

State	In Arbitration	Interconnection Agreements
North Carolina  ARB (Total - 7) ICA (Total - 26)	GTE and AT&T GTE and Sprint GTE and MCI GTE and US LEC BellSouth and AT&T BellSouth and MCI BellSouth and Sprint	BellSouth and MCI Metro BellSouth and TCG BellSouth and TW BellSouth and Am MetroComm BellSouth and Annox BellSouth and BA/NYNEX Mobile BellSouth and CCI BellSouth and Comm Brokerage BellSouth and Comm Depot BellSouth and Hart BellSouth and ICI BellSouth and Interlink BellSouth and Jetcom BellSouth and Now Comm BellSouth and Payphone Cons. BellSouth and Second Bell BellSouth and SouthEast Tel. BellSouth and Tele Sys BellSouth and Telephone Co. Of Cent. FL BellSouth and Tricomm BellSouth and TIE comm BellSouth and Undia I BellSouth and US LEC BellSouth and USLD BellSouth and WinStar GTE and 360 Communications
North Dakota  ARB (Total - 2) ICA (Total - 2)	US WEST and Western Wireless US WEST and AT&T	US WEST and Pam Oil US WEST and Infotel Comm

**Notes:**

1. In cases where the same two parties are listed in both columns, it is because an agreement has been reached and is in effect while other portions of the interconnection arrangements are in arbitration.
2. Agreements continue to be listed in the "In Arbitration" column until the parties have incorporated the results of the arbitration into an agreement signed by the parties
3. ARB = In Arbitration
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State	In Arbitration	Interconnection Agreements
Ohio  ARB (Total - 8) ICA (Total - 6)	Ameritech and TCG Ameritech and AT&T GTE and AT&T GTE and Sprint GTE and 360 Communications GTE and ICG Cincinnati Bell & ICG Cincinnati Bell & MCI	Ameritech and Time Warner Ameritech and MFS Comm Ameritech and ICG Ameritech and MCI Ameritech and Brooks Fiber GTE and TW
Oklahoma  ARB (Total - 4) ICA (Total - 10)	GTE and AT&T GTE and Brooks Fiber GTE and Chickasaw GTE and Dobson Wireless	SBC and Brooks Fiber SBC and Dobson Wireless SBC and USLD SBC and ICAsT Connection SBC and TIE Comm SBC and Western OK Long Distance SBC and Preferred Carrier Services SBC and Oklahoma Comm South SBC and Ameritel SBC and IntermedARB
Oregon  ARB (Total - 10) ICA (Total - 4)	GTE and Sprint GTE and Western Wireless GTE and AT&T GTE and MCI US WEST and MFS US WEST and TCG US WEST and AT&T US WEST and MCI US WEST and Western Wireless US WEST and Sprint	US WEST and Gigliotti, Kadcom US WEST and Pam Oil US WEST and Montana Telcom US WEST and Adv. Telcom

**Notes:**

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2. Agreements continue to be listed in the "In Arbitration" column until the parties have incorporated the results of the arbitration into an agreement signed by the parties
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State	In Arbitration	Interconnection Agreements
Pennsylvania  ARB (Total - 7) ICA (Total - 7)	GTE and AT&T GTE and Sprint GTE and Vanguard Cellular Bentleyville Telephone and Helecon Cable Bell Atlantic and AT&T Bell Atlantic and MCI Bell Atlantic and Sprint	Bell Atlantic and MFS Bell Atlantic and ETC Bell Atlantic and CCI Bell Atlantic and C-TEC Bell Atlantic and TCG Bell Atlantic and Winstar Bell Atlantic and Hyperion
Rhode Island  ARB (Total - 4) ICA (Total - 1)	NYNEX and TCG NYNEX and AT&T NYNEX and Brooks Fiber NYNEX and MCI	NYNEX and C-TEC Services (Residential Communications Network - RCN)

**Notes:**

1. In cases where the same two parties are listed in both columns, it is because an agreement has been reached and is in effect while other portions of the interconnection arrangements are in arbitration.
2. Agreements continue to be listed in the "In Arbitration" column until the parties have incorporated the results of the arbitration into an agreement signed by the parties
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State	In Arbitration	Interconnection Agreements
South Carolina  ARB (Total - 6) ICA (Total - 25)	BellSouth and AT&T BellSouth and Sprint GTE and AT&T GTE and Vanguard Cellular GTE and Low Tech Designs GTE and 360 Communications	BellSouth and TCG BellSouth and TW BellSouth and Am MetroComm BellSouth and Annox BellSouth and ACSI BellSouth and BA/NYNEX BellSouth and CCI BellSouth and Comm Brokerage BellSouth and Comm Depot BellSouth and Hart BellSouth and ICI BellSouth and Interlink BellSouth and Jetcom BellSouth and National Tel. BellSouth and Now Comm BellSouth and Payphone Cons. BellSouth and Second Bell BellSouth and SouthEast Tel. BellSouth and Tele Sys BellSouth and Telephone Co. Of Cent. FL BellSouth and Tricomm BellSouth and TIE comm BellSouth and Undia I BellSouth and US LEC BellSouth and USLD
South Dakota  ARB (Total - 3) ICA (Total - 1)	US WEST and Dakota Telecom US WEST and Western Wireless US WEST and AT&T	US WEST and Pam Oil

**Notes:**

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State	In Arbitration	Interconnection Agreements
Tennessee  ARB (Total - 3) ICA (Total - 28)	BellSouth and MCI BellSouth and AT&T Bell South and Sprint	BellSouth and MCI Metro BellSouth and TCG BellSouth and TW BellSouth and Am MetroComm BellSouth and ACSI BellSouth and Annox BellSouth and Brooks Fiber BellSouth and Bus. Cel Systems BellSouth and CCI BellSouth and Comm Brokerage BellSouth and Comm Depot BellSouth and Hart BellSouth and ICI BellSouth and Interlink BellSouth and Jetcom BellSouth and NextLink BellSouth and Now Comm BellSouth and Payphone Cons. BellSouth and Second Bell BellSouth and Tele Sys BellSouth and SouthEast Tel BellSouth and Telephone Co. of Cent. FL BellSouth and Tricomm BellSouth and Tie Comm BellSouth and Unidia I BellSouth and USLEC BellSouth and USLD BellSouth and WinStar

**Notes:**

1. In cases where the same two parties are listed in both columns, it is because an agreement has been reached and is in effect while other portions of the interconnection arrangements are in arbitration.
2. Agreements continue to be listed in the "In Arbitration" column until the parties have incorporated the results of the arbitration into an agreement signed by the parties
3. ARB = In Arbitration
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State	In Arbitration	Interconnection Agreements
Texas  ARB (Total - 8) ICA (Total - 31)	GTE and MCI GTE and AT&T GTE and Western Wireless GTE and 360 Communications GTE and ICG GTE and Sprint GTE and ACSI SBC and Lonestar Net	SBC and AT&T SBC and American Telco SBC and Kingsgate Midsouth SBC and MFS SBC and Time Warner SBC and US Telco SBC and Texas Comm South SBC and ACSI SBC and USLD SBC and Fast Connection SBC and TIE Comm SBC and Ameritel SBC and NTS Comm SBC and Metrolink Telcom SBC and TCG SBC and Cytel SBC and Choctaw Comm SBC and Texas Teleconnect SBC and Call-Four-Less SBC and Poshner Telecommunication SBC and M-Tel SBC and WinStar Wireless SBC and EZ Talk SBC and Intermedia Comm SBC and Easy Cellular SBC and Local Telephone Service Co. SBC and ICG Telecom Group SBC and Dobson Wireless SBC and Preferred Carrier Services SBC and Metro Connections SBC and Capital Telecommunications
Utah  ARB (Total - 5) ICA (Total - 2)	US WEST and TCG US WEST and AT&T US WEST and MCI US WEST and Sprint US WEST and Western Wireless	US WEST and Pam Oil US WEST and Phoenix Fiberlink

**Notes:**

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3. ARB = In Arbitration
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State	In Arbitration	Interconnection Agreements
Vermont  ARB (Total - 1) ICA (Total - 2)	NYNEX and AT&T	NYNEX and Hyperion NYNEX and C-TEC Services (Residential Communications Network - RCN)
Virginia  ARB (Total - 10) ICA (Total - 6)	GTE and MFS GTE and 360 Communications GTE and AT&T GTE and Cox GTE and MCI GTE and Sprint Bell Atlantic and AT&T Bell Atlantic and MCI Bell Atlantic and Cox Bell Atlantic and Sprint	Bell Atlantic and Jones Bell Atlantic and MFS Bell Atlantic and TCG Bell Atlantic and Winstar Bell Atlantic and Hyperion Bell Atlantic and C-TEC
Washington  ARB (Total - 9) ICA (Total - 6)	GTE and TCG GTE and AT&T GTE and MCI Metro GTE and Sprint GTE and MFS US WEST and MFS US WEST and TCG US WEST and AT&T US WEST and MCI	US WEST and Int'l Telecom Ltd Resale & Interconnection US WEST and Pam Oil US WEST and Adv. Telcom US WEST and Citizens US WEST and Int'l Telcom US WEST and Montana Telcom
West Virginia  ARB (Total - 1)	Bell Atlantic and AT&T	
Wisconsin  ARB (Total - 5) ICA (Total - 2)	Ameritech and TCG Ameritech and AT&T Ameritech and MCI GTE and AT&T GTE and Sharon Tel.	Ameritech and Time Warner Ameritech and MFS Comm

**Notes:**

1. In cases where the same two parties are listed in both columns, it is because an agreement has been reached and is in effect while other portions of the interconnection arrangements are in arbitration.
2. Agreements continue to be listed in the "In Arbitration" column until the parties have incorporated the results of the arbitration into an agreement signed by the parties
3. ARB = In Arbitration
4. ICA = Interconnection Agreements

State	In Arbitration	Interconnection Agreements
Wyoming  ARB (Total - 2) ICA (Total - 1)	US WEST and Western Wireless US WEST and AT&T	US WEST and Pam Oil

	1/15/97	1/31/97	2/4/97	2/11/97
<b>Total for Arbitration:</b>	<b>175</b>	<b>213</b>	<b>202</b>	<b>218</b>
<b>Total for Interconnection Agreements:</b>	<b>46</b>	<b>233</b>	<b>261</b>	<b>470</b>

**Notes:**

1. In cases where the same two parties are listed in both columns, it is because an agreement has been reached and is in effect while other portions of the interconnection arrangements are in arbitration.
2. Agreements continue to be listed in the "In Arbitration" column until the parties have incorporated the results of the arbitration into an agreement signed by the parties
3. ARB = In Arbitration
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**ATTACHMENT 9**

**Affidavit of Dr. James H. Vander Weide  
USTA Reply Comments  
CC Docket No. 94-1  
Attachment C**

**USTA Reply Comments  
CC Docket No. 96-262  
February 14, 1997**

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of	)	
	)	
Price Cap Performance Review	)	
for Local Exchange Carriers	)	CC Docket 94-1
	)	
Fourth Further Notice of Proposed Rulemaking	)	
	)	
	)	

AFFIDAVIT OF DR. JAMES H. VANDER WEIDE  
IN SUPPORT OF REPLY COMMENTS OF  
THE UNITED STATES TELEPHONE ASSOCIATION

March 1, 1996

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Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
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In the Matter of	)	
Price Cap Performance Review	)	
for Local Exchange Carriers	)	CC Docket 94-1
Fourth Further Notice of Proposed Rulemaking	)	
	)	

**AFFIDAVIT OF DR. JAMES H. VANDER WEIDE  
IN SUPPORT OF REPLY COMMENTS OF  
THE UNITED STATES TELEPHONE ASSOCIATION**

**I. Introduction**

1. I am Research Professor of Finance and Economics at the Fuqua School of Business, Duke University. I have taught courses in corporate finance, investment management, management of financial institutions, statistics, economics, and operations research, as well as a Ph.D. seminar on the theory of public utility pricing. In addition to my teaching and executive education activities, I have written a book entitled *Managing Corporate Liquidity: An Introduction to Working Capital Management*, and written numerous articles and research papers on such topics as portfolio management, the cost of capital, capital budgeting, the effect of regulation on the performance of public utilities, and cash management. I hold a Ph.D. in finance from Northwestern University and a

B.A. from Cornell University. A brief review of my background is contained in Appendix 1 to this affidavit.

2. In response to the Commission's Fourth Further Notice of Proposed Rulemaking (the "Fourth Notice"), AT&T, MCI, and the Ad Hoc Telecommunications Users Committee (collectively, the "Respondents") present proposals for measuring productivity that focus on accounting rates of return on investment rather than true economic productivity. I have been asked by United States Telephone Association<sup>1</sup> to respond to these productivity proposals. For the reasons set forth below, I have concluded that the respondents' proposals are flawed in material respects.

3. This affidavit will demonstrate that: 1) the Respondents' productivity proposals are thinly-veiled attempts to reimpose rate of return regulation; 2) the Respondents' allegations that the LECs' accounting rates of return from 1991—1994 were excessive are neither true nor relevant; 3) the Respondents' failure to recognize the differences between economic and accounting rates of return causes them to reach incorrect conclusions concerning productivity, depreciation, and sharing; and 4) the Commission correctly moved away from rate of return regulation when it implemented its Price Cap Plan and should not reimpose rate of return regulation.

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<sup>1</sup>I was also asked by Bell Atlantic to update the filing I made on their behalf in the initial round of this proceeding.

**II. The Commission should regulate prices, and not rate of return as advocated by the Respondents.**

4. In 1990, the Commission instituted a price cap plan for the participating LECs that, unlike the predecessor rate of return regulation plan, is designed to regulate the LECs' access *prices* rather than their *rates of return* on investment. The Commission correctly recognized in establishing the price cap plan that rate of return regulation: 1) "discourages efficient investment;" 2) "encourages cost shifting;" 3) provides "little profit incentive to introduce new and innovative services;" and 4) "requires elaborate regulatory oversight of all the carriers' costs."<sup>2</sup> In contrast, pure price cap regulation provides incentives for the price cap LECs to reduce costs, invest in new telecommunications infrastructure, and introduce new products and services. Pure price cap regulation also reduces the administrative burdens of: determining revenues, expenses, and rate base; arbitrarily allocating revenues, expenses, and rate base to the interstate jurisdiction; and determining an appropriate depreciation allowance in a rapidly changing technological environment.

5. Despite the Commission's denunciation of rate of return regulation, the Respondents continue to urge the Commission to regulate the LECs' accounting rates of return on the "interstate portion" of their investment (an investment figure that is derived using arbitrary separation procedures). In their responses to the Fourth Notice, the Respondents

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<sup>2</sup>*Price Cap Performance Review for Local Exchange Carriers*, 9 FCC Rcd 1687 at §11 (1994).

present proposals based on their complaint that the LECs' regulatory accounting rates of return on their interstate investment are "excessive." The Respondents claim that the Commission should adopt productivity offsets designed to produce rates of return that the respondents deem more reasonable. As a result, the Respondents propose a return to rate of return regulation rather than proposing an economically meaningful measure of productivity gains actually experienced by the LECs.

6. AT&T, for example, presents what it characterizes as a total factor productivity model, the "Performance-Based" Model, that is based on the LECs' achieved accounting rates of return on investment during the price cap period. AT&T's Performance-Based Model was developed in conjunction with their consultant, Dr. John R. Norsworthy. In his report, Dr. Norsworthy states that a "principal difference between the [Christensen] Model and the Performance-Based Model involves their respective assignment of costs to capital."<sup>3</sup> Dr. Norsworthy treats the price cap LECs' achieved rate of return on capital during the price cap period, based on regulatory accounting principles, as his estimate of the price cap LECs' cost of capital in the market place. Christensen, on the other hand, correctly measures the price cap LECs' cost of capital from capital market data. AT&T's "Performance-Based" Model produces a higher productivity or X-Factor for the LECs than the Christensen model partly because AT&T incorrectly uses the LECs'

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<sup>3</sup>Appendix A, Statement of Dr. John R. Norsworthy, "Analysis of TFP Methods for Measuring the X-Factor of the Local Exchange Carriers' Interstate Access Services," pp. 20–21.

achieved regulatory accounting rate of return on investment as their estimate of the cost of capital. By relying on accounting returns, AT&T's model has more in common with rate of return regulation than with productivity-based price caps.

7. AT&T's latest approach is fundamentally no different than another proposal it made earlier in this proceeding—a proposal it called a "Direct Method" for measuring productivity and that the Commission dubbed the Historical Revenue Method. AT&T's earlier proposal urged the Commission to set an X-Factor in the Price Cap Plan that, had it been in place during the price cap period, would have reduced the LECs' achieved accounting rates of return during the price cap period to the Commission's estimate of the cost of capital. As a result, that earlier proposal entailed a full scale retreat to rate of return regulation, and with it a return to all the problems the Commission sought to avoid by moving toward price cap regulation.

8. Despite its "new" appearance, AT&T's current model is actually just a dressed-up version of its earlier rate of return proposal. Both proposals urge the Commission to regulate the price cap LECs' accounting rates of return on investment—measured by arbitrary cost allocation, depreciation, and other regulatory accounting standards—just as the Commission did under rate of return regulation. If the LECs' accounting rates of return increase, AT&T's latest proposal—like its earlier one—would produce reductions to the LECs' access rates to the point that their

regulatory accounting rates of return equal their prescribed economic cost of capital.

9. Similarly, other respondents also focus their attention on rate of return concepts that are not relevant under price caps. For example, MCI claims that the LECs are earning "excessive profits," as measured by their regulatory accounting rates of return, and goes on to argue that these profits were not a result of under-depreciation. Based on these claims, MCI also urges the Commission to effectively retreat to rate of return regulation in order to set access rates that would eliminate the LECs' supposed "high profit levels during the price cap period."<sup>4</sup>

10. Likewise, the Ad Hoc Committee also urges a backtrack to rate of return concepts, and goes so far as to argue that "the Commission . . . may not regulate LEC rates without regard to whether the LECs' earnings from such rates are within the zone of reasonableness." The Ad Hoc Committee's filing also is replete with claims of "excessive profits" or "excessive returns," and it relies upon these claims as the basis for its argument that the Commission should adopt an extraordinarily high productivity factor in order to reduce the LECs' supposed excess profits.<sup>5</sup>

11. Because they focus on the price cap LECs' rates of return on investment rather than their true economic productivity, the

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<sup>4</sup>Appendix A, "Depreciation Policy in the Telecommunications Industry: Implications for Cost Recovery by the Local Exchange Carriers," page 4, by Kenneth C. Baseman and Harold Van Gieson, in MCI Telecommunications Corporation's *Comments*.

<sup>5</sup> Ad Hoc Committee *Comments*, p. 2, p. 8, p. 48, p. 49.

Respondents' proposals are thinly-veiled attempts to reimpose rate of return regulation. Under rate of return regulation, a firm's rates are based on the Commission's judgment of the firm's cost of capital, which becomes its authorized rate of return. If the firm increases its earnings beyond its authorized rate of return as a result of efficiency improvements or the introduction of successful new products, its "reward" will be a mandated decrease in its rates to bring its overall rate of return back to the authorized level. The effect of increasing the productivity factor and reducing the price cap index to take away alleged over earnings is the same as the effect of rate of return regulation.

12. The Commission correctly moved away from rate of return regulation, with its disincentive effects and administrative burdens, when it instituted the price cap plan. In response to the Commission's Fourth Further Notice on price cap regulation, the Respondents have recommended productivity proposals that would have the same effect as rate of return regulation: they would reduce the price cap LECs' rates whenever the price cap LECs' achieved accounting rates of return, based on regulatory cost allocations and depreciation rules, exceed the Commission's estimate of the price cap LECs' cost of capital. Adopting the Respondents' productivity proposals would reintroduce the same skewed incentives and administrative burdens that the Commission sought to avoid when it adopted its Price Cap Plan. The Commission should not return to rate of return regulation now in reaction to the ill-conceived productivity proposals of the Respondents.

**III. Economic rates of return measure actual economic performance, while accounting rates of return do not.**

13. While any review of earnings or returns is inappropriate in a price cap environment, if the Commission nevertheless wishes to evaluate the charge that the LECs' earned rates of return on investment are "excessive," the Commission must distinguish between the price cap LECs' economic and accounting rates of return on investment. The term "rate of return on investment" is generally defined as the ratio of the income, or profit, per period from an investment to the dollar amount of the investment at the beginning of the period. The economic and accounting definitions of "rate of return on investment" differ primarily in their definitions of "income" and "amount of the investment" at the beginning of the period.

14. Economists rely on the economic definition of "income" and "amount of investment" presented by Nobel Prize winner J. R. Hicks in his classic work titled, *Value and Capital*. On page 172 of his work, Hicks states,

The purpose of income calculations in practical affairs is to give people an indication of the amount which they can consume without impoverishing themselves. Following out this idea, it would seem that we ought to define a man's income as the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning. Thus, when a person saves, he plans to be better off in the future; when he lives beyond his income, he plans to be worse off.

According to this definition, the economic income from an investment is the sum of the cash flow from the investment during the period plus the change in market value of the investment. (If an individual consumes the cash flow

plus the change in the market value of the investment, the individual's wealth will be the same at the end of the period as at the beginning.) Likewise, according to this definition, the amount of the investment is the market value of the investment at the beginning of the period. Thus, the ***economic rate of return on an investment*** is current cash flow, plus the change in market value, divided by the market value of the investment at the beginning of the period.<sup>6</sup>

15. In contrast to economists, accountants define income as the difference between total revenues and expenses, where revenues and expenses are defined in accordance with Generally Accepted Accounting Principles (GAAP). While it is difficult to describe GAAP briefly, GAAP is essentially based on historical costs rather than market values, accrued revenues and expenses rather than cash flows, and accounting depreciation rather than economic depreciation. In addition, accountants define the amount of investment as the book value of investment (original cost minus book depreciation), not the market value of investment.

16. Moreover, regulatory accounting for LECs does not even rely on GAAP, but instead is based on regulatory requirements. Accounting rates of return based on regulatory accounting principles distort economic reality to an even greater extent than accounting rates of return based on

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<sup>6</sup>See "Some Aspects of the Pure Theory of Capital," by Paul Samuelson, in *The Quarterly Journal of Economics*, May 1937; and *Investments*, 4th edition, by William F. Sharpe and Gordon J. Alexander, Prentice Hall, 1990, page 509.

GAAP because regulatory accounting rates of return depend on cost allocation and depreciation rules that are ultimately arbitrary.

17. The difference between the economic and accounting rates of return on an equity investment can now be stated succinctly. The economic rate of return is equal to the dividend yield from the investment (that is, dividend divided by price), plus the percentage change in the market value of the investment during the period (that is, the capital gain). The accounting rate of return is equal to earnings divided by the book value of the investment at the beginning of the period. Since earnings is equal to dividends plus the change in book value, however, the accounting rate of return is also equal to the dividend yield on book value (i.e., dividends divided by book value), plus the percentage change in book value during the period.<sup>7</sup>

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<sup>7</sup>These ideas are expressed mathematically as follows. The economic rate of return is equal to:

$$\text{Economic Rate of Return} = \frac{D_t}{P_{t-1}} + \frac{P_t - P_{t-1}}{P_{t-1}}$$

where:

$D_t$  = dividends during period t  
 $P_t$  = market value of investment at end of period t  
 $P_{t-1}$  = market value of investment at beginning of period t.

The accounting rate of return is equal to:

$$\text{Accounting Rate of Return} = \frac{E_t}{B_{t-1}}$$

where:

$E_t$  = earnings during period t

(continued...)

18. Accounting rates of return do not indicate the return investors actually receive on their investment in the price cap LECs. Accounting rates of return are based on: 1) accounting rather than economic depreciation, 2) book values rather than market values, and 3) accrued revenues and expenses rather than cash flows.<sup>8</sup> In addition, regulatory accounting rates of return are based on prescribed depreciation rates that are lower than those used by comparable firms in competitive markets.

19. The Commission recognized the distinction between economic and accounting rates of return in its *First Report and Order* when it

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<sup>7</sup>(...continued)  
 $B_{t-1}$  = book, or accounting, value of investment at beginning of period  $t$ .

Since earnings during period  $t$  can also be expressed as:

$$(B_t - B_{t-1}) + D_t$$

where:

$B_t$  = book, or accounting, value of investment at end of period  $t$   
 $B_{t-1}$  = book, or accounting, value of investment at beginning of period  $t$   
 $D_t$  = dividends during period  $t$ .

the accounting rate of return is also equal to:

$$\text{Accounting Rate of Return} = \frac{D_t}{B_{t-1}} + \frac{B_t - B_{t-1}}{B_{t-1}}$$

<sup>8</sup> See, for example, Ezra Solomon, "Alternative rate of return concepts and their implications for utility regulation," *The Bell Journal of Economics and Management Science*, Spring 1970, pp. 65–81; and Franklin M. Fisher and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," *American Economic Review*, Vol. 73, No. 1, March 1983, pp. 82–97.

ruled that the price cap LECs cannot treat the increased accounting expenses resulting from accounting rule changes, such as SFAS 106, as "exogenous costs" under the Price Cap Plan. The Commission defended its rule by stating that:

a change in accounting rules that has an impact on a LEC's discounted cash flow represents a change in the LEC's economic costs and should be eligible for exogenous treatment . . . Conversely, an accounting change that does not affect a LEC's discounted cash flow does not represent a change in the LEC's economic costs and should not be eligible for exogenous treatment.<sup>9</sup>

If the focus on economic rates of return is appropriate regarding the treatment of exogenous costs,<sup>10</sup> the focus on economic rates of return is even more appropriate to evaluate the Respondents' productivity proposals. The Respondents' emphasis on accounting rates of return is inconsistent with the Commission's reasoning in the *First Report and Order*.

20. Economic and accounting rates of return on investment can differ significantly and can move in different directions. If, for example, the market value of an investment is increasing less rapidly than book value,

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<sup>9</sup>Price Cap Performance Review for Local Exchange Carriers, *First Report and Order*, CC Docket No. 94-1, FCC No. 95-132 (released April 7, 1995), at §295.

<sup>10</sup>While the Commission relied on economic return concepts in its evaluation of exogenous costs, it failed to recognize when it applied the concept to new accounting standards for the LECs' post-employment benefit costs that the new accounting standard was designed to measure the true economic effect of a firm's current employment decisions. Specifically, the new accounting standard recognizes that a firm incurs a liability when it employs an individual in the current period, and that the liability, as measured by the discounted present value of a firm's future health outlays, must be recognized as a current economic expense. Thus, the new accounting standard *does* measure the economic costs associated with a firm's current employment decisions.

then the economic rate of return will be moving down relative to the accounting rate of return. On the other hand, if the market value is increasing more rapidly than book value, then the economic rate of return will be increasing relative to the accounting rate of return. Regardless of which circumstance prevails, ***the economic rate of return is always a better measure of actual economic performance.***

IV. The LECs' economic rates of return during the price cap period are significantly less than their accounting rates of return.

21. If the Commission wishes to evaluate the economic performance of the price cap LECs under the price cap plan, the Commission should review data regarding the LECs' economic rates of return on capital rather than their accounting rates of return on capital. As shown on Schedule 1, I have calculated the LECs' economic rates of return on total capital using Bureau of Economic Analysis data on the current value of various categories of telecommunications equipment and total dividend data for the price cap LECs. The price cap LECs' total company economic rate of return on investment was 8.94 percent for the period 1991-94.

22. These economic earnings are not only below the accounting earnings reported by the LECs, but they are also below the Commission's 11.25% rate of return benchmark. The benchmark is based on cash flows and market values, not accrued income and book values. As such, it is itself an *economic* benchmark that is only comparable to *economic* rates of return. Thus, if they were to be evaluated under a rate of

return standard, the LECs would be legally entitled to *raise* rates based on their current returns.

**V. AT&T's model incorrectly relies on accounting rates of return to measure the cost of capital.**

23. AT&T's proposed model not only relies on rate of return concepts, but uses regulatory accounting results rather than economic returns. According to AT&T's consultant Dr. Norsworthy,

The difference between these models [the AT&T Model and Dr. Christensen's TFP model] lies in the respective assignments of costs to capital. The Performance-Based Model, like the regulatory process itself, treats the difference between total revenues (TR) and labor and materials expense ( $E_L$ ,  $E_M$ ) as a **gross return to capital**. Thus, in the Performance-Based Model all revenues received by the LEC are assigned to some input cost category. By contrast, the USTA assumed rate-of-return model presupposes a long-term user cost per unit of capital, and assigns a total cost of capital,  $AC_K$ , that is the product of the quantity of capital input,  $K$ , and the long term user cost,  $P_K$ , which is based on an *assumed* rate of return.<sup>11</sup>

Thus, one difference between the AT&T Model and the Christensen model is that the AT&T Model uses the LECs' regulatory accounting rate of return on capital to measure the LECs' cost of capital, while the Christensen model measures the LECs' cost of capital directly.

24. AT&T's use of the price cap LECs' achieved regulatory accounting rates of return as its measure of the price cap LECs' cost of capital in its "Performance-Based" Model makes no economic sense. The cost of capital is an economic concept that is based on investors' estimates

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<sup>11</sup>*Comments of AT&T*, page 37. (emphasis original to Dr. Norsworthy)