | 8/1/2017      | 2.26 |
| 10/27/2017                         | 3.29 | 8/2/2017      | 2.27 |
| 10/30/2017                         | 3.29 | 8/3/2017      | 2.24 |
| 10/31/2017                         | 3.29 | 8/4/2017      | 2.27 |
| 11/1/2017                          | 3.31 | 8/7/2017      | 2.26 |
| 11/2/2017                          | 3.3  | 8/8/2017      | 2.29 |
| 11/3/2017                          | 3.29 | 8/9/2017      | 2.24 |
| 11/6/2017                          | 3.3  | 8/10/2017     | 2.20 |
| 11/7/2017                          | 3.26 | 8/11/2017     | 2.19 |
| 11/8/2017                          | 3.26 | 8/14/2017     | 2.22 |
| 11/9/2017                          | 3.26 | 8/15/2017     | 2.27 |
| 11/10/2017                         | 3.28 | 8/16/2017     | 2.23 |
| 11/13/2017                         | 3.24 | 8/17/2017     | 2.19 |
| 11/14/2017                         | 3.2  | 8/18/2017     | 2.19 |
| 11/15/2017                         | 3.23 | 8/21/2017     | 2.18 |
| 11/16/2017                         | 3.25 | 8/22/2017     | 2.22 |
| 11/17/2017                         | 3.28 | 8/23/2017     | 2.17 |
| 11/20/2017                         | 3.29 | 8/24/2017     | 2.19 |
| 11/21/2017                         | 3.28 | 8/25/2017     | 2.17 |
| 11/22/2017                         | 3.29 | 8/28/2017     | 2.16 |
| 11/24/2017                         | 3.28 | 8/29/2017     | 2.13 |
| 11/27/2017                         | 3.27 | 8/30/2017     | 2.15 |
| 11/28/2017                         | 3.26 | 8/31/2017     | 2.12 |
| 11/29/2017                         | 3.25 | 9/1/2017      | 2.16 |
| 11/30/2017                         | 3.25 | 9/4/2017      | 2.16 |
| 12/1/2017                          | 3.26 | 9/5/2017      | 2.07 |
| 12/4/2017                          | 3.28 | 9/6/2017      | 2.10 |
| 12/5/2017                          | 3.32 | 9/7/2017      | 2.05 |
| 12/6/2017                          | 3.31 | 9/8/2017      | 2.06 |
| 12/7/2017                          | 3.31 | 9/11/2017     | 2.14 |
| 12/8/2017                          | 3.3  | 9/12/2017     | 2.17 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 12/11/2017                         | 3.28 | 9/13/2017     | 2.20 |
| 12/12/2017                         | 3.34 | 9/14/2017     | 2.20 |
| 12/13/2017                         | 3.33 | 9/15/2017     | 2.20 |
| 12/14/2017                         | 3.33 | 9/18/2017     | 2.23 |
| 12/15/2017                         | 3.32 | 9/19/2017     | 2.24 |
| 12/18/2017                         | 3.36 | 9/20/2017     | 2.28 |
| 12/19/2017                         | 3.42 | 9/21/2017     | 2.27 |
| 12/20/2017                         | 3.45 | 9/22/2017     | 2.26 |
| 12/21/2017                         | 3.49 | 9/25/2017     | 2.22 |
| 12/22/2017                         | 3.49 | 9/26/2017     | 2.24 |
| 12/26/2017                         | 3.51 | 9/27/2017     | 2.31 |
| 12/27/2017                         | 3.5  | 9/28/2017     | 2.31 |
| 12/28/2017                         | 3.45 | 9/29/2017     | 2.33 |
| 12/29/2017                         | 3.45 | 10/2/2017     | 2.34 |
| 1/2/2018                           | 3.48 | 10/3/2017     | 2.33 |
| 1/3/2018                           | 3.5  | 10/4/2017     | 2.33 |
| 1/4/2018                           | 3.54 | 10/5/2017     | 2.35 |
| 1/5/2018                           | 3.54 | 10/6/2017     | 2.37 |
| 1/8/2018                           | 3.5  | 10/9/2017     | 2.37 |
| 1/9/2018                           | 3.54 | 10/10/2017    | 2.35 |
| 1/10/2018                          | 3.58 | 10/11/2017    | 2.35 |
| 1/11/2018                          | 3.59 | 10/12/2017    | 2.33 |
| 1/12/2018                          | 3.61 | 10/13/2017    | 2.28 |
| 1/16/2018                          | 3.62 | 10/16/2017    | 2.30 |
| 1/17/2018                          | 3.6  | 10/17/2017    | 2.30 |
| 1/18/2018                          | 3.62 | 10/18/2017    | 2.34 |
| 1/19/2018                          | 3.63 | 10/19/2017    | 2.33 |
| 1/22/2018                          | 3.63 | 10/20/2017    | 2.39 |
| 1/23/2018                          | 3.59 | 10/23/2017    | 2.38 |
| 1/24/2018                          | 3.61 | 10/24/2017    | 2.42 |
| 1/25/2018                          | 3.56 | 10/25/2017    | 2.44 |
| 1/26/2018                          | 3.56 | 10/26/2017    | 2.46 |
| 1/29/2018                          | 3.6  | 10/27/2017    | 2.42 |
| 1/30/2018                          | 3.6  | 10/30/2017    | 2.37 |
| 1/31/2018                          | 3.56 | 10/31/2017    | 2.38 |
| 2/1/2018                           | 3.62 | 11/1/2017     | 2.37 |
| 2/2/2018                           | 3.64 | 11/2/2017     | 2.35 |
| 2/5/2018                           | 3.71 | 11/3/2017     | 2.34 |
| 2/6/2018                           | 3.76 | 11/6/2017     | 2.32 |
| 2/7/2018                           | 3.78 | 11/7/2017     | 2.32 |
| 2/8/2018                           | 3.83 | 11/8/2017     | 2.32 |
| 2/9/2018                           | 3.75 | 11/9/2017     | 2.33 |
| 2/12/2018                          | 3.72 | 11/10/2017    | 2.40 |
| 2/13/2018                          | 3.71 | 11/13/2017    | 2.40 |
| 2/14/2018                          | 3.76 | 11/14/2017    | 2.38 |
| 2/15/2018                          | 3.69 | 11/15/2017    | 2.33 |
| 2/16/2018                          | 3.66 | 11/16/2017    | 2.37 |
| 2/20/2018                          | 3.71 | 11/17/2017    | 2.35 |
| 2/21/2018                          | 3.76 | 11/20/2017    | 2.37 |
| 2/22/2018                          | 3.74 | 11/21/2017    | 2.36 |
| 2/23/2018                          | 3.64 | 11/22/2017    | 2.32 |
| 2/26/2018                          | 3.67 | 11/23/2017    | 2.32 |
| 2/27/2018                          | 3.73 | 11/24/2017    | 2.34 |
| 2/28/2018                          | 3.75 | 11/27/2017    | 2.32 |
| 3/1/2018                           | 3.76 | 11/28/2017    | 2.34 |
| 3/2/2018                           | 3.77 | 11/29/2017    | 2.37 |
| 3/5/2018                           | 3.7  | 11/30/2017    | 2.42 |
| 3/6/2018                           | 3.75 | 12/1/2017     | 2.37 |
| 3/7/2018                           | 3.78 | 12/4/2017     | 2.37 |
| 3/8/2018                           | 3.76 | 12/5/2017     | 2.36 |
| 3/9/2018                           | 3.75 | 12/6/2017     | 2.33 |
| 3/12/2018                          | 3.73 | 12/7/2017     | 2.37 |
| 3/13/2018                          | 3.73 | 12/8/2017     | 2.38 |
| 3/14/2018                          | 3.69 | 12/11/2017    | 2.39 |
| 3/15/2018                          | 3.69 | 12/12/2017    | 2.40 |
| 3/16/2018                          | 3.66 | 12/13/2017    | 2.36 |
| 3/19/2018                          | 3.69 | 12/14/2017    | 2.35 |
| 3/20/2018                          | 3.7  | 12/15/2017    | 2.35 |
| 3/21/2018                          | 3.72 | 12/18/2017    | 2.39 |
| 3/22/2018                          | 3.71 | 12/19/2017    | 2.46 |
| 3/23/2018                          | 3.76 | 12/20/2017    | 2.49 |
| 3/26/2018                          | 3.72 | 12/21/2017    | 2.48 |
| 3/27/2018                          | 3.67 | 12/22/2017    | 2.48 |
| 3/28/2018                          | 3.67 | 12/25/2017    | 2.48 |
| 3/29/2018                          | 3.65 | 12/26/2017    | 2.47 |
| 4/2/2018                           | 3.68 | 12/27/2017    | 2.42 |
| 4/3/2018                           | 3.67 | 12/28/2017    | 2.43 |



| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 4/4/2018                           | 3.66 | 12/29/2017    | 2.40 |
| 4/5/2018                           | 3.63 | 1/1/2018      | 2.40 |
| 4/6/2018                           | 3.66 | 1/2/2018      | 2.46 |
| 4/9/2018                           | 3.65 | 1/3/2018      | 2.44 |
| 4/10/2018                          | 3.68 | 1/4/2018      | 2.46 |
| 4/11/2018                          | 3.69 | 1/5/2018      | 2.47 |
| 4/12/2018                          | 3.73 | 1/8/2018      | 2.49 |
| 4/13/2018                          | 3.71 | 1/9/2018      | 2.55 |
| 4/16/2018                          | 3.66 | 1/10/2018     | 2.55 |
| 4/17/2018                          | 3.62 | 1/11/2018     | 2.54 |
| 4/18/2018                          | 3.63 | 1/12/2018     | 2.55 |
| 4/19/2018                          | 3.64 | 1/15/2018     | 2.55 |
| 4/20/2018                          | 3.67 | 1/16/2018     | 2.54 |
| 4/23/2018                          | 3.67 | 1/17/2018     | 2.57 |
| 4/24/2018                          | 3.64 | 1/18/2018     | 2.62 |
| 4/25/2018                          | 3.64 | 1/19/2018     | 2.64 |
| 4/26/2018                          | 3.6  | 1/22/2018     | 2.66 |
| 4/27/2018                          | 3.57 | 1/23/2018     | 2.63 |
| 4/30/2018                          | 3.58 | 1/24/2018     | 2.65 |
| 5/1/2018                           | 3.55 | 1/25/2018     | 2.63 |
| 5/2/2018                           | 3.56 | 1/26/2018     | 2.66 |
| 5/3/2018                           | 3.56 | 1/29/2018     | 2.70 |
| 5/4/2018                           | 3.55 | 1/30/2018     | 2.73 |
| 5/7/2018                           | 3.57 | 1/31/2018     | 2.72 |
| 5/8/2018                           | 3.66 | 2/1/2018      | 2.78 |
| 5/9/2018                           | 3.69 | 2/2/2018      | 2.84 |
| 5/10/2018                          | 3.64 | 2/5/2018      | 2.77 |
| 5/11/2018                          | 3.64 | 2/6/2018      | 2.79 |
| 5/14/2018                          | 3.66 | 2/7/2018      | 2.84 |
| 5/15/2018                          | 3.69 | 2/8/2018      | 2.85 |
| 5/16/2018                          | 3.72 | 2/9/2018      | 2.83 |
| 5/17/2018                          | 3.76 | 2/12/2018     | 2.86 |
| 5/18/2018                          | 3.77 | 2/13/2018     | 2.83 |
| 5/21/2018                          | 3.75 | 2/14/2018     | 2.91 |
| 5/22/2018                          | 3.73 | 2/15/2018     | 2.90 |
| 5/23/2018                          | 3.7  | 2/16/2018     | 2.87 |
| 5/24/2018                          | 3.67 | 2/19/2018     | 2.87 |
| 5/25/2018                          | 3.66 | 2/20/2018     | 2.88 |
| 5/29/2018                          | 3.66 | 2/21/2018     | 2.94 |
| 5/30/2018                          | 3.63 | 2/22/2018     | 2.92 |
| 5/31/2018                          | 3.63 | 2/23/2018     | 2.88 |
| 6/1/2018                           | 3.69 | 2/26/2018     | 2.86 |
| 6/4/2018                           | 3.73 | 2/27/2018     | 2.90 |
| 6/5/2018                           | 3.74 | 2/28/2018     | 2.87 |
| 6/6/2018                           | 3.82 | 3/1/2018      | 2.81 |
| 6/7/2018                           | 3.81 | 3/2/2018      | 2.86 |
| 6/8/2018                           | 3.81 | 3/5/2018      | 2.88 |
| 6/11/2018                          | 3.82 | 3/6/2018      | 2.88 |
| 6/12/2018                          | 3.77 | 3/7/2018      | 2.89 |
| 6/13/2018                          | 3.78 | 3/8/2018      | 2.86 |
| 6/14/2018                          | 3.74 | 3/9/2018      | 2.90 |
| 6/15/2018                          | 3.72 | 3/12/2018     | 2.87 |
| 6/18/2018                          | 3.7  | 3/13/2018     | 2.84 |
| 6/19/2018                          | 3.66 | 3/14/2018     | 2.81 |
| 6/20/2018                          | 3.66 | 3/15/2018     | 2.82 |
| 6/21/2018                          | 3.65 | 3/16/2018     | 2.85 |
| 6/22/2018                          | 3.63 | 3/19/2018     | 2.85 |
| 6/25/2018                          | 3.57 | 3/20/2018     | 2.89 |
| 6/26/2018                          | 3.57 | 3/21/2018     | 2.89 |
| 6/27/2018                          | 3.55 | 3/22/2018     | 2.83 |
| 6/28/2018                          | 3.55 | 3/23/2018     | 2.82 |
| 6/29/2018                          | 3.55 | 3/26/2018     | 2.85 |
| 7/2/2018                           | 3.52 | 3/27/2018     | 2.78 |
| 7/3/2018                           | 3.51 | 3/28/2018     | 2.77 |
| 7/5/2018                           | 3.49 | 3/29/2018     | 2.74 |
| 7/6/2018                           | 3.47 | 3/30/2018     | 2.74 |
| 7/9/2018                           | 3.57 | 4/2/2018      | 2.73 |
| 7/10/2018                          | 3.53 | 4/3/2018      | 2.79 |
| 7/11/2018                          | 3.5  | 4/4/2018      | 2.79 |
| 7/12/2018                          | 3.5  | 4/5/2018      | 2.83 |
| 7/13/2018                          | 3.5  | 4/6/2018      | 2.77 |
| 7/16/2018                          | 3.5  | 4/9/2018      | 2.78 |
| 7/17/2018                          | 3.51 | 4/10/2018     | 2.80 |
| 7/18/2018                          | 3.52 | 4/11/2018     | 2.79 |
| 7/19/2018                          | 3.49 | 4/12/2018     | 2.83 |
| 7/20/2018                          | 3.52 | 4/13/2018     | 2.82 |
| 7/23/2018                          | 3.54 | 4/16/2018     | 2.83 |

| S&P 500 Utilities (\$\$UTIL Index)<br>Dividend Yield (NET_AGGTE_DVD_YLD) |      | 10y US T-Note<br>YIELD |      |
|--------------------------------------------------------------------------|------|------------------------|------|
| 7/24/2018                                                                | 3.53 | 4/17/2018              | 2.82 |
| 7/25/2018                                                                | 3.52 | 4/18/2018              | 2.87 |
| 7/26/2018                                                                | 3.48 | 4/19/2018              | 2.92 |
| 7/27/2018                                                                | 3.49 | 4/20/2018              | 2.96 |
| 7/30/2018                                                                | 3.52 | 4/23/2018              | 2.98 |
| 7/31/2018                                                                | 3.48 | 4/24/2018              | 3.00 |
| 8/1/2018                                                                 | 3.47 | 4/25/2018              | 3.03 |
| 8/2/2018                                                                 | 3.45 | 4/26/2018              | 3.00 |
| 8/3/2018                                                                 | 3.42 | 4/27/2018              | 2.96 |
| 8/6/2018                                                                 | 3.41 | 4/30/2018              | 2.95 |
| 8/7/2018                                                                 | 3.42 | 5/1/2018               | 2.97 |
| 8/8/2018                                                                 | 3.44 | 5/2/2018               | 2.97 |
| 8/9/2018                                                                 | 3.43 | 5/3/2018               | 2.94 |
| 8/10/2018                                                                | 3.44 | 5/4/2018               | 2.95 |
| 8/13/2018                                                                | 3.44 | 5/7/2018               | 2.95 |
| 8/14/2018                                                                | 3.44 | 5/8/2018               | 2.97 |
| 8/15/2018                                                                | 3.41 | 5/9/2018               | 3.00 |
| 8/16/2018                                                                | 3.38 | 5/10/2018              | 2.97 |
| 8/17/2018                                                                | 3.37 | 5/11/2018              | 2.97 |
| 8/20/2018                                                                | 3.38 | 5/14/2018              | 3.00 |
| 8/21/2018                                                                | 3.41 | 5/15/2018              | 3.08 |
| 8/22/2018                                                                | 3.43 | 5/16/2018              | 3.09 |
| 8/23/2018                                                                | 3.43 | 5/17/2018              | 3.11 |
| 8/24/2018                                                                | 3.42 | 5/18/2018              | 3.06 |
| 8/27/2018                                                                | 3.44 | 5/21/2018              | 3.06 |
| 8/28/2018                                                                | 3.45 | 5/22/2018              | 3.06 |
| 8/29/2018                                                                | 3.44 | 5/23/2018              | 3.01 |
| 8/30/2018                                                                | 3.43 | 5/24/2018              | 2.98 |
| 8/31/2018                                                                | 3.45 | 5/25/2018              | 2.93 |
| 9/4/2018                                                                 | 3.43 | 5/28/2018              | 2.93 |
| 9/5/2018                                                                 | 3.39 | 5/29/2018              | 2.77 |
| 9/6/2018                                                                 | 3.38 | 5/30/2018              | 2.84 |
| 9/7/2018                                                                 | 3.42 | 5/31/2018              | 2.83 |
| 9/10/2018                                                                | 3.4  | 6/1/2018               | 2.89 |
| 9/11/2018                                                                | 3.41 | 6/4/2018               | 2.94 |
| 9/12/2018                                                                | 3.41 | 6/5/2018               | 2.92 |
| 9/13/2018                                                                | 3.39 | 6/6/2018               | 2.97 |
| 9/14/2018                                                                | 3.41 | 6/7/2018               | 2.93 |
| 9/17/2018                                                                | 3.4  | 6/8/2018               | 2.93 |
| 9/18/2018                                                                | 3.4  | 6/11/2018              | 2.96 |
| 9/19/2018                                                                | 3.48 | 6/12/2018              | 2.96 |
| 9/20/2018                                                                | 3.48 | 6/13/2018              | 2.98 |
| 9/21/2018                                                                | 3.46 | 6/14/2018              | 2.94 |
| 9/24/2018                                                                | 3.49 | 6/15/2018              | 2.93 |
| 9/25/2018                                                                | 3.54 | 6/18/2018              | 2.92 |
| 9/26/2018                                                                | 3.57 | 6/19/2018              | 2.89 |
| 9/27/2018                                                                | 3.55 | 6/20/2018              | 2.93 |
| 9/28/2018                                                                | 3.49 | 6/21/2018              | 2.90 |
| 10/1/2018                                                                | 3.5  | 6/22/2018              | 2.90 |
| 10/2/2018                                                                | 3.46 | 6/25/2018              | 2.87 |
| 10/3/2018                                                                | 3.5  | 6/26/2018              | 2.88 |
| 10/4/2018                                                                | 3.48 | 6/27/2018              | 2.83 |
| 10/5/2018                                                                | 3.43 | 6/28/2018              | 2.84 |
| 10/8/2018                                                                | 3.4  | 6/29/2018              | 2.85 |
| 10/9/2018                                                                | 3.39 | 7/2/2018               | 2.87 |
| 10/10/2018                                                               | 3.41 | 7/3/2018               | 2.83 |
| 10/11/2018                                                               | 3.47 | 7/4/2018               | 2.83 |
| 10/12/2018                                                               | 3.47 | 7/5/2018               | 2.84 |
| 10/15/2018                                                               | 3.46 | 7/6/2018               | 2.82 |
| 10/16/2018                                                               | 3.42 | 7/9/2018               | 2.86 |
| 10/17/2018                                                               | 3.43 | 7/10/2018              | 2.87 |
| 10/18/2018                                                               | 3.42 | 7/11/2018              | 2.85 |
| 10/19/2018                                                               | 3.37 | 7/12/2018              | 2.85 |
| 10/22/2018                                                               | 3.39 | 7/13/2018              | 2.83 |
| 10/23/2018                                                               | 3.41 | 7/16/2018              | 2.85 |
| 10/24/2018                                                               | 3.33 | 7/17/2018              | 2.86 |
| 10/25/2018                                                               | 3.38 | 7/18/2018              | 2.88 |
| 10/26/2018                                                               | 3.44 | 7/19/2018              | 2.84 |
| 10/29/2018                                                               | 3.4  | 7/20/2018              | 2.89 |
| 10/30/2018                                                               | 3.39 | 7/23/2018              | 2.96 |
| 10/31/2018                                                               | 3.43 | 7/24/2018              | 2.95 |
| 11/1/2018                                                                | 3.45 | 7/25/2018              | 2.94 |
| 11/2/2018                                                                | 3.47 | 7/26/2018              | 2.98 |
| 11/5/2018                                                                | 3.42 | 7/27/2018              | 2.96 |
| 11/6/2018                                                                | 3.36 | 7/30/2018              | 2.98 |
| 11/7/2018                                                                | 3.32 | 7/31/2018              | 2.96 |
| 11/8/2018                                                                | 3.33 | 8/1/2018               | 3.00 |

| S&P 500 Utilities (\$\$UTIL Index)<br>Dividend Yield (NET_AGGTE_DVD_YLD) |      | 10y US T-Note<br>YIELD |      |
|--------------------------------------------------------------------------|------|------------------------|------|
| 11/9/2018                                                                | 3.33 | 8/2/2018               | 2.98 |
| 11/12/2018                                                               | 3.33 | 8/3/2018               | 2.95 |
| 11/13/2018                                                               | 3.32 | 8/6/2018               | 2.94 |
| 11/14/2018                                                               | 3.36 | 8/7/2018               | 2.98 |
| 11/15/2018                                                               | 3.39 | 8/8/2018               | 2.96 |
| 11/16/2018                                                               | 3.35 | 8/9/2018               | 2.93 |
| 11/19/2018                                                               | 3.33 | 8/10/2018              | 2.87 |
| 11/20/2018                                                               | 3.35 | 8/13/2018              | 2.88 |
| 11/21/2018                                                               | 3.4  | 8/14/2018              | 2.89 |
| 11/23/2018                                                               | 3.4  | 8/15/2018              | 2.86 |
| 11/26/2018                                                               | 3.38 | 8/16/2018              | 2.87 |
| 11/27/2018                                                               | 3.35 | 8/17/2018              | 2.87 |
| 11/28/2018                                                               | 3.36 | 8/20/2018              | 2.82 |
| 11/29/2018                                                               | 3.37 | 8/21/2018              | 2.85 |
| 11/30/2018                                                               | 3.32 | 8/22/2018              | 2.82 |
| 12/3/2018                                                                | 3.29 | 8/23/2018              | 2.82 |
| 12/4/2018                                                                | 3.29 | 8/24/2018              | 2.82 |
| 12/6/2018                                                                | 3.3  | 8/27/2018              | 2.85 |
| 12/7/2018                                                                | 3.28 | 8/28/2018              | 2.88 |
| 12/10/2018                                                               | 3.27 | 8/29/2018              | 2.89 |
| 12/11/2018                                                               | 3.26 | 8/30/2018              | 2.86 |
| 12/12/2018                                                               | 3.28 | 8/31/2018              | 2.86 |
| 12/13/2018                                                               | 3.25 | 9/3/2018               | 2.86 |
| 12/14/2018                                                               | 3.26 | 9/4/2018               | 2.90 |
| 12/17/2018                                                               | 3.37 | 9/5/2018               | 2.90 |
| 12/18/2018                                                               | 3.39 | 9/6/2018               | 2.88 |
| 12/19/2018                                                               | 3.4  | 9/7/2018               | 2.94 |
| 12/20/2018                                                               | 3.39 | 9/10/2018              | 2.94 |
| 12/21/2018                                                               | 3.41 | 9/11/2018              | 2.98 |
| 12/24/2018                                                               | 3.57 | 9/12/2018              | 2.97 |
| 12/26/2018                                                               | 3.51 | 9/13/2018              | 2.97 |
| 12/27/2018                                                               | 3.48 | 9/14/2018              | 2.99 |
| 12/28/2018                                                               | 3.49 | 9/17/2018              | 2.99 |
| 12/31/2018                                                               | 3.48 | 9/18/2018              | 3.05 |
| 1/2/2019                                                                 | 3.57 | 9/19/2018              | 3.08 |
| 1/3/2019                                                                 | 3.57 | 9/20/2018              | 3.07 |
| 1/4/2019                                                                 | 3.52 | 9/21/2018              | 3.07 |
| 1/7/2019                                                                 | 3.54 | 9/24/2018              | 3.08 |
| 1/8/2019                                                                 | 3.5  | 9/25/2018              | 3.10 |
| 1/9/2019                                                                 | 3.52 | 9/26/2018              | 3.06 |
| 1/10/2019                                                                | 3.47 | 9/27/2018              | 3.06 |
| 1/11/2019                                                                | 3.49 | 9/28/2018              | 3.05 |
| 1/14/2019                                                                | 3.57 | 10/1/2018              | 3.09 |
| 1/15/2019                                                                | 3.52 | 10/2/2018              | 3.05 |
| 1/16/2019                                                                | 3.51 | 10/3/2018              | 3.15 |
| 1/17/2019                                                                | 3.5  | 10/4/2018              | 3.19 |
| 1/18/2019                                                                | 3.51 | 10/5/2018              | 3.23 |
| 1/22/2019                                                                | 3.5  | 10/8/2018              | 3.23 |
| 1/23/2019                                                                | 3.47 | 10/9/2018              | 3.21 |
| 1/24/2019                                                                | 3.45 | 10/10/2018             | 3.22 |
| 1/25/2019                                                                | 3.5  | 10/11/2018             | 3.14 |
| 1/28/2019                                                                | 3.51 | 10/12/2018             | 3.15 |
| 1/29/2019                                                                | 3.5  | 10/15/2018             | 3.16 |
| 1/30/2019                                                                | 3.48 | 10/16/2018             | 3.16 |
| 1/31/2019                                                                | 3.41 | 10/17/2018             | 3.19 |
| 2/1/2019                                                                 | 3.42 | 10/18/2018             | 3.17 |
| 2/4/2019                                                                 | 3.42 | 10/19/2018             | 3.20 |
| 2/5/2019                                                                 | 3.41 | 10/22/2018             | 3.20 |
| 2/6/2019                                                                 | 3.42 | 10/23/2018             | 3.17 |
| 2/7/2019                                                                 | 3.38 | 10/24/2018             | 3.10 |
| 2/8/2019                                                                 | 3.36 | 10/25/2018             | 3.14 |
| 2/11/2019                                                                | 3.36 | 10/26/2018             | 3.08 |
| 2/12/2019                                                                | 3.36 | 10/29/2018             | 3.08 |
| 2/13/2019                                                                | 3.37 | 10/30/2018             | 3.12 |
| 2/14/2019                                                                | 3.39 | 10/31/2018             | 3.15 |
| 2/15/2019                                                                | 3.36 | 11/1/2018              | 3.14 |
| 2/19/2019                                                                | 3.34 | 11/2/2018              | 3.22 |
| 2/20/2019                                                                | 3.33 | 11/5/2018              | 3.20 |
| 2/21/2019                                                                | 3.31 | 11/6/2018              | 3.22 |
| 2/22/2019                                                                | 3.29 | 11/7/2018              | 3.22 |
| 2/25/2019                                                                | 3.31 | 11/8/2018              | 3.24 |
| 2/26/2019                                                                | 3.31 | 11/9/2018              | 3.19 |
| 2/27/2019                                                                | 3.32 | 11/12/2018             | 3.19 |
| 2/28/2019                                                                | 3.31 | 11/13/2018             | 3.14 |
| 3/1/2019                                                                 | 3.31 | 11/14/2018             | 3.12 |
| 3/4/2019                                                                 | 3.3  | 11/15/2018             | 3.11 |
| 3/5/2019                                                                 | 3.31 | 11/16/2018             | 3.08 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 3/6/2019                           | 3.31 | 11/19/2018    | 3.06 |
| 3/7/2019                           | 3.3  | 11/20/2018    | 3.06 |
| 3/8/2019                           | 3.29 | 11/21/2018    | 3.06 |
| 3/11/2019                          | 3.26 | 11/22/2018    | 3.06 |
| 3/12/2019                          | 3.25 | 11/23/2018    | 3.05 |
| 3/13/2019                          | 3.24 | 11/26/2018    | 3.07 |
| 3/14/2019                          | 3.25 | 11/27/2018    | 3.06 |
| 3/15/2019                          | 3.23 | 11/28/2018    | 3.06 |
| 3/18/2019                          | 3.25 | 11/29/2018    | 3.03 |
| 3/19/2019                          | 3.29 | 11/30/2018    | 3.01 |
| 3/20/2019                          | 3.28 | 12/3/2018     | 2.98 |
| 3/21/2019                          | 3.25 | 12/4/2018     | 2.91 |
| 3/22/2019                          | 3.23 | 12/5/2018     | 2.91 |
| 3/25/2019                          | 3.23 | 12/6/2018     | 2.87 |
| 3/26/2019                          | 3.2  | 12/7/2018     | 2.85 |
| 3/27/2019                          | 3.23 | 12/10/2018    | 2.85 |
| 3/28/2019                          | 3.27 | 12/11/2018    | 2.89 |
| 3/29/2019                          | 3.25 | 12/12/2018    | 2.91 |
| 4/1/2019                           | 3.27 | 12/13/2018    | 2.91 |
| 4/2/2019                           | 3.27 | 12/14/2018    | 2.89 |
| 4/3/2019                           | 3.27 | 12/17/2018    | 2.86 |
| 4/4/2019                           | 3.28 | 12/18/2018    | 2.82 |
| 4/5/2019                           | 3.25 | 12/19/2018    | 2.77 |
| 4/8/2019                           | 3.28 | 12/20/2018    | 2.79 |
| 4/9/2019                           | 3.27 | 12/21/2018    | 2.79 |
| 4/10/2019                          | 3.28 | 12/24/2018    | 2.74 |
| 4/11/2019                          | 3.26 | 12/25/2018    | 2.74 |
| 4/12/2019                          | 3.24 | 12/26/2018    | 2.81 |
| 4/15/2019                          | 3.24 | 12/27/2018    | 2.77 |
| 4/16/2019                          | 3.29 | 12/28/2018    | 2.72 |
| 4/17/2019                          | 3.3  | 12/31/2018    | 2.69 |
| 4/18/2019                          | 3.3  | 1/1/2019      | 2.69 |
| 4/22/2019                          | 3.3  | 1/2/2019      | 2.66 |
| 4/23/2019                          | 3.29 | 1/3/2019      | 2.56 |
| 4/24/2019                          | 3.27 | 1/4/2019      | 2.67 |
| 4/25/2019                          | 3.26 | 1/7/2019      | 2.70 |
| 4/26/2019                          | 3.25 | 1/8/2019      | 2.73 |
| 4/29/2019                          | 3.27 | 1/9/2019      | 2.74 |
| 4/30/2019                          | 3.22 | 1/10/2019     | 2.74 |
| 5/1/2019                           | 3.25 | 1/11/2019     | 2.71 |
| 5/2/2019                           | 3.26 | 1/14/2019     | 2.71 |
| 5/3/2019                           | 3.24 | 1/15/2019     | 2.72 |
| 5/6/2019                           | 3.27 | 1/16/2019     | 2.73 |
| 5/7/2019                           | 3.28 | 1/17/2019     | 2.75 |
| 5/8/2019                           | 3.32 | 1/18/2019     | 2.79 |
| 5/9/2019                           | 3.33 | 1/21/2019     | 2.79 |
| 5/10/2019                          | 3.27 | 1/22/2019     | 2.74 |
| 5/13/2019                          | 3.24 | 1/23/2019     | 2.76 |
| 5/14/2019                          | 3.27 | 1/24/2019     | 2.72 |
| 5/15/2019                          | 3.28 | 1/25/2019     | 2.76 |
| 5/16/2019                          | 3.26 | 1/28/2019     | 2.75 |
| 5/17/2019                          | 3.25 | 1/29/2019     | 2.72 |
| 5/20/2019                          | 3.24 | 1/30/2019     | 2.70 |
| 5/21/2019                          | 3.24 | 1/31/2019     | 2.63 |
| 5/22/2019                          | 3.21 | 2/1/2019      | 2.70 |
| 5/23/2019                          | 3.19 | 2/4/2019      | 2.73 |
| 5/24/2019                          | 3.2  | 2/5/2019      | 2.71 |
| 5/28/2019                          | 3.25 | 2/6/2019      | 2.70 |
| 5/29/2019                          | 3.29 | 2/7/2019      | 2.65 |
| 5/30/2019                          | 3.3  | 2/8/2019      | 2.63 |
| 5/31/2019                          | 3.29 | 2/11/2019     | 2.65 |
| 6/3/2019                           | 3.26 | 2/12/2019     | 2.68 |
| 6/4/2019                           | 3.26 | 2/13/2019     | 2.71 |
| 6/5/2019                           | 3.19 | 2/14/2019     | 2.66 |
| 6/6/2019                           | 3.19 | 2/15/2019     | 2.66 |
| 6/7/2019                           | 3.21 | 2/18/2019     | 2.66 |
| 6/10/2019                          | 3.23 | 2/19/2019     | 2.65 |
| 6/11/2019                          | 3.25 | 2/20/2019     | 2.65 |
| 6/12/2019                          | 3.21 | 2/21/2019     | 2.69 |
| 6/13/2019                          | 3.21 | 2/22/2019     | 2.65 |
| 6/14/2019                          | 3.18 | 2/25/2019     | 2.67 |
| 6/17/2019                          | 3.19 | 2/26/2019     | 2.64 |
| 6/18/2019                          | 3.2  | 2/27/2019     | 2.69 |
| 6/19/2019                          | 3.17 | 2/28/2019     | 2.73 |
| 6/20/2019                          | 3.15 | 3/1/2019      | 2.76 |
| 6/21/2019                          | 3.14 | 3/4/2019      | 2.72 |
| 6/24/2019                          | 3.14 | 3/5/2019      | 2.72 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 6/25/2019                          | 3.16 | 3/6/2019      | 2.69 |
| 6/26/2019                          | 3.23 | 3/7/2019      | 2.64 |
| 6/27/2019                          | 3.23 | 3/8/2019      | 2.62 |
| 6/28/2019                          | 3.21 | 3/11/2019     | 2.64 |
| 7/1/2019                           | 3.22 | 3/12/2019     | 2.61 |
| 7/2/2019                           | 3.18 | 3/13/2019     | 2.61 |
| 7/3/2019                           | 3.16 | 3/14/2019     | 2.63 |
| 7/5/2019                           | 3.16 | 3/15/2019     | 2.59 |
| 7/8/2019                           | 3.16 | 3/18/2019     | 2.60 |
| 7/9/2019                           | 3.16 | 3/19/2019     | 2.61 |
| 7/10/2019                          | 3.15 | 3/20/2019     | 2.54 |
| 7/11/2019                          | 3.15 | 3/21/2019     | 2.54 |
| 7/12/2019                          | 3.17 | 3/22/2019     | 2.44 |
| 7/15/2019                          | 3.15 | 3/25/2019     | 2.43 |
| 7/16/2019                          | 3.17 | 3/26/2019     | 2.41 |
| 7/17/2019                          | 3.16 | 3/27/2019     | 2.39 |
| 7/18/2019                          | 3.13 | 3/28/2019     | 2.39 |
| 7/19/2019                          | 3.18 | 3/29/2019     | 2.41 |
| 7/22/2019                          | 3.19 | 4/1/2019      | 2.49 |
| 7/23/2019                          | 3.2  | 4/2/2019      | 2.48 |
| 7/24/2019                          | 3.2  | 4/3/2019      | 2.52 |
| 7/25/2019                          | 3.21 | 4/4/2019      | 2.51 |
| 7/26/2019                          | 3.2  | 4/5/2019      | 2.50 |
| 7/29/2019                          | 3.18 | 4/8/2019      | 2.52 |
| 7/30/2019                          | 3.21 | 4/9/2019      | 2.51 |
| 7/31/2019                          | 3.23 | 4/10/2019     | 2.48 |
| 8/1/2019                           | 3.2  | 4/11/2019     | 2.51 |
| 8/2/2019                           | 3.19 | 4/12/2019     | 2.56 |
| 8/5/2019                           | 3.24 | 4/15/2019     | 2.55 |
| 8/6/2019                           | 3.2  | 4/16/2019     | 2.60 |
| 8/7/2019                           | 3.2  | 4/17/2019     | 2.59 |
| 8/8/2019                           | 3.17 | 4/18/2019     | 2.57 |
| 8/9/2019                           | 3.17 | 4/19/2019     | 2.57 |
| 8/12/2019                          | 3.17 | 4/22/2019     | 2.59 |
| 8/13/2019                          | 3.17 | 4/23/2019     | 2.57 |
| 8/14/2019                          | 3.21 | 4/24/2019     | 2.53 |
| 8/15/2019                          | 3.17 | 4/25/2019     | 2.54 |
| 8/16/2019                          | 3.16 | 4/26/2019     | 2.51 |
| 8/19/2019                          | 3.14 | 4/29/2019     | 2.54 |
| 8/20/2019                          | 3.14 | 4/30/2019     | 2.51 |
| 8/21/2019                          | 3.12 | 5/1/2019      | 2.52 |
| 8/22/2019                          | 3.12 | 5/2/2019      | 2.55 |
| 8/23/2019                          | 3.15 | 5/3/2019      | 2.54 |
| 8/26/2019                          | 3.12 | 5/6/2019      | 2.51 |
| 8/27/2019                          | 3.11 | 5/7/2019      | 2.45 |
| 8/28/2019                          | 3.13 | 5/8/2019      | 2.49 |
| 8/29/2019                          | 3.11 | 5/9/2019      | 2.45 |
| 8/30/2019                          | 3.11 | 5/10/2019     | 2.47 |
| 9/3/2019                           | 3.06 | 5/13/2019     | 2.40 |
| 9/4/2019                           | 3.05 | 5/14/2019     | 2.42 |
| 9/5/2019                           | 3.1  | 5/15/2019     | 2.37 |
| 9/6/2019                           | 3.11 | 5/16/2019     | 2.40 |
| 9/9/2019                           | 3.13 | 5/17/2019     | 2.39 |
| 9/10/2019                          | 3.12 | 5/20/2019     | 2.41 |
| 9/11/2019                          | 3.09 | 5/21/2019     | 2.43 |
| 9/12/2019                          | 3.09 | 5/22/2019     | 2.39 |
| 9/13/2019                          | 3.11 | 5/23/2019     | 2.31 |
| 9/16/2019                          | 3.11 | 5/24/2019     | 2.32 |
| 9/17/2019                          | 3.08 | 5/27/2019     | 2.32 |
| 9/18/2019                          | 3.07 | 5/28/2019     | 2.26 |
| 9/19/2019                          | 3.06 | 5/29/2019     | 2.25 |
| 9/20/2019                          | 3.05 | 5/30/2019     | 2.22 |
| 9/23/2019                          | 3.04 | 5/31/2019     | 2.14 |
| 9/24/2019                          | 3.01 | 6/3/2019      | 2.07 |
| 9/25/2019                          | 3.01 | 6/4/2019      | 2.12 |
| 9/26/2019                          | 3    | 6/5/2019      | 2.12 |
| 9/27/2019                          | 3.01 | 6/6/2019      | 2.12 |
| 9/30/2019                          | 3.01 | 6/7/2019      | 2.09 |
| 10/1/2019                          | 3.02 | 6/10/2019     | 2.15 |
| 10/2/2019                          | 3.06 | 6/11/2019     | 2.15 |
| 10/3/2019                          | 3.05 | 6/12/2019     | 2.13 |
| 10/4/2019                          | 3    | 6/13/2019     | 2.10 |
| 10/7/2019                          | 3.01 | 6/14/2019     | 2.09 |
| 10/8/2019                          | 3.05 | 6/17/2019     | 2.09 |
| 10/9/2019                          | 3.03 | 6/18/2019     | 2.06 |
| 10/10/2019                         | 3.03 | 6/19/2019     | 2.03 |
| 10/11/2019                         | 3.04 | 6/20/2019     | 2.01 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 10/14/2019                         | 3.07 | 6/21/2019     | 2.07 |
| 10/15/2019                         | 3.07 | 6/24/2019     | 2.02 |
| 10/16/2019                         | 3.07 | 6/25/2019     | 2.00 |
| 10/17/2019                         | 3.06 | 6/26/2019     | 2.05 |
| 10/18/2019                         | 3.05 | 6/27/2019     | 2.01 |
| 10/21/2019                         | 3.04 | 6/28/2019     | 2.00 |
| 10/22/2019                         | 3.02 | 7/1/2019      | 2.03 |
| 10/23/2019                         | 3.01 | 7/2/2019      | 1.98 |
| 10/24/2019                         | 3    | 7/3/2019      | 1.96 |
| 10/25/2019                         | 3.03 | 7/4/2019      | 1.96 |
| 10/28/2019                         | 3.07 | 7/5/2019      | 2.04 |
| 10/29/2019                         | 3.07 | 7/8/2019      | 2.05 |
| 10/30/2019                         | 3.05 | 7/9/2019      | 2.07 |
| 10/31/2019                         | 3.03 | 7/10/2019     | 2.07 |
| 11/1/2019                          | 3.04 | 7/11/2019     | 2.13 |
| 11/4/2019                          | 3.08 | 7/12/2019     | 2.12 |
| 11/5/2019                          | 3.11 | 7/15/2019     | 2.09 |
| 11/6/2019                          | 3.11 | 7/16/2019     | 2.13 |
| 11/7/2019                          | 3.15 | 7/17/2019     | 2.06 |
| 11/8/2019                          | 3.16 | 7/18/2019     | 2.04 |
| 11/11/2019                         | 3.18 | 7/19/2019     | 2.05 |
| 11/12/2019                         | 3.18 | 7/22/2019     | 2.05 |
| 11/13/2019                         | 3.13 | 7/23/2019     | 2.08 |
| 11/14/2019                         | 3.13 | 7/24/2019     | 2.05 |
| 11/15/2019                         | 3.12 | 7/25/2019     | 2.08 |
| 11/18/2019                         | 3.12 | 7/26/2019     | 2.08 |
| 11/19/2019                         | 3.13 | 7/29/2019     | 2.06 |
| 11/20/2019                         | 3.11 | 7/30/2019     | 2.06 |
| 11/21/2019                         | 3.12 | 7/31/2019     | 2.02 |
| 11/22/2019                         | 3.12 | 8/1/2019      | 1.90 |
| 11/25/2019                         | 3.13 | 8/2/2019      | 1.86 |
| 11/26/2019                         | 3.12 | 8/5/2019      | 1.75 |
| 11/27/2019                         | 3.12 | 8/6/2019      | 1.73 |
| 11/29/2019                         | 3.13 | 8/7/2019      | 1.71 |
| 12/2/2019                          | 3.15 | 8/8/2019      | 1.72 |
| 12/3/2019                          | 3.14 | 8/9/2019      | 1.74 |
| 12/4/2019                          | 3.11 | 8/12/2019     | 1.65 |
| 12/5/2019                          | 3.12 | 8/13/2019     | 1.68 |
| 12/6/2019                          | 3.13 | 8/14/2019     | 1.59 |
| 12/9/2019                          | 3.14 | 8/15/2019     | 1.52 |
| 12/10/2019                         | 3.15 | 8/16/2019     | 1.55 |
| 12/11/2019                         | 3.14 | 8/19/2019     | 1.60 |
| 12/12/2019                         | 3.15 | 8/20/2019     | 1.55 |
| 12/13/2019                         | 3.13 | 8/21/2019     | 1.59 |
| 12/16/2019                         | 3.09 | 8/22/2019     | 1.62 |
| 12/17/2019                         | 3.08 | 8/23/2019     | 1.52 |
| 12/18/2019                         | 3.07 | 8/26/2019     | 1.54 |
| 12/19/2019                         | 3.07 | 8/27/2019     | 1.49 |
| 12/20/2019                         | 3.05 | 8/28/2019     | 1.47 |
| 12/23/2019                         | 3.08 | 8/29/2019     | 1.50 |
| 12/24/2019                         | 3.07 | 8/30/2019     | 1.50 |
| 12/26/2019                         | 3.07 | 9/2/2019      | 1.50 |
| 12/27/2019                         | 3.06 | 9/3/2019      | 1.47 |
| 12/30/2019                         | 3.06 | 9/4/2019      | 1.47 |
| 12/31/2019                         | 3.05 | 9/5/2019      | 1.57 |
| 1/2/2020                           | 3.09 | 9/6/2019      | 1.55 |
| 1/3/2020                           | 3.09 | 9/9/2019      | 1.63 |
| 1/6/2020                           | 3.08 | 9/10/2019     | 1.72 |
| 1/7/2020                           | 3.09 | 9/11/2019     | 1.75 |
| 1/8/2020                           | 3.09 | 9/12/2019     | 1.79 |
| 1/9/2020                           | 3.07 | 9/13/2019     | 1.90 |
| 1/10/2020                          | 3.06 | 9/16/2019     | 1.84 |
| 1/13/2020                          | 3.04 | 9/17/2019     | 1.81 |
| 1/14/2020                          | 3.03 | 9/18/2019     | 1.80 |
| 1/15/2020                          | 2.99 | 9/19/2019     | 1.79 |
| 1/16/2020                          | 2.97 | 9/20/2019     | 1.74 |
| 1/17/2020                          | 2.95 | 9/23/2019     | 1.72 |
| 1/21/2020                          | 2.93 | 9/24/2019     | 1.64 |
| 1/22/2020                          | 2.92 | 9/25/2019     | 1.73 |
| 1/23/2020                          | 2.89 | 9/26/2019     | 1.70 |
| 1/24/2020                          | 2.88 | 9/27/2019     | 1.69 |
| 1/27/2020                          | 2.89 | 9/30/2019     | 1.68 |
| 1/28/2020                          | 2.88 | 10/1/2019     | 1.65 |
| 1/29/2020                          | 2.87 | 10/2/2019     | 1.60 |
| 1/30/2020                          | 2.85 | 10/3/2019     | 1.54 |
| 1/31/2020                          | 2.87 | 10/4/2019     | 1.52 |
| 2/3/2020                           | 2.86 | 10/7/2019     | 1.56 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 2/4/2020                           | 2.89 | 10/8/2019     | 1.54 |
| 2/5/2020                           | 2.88 | 10/9/2019     | 1.59 |
| 2/6/2020                           | 2.88 | 10/10/2019    | 1.67 |
| 2/7/2020                           | 2.89 | 10/11/2019    | 1.76 |
| 2/10/2020                          | 2.88 | 10/14/2019    | 1.76 |
| 2/11/2020                          | 2.87 | 10/15/2019    | 1.77 |
| 2/12/2020                          | 2.87 | 10/16/2019    | 1.75 |
| 2/13/2020                          | 2.84 | 10/17/2019    | 1.76 |
| 2/14/2020                          | 2.83 | 10/18/2019    | 1.76 |
| 2/18/2020                          | 2.81 | 10/21/2019    | 1.80 |
| 2/19/2020                          | 2.84 | 10/22/2019    | 1.78 |
| 2/20/2020                          | 2.83 | 10/23/2019    | 1.77 |
| 2/21/2020                          | 2.84 | 10/24/2019    | 1.77 |
| 2/24/2020                          | 2.87 | 10/25/2019    | 1.80 |
| 2/25/2020                          | 2.93 | 10/28/2019    | 1.85 |
| 2/26/2020                          | 2.96 | 10/29/2019    | 1.84 |
| 2/27/2020                          | 3.12 | 10/30/2019    | 1.78 |
| 2/28/2020                          | 3.23 | 10/31/2019    | 1.69 |
| 3/2/2020                           | 3.05 | 11/1/2019     | 1.73 |
| 3/3/2020                           | 3.09 | 11/4/2019     | 1.79 |
| 3/4/2020                           | 2.92 | 11/5/2019     | 1.86 |
| 3/5/2020                           | 2.97 | 11/6/2019     | 1.81 |
| 3/6/2020                           | 2.99 | 11/7/2019     | 1.92 |
| 3/9/2020                           | 3.17 | 11/8/2019     | 1.94 |
| 3/10/2020                          | 3.14 | 11/11/2019    | 1.94 |
| 3/11/2020                          | 3.31 | 11/12/2019    | 1.92 |
| 3/12/2020                          | 3.69 | 11/13/2019    | 1.88 |
| 3/13/2020                          | 3.5  | 11/14/2019    | 1.82 |
| 3/16/2020                          | 3.95 | 11/15/2019    | 1.84 |
| 3/17/2020                          | 3.49 | 11/18/2019    | 1.81 |
| 3/18/2020                          | 3.66 | 11/19/2019    | 1.79 |
| 3/19/2020                          | 3.88 | 11/20/2019    | 1.73 |
| 3/20/2020                          | 4.22 | 11/21/2019    | 1.77 |
| 3/23/2020                          | 4.46 | 11/22/2019    | 1.77 |
| 3/24/2020                          | 4.02 | 11/25/2019    | 1.76 |
| 3/25/2020                          | 3.91 | 11/26/2019    | 1.74 |
| 3/26/2020                          | 3.61 | 11/27/2019    | 1.77 |
| 3/27/2020                          | 3.59 | 11/28/2019    | 1.77 |
| 3/30/2020                          | 3.46 | 11/29/2019    | 1.78 |
| 3/31/2020                          | 3.61 | 12/2/2019     | 1.83 |
| 4/1/2020                           | 3.84 | 12/3/2019     | 1.72 |
| 4/2/2020                           | 3.73 | 12/4/2019     | 1.77 |
| 4/3/2020                           | 3.87 | 12/5/2019     | 1.80 |
| 4/6/2020                           | 3.58 | 12/6/2019     | 1.84 |
| 4/7/2020                           | 3.63 | 12/9/2019     | 1.83 |
| 4/8/2020                           | 3.44 | 12/10/2019    | 1.85 |
| 4/9/2020                           | 3.29 | 12/11/2019    | 1.79 |
| 4/13/2020                          | 3.4  | 12/12/2019    | 1.90 |
| 4/14/2020                          | 3.3  | 12/13/2019    | 1.82 |
| 4/15/2020                          | 3.41 | 12/16/2019    | 1.89 |
| 4/16/2020                          | 3.41 | 12/17/2019    | 1.89 |
| 4/17/2020                          | 3.3  | 12/18/2019    | 1.92 |
| 4/20/2020                          | 3.44 | 12/19/2019    | 1.92 |
| 4/21/2020                          | 3.49 | 12/20/2019    | 1.92 |
| 4/22/2020                          | 3.39 | 12/23/2019    | 1.93 |
| 4/23/2020                          | 3.45 | 12/24/2019    | 1.90 |
| 4/24/2020                          | 3.43 | 12/25/2019    | 1.90 |
| 4/27/2020                          | 3.39 | 12/26/2019    | 1.90 |
| 4/28/2020                          | 3.38 | 12/27/2019    | 1.88 |
| 4/29/2020                          | 3.42 | 12/30/2019    | 1.90 |
| 4/30/2020                          | 3.51 | 12/31/2019    | 1.92 |
| 5/1/2020                           | 3.6  | 1/1/2020      | 1.92 |
| 5/4/2020                           | 3.57 | 1/2/2020      | 1.88 |
| 5/5/2020                           | 3.54 | 1/3/2020      | 1.80 |
| 5/6/2020                           | 3.67 | 1/6/2020      | 1.81 |
| 5/7/2020                           | 3.65 | 1/7/2020      | 1.83 |
| 5/8/2020                           | 3.58 | 1/8/2020      | 1.87 |
| 5/11/2020                          | 3.6  | 1/9/2020      | 1.85 |
| 5/12/2020                          | 3.63 | 1/10/2020     | 1.83 |
| 5/13/2020                          | 3.67 | 1/13/2020     | 1.85 |
| 5/14/2020                          | 3.64 | 1/14/2020     | 1.82 |
| 5/15/2020                          | 3.69 | 1/15/2020     | 1.79 |
| 5/18/2020                          | 3.55 | 1/16/2020     | 1.81 |
| 5/19/2020                          | 3.61 | 1/17/2020     | 1.84 |
| 5/20/2020                          | 3.58 | 1/20/2020     | 1.84 |
| 5/21/2020                          | 3.62 | 1/21/2020     | 1.78 |
| 5/22/2020                          | 3.58 | 1/22/2020     | 1.77 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 5/26/2020                          | 3.55 | 1/23/2020     | 1.74 |
| 5/27/2020                          | 3.52 | 1/24/2020     | 1.70 |
| 5/28/2020                          | 3.41 | 1/27/2020     | 1.61 |
| 5/29/2020                          | 3.39 | 1/28/2020     | 1.65 |
| 6/1/2020                           | 3.36 | 1/29/2020     | 1.60 |
| 6/2/2020                           | 3.34 | 1/30/2020     | 1.57 |
| 6/3/2020                           | 3.3  | 1/31/2020     | 1.51 |
| 6/4/2020                           | 3.36 | 2/3/2020      | 1.54 |
| 6/5/2020                           | 3.32 | 2/4/2020      | 1.61 |
| 6/8/2020                           | 3.23 | 2/5/2020      | 1.66 |
| 6/9/2020                           | 3.3  | 2/6/2020      | 1.65 |
| 6/10/2020                          | 3.32 | 2/7/2020      | 1.59 |
| 6/11/2020                          | 3.46 | 2/10/2020     | 1.56 |
| 6/12/2020                          | 3.47 | 2/11/2020     | 1.59 |
| 6/15/2020                          | 3.45 | 2/12/2020     | 1.62 |
| 6/16/2020                          | 3.43 | 2/13/2020     | 1.61 |
| 6/17/2020                          | 3.44 | 2/14/2020     | 1.59 |
| 6/18/2020                          | 3.45 | 2/17/2020     | 1.59 |
| 6/19/2020                          | 3.56 | 2/18/2020     | 1.55 |
| 6/22/2020                          | 3.51 | 2/19/2020     | 1.56 |
| 6/23/2020                          | 3.55 | 2/20/2020     | 1.52 |
| 6/24/2020                          | 3.58 | 2/21/2020     | 1.46 |
| 6/25/2020                          | 3.63 | 2/24/2020     | 1.38 |
| 6/26/2020                          | 3.67 | 2/25/2020     | 1.33 |
| 6/29/2020                          | 3.6  | 2/26/2020     | 1.33 |
| 6/30/2020                          | 3.59 | 2/27/2020     | 1.30 |
| 7/1/2020                           | 3.51 | 2/28/2020     | 1.13 |
| 7/2/2020                           | 3.5  | 3/2/2020      | 1.10 |
| 7/6/2020                           | 3.55 | 3/3/2020      | 1.02 |
| 7/7/2020                           | 3.56 | 3/4/2020      | 1.02 |
| 7/8/2020                           | 3.53 | 3/5/2020      | 0.92 |
| 7/9/2020                           | 3.57 | 3/6/2020      | 0.74 |
| 7/10/2020                          | 3.51 | 3/9/2020      | 0.54 |
| 7/13/2020                          | 3.51 | 3/10/2020     | 0.76 |
| 7/14/2020                          | 3.47 | 3/11/2020     | 0.82 |
| 7/15/2020                          | 3.49 | 3/12/2020     | 0.88 |
| 7/16/2020                          | 3.44 | 3/13/2020     | 0.94 |
| 7/17/2020                          | 3.36 | 3/16/2020     | 0.73 |
| 7/20/2020                          | 3.41 | 3/17/2020     | 1.02 |
| 7/21/2020                          | 3.4  | 3/18/2020     | 1.18 |
| 7/22/2020                          | 3.34 | 3/19/2020     | 1.12 |
| 7/23/2020                          | 3.34 | 3/20/2020     | 0.92 |
| 7/24/2020                          | 3.36 | 3/23/2020     | 0.76 |
| 7/27/2020                          | 3.4  | 3/24/2020     | 0.84 |
| 7/28/2020                          | 3.35 | 3/25/2020     | 0.88 |
| 7/29/2020                          | 3.34 | 3/26/2020     | 0.83 |
| 7/30/2020                          | 3.34 | 3/27/2020     | 0.72 |
| 7/31/2020                          | 3.34 | 3/30/2020     | 0.70 |
| 8/3/2020                           | 3.38 | 3/31/2020     | 0.70 |
| 8/4/2020                           | 3.34 | 4/1/2020      | 0.62 |
| 8/5/2020                           | 3.39 | 4/2/2020      | 0.63 |
| 8/6/2020                           | 3.37 | 4/3/2020      | 0.62 |
| 8/7/2020                           | 3.31 | 4/6/2020      | 0.67 |
| 8/10/2020                          | 3.32 | 4/7/2020      | 0.75 |
| 8/11/2020                          | 3.39 | 4/8/2020      | 0.77 |
| 8/12/2020                          | 3.34 | 4/9/2020      | 0.73 |
| 8/13/2020                          | 3.36 | 4/10/2020     | 0.73 |
| 8/14/2020                          | 3.39 | 4/13/2020     | 0.76 |
| 8/17/2020                          | 3.4  | 4/14/2020     | 0.76 |
| 8/18/2020                          | 3.42 | 4/15/2020     | 0.63 |
| 8/19/2020                          | 3.42 | 4/16/2020     | 0.61 |
| 8/20/2020                          | 3.45 | 4/17/2020     | 0.65 |
| 8/21/2020                          | 3.44 | 4/20/2020     | 0.63 |
| 8/24/2020                          | 3.41 | 4/21/2020     | 0.58 |
| 8/25/2020                          | 3.44 | 4/22/2020     | 0.63 |
| 8/26/2020                          | 3.49 | 4/23/2020     | 0.61 |
| 8/27/2020                          | 3.49 | 4/24/2020     | 0.60 |
| 8/28/2020                          | 3.48 | 4/27/2020     | 0.67 |
| 8/31/2020                          | 3.47 | 4/28/2020     | 0.62 |
| 9/1/2020                           | 3.5  | 4/29/2020     | 0.63 |
| 9/2/2020                           | 3.4  | 4/30/2020     | 0.64 |
| 9/3/2020                           | 3.44 | 5/1/2020      | 0.64 |
| 9/4/2020                           | 3.46 | 5/4/2020      | 0.64 |
| 9/8/2020                           | 3.49 | 5/5/2020      | 0.66 |
| 9/9/2020                           | 3.44 | 5/6/2020      | 0.72 |
| 9/10/2020                          | 3.51 | 5/7/2020      | 0.63 |
| 9/11/2020                          | 3.49 | 5/8/2020      | 0.69 |



| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 9/14/2020                          | 3.45 | 5/11/2020     | 0.73 |
| 9/15/2020                          | 3.43 | 5/12/2020     | 0.69 |
| 9/16/2020                          | 3.43 | 5/13/2020     | 0.64 |
| 9/17/2020                          | 3.46 | 5/14/2020     | 0.63 |
| 9/18/2020                          | 3.53 | 5/15/2020     | 0.64 |
| 9/21/2020                          | 3.55 | 5/18/2020     | 0.73 |
| 9/22/2020                          | 3.52 | 5/19/2020     | 0.70 |
| 9/23/2020                          | 3.58 | 5/20/2020     | 0.68 |
| 9/24/2020                          | 3.54 | 5/21/2020     | 0.68 |
| 9/25/2020                          | 3.49 | 5/22/2020     | 0.66 |
| 9/28/2020                          | 3.48 | 5/25/2020     | 0.66 |
| 9/29/2020                          | 3.48 | 5/26/2020     | 0.69 |
| 9/30/2020                          | 3.45 | 5/27/2020     | 0.68 |
| 10/1/2020                          | 3.58 | 5/28/2020     | 0.70 |
| 10/2/2020                          | 3.54 | 5/29/2020     | 0.65 |
| 10/5/2020                          | 3.5  | 6/1/2020      | 0.66 |
| 10/6/2020                          | 3.47 | 6/2/2020      | 0.68 |
| 10/7/2020                          | 3.45 | 6/3/2020      | 0.77 |
| 10/8/2020                          | 3.38 | 6/4/2020      | 0.82 |
| 10/9/2020                          | 3.39 | 6/5/2020      | 0.91 |
| 10/12/2020                         | 3.36 | 6/8/2020      | 0.88 |
| 10/13/2020                         | 3.39 | 6/9/2020      | 0.84 |
| 10/14/2020                         | 3.39 | 6/10/2020     | 0.75 |
| 10/15/2020                         | 3.39 | 6/11/2020     | 0.66 |
| 10/16/2020                         | 3.36 | 6/12/2020     | 0.71 |
| 10/19/2020                         | 3.39 | 6/15/2020     | 0.71 |
| 10/20/2020                         | 3.37 | 6/16/2020     | 0.75 |
| 10/21/2020                         | 3.37 | 6/17/2020     | 0.74 |
| 10/22/2020                         | 3.33 | 6/18/2020     | 0.71 |
| 10/23/2020                         | 3.32 | 6/19/2020     | 0.70 |
| 10/26/2020                         | 3.32 | 6/22/2020     | 0.71 |
| 10/27/2020                         | 3.32 | 6/23/2020     | 0.72 |
| 10/28/2020                         | 3.42 | 6/24/2020     | 0.69 |
| 10/29/2020                         | 3.42 | 6/25/2020     | 0.68 |
| 10/30/2020                         | 3.46 | 6/26/2020     | 0.64 |
| 11/2/2020                          | 3.38 | 6/29/2020     | 0.64 |
| 11/3/2020                          | 3.33 | 6/30/2020     | 0.66 |
| 11/4/2020                          | 3.39 | 7/1/2020      | 0.69 |
| 11/5/2020                          | 3.36 | 7/2/2020      | 0.68 |
| 11/6/2020                          | 3.36 | 7/3/2020      | 0.68 |
| 11/9/2020                          | 3.31 | 7/6/2020      | 0.69 |
| 11/10/2020                         | 3.26 | 7/7/2020      | 0.65 |
| 11/11/2020                         | 3.25 | 7/8/2020      | 0.67 |
| 11/12/2020                         | 3.31 | 7/9/2020      | 0.62 |
| 11/13/2020                         | 3.29 | 7/10/2020     | 0.65 |
| 11/16/2020                         | 3.25 | 7/13/2020     | 0.64 |
| 11/17/2020                         | 3.32 | 7/14/2020     | 0.63 |
| 11/18/2020                         | 3.38 | 7/15/2020     | 0.64 |
| 11/19/2020                         | 3.41 | 7/16/2020     | 0.62 |
| 11/20/2020                         | 3.41 | 7/17/2020     | 0.64 |
| 11/23/2020                         | 3.41 | 7/20/2020     | 0.62 |
| 11/24/2020                         | 3.38 | 7/21/2020     | 0.61 |
| 11/25/2020                         | 3.38 | 7/22/2020     | 0.60 |
| 11/27/2020                         | 3.41 | 7/23/2020     | 0.59 |
| 11/30/2020                         | 3.46 | 7/24/2020     | 0.59 |
| 12/1/2020                          | 3.44 | 7/27/2020     | 0.62 |
| 12/2/2020                          | 3.42 | 7/28/2020     | 0.59 |
| 12/3/2020                          | 3.43 | 7/29/2020     | 0.58 |
| 12/4/2020                          | 3.46 | 7/30/2020     | 0.55 |
| 12/7/2020                          | 3.44 | 7/31/2020     | 0.55 |
| 12/8/2020                          | 3.45 | 8/3/2020      | 0.56 |
| 12/9/2020                          | 3.46 | 8/4/2020      | 0.52 |
| 12/10/2020                         | 3.48 | 8/5/2020      | 0.55 |
| 12/11/2020                         | 3.48 | 8/6/2020      | 0.55 |
| 12/14/2020                         | 3.5  | 8/7/2020      | 0.57 |
| 12/15/2020                         | 3.43 | 8/10/2020     | 0.59 |
| 12/16/2020                         | 3.47 | 8/11/2020     | 0.64 |
| 12/17/2020                         | 3.45 | 8/12/2020     | 0.69 |
| 12/18/2020                         | 3.48 | 8/13/2020     | 0.71 |
| 12/21/2020                         | 3.52 | 8/14/2020     | 0.71 |
| 12/22/2020                         | 3.53 | 8/17/2020     | 0.69 |
| 12/23/2020                         | 3.54 | 8/18/2020     | 0.67 |
| 12/24/2020                         | 3.51 | 8/19/2020     | 0.68 |
| 12/28/2020                         | 3.5  | 8/20/2020     | 0.65 |
| 12/29/2020                         | 3.5  | 8/21/2020     | 0.64 |
| 12/30/2020                         | 3.48 | 8/24/2020     | 0.65 |
| 12/31/2020                         | 3.43 | 8/25/2020     | 0.69 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 1/4/2021                           | 3.36 | 8/26/2020     | 0.69 |
| 1/5/2021                           | 3.36 | 8/27/2020     | 0.74 |
| 1/6/2021                           | 3.27 | 8/28/2020     | 0.74 |
| 1/7/2021                           | 3.32 | 8/31/2020     | 0.72 |
| 1/8/2021                           | 3.29 | 9/1/2020      | 0.68 |
| 1/11/2021                          | 3.32 | 9/2/2020      | 0.66 |
| 1/12/2021                          | 3.34 | 9/3/2020      | 0.63 |
| 1/13/2021                          | 3.28 | 9/4/2020      | 0.72 |
| 1/14/2021                          | 3.29 | 9/7/2020      | 0.72 |
| 1/15/2021                          | 3.26 | 9/8/2020      | 0.69 |
| 1/19/2021                          | 3.27 | 9/9/2020      | 0.71 |
| 1/20/2021                          | 3.25 | 9/10/2020     | 0.68 |
| 1/21/2021                          | 3.27 | 9/11/2020     | 0.67 |
| 1/22/2021                          | 3.26 | 9/14/2020     | 0.68 |
| 1/25/2021                          | 3.2  | 9/15/2020     | 0.68 |
| 1/26/2021                          | 3.23 | 9/16/2020     | 0.69 |
| 1/27/2021                          | 3.32 | 9/17/2020     | 0.69 |
| 1/28/2021                          | 3.28 | 9/18/2020     | 0.70 |
| 1/29/2021                          | 3.3  | 9/21/2020     | 0.68 |
| 2/1/2021                           | 3.29 | 9/22/2020     | 0.68 |
| 2/2/2021                           | 3.26 | 9/23/2020     | 0.68 |
| 2/3/2021                           | 3.27 | 9/24/2020     | 0.67 |
| 2/4/2021                           | 3.25 | 9/25/2020     | 0.66 |
| 2/5/2021                           | 3.23 | 9/28/2020     | 0.67 |
| 2/8/2021                           | 3.26 | 9/29/2020     | 0.66 |
| 2/9/2021                           | 3.26 | 9/30/2020     | 0.69 |
| 2/10/2021                          | 3.24 | 10/1/2020     | 0.68 |
| 2/11/2021                          | 3.27 | 10/2/2020     | 0.70 |
| 2/12/2021                          | 3.3  | 10/5/2020     | 0.78 |
| 2/16/2021                          | 3.34 | 10/6/2020     | 0.76 |
| 2/17/2021                          | 3.33 | 10/7/2020     | 0.81 |
| 2/18/2021                          | 3.31 | 10/8/2020     | 0.78 |
| 2/19/2021                          | 3.36 | 10/9/2020     | 0.79 |
| 2/22/2021                          | 3.43 | 10/12/2020    | 0.79 |
| 2/23/2021                          | 3.4  | 10/13/2020    | 0.74 |
| 2/24/2021                          | 3.44 | 10/14/2020    | 0.73 |
| 2/25/2021                          | 3.48 | 10/15/2020    | 0.74 |
| 2/26/2021                          | 3.55 | 10/16/2020    | 0.76 |
| 3/1/2021                           | 3.47 | 10/19/2020    | 0.78 |
| 3/2/2021                           | 3.48 | 10/20/2020    | 0.81 |
| 3/3/2021                           | 3.52 | 10/21/2020    | 0.83 |
| 3/4/2021                           | 3.5  | 10/22/2020    | 0.87 |
| 3/5/2021                           | 3.45 | 10/23/2020    | 0.85 |
| 3/8/2021                           | 3.4  | 10/26/2020    | 0.81 |
| 3/9/2021                           | 3.36 | 10/27/2020    | 0.79 |
| 3/10/2021                          | 3.34 | 10/28/2020    | 0.79 |
| 3/11/2021                          | 3.34 | 10/29/2020    | 0.85 |
| 3/12/2021                          | 3.31 | 10/30/2020    | 0.88 |
| 3/15/2021                          | 3.26 | 11/2/2020     | 0.87 |
| 3/16/2021                          | 3.26 | 11/3/2020     | 0.90 |
| 3/17/2021                          | 3.31 | 11/4/2020     | 0.78 |
| 3/18/2021                          | 3.32 | 11/5/2020     | 0.79 |
| 3/19/2021                          | 3.32 | 11/6/2020     | 0.83 |
| 3/22/2021                          | 3.32 | 11/9/2020     | 0.96 |
| 3/23/2021                          | 3.27 | 11/10/2020    | 0.98 |
| 3/24/2021                          | 3.27 | 11/11/2020    | 0.98 |
| 3/25/2021                          | 3.24 | 11/12/2020    | 0.88 |
| 3/26/2021                          | 3.23 | 11/13/2020    | 0.89 |
| 3/29/2021                          | 3.19 | 11/16/2020    | 0.91 |
| 3/30/2021                          | 3.22 | 11/17/2020    | 0.87 |
| 3/31/2021                          | 3.2  | 11/18/2020    | 0.88 |
| 4/1/2021                           | 3.2  | 11/19/2020    | 0.86 |
| 4/5/2021                           | 3.17 | 11/20/2020    | 0.83 |
| 4/6/2021                           | 3.15 | 11/23/2020    | 0.86 |
| 4/7/2021                           | 3.16 | 11/24/2020    | 0.88 |
| 4/8/2021                           | 3.16 | 11/25/2020    | 0.88 |
| 4/9/2021                           | 3.16 | 11/26/2020    | 0.88 |
| 4/12/2021                          | 3.16 | 11/27/2020    | 0.84 |
| 4/13/2021                          | 3.12 | 11/30/2020    | 0.84 |
| 4/14/2021                          | 3.11 | 12/1/2020     | 0.92 |
| 4/15/2021                          | 3.08 | 12/2/2020     | 0.95 |
| 4/16/2021                          | 3.05 | 12/3/2020     | 0.92 |
| 4/19/2021                          | 3.07 | 12/4/2020     | 0.97 |
| 4/20/2021                          | 3.03 | 12/7/2020     | 0.94 |
| 4/21/2021                          | 3.05 | 12/8/2020     | 0.92 |
| 4/22/2021                          | 3.07 | 12/9/2020     | 0.95 |
| 4/23/2021                          | 3.08 | 12/10/2020    | 0.92 |

| S&P 500 Utilities (S5UTIL Index)<br>Dividend Yield (NET_AGGTE_DVD_YLD) |      | 10y US T-Note<br>YIELD |      |
|------------------------------------------------------------------------|------|------------------------|------|
| 4/26/2021                                                              | 3.1  | 12/11/2020             | 0.90 |
| 4/27/2021                                                              | 3.12 | 12/14/2020             | 0.90 |
| 4/28/2021                                                              | 3.13 | 12/15/2020             | 0.92 |
| 4/29/2021                                                              | 3.1  | 12/16/2020             | 0.92 |
| 4/30/2021                                                              | 3.08 | 12/17/2020             | 0.94 |
| 5/3/2021                                                               | 3.08 | 12/18/2020             | 0.95 |
| 5/4/2021                                                               | 3.09 | 12/21/2020             | 0.95 |
| 5/5/2021                                                               | 3.14 | 12/22/2020             | 0.93 |
| 5/6/2021                                                               | 3.12 | 12/23/2020             | 0.96 |
| 5/7/2021                                                               | 3.12 | 12/24/2020             | 0.94 |
| 5/10/2021                                                              | 3.08 | 12/25/2020             | 0.94 |
| 5/11/2021                                                              | 3.12 | 12/28/2020             | 0.94 |
| 5/12/2021                                                              | 3.2  | 12/29/2020             | 0.94 |
| 5/13/2021                                                              | 3.14 | 12/30/2020             | 0.93 |
| 5/14/2021                                                              | 3.13 | 12/31/2020             | 0.93 |
| 5/17/2021                                                              | 3.16 | 1/1/2021               | 0.93 |
| 5/18/2021                                                              | 3.16 | 1/4/2021               | 0.93 |
| 5/19/2021                                                              | 3.17 | 1/5/2021               | 0.96 |
| 5/20/2021                                                              | 3.14 | 1/6/2021               | 1.04 |
| 5/21/2021                                                              | 3.13 | 1/7/2021               | 1.08 |
| 5/24/2021                                                              | 3.13 | 1/8/2021               | 1.13 |
| 5/25/2021                                                              | 3.17 | 1/11/2021              | 1.15 |
| 5/26/2021                                                              | 3.17 | 1/12/2021              | 1.15 |
| 5/27/2021                                                              | 3.19 | 1/13/2021              | 1.10 |
| 5/28/2021                                                              | 3.18 | 1/14/2021              | 1.15 |
| 6/1/2021                                                               | 3.21 | 1/15/2021              | 1.11 |
| 6/2/2021                                                               | 3.19 | 1/18/2021              | 1.11 |
| 6/3/2021                                                               | 3.15 | 1/19/2021              | 1.10 |
| 6/4/2021                                                               | 3.15 | 1/20/2021              | 1.10 |
| 6/7/2021                                                               | 3.15 | 1/21/2021              | 1.12 |
| 6/8/2021                                                               | 3.18 | 1/22/2021              | 1.10 |
| 6/9/2021                                                               | 3.15 | 1/25/2021              | 1.05 |
| 6/10/2021                                                              | 3.13 | 1/26/2021              | 1.05 |
| 6/11/2021                                                              | 3.12 | 1/27/2021              | 1.04 |
| 6/14/2021                                                              | 3.12 | 1/28/2021              | 1.07 |
| 6/15/2021                                                              | 3.11 | 1/29/2021              | 1.11 |
| 6/16/2021                                                              | 3.15 | 2/1/2021               | 1.09 |
| 6/17/2021                                                              | 3.14 | 2/2/2021               | 1.12 |
| 6/18/2021                                                              | 3.22 | 2/3/2021               | 1.15 |
| 6/21/2021                                                              | 3.18 | 2/4/2021               | 1.15 |
| 6/22/2021                                                              | 3.2  | 2/5/2021               | 1.19 |
| 6/23/2021                                                              | 3.24 | 2/8/2021               | 1.19 |
| 6/24/2021                                                              | 3.24 | 2/9/2021               | 1.18 |
| 6/25/2021                                                              | 3.2  | 2/10/2021              | 1.15 |
| 6/28/2021                                                              | 3.18 | 2/11/2021              | 1.16 |
| 6/29/2021                                                              | 3.24 | 2/12/2021              | 1.20 |
| 6/30/2021                                                              | 3.24 | 2/15/2021              | 1.20 |
| 7/1/2021                                                               | 3.21 | 2/16/2021              | 1.30 |
| 7/2/2021                                                               | 3.22 | 2/17/2021              | 1.29 |
| 7/6/2021                                                               | 3.21 | 2/18/2021              | 1.29 |
| 7/7/2021                                                               | 3.19 | 2/19/2021              | 1.34 |
| 7/8/2021                                                               | 3.2  | 2/22/2021              | 1.37 |
| 7/9/2021                                                               | 3.19 | 2/23/2021              | 1.37 |
| 7/12/2021                                                              | 3.18 | 2/24/2021              | 1.38 |
| 7/13/2021                                                              | 3.21 | 2/25/2021              | 1.54 |
| 7/14/2021                                                              | 3.18 | 2/26/2021              | 1.44 |
| 7/15/2021                                                              | 3.14 | 3/1/2021               | 1.45 |
| 7/16/2021                                                              | 3.11 | 3/2/2021               | 1.42 |
| 7/19/2021                                                              | 3.16 | 3/3/2021               | 1.47 |
| 7/20/2021                                                              | 3.15 | 3/4/2021               | 1.54 |
| 7/21/2021                                                              | 3.18 | 3/5/2021               | 1.56 |
| 7/22/2021                                                              | 3.18 | 3/8/2021               | 1.59 |
| 7/23/2021                                                              | 3.14 | 3/9/2021               | 1.55 |
| 7/26/2021                                                              | 3.14 | 3/10/2021              | 1.53 |
| 7/27/2021                                                              | 3.09 | 3/11/2021              | 1.54 |
| 7/28/2021                                                              | 3.11 | 3/12/2021              | 1.64 |
| 7/29/2021                                                              | 3.1  | 3/15/2021              | 1.62 |
| 7/30/2021                                                              | 3.13 | 3/16/2021              | 1.62 |
| 8/2/2021                                                               | 3.11 | 3/17/2021              | 1.63 |
| 8/3/2021                                                               | 3.09 | 3/18/2021              | 1.71 |
| 8/4/2021                                                               | 3.09 | 3/19/2021              | 1.74 |
| 8/5/2021                                                               | 3.06 | 3/22/2021              | 1.69 |
| 8/6/2021                                                               | 3.06 | 3/23/2021              | 1.63 |
| 8/9/2021                                                               | 3.07 | 3/24/2021              | 1.62 |
| 8/10/2021                                                              | 3.07 | 3/25/2021              | 1.63 |
| 8/11/2021                                                              | 3.04 | 3/26/2021              | 1.67 |
| 8/12/2021                                                              | 3.04 | 3/29/2021              | 1.73 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 8/13/2021                          | 3.03 | 3/30/2021     | 1.73 |
| 8/16/2021                          | 3.01 | 3/31/2021     | 1.74 |
| 8/17/2021                          | 3.01 | 4/1/2021      | 1.69 |
| 8/18/2021                          | 3.02 | 4/2/2021      | 1.72 |
| 8/19/2021                          | 3.01 | 4/5/2021      | 1.73 |
| 8/20/2021                          | 2.98 | 4/6/2021      | 1.67 |
| 8/23/2021                          | 3.02 | 4/7/2021      | 1.68 |
| 8/24/2021                          | 3.03 | 4/8/2021      | 1.64 |
| 8/25/2021                          | 3.03 | 4/9/2021      | 1.67 |
| 8/26/2021                          | 3.05 | 4/12/2021     | 1.69 |
| 8/27/2021                          | 3.05 | 4/13/2021     | 1.64 |
| 8/30/2021                          | 3.04 | 4/14/2021     | 1.64 |
| 8/31/2021                          | 3.04 | 4/15/2021     | 1.56 |
| 9/1/2021                           | 3.01 | 4/16/2021     | 1.59 |
| 9/2/2021                           | 2.96 | 4/19/2021     | 1.61 |
| 9/3/2021                           | 2.98 | 4/20/2021     | 1.58 |
| 9/7/2021                           | 3.02 | 4/21/2021     | 1.57 |
| 9/8/2021                           | 2.97 | 4/22/2021     | 1.57 |
| 9/9/2021                           | 2.99 | 4/23/2021     | 1.58 |
| 9/10/2021                          | 3.03 | 4/26/2021     | 1.58 |
| 9/13/2021                          | 3.04 | 4/27/2021     | 1.63 |
| 9/14/2021                          | 3.05 | 4/28/2021     | 1.63 |
| 9/15/2021                          | 3.06 | 4/29/2021     | 1.65 |
| 9/16/2021                          | 3.08 | 4/30/2021     | 1.65 |
| 9/17/2021                          | 3.13 | 5/3/2021      | 1.63 |
| 9/20/2021                          | 3.13 | 5/4/2021      | 1.61 |
| 9/21/2021                          | 3.14 | 5/5/2021      | 1.59 |
| 9/22/2021                          | 3.14 | 5/6/2021      | 1.58 |
| 9/23/2021                          | 3.16 | 5/7/2021      | 1.60 |
| 9/24/2021                          | 3.17 | 5/10/2021     | 1.63 |
| 9/27/2021                          | 3.21 | 5/11/2021     | 1.64 |
| 9/28/2021                          | 3.24 | 5/12/2021     | 1.69 |
| 9/29/2021                          | 3.2  | 5/13/2021     | 1.66 |
| 9/30/2021                          | 3.23 | 5/14/2021     | 1.63 |
| 10/1/2021                          | 3.23 | 5/17/2021     | 1.64 |
| 10/4/2021                          | 3.19 | 5/18/2021     | 1.64 |
| 10/5/2021                          | 3.19 | 5/19/2021     | 1.68 |
| 10/6/2021                          | 3.15 | 5/20/2021     | 1.63 |
| 10/7/2021                          | 3.16 | 5/21/2021     | 1.63 |
| 10/8/2021                          | 3.19 | 5/24/2021     | 1.61 |
| 10/11/2021                         | 3.23 | 5/25/2021     | 1.56 |
| 10/12/2021                         | 3.21 | 5/26/2021     | 1.58 |
| 10/13/2021                         | 3.17 | 5/27/2021     | 1.61 |
| 10/14/2021                         | 3.13 | 5/28/2021     | 1.58 |
| 10/15/2021                         | 3.14 | 5/31/2021     | 1.58 |
| 10/18/2021                         | 3.17 | 6/1/2021      | 1.62 |
| 10/19/2021                         | 3.13 | 6/2/2021      | 1.59 |
| 10/20/2021                         | 3.08 | 6/3/2021      | 1.63 |
| 10/21/2021                         | 3.08 | 6/4/2021      | 1.56 |
| 10/22/2021                         | 3.07 | 6/7/2021      | 1.57 |
| 10/25/2021                         | 3.08 | 6/8/2021      | 1.53 |
| 10/26/2021                         | 3.07 | 6/9/2021      | 1.50 |
| 10/27/2021                         | 3.09 | 6/10/2021     | 1.45 |
| 10/28/2021                         | 3.07 | 6/11/2021     | 1.47 |
| 10/29/2021                         | 3.09 | 6/14/2021     | 1.51 |
| 11/1/2021                          | 3.08 | 6/15/2021     | 1.51 |
| 11/2/2021                          | 3.07 | 6/16/2021     | 1.57 |
| 11/3/2021                          | 3.08 | 6/17/2021     | 1.52 |
| 11/4/2021                          | 3.1  | 6/18/2021     | 1.45 |
| 11/5/2021                          | 3.08 | 6/21/2021     | 1.50 |
| 11/8/2021                          | 3.12 | 6/22/2021     | 1.48 |
| 11/9/2021                          | 3.11 | 6/23/2021     | 1.50 |
| 11/10/2021                         | 3.09 | 6/24/2021     | 1.49 |
| 11/11/2021                         | 3.11 | 6/25/2021     | 1.54 |
| 11/12/2021                         | 3.12 | 6/28/2021     | 1.49 |
| 11/15/2021                         | 3.08 | 6/29/2021     | 1.49 |
| 11/16/2021                         | 3.1  | 6/30/2021     | 1.45 |
| 11/17/2021                         | 3.09 | 7/1/2021      | 1.48 |
| 11/18/2021                         | 3.11 | 7/2/2021      | 1.44 |
| 11/19/2021                         | 3.09 | 7/5/2021      | 1.44 |
| 11/22/2021                         | 3.08 | 7/6/2021      | 1.37 |
| 11/23/2021                         | 3.07 | 7/7/2021      | 1.33 |
| 11/24/2021                         | 3.08 | 7/8/2021      | 1.30 |
| 11/26/2021                         | 3.13 | 7/9/2021      | 1.37 |
| 11/29/2021                         | 3.08 | 7/12/2021     | 1.38 |
| 11/30/2021                         | 3.18 | 7/13/2021     | 1.42 |
| 12/1/2021                          | 3.17 | 7/14/2021     | 1.37 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 12/2/2021                          | 3.13 | 7/15/2021     | 1.31 |
| 12/3/2021                          | 3.1  | 7/16/2021     | 1.31 |
| 12/6/2021                          | 3.06 | 7/19/2021     | 1.19 |
| 12/7/2021                          | 3.03 | 7/20/2021     | 1.23 |
| 12/8/2021                          | 3.04 | 7/21/2021     | 1.30 |
| 12/9/2021                          | 3.04 | 7/22/2021     | 1.27 |
| 12/10/2021                         | 3.03 | 7/23/2021     | 1.30 |
| 12/13/2021                         | 2.99 | 7/26/2021     | 1.29 |
| 12/14/2021                         | 3.01 | 7/27/2021     | 1.25 |
| 12/15/2021                         | 2.96 | 7/28/2021     | 1.26 |
| 12/16/2021                         | 2.95 | 7/29/2021     | 1.28 |
| 12/17/2021                         | 2.99 | 7/30/2021     | 1.24 |
| 12/20/2021                         | 2.99 | 8/2/2021      | 1.20 |
| 12/21/2021                         | 2.99 | 8/3/2021      | 1.19 |
| 12/22/2021                         | 2.98 | 8/4/2021      | 1.19 |
| 12/23/2021                         | 2.98 | 8/5/2021      | 1.23 |
| 12/27/2021                         | 2.97 | 8/6/2021      | 1.31 |
| 12/28/2021                         | 2.94 | 8/9/2021      | 1.33 |
| 12/29/2021                         | 2.93 | 8/10/2021     | 1.36 |
| 12/30/2021                         | 2.92 | 8/11/2021     | 1.35 |
| 12/31/2021                         | 2.91 | 8/12/2021     | 1.36 |
| 1/3/2022                           | 2.94 | 8/13/2021     | 1.29 |
| 1/4/2022                           | 2.94 | 8/16/2021     | 1.26 |
| 1/5/2022                           | 2.95 | 8/17/2021     | 1.26 |
| 1/6/2022                           | 2.98 | 8/18/2021     | 1.27 |
| 1/7/2022                           | 2.96 | 8/19/2021     | 1.24 |
| 1/10/2022                          | 2.97 | 8/20/2021     | 1.26 |
| 1/11/2022                          | 3    | 8/23/2021     | 1.25 |
| 1/12/2022                          | 2.99 | 8/24/2021     | 1.29 |
| 1/13/2022                          | 2.98 | 8/25/2021     | 1.35 |
| 1/14/2022                          | 3    | 8/26/2021     | 1.34 |
| 1/18/2022                          | 3.03 | 8/27/2021     | 1.31 |
| 1/19/2022                          | 3.02 | 8/30/2021     | 1.29 |
| 1/20/2022                          | 3.02 | 8/31/2021     | 1.30 |
| 1/21/2022                          | 3.02 | 9/1/2021      | 1.31 |
| 1/24/2022                          | 3.05 | 9/2/2021      | 1.29 |
| 1/25/2022                          | 3.1  | 9/3/2021      | 1.33 |
| 1/26/2022                          | 3.12 | 9/6/2021      | 1.33 |
| 1/27/2022                          | 3.1  | 9/7/2021      | 1.38 |
| 1/28/2022                          | 3.06 | 9/8/2021      | 1.35 |
| 1/31/2022                          | 3.01 | 9/9/2021      | 1.30 |
| 2/1/2022                           | 3.05 | 9/10/2021     | 1.35 |
| 2/2/2022                           | 3    | 9/13/2021     | 1.33 |
| 2/3/2022                           | 3.02 | 9/14/2021     | 1.28 |
| 2/4/2022                           | 3.04 | 9/15/2021     | 1.31 |
| 2/7/2022                           | 3.05 | 9/16/2021     | 1.34 |
| 2/8/2022                           | 3.05 | 9/17/2021     | 1.37 |
| 2/9/2022                           | 3.03 | 9/20/2021     | 1.31 |
| 2/10/2022                          | 3.12 | 9/21/2021     | 1.33 |
| 2/11/2022                          | 3.12 | 9/22/2021     | 1.32 |
| 2/14/2022                          | 3.14 | 9/23/2021     | 1.41 |
| 2/15/2022                          | 3.16 | 9/24/2021     | 1.47 |
| 2/16/2022                          | 3.16 | 9/27/2021     | 1.48 |
| 2/17/2022                          | 3.16 | 9/28/2021     | 1.54 |
| 2/18/2022                          | 3.17 | 9/29/2021     | 1.55 |
| 2/22/2022                          | 3.17 | 9/30/2021     | 1.52 |
| 2/23/2022                          | 3.23 | 10/1/2021     | 1.48 |
| 2/24/2022                          | 3.21 | 10/4/2021     | 1.49 |
| 2/25/2022                          | 3.11 | 10/5/2021     | 1.54 |
| 2/28/2022                          | 3.1  | 10/6/2021     | 1.53 |
| 3/1/2022                           | 3.13 | 10/7/2021     | 1.58 |
| 3/2/2022                           | 3.09 | 10/8/2021     | 1.61 |
| 3/3/2022                           | 3.04 | 10/11/2021    | 1.61 |
| 3/4/2022                           | 2.98 | 10/12/2021    | 1.59 |
| 3/7/2022                           | 2.94 | 10/13/2021    | 1.56 |
| 3/8/2022                           | 2.99 | 10/14/2021    | 1.52 |
| 3/9/2022                           | 3    | 10/15/2021    | 1.59 |
| 3/10/2022                          | 2.98 | 10/18/2021    | 1.59 |
| 3/11/2022                          | 2.99 | 10/19/2021    | 1.65 |
| 3/14/2022                          | 2.99 | 10/20/2021    | 1.65 |
| 3/15/2022                          | 2.96 | 10/21/2021    | 1.68 |
| 3/16/2022                          | 2.96 | 10/22/2021    | 1.66 |
| 3/17/2022                          | 2.95 | 10/25/2021    | 1.64 |
| 3/18/2022                          | 2.97 | 10/26/2021    | 1.63 |
| 3/21/2022                          | 2.95 | 10/27/2021    | 1.54 |
| 3/22/2022                          | 2.95 | 10/28/2021    | 1.57 |
| 3/23/2022                          | 2.94 | 10/29/2021    | 1.55 |

| S&P 500 Utilities (\$\$UTIL Index)<br>Dividend Yield (NET_AGGTE_DVD_YLD) |      | 10y US T-Note<br>YIELD |      |
|--------------------------------------------------------------------------|------|------------------------|------|
| 3/24/2022                                                                | 2.92 | 11/1/2021              | 1.58 |
| 3/25/2022                                                                | 2.87 | 11/2/2021              | 1.56 |
| 3/28/2022                                                                | 2.85 | 11/3/2021              | 1.60 |
| 3/29/2022                                                                | 2.83 | 11/4/2021              | 1.53 |
| 3/30/2022                                                                | 2.81 | 11/5/2021              | 1.45 |
| 3/31/2022                                                                | 2.81 | 11/8/2021              | 1.51 |
| 4/1/2022                                                                 | 2.77 | 11/9/2021              | 1.46 |
| 4/4/2022                                                                 | 2.79 | 11/10/2021             | 1.56 |
| 4/5/2022                                                                 | 2.77 | 11/12/2021             | 1.58 |
| 4/6/2022                                                                 | 2.72 | 11/15/2021             | 1.63 |
| 4/7/2022                                                                 | 2.73 | 11/16/2021             | 1.63 |
| 4/8/2022                                                                 | 2.72 | 11/17/2021             | 1.60 |
| 4/11/2022                                                                | 2.76 | 11/18/2021             | 1.59 |
| 4/12/2022                                                                | 2.75 | 11/19/2021             | 1.54 |
| 4/13/2022                                                                | 2.75 | 11/22/2021             | 1.63 |
| 4/14/2022                                                                | 2.75 | 11/23/2021             | 1.67 |
| 4/18/2022                                                                | 2.76 | 11/24/2021             | 1.64 |
| 4/19/2022                                                                | 2.75 | 11/25/2021             | 1.64 |
| 4/20/2022                                                                | 2.73 | 11/26/2021             | 1.48 |
| 4/21/2022                                                                | 2.77 | 11/29/2021             | 1.52 |
| 4/22/2022                                                                | 2.82 | 11/30/2021             | 1.43 |
| 4/25/2022                                                                | 2.84 | 12/1/2021              | 1.43 |
| 4/26/2022                                                                | 2.87 | 12/2/2021              | 1.44 |
| 4/27/2022                                                                | 2.88 | 12/3/2021              | 1.35 |
| 4/28/2022                                                                | 2.85 | 12/6/2021              | 1.43 |
| 4/29/2022                                                                | 2.94 | 12/7/2021              | 1.48 |
| 5/2/2022                                                                 | 2.97 | 12/8/2021              | 1.52 |
| 5/3/2022                                                                 | 2.96 | 12/9/2021              | 1.49 |
| 5/4/2022                                                                 | 2.9  | 12/10/2021             | 1.48 |
| 5/5/2022                                                                 | 2.93 | 12/13/2021             | 1.42 |
| 5/6/2022                                                                 | 2.91 | 12/14/2021             | 1.44 |
| 5/9/2022                                                                 | 2.93 | 12/15/2021             | 1.47 |
| 5/10/2022                                                                | 2.97 | 12/16/2021             | 1.44 |
| 5/11/2022                                                                | 2.95 | 12/17/2021             | 1.41 |
| 5/12/2022                                                                | 2.98 | 12/20/2021             | 1.43 |
| 5/13/2022                                                                | 2.95 | 12/21/2021             | 1.48 |
| 5/16/2022                                                                | 2.94 | 12/22/2021             | 1.46 |
| 5/17/2022                                                                | 2.91 | 12/23/2021             | 1.50 |
| 5/18/2022                                                                | 2.95 | 12/27/2021             | 1.48 |
| 5/19/2022                                                                | 2.95 | 12/28/2021             | 1.49 |
| 5/20/2022                                                                | 2.95 | 12/29/2021             | 1.55 |
| 5/23/2022                                                                | 2.91 | 12/30/2021             | 1.52 |
| 5/24/2022                                                                | 2.85 | 12/31/2021             | 1.52 |
| 5/25/2022                                                                | 2.86 | 1/3/2022               | 1.63 |
| 5/26/2022                                                                | 2.85 | 1/4/2022               | 1.66 |
| 5/27/2022                                                                | 2.81 | 1/5/2022               | 1.71 |
| 5/31/2022                                                                | 2.85 | 1/6/2022               | 1.73 |
| 6/1/2022                                                                 | 2.86 | 1/7/2022               | 1.76 |
| 6/2/2022                                                                 | 2.84 | 1/10/2022              | 1.78 |
| 6/3/2022                                                                 | 2.86 | 1/11/2022              | 1.75 |
| 6/6/2022                                                                 | 2.84 | 1/12/2022              | 1.74 |
| 6/7/2022                                                                 | 2.83 | 1/13/2022              | 1.70 |
| 6/8/2022                                                                 | 2.89 | 1/14/2022              | 1.78 |
| 6/9/2022                                                                 | 2.96 | 1/17/2022              | 1.78 |
| 6/10/2022                                                                | 2.98 | 1/18/2022              | 1.87 |
| 6/13/2022                                                                | 3.13 | 1/19/2022              | 1.83 |
| 6/14/2022                                                                | 3.21 | 1/20/2022              | 1.83 |
| 6/15/2022                                                                | 3.19 | 1/21/2022              | 1.75 |
| 6/16/2022                                                                | 3.25 | 1/24/2022              | 1.75 |
| 6/17/2022                                                                | 3.26 | 1/25/2022              | 1.78 |
| 6/21/2022                                                                | 3.2  | 1/26/2022              | 1.85 |
| 6/22/2022                                                                | 3.17 | 1/27/2022              | 1.81 |
| 6/23/2022                                                                | 3.1  | 1/28/2022              | 1.78 |
| 6/24/2022                                                                | 3.04 | 1/31/2022              | 1.79 |
| 6/27/2022                                                                | 3.02 | 2/1/2022               | 1.81 |
| 6/28/2022                                                                | 3.03 | 2/2/2022               | 1.78 |
| 6/29/2022                                                                | 3.03 | 2/3/2022               | 1.82 |
| 6/30/2022                                                                | 3    | 2/4/2022               | 1.93 |
| 7/1/2022                                                                 | 2.92 | 2/7/2022               | 1.92 |
| 7/5/2022                                                                 | 3.03 | 2/8/2022               | 1.96 |
| 7/6/2022                                                                 | 3    | 2/9/2022               | 1.94 |
| 7/7/2022                                                                 | 3    | 2/10/2022              | 2.03 |
| 7/8/2022                                                                 | 3.01 | 2/11/2022              | 1.92 |
| 7/11/2022                                                                | 2.99 | 2/14/2022              | 1.98 |
| 7/12/2022                                                                | 3.01 | 2/15/2022              | 2.05 |
| 7/13/2022                                                                | 3.02 | 2/16/2022              | 2.03 |
| 7/14/2022                                                                | 3.02 | 2/17/2022              | 1.97 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 7/15/2022                          | 3.02 | 2/18/2022     | 1.92 |
| 7/18/2022                          | 3.06 | 2/21/2022     | 1.92 |
| 7/19/2022                          | 3.04 | 2/22/2022     | 1.94 |
| 7/20/2022                          | 3.08 | 2/23/2022     | 1.99 |
| 7/21/2022                          | 3.07 | 2/24/2022     | 1.96 |
| 7/22/2022                          | 3.03 | 2/25/2022     | 1.97 |
| 7/25/2022                          | 2.99 | 2/28/2022     | 1.83 |
| 7/26/2022                          | 2.97 | 3/1/2022      | 1.72 |
| 7/27/2022                          | 2.97 | 3/2/2022      | 1.86 |
| 7/28/2022                          | 2.87 | 3/3/2022      | 1.86 |
| 7/29/2022                          | 2.85 | 3/4/2022      | 1.74 |
| 8/1/2022                           | 2.84 | 3/7/2022      | 1.78 |
| 8/2/2022                           | 2.85 | 3/8/2022      | 1.86 |
| 8/3/2022                           | 2.83 | 3/9/2022      | 1.94 |
| 8/4/2022                           | 2.83 | 3/10/2022     | 1.98 |
| 8/5/2022                           | 2.84 | 3/11/2022     | 2.00 |
| 8/8/2022                           | 2.83 | 3/14/2022     | 2.14 |
| 8/9/2022                           | 2.81 | 3/15/2022     | 2.15 |
| 8/10/2022                          | 2.8  | 3/16/2022     | 2.19 |
| 8/11/2022                          | 2.8  | 3/17/2022     | 2.20 |
| 8/12/2022                          | 2.76 | 3/18/2022     | 2.14 |
| 8/15/2022                          | 2.74 | 3/21/2022     | 2.32 |
| 8/16/2022                          | 2.73 | 3/22/2022     | 2.38 |
| 8/17/2022                          | 2.74 | 3/23/2022     | 2.32 |
| 8/18/2022                          | 2.73 | 3/24/2022     | 2.34 |
| 8/19/2022                          | 2.73 | 3/25/2022     | 2.48 |
| 8/22/2022                          | 2.77 | 3/28/2022     | 2.46 |
| 8/23/2022                          | 2.79 | 3/29/2022     | 2.41 |
| 8/24/2022                          | 2.78 | 3/30/2022     | 2.35 |
| 8/25/2022                          | 2.76 | 3/31/2022     | 2.32 |
| 8/26/2022                          | 2.8  | 4/1/2022      | 2.39 |
| 8/29/2022                          | 2.81 | 4/4/2022      | 2.42 |
| 8/30/2022                          | 2.85 | 4/5/2022      | 2.54 |
| 8/31/2022                          | 2.87 | 4/6/2022      | 2.61 |
| 9/1/2022                           | 2.83 | 4/7/2022      | 2.66 |
| 9/2/2022                           | 2.86 | 4/8/2022      | 2.72 |
| 9/6/2022                           | 2.85 | 4/11/2022     | 2.79 |
| 9/7/2022                           | 2.77 | 4/12/2022     | 2.72 |
| 9/8/2022                           | 2.76 | 4/13/2022     | 2.70 |
| 9/9/2022                           | 2.75 | 4/14/2022     | 2.83 |
| 9/12/2022                          | 2.72 | 4/15/2022     | 2.83 |
| 9/13/2022                          | 2.8  | 4/18/2022     | 2.85 |
| 9/14/2022                          | 2.78 | 4/19/2022     | 2.93 |
| 9/15/2022                          | 2.85 | 4/20/2022     | 2.85 |
| 9/16/2022                          | 2.86 | 4/21/2022     | 2.90 |
| 9/19/2022                          | 2.82 | 4/22/2022     | 2.90 |
| 9/20/2022                          | 2.86 | 4/25/2022     | 2.81 |
| 9/21/2022                          | 2.9  | 4/26/2022     | 2.77 |
| 9/22/2022                          | 2.92 | 4/27/2022     | 2.82 |
| 9/23/2022                          | 2.95 | 4/28/2022     | 2.85 |
| 9/26/2022                          | 3.02 | 4/29/2022     | 2.89 |
| 9/27/2022                          | 3.08 | 5/2/2022      | 2.99 |
| 9/28/2022                          | 3.04 | 5/3/2022      | 2.97 |
| 9/29/2022                          | 3.17 | 5/4/2022      | 2.93 |
| 9/30/2022                          | 3.24 | 5/5/2022      | 3.05 |
| 10/3/2022                          | 3.08 | 5/6/2022      | 3.12 |
| 10/4/2022                          | 3.01 | 5/9/2022      | 3.05 |
| 10/5/2022                          | 3.08 | 5/10/2022     | 2.99 |
| 10/6/2022                          | 3.19 | 5/11/2022     | 2.91 |
| 10/7/2022                          | 3.25 | 5/12/2022     | 2.84 |
| 10/10/2022                         | 3.25 | 5/13/2022     | 2.93 |
| 10/11/2022                         | 3.26 | 5/16/2022     | 2.88 |
| 10/12/2022                         | 3.37 | 5/17/2022     | 2.98 |
| 10/13/2022                         | 3.29 | 5/18/2022     | 2.88 |
| 10/14/2022                         | 3.34 | 5/19/2022     | 2.84 |
| 10/17/2022                         | 3.27 | 5/20/2022     | 2.78 |
| 10/18/2022                         | 3.21 | 5/23/2022     | 2.86 |
| 10/19/2022                         | 3.25 | 5/24/2022     | 2.76 |
| 10/20/2022                         | 3.34 | 5/25/2022     | 2.75 |
| 10/21/2022                         | 3.28 | 5/26/2022     | 2.75 |
| 10/24/2022                         | 3.25 | 5/27/2022     | 2.74 |
| 10/25/2022                         | 3.19 | 5/30/2022     | 2.74 |
| 10/26/2022                         | 3.19 | 5/31/2022     | 2.85 |
| 10/27/2022                         | 3.17 | 6/1/2022      | 2.94 |
| 10/28/2022                         | 3.08 | 6/2/2022      | 2.92 |
| 10/31/2022                         | 3.11 | 6/3/2022      | 2.96 |
| 11/1/2022                          | 3.1  | 6/6/2022      | 3.04 |

| S&P 500 Utilities (\$\$UTIL Index)<br>Dividend Yield (NET_AGGTE_DVD_YLD) |      | 10y US T-Note<br>YIELD |      |
|--------------------------------------------------------------------------|------|------------------------|------|
| 11/2/2022                                                                | 3.13 | 6/7/2022               | 2.98 |
| 11/3/2022                                                                | 3.12 | 6/8/2022               | 3.03 |
| 11/4/2022                                                                | 3.1  | 6/9/2022               | 3.04 |
| 11/7/2022                                                                | 3.16 | 6/10/2022              | 3.15 |
| 11/8/2022                                                                | 3.14 | 6/13/2022              | 3.43 |
| 11/9/2022                                                                | 3.17 | 6/14/2022              | 3.49 |
| 11/10/2022                                                               | 3.03 | 6/15/2022              | 3.33 |
| 11/11/2022                                                               | 3.06 | 6/16/2022              | 3.28 |
| 11/14/2022                                                               | 3.1  | 6/17/2022              | 3.25 |
| 11/15/2022                                                               | 3.07 | 6/20/2022              | 3.25 |
| 11/16/2022                                                               | 3.04 | 6/21/2022              | 3.31 |
| 11/17/2022                                                               | 3.1  | 6/22/2022              | 3.16 |
| 11/18/2022                                                               | 3.04 | 6/23/2022              | 3.09 |
| 11/21/2022                                                               | 3.03 | 6/24/2022              | 3.13 |
| 11/22/2022                                                               | 3    | 6/27/2022              | 3.20 |
| 11/23/2022                                                               | 2.98 | 6/28/2022              | 3.20 |
| 11/25/2022                                                               | 2.96 | 6/29/2022              | 3.10 |
| 11/28/2022                                                               | 2.99 | 6/30/2022              | 2.98 |
| 11/29/2022                                                               | 3.02 | 7/1/2022               | 2.88 |
| 11/30/2022                                                               | 2.94 | 7/4/2022               | 2.88 |
| 12/1/2022                                                                | 2.95 | 7/5/2022               | 2.82 |
| 12/2/2022                                                                | 2.96 | 7/6/2022               | 2.93 |
| 12/5/2022                                                                | 2.98 | 7/7/2022               | 3.01 |
| 12/6/2022                                                                | 2.96 | 7/8/2022               | 3.09 |
| 12/7/2022                                                                | 2.98 | 7/11/2022              | 2.99 |
| 12/8/2022                                                                | 2.95 | 7/12/2022              | 2.96 |
| 12/9/2022                                                                | 2.96 | 7/13/2022              | 2.91 |
| 12/12/2022                                                               | 2.9  | 7/14/2022              | 2.96 |
| 12/13/2022                                                               | 2.89 | 7/15/2022              | 2.93 |
| 12/14/2022                                                               | 2.89 | 7/18/2022              | 2.96 |
| 12/15/2022                                                               | 2.93 | 7/19/2022              | 3.01 |
| 12/16/2022                                                               | 2.98 | 7/20/2022              | 3.04 |
| 12/19/2022                                                               | 2.99 | 7/21/2022              | 2.91 |
| 12/20/2022                                                               | 2.99 | 7/22/2022              | 2.77 |
| 12/21/2022                                                               | 2.95 | 7/25/2022              | 2.81 |
| 12/22/2022                                                               | 2.97 | 7/26/2022              | 2.81 |
| 12/23/2022                                                               | 2.94 | 7/27/2022              | 2.78 |
| 12/27/2022                                                               | 2.92 | 7/28/2022              | 2.68 |
| 12/28/2022                                                               | 2.95 | 7/29/2022              | 2.67 |
| 12/29/2022                                                               | 2.93 | 8/1/2022               | 2.60 |
| 12/30/2022                                                               | 2.96 | 8/2/2022               | 2.75 |
| 1/3/2023                                                                 | 2.96 | 8/3/2022               | 2.73 |
| 1/4/2023                                                                 | 2.93 | 8/4/2022               | 2.68 |
| 1/5/2023                                                                 | 3    | 8/5/2022               | 2.83 |
| 1/6/2023                                                                 | 2.94 | 8/8/2022               | 2.77 |
| 1/9/2023                                                                 | 2.92 | 8/9/2022               | 2.80 |
| 1/10/2023                                                                | 2.92 | 8/10/2022              | 2.78 |
| 1/11/2023                                                                | 2.9  | 8/11/2022              | 2.87 |
| 1/12/2023                                                                | 2.92 | 8/12/2022              | 2.84 |
| 1/13/2023                                                                | 2.93 | 8/15/2022              | 2.79 |
| 1/17/2023                                                                | 2.93 | 8/16/2022              | 2.82 |
| 1/18/2023                                                                | 3    | 8/17/2022              | 2.89 |
| 1/19/2023                                                                | 3.03 | 8/18/2022              | 2.88 |
| 1/20/2023                                                                | 3.02 | 8/19/2022              | 2.98 |
| 1/23/2023                                                                | 3.02 | 8/22/2022              | 3.03 |
| 1/24/2023                                                                | 3    | 8/23/2022              | 3.05 |
| 1/25/2023                                                                | 3.04 | 8/24/2022              | 3.11 |
| 1/26/2023                                                                | 3.03 | 8/25/2022              | 3.03 |
| 1/27/2023                                                                | 3.03 | 8/26/2022              | 3.04 |
| 1/30/2023                                                                | 3.05 | 8/29/2022              | 3.12 |
| 1/31/2023                                                                | 3.03 | 8/30/2022              | 3.11 |
| 2/1/2023                                                                 | 3.02 | 8/31/2022              | 3.15 |
| 2/2/2023                                                                 | 3.02 | 9/1/2022               | 3.26 |
| 2/3/2023                                                                 | 3.08 | 9/2/2022               | 3.20 |
| 2/6/2023                                                                 | 3.05 | 9/5/2022               | 3.20 |
| 2/7/2023                                                                 | 3.06 | 9/6/2022               | 3.33 |
| 2/8/2023                                                                 | 3.11 | 9/7/2022               | 3.27 |
| 2/9/2023                                                                 | 3.16 | 9/8/2022               | 3.29 |
| 2/10/2023                                                                | 3.1  | 9/9/2022               | 3.33 |
| 2/13/2023                                                                | 3.08 | 9/12/2022              | 3.37 |
| 2/14/2023                                                                | 3.1  | 9/13/2022              | 3.42 |
| 2/15/2023                                                                | 3.08 | 9/14/2022              | 3.41 |
| 2/16/2023                                                                | 3.11 | 9/15/2022              | 3.45 |
| 2/17/2023                                                                | 3.08 | 9/16/2022              | 3.45 |
| 2/21/2023                                                                | 3.14 | 9/19/2022              | 3.49 |
| 2/22/2023                                                                | 3.15 | 9/20/2022              | 3.57 |
| 2/23/2023                                                                | 3.17 | 9/21/2022              | 3.51 |



| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 2/24/2023                          | 3.17 | 9/22/2022     | 3.70 |
| 2/27/2023                          | 3.21 | 9/23/2022     | 3.69 |
| 2/28/2023                          | 3.26 | 9/26/2022     | 3.88 |
| 3/1/2023                           | 3.32 | 9/27/2022     | 3.97 |
| 3/2/2023                           | 3.26 | 9/28/2022     | 3.72 |
| 3/3/2023                           | 3.2  | 9/29/2022     | 3.76 |
| 3/6/2023                           | 3.19 | 9/30/2022     | 3.83 |
| 3/7/2023                           | 3.24 | 10/3/2022     | 3.67 |
| 3/8/2023                           | 3.22 | 10/4/2022     | 3.62 |
| 3/9/2023                           | 3.25 | 10/5/2022     | 3.76 |
| 3/10/2023                          | 3.3  | 10/6/2022     | 3.83 |
| 3/13/2023                          | 3.25 | 10/7/2022     | 3.89 |
| 3/14/2023                          | 3.22 | 10/10/2022    | 3.89 |
| 3/15/2023                          | 3.17 | 10/11/2022    | 3.93 |
| 3/16/2023                          | 3.15 | 10/12/2022    | 3.91 |
| 3/17/2023                          | 3.18 | 10/13/2022    | 3.97 |
| 3/20/2023                          | 3.16 | 10/14/2022    | 4.00 |
| 3/21/2023                          | 3.23 | 10/17/2022    | 4.02 |
| 3/22/2023                          | 3.29 | 10/18/2022    | 4.01 |
| 3/23/2023                          | 3.32 | 10/19/2022    | 4.14 |
| 3/24/2023                          | 3.22 | 10/20/2022    | 4.24 |
| 3/27/2023                          | 3.22 | 10/21/2022    | 4.21 |
| 3/28/2023                          | 3.21 | 10/24/2022    | 4.25 |
| 3/29/2023                          | 3.17 | 10/25/2022    | 4.10 |
| 3/30/2023                          | 3.15 | 10/26/2022    | 4.04 |
| 3/31/2023                          | 3.13 | 10/27/2022    | 3.96 |
| 4/3/2023                           | 3.15 | 10/28/2022    | 4.02 |
| 4/4/2023                           | 3.14 | 10/31/2022    | 4.10 |
| 4/5/2023                           | 3.06 | 11/1/2022     | 4.07 |
| 4/6/2023                           | 3.04 | 11/2/2022     | 4.10 |
| 4/10/2023                          | 3.04 | 11/3/2022     | 4.14 |
| 4/11/2023                          | 3.04 | 11/4/2022     | 4.17 |
| 4/12/2023                          | 3.04 | 11/7/2022     | 4.22 |
| 4/13/2023                          | 3.04 | 11/8/2022     | 4.14 |
| 4/14/2023                          | 3.08 | 11/9/2022     | 4.12 |
| 45033                              | 3.06 | 11/10/2022    | 3.82 |
| 45034                              | 3.08 | 11/14/2022    | 3.88 |
| 45035                              | 3.05 | 11/15/2022    | 3.80 |
| 4/20/2023                          | 3.05 | 11/16/2022    | 3.67 |
| 4/21/2023                          | 3.04 | 11/17/2022    | 3.77 |
| 4/24/2023                          | 3.03 | 11/18/2022    | 3.82 |
| 4/25/2023                          | 3.03 | 11/21/2022    | 3.83 |
| 4/26/2023                          | 3.11 | 11/22/2022    | 3.76 |
| 4/27/2023                          | 3.07 | 11/23/2022    | 3.71 |
| 4/28/2023                          | 3.08 | 11/24/2022    | 3.71 |
| 5/1/2023                           | 3.07 | 11/25/2022    | 3.68 |
| 5/2/2023                           | 3.11 | 11/28/2022    | 3.69 |
| 5/3/2023                           | 3.12 | 11/29/2022    | 3.75 |
| 5/4/2023                           | 3.1  | 11/30/2022    | 3.68 |
| 45051                              | 3.08 | 12/1/2022     | 3.53 |
| 45054                              | 3.09 | 12/2/2022     | 3.51 |
| 45055                              | 3.1  | 12/5/2022     | 3.60 |
| 45056                              | 3.07 | 12/6/2022     | 3.51 |
| 45057                              | 3.11 | 12/7/2022     | 3.42 |
| 45058                              | 3.1  | 12/8/2022     | 3.48 |
| 5/15/2023                          | 3.14 | 12/9/2022     | 3.57 |
| 5/16/2023                          | 3.22 | 12/12/2022    | 3.61 |
| 5/17/2023                          | 3.23 | 12/13/2022    | 3.51 |
| 5/18/2023                          | 3.24 | 12/14/2022    | 3.49 |
| 5/19/2023                          | 3.25 | 12/15/2022    | 3.44 |
| 5/22/2023                          | 3.25 | 12/16/2022    | 3.48 |
| 5/23/2023                          | 3.26 | 12/19/2022    | 3.57 |
| 5/24/2023                          | 3.28 | 12/20/2022    | 3.69 |
| 5/25/2023                          | 3.33 | 12/21/2022    | 3.68 |
| 5/26/2023                          | 3.34 | 12/22/2022    | 3.67 |
| 5/30/2023                          | 3.35 | 12/23/2022    | 3.75 |
| 5/31/2023                          | 3.32 | 12/26/2022    | 3.75 |
| 6/1/2023                           | 3.35 | 12/27/2022    | 3.84 |
| 6/2/2023                           | 3.31 | 12/28/2022    | 3.88 |
| 6/5/2023                           | 3.3  | 12/29/2022    | 3.83 |
| 6/6/2023                           | 3.3  | 12/30/2022    | 3.88 |
| 6/7/2023                           | 3.24 | 1/2/2023      | 3.88 |
| 6/8/2023                           | 3.23 | 1/3/2023      | 3.79 |
| 6/9/2023                           | 3.25 | 1/4/2023      | 3.69 |
| 6/12/2023                          | 3.26 | 1/5/2023      | 3.71 |
| 6/13/2023                          | 3.26 | 1/6/2023      | 3.55 |
| 6/14/2023                          | 3.27 | 1/9/2023      | 3.53 |

| S&P 500 Utilities (\$\$UTIL Index) |      | 10y US T-Note |      |
|------------------------------------|------|---------------|------|
| Dividend Yield (NET_AGGTE_DVD_YLD) |      | YIELD         |      |
| 6/15/2023                          | 3.23 | 1/10/2023     | 3.61 |
| 6/16/2023                          | 3.22 | 1/11/2023     | 3.54 |
| 6/20/2023                          | 3.25 | 1/12/2023     | 3.43 |
| 6/21/2023                          | 3.22 | 1/13/2023     | 3.49 |
| 6/22/2023                          | 3.25 | 1/16/2023     | 3.49 |
| 6/23/2023                          | 3.3  | 1/17/2023     | 3.53 |
| 6/26/2023                          | 3.27 | 1/18/2023     | 3.37 |
| 6/27/2023                          | 3.27 | 1/19/2023     | 3.39 |
| 6/28/2023                          | 3.32 | 1/20/2023     | 3.48 |
| 6/29/2023                          | 3.32 | 1/23/2023     | 3.52 |
| 6/30/2023                          | 3.28 | 1/24/2023     | 3.46 |
| 7/3/2023                           | 3.26 | 1/25/2023     | 3.46 |
| 7/5/2023                           | 3.22 | 1/26/2023     | 3.49 |
| 7/6/2023                           | 3.26 | 1/27/2023     | 3.52 |
| 7/7/2023                           | 3.29 | 1/30/2023     | 3.55 |
| 7/10/2023                          | 3.3  | 1/31/2023     | 3.52 |
| 7/11/2023                          | 3.26 | 2/1/2023      | 3.39 |
| 7/12/2023                          | 3.21 | 2/2/2023      | 3.40 |
| 7/13/2023                          | 3.2  | 2/3/2023      | 3.53 |
| 7/14/2023                          | 3.21 | 2/6/2023      | 3.63 |
| 7/17/2023                          | 3.25 | 2/7/2023      | 3.67 |
| 7/18/2023                          | 3.28 | 2/8/2023      | 3.63 |
| 7/19/2023                          | 3.24 | 2/9/2023      | 3.67 |
| 7/20/2023                          | 3.19 | 2/10/2023     | 3.74 |
| 7/21/2023                          | 3.14 | 2/13/2023     | 3.72 |
| 7/24/2023                          | 3.15 | 2/14/2023     | 3.77 |
| 7/25/2023                          | 3.14 | 2/15/2023     | 3.81 |
| 7/26/2023                          | 3.14 | 2/16/2023     | 3.86 |
| 7/27/2023                          | 3.2  | 2/17/2023     | 3.82 |
| 7/28/2023                          | 3.21 | 2/20/2023     | 3.82 |
| 7/31/2023                          | 3.21 | 2/21/2023     | 3.95 |
|                                    |      | 2/22/2023     | 3.93 |
|                                    |      | 2/23/2023     | 3.88 |
|                                    |      | 2/24/2023     | 3.95 |
|                                    |      | 2/27/2023     | 3.92 |
|                                    |      | 2/28/2023     | 3.92 |
|                                    |      | 3/1/2023      | 4.01 |
|                                    |      | 3/2/2023      | 4.08 |
|                                    |      | 3/3/2023      | 3.97 |
|                                    |      | 3/6/2023      | 3.98 |
|                                    |      | 3/7/2023      | 3.97 |
|                                    |      | 3/8/2023      | 3.98 |
|                                    |      | 3/9/2023      | 3.93 |
|                                    |      | 3/10/2023     | 3.70 |
|                                    |      | 3/13/2023     | 3.55 |
|                                    |      | 3/14/2023     | 3.64 |
|                                    |      | 3/15/2023     | 3.51 |
|                                    |      | 3/16/2023     | 3.56 |
|                                    |      | 3/17/2023     | 3.39 |
|                                    |      | 3/20/2023     | 3.47 |
|                                    |      | 3/21/2023     | 3.59 |
|                                    |      | 3/22/2023     | 3.48 |
|                                    |      | 3/23/2023     | 3.38 |
|                                    |      | 3/24/2023     | 3.38 |
|                                    |      | 3/27/2023     | 3.53 |
|                                    |      | 3/28/2023     | 3.55 |
|                                    |      | 3/29/2023     | 3.57 |
|                                    |      | 3/30/2023     | 3.55 |
|                                    |      | 3/31/2023     | 3.48 |
|                                    |      | 4/3/2023      | 3.43 |
|                                    |      | 4/4/2023      | 3.35 |
|                                    |      | 4/5/2023      | 3.30 |
|                                    |      | 4/6/2023      | 3.30 |
|                                    |      | 4/7/2023      | 3.39 |
|                                    |      | 4/10/2023     | 3.41 |
|                                    |      | 4/11/2023     | 3.43 |
|                                    |      | 4/12/2023     | 3.41 |
|                                    |      | 4/13/2023     | 3.45 |
|                                    |      | 4/14/2023     | 3.52 |
|                                    |      | 4/17/2023     | 3.60 |
|                                    |      | 4/18/2023     | 3.58 |
|                                    |      | 4/19/2023     | 3.60 |
|                                    |      | 4/20/2023     | 3.54 |
|                                    |      | 4/21/2023     | 3.57 |
|                                    |      | 4/24/2023     | 3.52 |
|                                    |      | 4/25/2023     | 3.40 |
|                                    |      | 4/26/2023     | 3.43 |

| S&P 500 Utilities (\$\$UTIL Index)<br>Dividend Yield (NET_AGGTE_DVD_YLD) | 10y US T-Note<br>YIELD |
|--------------------------------------------------------------------------|------------------------|
| 4/27/2023                                                                | 3.53                   |
| 4/28/2023                                                                | 3.44                   |
| 5/1/2023                                                                 | 3.59                   |
| 5/2/2023                                                                 | 3.44                   |
| 5/3/2023                                                                 | 3.38                   |
| 5/4/2023                                                                 | 3.37                   |
| 5/5/2023                                                                 | 3.44                   |
| 5/8/2023                                                                 | 3.52                   |
| 5/9/2023                                                                 | 3.53                   |
| 5/10/2023                                                                | 3.43                   |
| 5/11/2023                                                                | 3.39                   |
| 5/12/2023                                                                | 3.46                   |
| 5/15/2023                                                                | 3.50                   |
| 5/16/2023                                                                | 3.54                   |
| 5/17/2023                                                                | 3.57                   |
| 5/18/2023                                                                | 3.65                   |
| 5/19/2023                                                                | 3.70                   |
| 5/22/2023                                                                | 3.72                   |
| 5/23/2023                                                                | 3.70                   |
| 5/24/2023                                                                | 3.73                   |
| 5/25/2023                                                                | 3.83                   |
| 5/26/2023                                                                | 3.80                   |
| 5/29/2023                                                                | 3.80                   |
| 5/30/2023                                                                | 3.69                   |
| 5/31/2023                                                                | 3.64                   |
| 6/1/2023                                                                 | 3.61                   |
| 6/2/2023                                                                 | 3.69                   |
| 6/5/2023                                                                 | 3.69                   |
| 6/6/2023                                                                 | 3.70                   |
| 6/7/2023                                                                 | 3.79                   |
| 6/8/2023                                                                 | 3.73                   |
| 6/9/2023                                                                 | 3.75                   |
| 6/12/2023                                                                | 3.73                   |
| 6/13/2023                                                                | 3.84                   |
| 6/14/2023                                                                | 3.83                   |
| 6/15/2023                                                                | 3.72                   |
| 6/16/2023                                                                | 3.77                   |
| 6/19/2023                                                                | 3.77                   |
| 6/20/2023                                                                | 3.74                   |
| 6/21/2023                                                                | 3.72                   |
| 6/22/2023                                                                | 3.80                   |
| 6/23/2023                                                                | 3.74                   |
| 6/26/2023                                                                | 3.72                   |
| 6/27/2023                                                                | 3.77                   |
| 6/28/2023                                                                | 3.71                   |
| 6/29/2023                                                                | 3.85                   |
| 6/30/2023                                                                | 3.81                   |
| 7/3/2023                                                                 | 3.86                   |
| 7/4/2023                                                                 | 3.86                   |
| 7/5/2023                                                                 | 3.95                   |
| 7/6/2023                                                                 | 4.05                   |
| 7/7/2023                                                                 | 4.06                   |
| 7/10/2023                                                                | 4.01                   |
| 7/11/2023                                                                | 3.99                   |
| 7/12/2023                                                                | 3.86                   |
| 7/13/2023                                                                | 3.76                   |
| 7/14/2023                                                                | 3.83                   |
| 7/17/2023                                                                | 3.81                   |
| 7/18/2023                                                                | 3.80                   |
| 7/19/2023                                                                | 3.75                   |
| 7/20/2023                                                                | 3.85                   |
| 7/21/2023                                                                | 3.84                   |
| 7/24/2023                                                                | 3.86                   |
| 7/25/2023                                                                | 3.91                   |
| 7/26/2023                                                                | 3.86                   |
| 7/27/2023                                                                | 4.01                   |
| 7/28/2023                                                                | 3.96                   |
| 7/31/2023                                                                | 3.97                   |

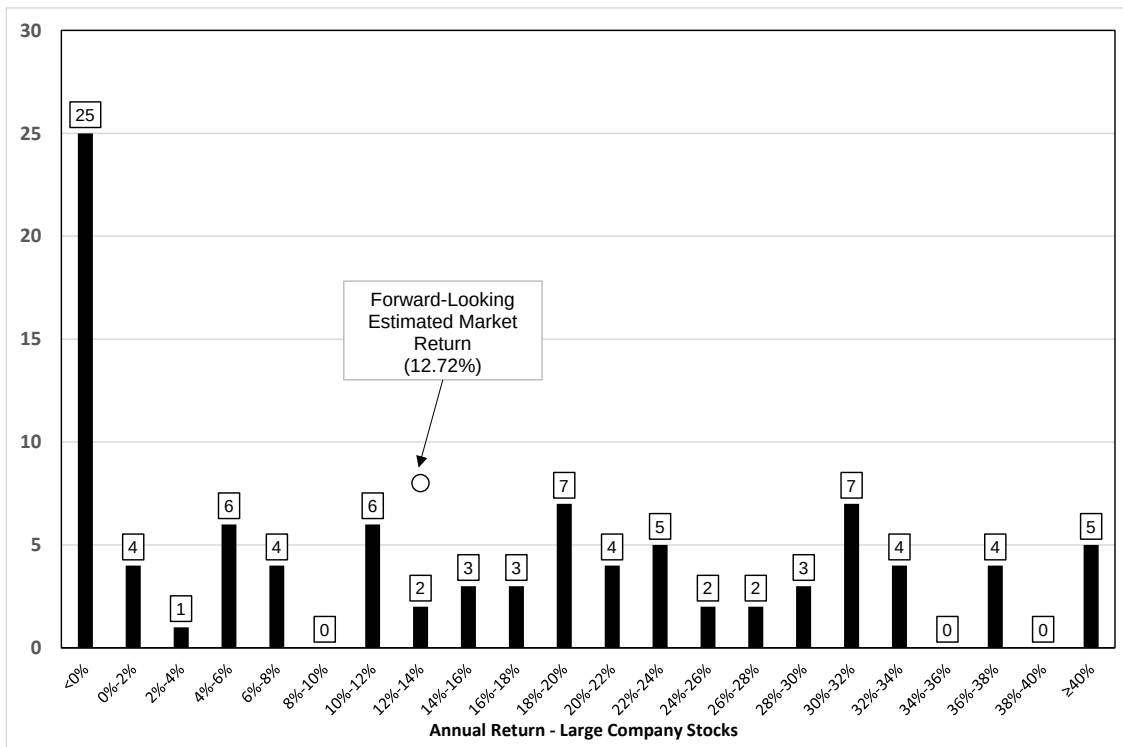
## Historical equity market returns and historical equity premium (HEP)

|      | Large Co Stock<br>Total Return<br>Table A-1 | Income Only<br>Returns LT Govt<br>Table A-7 | Observed<br>Equity<br>Premium |
|------|---------------------------------------------|---------------------------------------------|-------------------------------|
| 1926 | 11.62%                                      | 3.73%                                       | 7.89%                         |
| 1927 | 37.49%                                      | 3.41%                                       | 34.08%                        |
| 1928 | 43.61%                                      | 3.22%                                       | 40.39%                        |
| 1929 | -8.42%                                      | 3.47%                                       | -11.89%                       |
| 1930 | -24.90%                                     | 3.32%                                       | -28.22%                       |
| 1931 | -43.34%                                     | 3.33%                                       | -46.67%                       |
| 1932 | -8.19%                                      | 3.69%                                       | -11.88%                       |
| 1933 | 53.99%                                      | 3.12%                                       | 50.87%                        |
| 1934 | -1.44%                                      | 3.18%                                       | -4.62%                        |
| 1935 | 47.67%                                      | 2.81%                                       | 44.86%                        |
| 1936 | 33.92%                                      | 2.77%                                       | 31.15%                        |
| 1937 | -35.03%                                     | 2.66%                                       | -37.69%                       |
| 1938 | 31.12%                                      | 2.64%                                       | 28.48%                        |
| 1939 | 0.41%                                       | 2.40%                                       | -1.99%                        |
| 1940 | -9.78%                                      | 2.23%                                       | -12.01%                       |
| 1941 | -11.59%                                     | 1.94%                                       | -13.53%                       |
| 1942 | 20.34%                                      | 2.46%                                       | 17.88%                        |
| 1943 | 25.90%                                      | 2.44%                                       | 23.46%                        |
| 1944 | 19.75%                                      | 2.46%                                       | 17.29%                        |
| 1945 | 36.44%                                      | 2.34%                                       | 34.10%                        |
| 1946 | -8.07%                                      | 2.04%                                       | -10.11%                       |
| 1947 | 5.71%                                       | 2.13%                                       | 3.58%                         |
| 1948 | 5.50%                                       | 2.40%                                       | 3.10%                         |
| 1949 | 18.79%                                      | 2.25%                                       | 16.54%                        |
| 1950 | 31.71%                                      | 2.12%                                       | 29.59%                        |
| 1951 | 24.02%                                      | 2.38%                                       | 21.64%                        |
| 1952 | 18.37%                                      | 2.66%                                       | 15.71%                        |
| 1953 | -0.99%                                      | 2.84%                                       | -3.83%                        |
| 1954 | 52.62%                                      | 2.79%                                       | 49.83%                        |
| 1955 | 31.56%                                      | 2.75%                                       | 28.81%                        |
| 1956 | 6.56%                                       | 2.99%                                       | 3.57%                         |
| 1957 | -10.78%                                     | 3.44%                                       | -14.22%                       |
| 1958 | 43.36%                                      | 3.27%                                       | 40.09%                        |
| 1959 | 11.96%                                      | 4.01%                                       | 7.95%                         |
| 1960 | 0.47%                                       | 4.26%                                       | -3.79%                        |
| 1961 | 26.89%                                      | 3.83%                                       | 23.06%                        |
| 1962 | -8.73%                                      | 4.00%                                       | -12.73%                       |
| 1963 | 22.80%                                      | 3.89%                                       | 18.91%                        |
| 1964 | 16.48%                                      | 4.15%                                       | 12.33%                        |
| 1965 | 12.45%                                      | 4.20%                                       | 8.25%                         |
| 1966 | -10.06%                                     | 4.49%                                       | -14.55%                       |
| 1967 | 23.98%                                      | 4.59%                                       | 19.39%                        |

|                       | Large Co Stock<br>Total Return<br>Table A-1 | Income Only<br>Returns LT Govt<br>Table A-7 | Observed<br>Equity<br>Premium |
|-----------------------|---------------------------------------------|---------------------------------------------|-------------------------------|
| 1968                  | 11.06%                                      | 5.50%                                       | 5.56%                         |
| 1969                  | -8.50%                                      | 5.95%                                       | -14.45%                       |
| 1970                  | 4.01%                                       | 6.74%                                       | -2.73%                        |
| 1971                  | 14.31%                                      | 6.32%                                       | 7.99%                         |
| 1972                  | 18.98%                                      | 5.87%                                       | 13.11%                        |
| 1973                  | -14.66%                                     | 6.51%                                       | -21.17%                       |
| 1974                  | -26.47%                                     | 7.27%                                       | -33.74%                       |
| 1975                  | 37.20%                                      | 7.99%                                       | 29.21%                        |
| 1976                  | 23.84%                                      | 7.89%                                       | 15.95%                        |
| 1977                  | -7.18%                                      | 7.14%                                       | -14.32%                       |
| 1978                  | 6.56%                                       | 7.90%                                       | -1.34%                        |
| 1979                  | 18.44%                                      | 8.86%                                       | 9.58%                         |
| 1980                  | 32.50%                                      | 9.97%                                       | 22.53%                        |
| 1981                  | -4.92%                                      | 11.55%                                      | -16.47%                       |
| 1982                  | 21.55%                                      | 13.50%                                      | 8.05%                         |
| 1983                  | 22.56%                                      | 10.38%                                      | 12.18%                        |
| 1984                  | 6.27%                                       | 11.74%                                      | -5.47%                        |
| 1985                  | 31.73%                                      | 11.25%                                      | 20.48%                        |
| 1986                  | 18.67%                                      | 8.98%                                       | 9.69%                         |
| 1987                  | 5.25%                                       | 7.92%                                       | -2.67%                        |
| 1988                  | 16.61%                                      | 8.97%                                       | 7.64%                         |
| 1989                  | 31.69%                                      | 8.81%                                       | 22.88%                        |
| 1990                  | -3.11%                                      | 8.19%                                       | -11.30%                       |
| 1991                  | 30.47%                                      | 8.22%                                       | 22.25%                        |
| 1992                  | 7.62%                                       | 7.26%                                       | 0.36%                         |
| 1993                  | 10.08%                                      | 7.17%                                       | 2.91%                         |
| 1994                  | 1.32%                                       | 6.59%                                       | -5.27%                        |
| 1995                  | 37.58%                                      | 7.60%                                       | 29.98%                        |
| 1996                  | 22.96%                                      | 6.18%                                       | 16.78%                        |
| 1997                  | 33.36%                                      | 6.64%                                       | 26.72%                        |
| 1998                  | 28.58%                                      | 5.83%                                       | 22.75%                        |
| 1999                  | 21.04%                                      | 5.57%                                       | 15.47%                        |
| 2000                  | -9.10%                                      | 6.50%                                       | -15.60%                       |
| 2001                  | -11.89%                                     | 5.53%                                       | -17.42%                       |
| 2002                  | -22.10%                                     | 5.59%                                       | -27.69%                       |
| 2003                  | 28.68%                                      | 4.80%                                       | 23.88%                        |
| 2004                  | 10.88%                                      | 5.02%                                       | 5.86%                         |
| 2005                  | 4.91%                                       | 4.69%                                       | 0.22%                         |
| 2006                  | 15.79%                                      | 4.68%                                       | 11.11%                        |
| 2007                  | 5.49%                                       | 4.86%                                       | 0.63%                         |
| 2008                  | -37.00%                                     | 4.45%                                       | -41.45%                       |
| 2009                  | 26.46%                                      | 3.47%                                       | 22.99%                        |
| 2010                  | 15.06%                                      | 4.25%                                       | 10.81%                        |
| 2011                  | 2.11%                                       | 3.82%                                       | -1.71%                        |
| 2012                  | 16.00%                                      | 2.46%                                       | 13.54%                        |
| 2013                  | 32.39%                                      | 2.88%                                       | 29.51%                        |
| 2014                  | 13.69%                                      | 3.41%                                       | 10.28%                        |
| 2015                  | 1.38%                                       | 2.47%                                       | -1.09%                        |
| 2016                  | 11.96%                                      | 2.30%                                       | 9.66%                         |
| 2017                  | 21.83%                                      | 2.67%                                       | 19.16%                        |
| 2018                  | -4.38%                                      | 2.82%                                       | -7.20%                        |
| 2019                  | 31.49%                                      | 2.55%                                       | 28.94%                        |
| 2020                  | 18.40%                                      | 1.53%                                       | 16.87%                        |
| 2021                  | 28.70%                                      | 1.73%                                       | 26.97%                        |
| 2022                  | -18.11%                                     | 2.61%                                       | -20.72%                       |
| Arithmetic<br>average | 12.02%                                      | 4.85%                                       | 7.17%                         |

12.72%      50  
97

|        |        |         | Count | Bulkley Direct |
|--------|--------|---------|-------|----------------|
|        | 0.00%  | <0%     | 25    |                |
| 0.00%  | 2.00%  | 0%-2%   | 4     |                |
| 2.00%  | 4.00%  | 2%-4%   | 1     |                |
| 4.00%  | 6.00%  | 4%-6%   | 6     |                |
| 6.00%  | 8.00%  | 6%-8%   | 4     |                |
| 8.00%  | 10.00% | 8%-10%  | 0     |                |
| 10.00% | 12.00% | 10%-12% | 6     |                |
| 12.00% | 14.00% | 12%-14% | 2     | 8              |
| 14.00% | 16.00% | 14%-16% | 3     |                |
| 16.00% | 18.00% | 16%-18% | 3     |                |
| 18.00% | 20.00% | 18%-20% | 7     |                |
| 20.00% | 22.00% | 20%-22% | 4     |                |
| 22.00% | 24.00% | 22%-24% | 5     |                |
| 24.00% | 26.00% | 24%-26% | 2     |                |
| 26.00% | 28.00% | 26%-28% | 2     |                |
| 28.00% | 30.00% | 28%-30% | 3     |                |
| 30.00% | 32.00% | 30%-32% | 7     |                |
| 32.00% | 34.00% | 32%-34% | 4     |                |
| 34.00% | 36.00% | 34%-36% | 0     |                |
| 36.00% | 38.00% | 36%-38% | 4     |                |
| 38.00% | 40.00% | 38%-40% | 0     |                |
| 40.00% |        | ≥40%    | 5     |                |



**PUBLIC DOCUMENT – NOT PUBLIC (OR PRIVILEGED) DATA HAS BEEN EXCISED**

**[PROTECTED DATA BEGINS...**

Case No. PU-23-  
Bulkley Workpapers – Figure 14 – Customer  
Concentration Analysis  
is CONFIDENTIAL in its Entirety

**...PROTECTED DATA ENDS]**