

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 substitution :

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

and

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

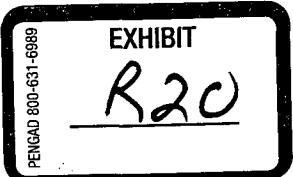
since

$$\frac{\frac{a}{b}}{\frac{c}{b}} = \frac{a}{c}$$

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

which reduces to :

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



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)	(TOR-TOE)/TOR	29.03%
Total Avoided Costs (TAC)		\$1,243,737
Total Wholesale Expenses (TWE)	TOE - TAC	\$10,804,531
Wholesale Service Revenue (WSR)	TWE / (1-BM)	\$15,223,125
Wholesale Price Discount (WPD)	1 - (WSR / TOR)	10.32%

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

$$\begin{aligned} \text{TAC/TOE} &= 10.32\% \\ 1 - (\text{WSR/TOR}) &= \text{TAC/TOE} \quad \text{TRUE} \end{aligned}$$

Source: FCC, Local Competition Order, FCC 96-235, at 892 note 2147, See also paragraph 930.