

Algebraic Reduction of FCC Discount Rate Formula¹

$$1. \text{ Wholesale Price Discount} = 1 - \left(\frac{\text{Wholesale Service Revenue}}{\text{Total Operating Revenue}} \right)$$

$$2. \text{ Wholesale Service Revenue} = \frac{\text{Total Wholesale Expenses}}{(1 - \text{Base Margin})}$$

$$3. \text{ Total Wholesale Expenses} = \text{Total Operating Expenses} - \text{Total Avoided Costs}$$

$$4. \text{ Base Margin} = \frac{\text{Total Operating Revenue} - \text{Total Operating Expenses}}{\text{Total Operating Revenue}}$$

since

$$1 - \frac{(a - b)}{a} = \frac{b}{a}$$

$$\Rightarrow 1 - \text{Base Margin} = \frac{\text{Total Operating Expenses}}{\text{Total Operating Revenue}}$$

by substituti on :

$$\text{Wholesale Service Revenue} = \frac{\text{Total Operating Expenses} - \text{Total Avoided Costs}}{\left(\frac{\text{Total Operating Expenses}}{\text{Total Operating Revenue}} \right)}$$

and

$$\text{Wholesale Price Discount} = 1 - \left[\frac{\text{Total Operating Expenses} - \text{Total Avoided Costs}}{\left(\frac{\text{Total Operating Expenses}}{\text{Total Operating Revenue}} \right)} \right]$$

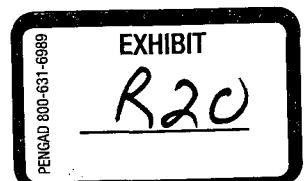
since

$$\frac{\frac{a}{\left(\frac{b}{c} \right)}}{c} = \frac{a}{b}$$

$$\Rightarrow \text{Wholesale Price Discount} = 1 - \frac{\text{Total Operating Expenses} - \text{Total Avoided Costs}}{\text{Total Operating Expenses}}$$

which reduces to :

$$5. \text{ Whole sale Price Discount} = \frac{\text{Total Avoided Costs}}{\text{Total Operating Expenses}}$$



¹ Federal Communications Commission, *Local Competition Order*, FCC 96-325 at 892 note 2147.

Numeric Example of FCC Formula without Cost Onsets

Total Operating Revenue (TOR)		\$16,975,497
Total Operating Expenses (TOE)		\$12,048,268
Base Margin (BM)	$(\text{TOR} - \text{TOE}) / \text{TOR}$	29.03%
Total Avoided Costs (TAC)		\$1,243,737
Total Wholesale Expenses (TWE)	$\text{TOE} - \text{TAC}$	\$10,804,531
Wholesale Service Revenue (WSR)	$\text{TWE} / (1 - \text{BM})$	\$15,223,125
Wholesale Price Discount (WPD)	$1 - (\text{WSR} / \text{TOR})$	10.32%

This formula yields the exact result of the simplified model TAC/TOE

TAC/TOE	10.32%
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$1 - (\text{WSR} / \text{TOR}) = \text{TAC} / \text{TOE}$	TRUE
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Source: FCC, Local Competition Order, FCC 96-235, at 892 note 2147, See also paragraph 930.