

In both models, the staff relies on BLS data for the nonfarm sector. BLS measures nonfarm TFP and input price growth using a model based on an internally calculated rate of return, i.e., total revenue equals total cost and all measured profits are assumed to reflect opportunity costs. One nice feature of the 1997 staff model is that its adoption of an internal rate of return framework for the LEC capital accounts guarantees symmetry with the BLS accounts so that the computation of the TFP and input price differentials are computed on like concepts. The 1999 staff model introduces an asymmetry.⁸⁴

Professor Gollop's evaluation of the 1999 Staff TFP Model is discussed under Section VII A, below.

USTA asked Dr. James H. Vander Weide of Duke University to evaluate the proposal by the current staff to estimate the cost of capital input in its productivity studies. The new staff proposal is applied in both the 1999 Staff TFP Study and the Staff Imputed X Study. Dr. Vander Weide's affidavit is attached to USTA's Comments in this proceeding.

Dr. Vander Weide concludes that the staff's proposed methodology is inconsistent with the economic definition of the market cost of capital. Specifically, the staff's methodology incorrectly links changes in the market cost of capital to changes in the yield on Baa-rated bonds. The staff ignores any changes in the cost of equity and market value capital structures of competitive firms over the period 1991-1998. Dr. Vander Weide demonstrates that any changes in the market cost of capital from 1991-1998 was negligible because, while debt costs declined over the staff's study period, the cost of equity remained relatively constant and the percentage of equity in the capital structure of competitive firms increased significantly. As a result, the staff studies significantly underestimate the market cost of capital and hence overestimate LEC productivity over the study period.⁸⁵

⁸³ *Id.* at 5-6, Sect. 1.

⁸⁴ Gollop at 17, Sect. 1.e.

⁸⁵ USTA Comments, "Affidavit of James H. Vander Weide on Behalf of the United States Telephone Association" ("Vander Weide"), Executive Summary.

In Appendix A, the Staff begins with the assumption that LECs earned a normal, competitive rate of return in 1991, the first year of price caps. The staff then adjusts the cost of capital both forward and backwards using changes in Moody's Baa bond yields. The staff asserts that this "gives an independent competitive cost of capital for the LECs in each year of the historical period."⁸⁶ The staff then uses this derived cost of capital estimate in both the 1999 Staff TFP Study and the Staff Imputed-X Study.

Dr. Vander Weide demonstrates the fallacies of the staff's approach to calculating the LEC cost of capital. He notes that the staff's approach ignores the economic definition of cost of capital.

Economists define the market cost of capital as a weighted average of the cost of debt and the cost of equity, where the market value percentages of debt and equity in the firm's capital structure are used as weights in calculating the weighted average. Since the market weighted average cost of capital depends on the cost of debt, the cost of equity, and the percentages of debt and equity in the competitive firm's capital structure, the weighted average cost of capital will change with changes in any of the three components of the weighted average cost of capital, not just with changes in the cost of debt. By focusing only on changes in the market cost of debt, the Commission Staff is implicitly assuming that: (1) the cost of equity moves up and down by the same amount as the cost of debt; and (2) the market value capital structure of competitive firms remains constant at its 1991 level. If these basic assumptions of the Staff's TFP and Imputed X Studies are incorrect, . . . the Staff's proposed cost of capital methodology may significantly under- or over-estimate the competitive market cost of capital; and the resulting X-Factor in the Staff's TFP and Imputed X Studies may significantly under- or over-estimate the correct productivity factor in the price cap formula.⁸⁷

Dr. Vander Weide performed three studies to test the assumptions implicit in the staff's methodology. First, he estimated the cost of equity for the S&P 500 at the end of each year from 1991 to 1998 and at November 1999 to determine whether the cost of equity of these competitive firms declined over the period. Dr. Vander Weide used the same annual Discounted Cash Flow

⁸⁶ FNPRM, Appendix A at 22.

⁸⁷ Vander Weide at 6, Sect. IV, ¶ 9.

model used by the Commission to estimate the LECs cost of equity under rate of return regulation. His Table 3 shows that the cost of equity has varied much less than the yield on Baa bonds, and in November 1999 was almost identical to the cost of equity in December 1991.⁸⁸

Dr. Vander Weide next performed a regression analysis to test statistically the Staff's assumption that the cost of equity of competitive firms changes by the same magnitude as the yield on Baa bonds. The analysis clearly shows that the Staff's assumption is incorrect. When the yield for Baa bonds varies by 100 basis points, the cost of equity for the S&P 500 changes by only 28 basis points.⁸⁹

Finally, Dr. Vander Weide examined the change in the market value capital structures of both the S&P Industrials and the Bell Holding Companies from December 1991 to September 1999. The average percentage of equity in the market value capital structure of the S&P Industrials increased from 70.68 percent at year-end 1991 to 82.95 percent at September 30, 1999. The corresponding change in the Bell Holding Company average capital structure increased from 69.41 percent at December 1991 to 83.14 percent at September 1999. These data demonstrate that the Staff's cost of capital methodology incorrectly assumes that the percentage of equity in the capital structure of competitive firms has remained constant. It also demonstrates that the change in the Bell Holding Company average capital structure was approximately the same as that for the S&P Industrials.⁹⁰

Dr. Vander Weide shows that "the Staff's proposed methodology produces results that significantly underestimate the competitive market cost of capital for the period 1991 to 1998."⁹¹

⁸⁸ Vander Weide at 8-9, Sect. V, ¶ 13.

⁸⁹ Vander Weide at 10, Sect. V, ¶ 14.

⁹⁰ Vander Weide at 10-11, Sect. V.

⁹¹ Vander Weide at 13, Sect. VI, ¶ 18.

He then examined whether a correct method of estimating the competitive market cost of capital would determine that the cost of capital has changed since 1991. His study determined that the market cost of capital declined only slightly from 1991 to 1995, and increased thereafter. The total change in the market cost of capital from 1991 to 1998 was negligible.⁹²

While Dr. Vander Weide's studies prove the point empirically, BellSouth notes that the staff's estimates of the LEC's cost of capital are absurdly low, and could never have been imposed lawfully by regulators. Beginning with the LECs' achieved accounting earnings in 1991 of 11.81 percent, the staff's methodology estimates that the "competitive rate of return" falls to 9.65 percent in 1995 and to 8.68 percent in 1998.⁹³

Although price cap regulation increases the risk, and hence the cost of capital, of firms subject to that form of regulation, the staff's proposed methodology implies that price cap regulation has been accompanied by a sharply reduced cost of capital for the price cap LECs.⁹⁴ Indeed, the estimated cost of capital produced by the staff model is so low that achieved earnings as low as those estimated by the Staff could not have occurred under price caps. Earnings that low would have triggered a lower formula adjustment, which would have allowed the price cap LECs to raise prices to the level needed to produce a 10.25% rate of return.⁹⁵ The Commission adopted the lower formula adjustment to avoid unconstitutional confiscation of LEC property—a result that would clearly have occurred if LEC earnings were driven to the levels of the cost of

⁹² Vander Weide at 14, Sect. VI, ¶ 19.

⁹³ FNPRM, Appendix C, Table C-3.

⁹⁴ The Staff estimates of a competitive rate of return are also inconsistent with the Commission's treatment of those LECs remaining under rate of return regulation. Despite the decline in interest rates noted by the Staff, the Commission has not found it necessary to rescribe the authorized rate of return for non-price cap LECs, which has remained at 11.25% since 1990.

⁹⁵ The FNPRM implicitly concedes that an X-Factor high enough to drive LEC earnings to the level suggested by the Staff's alleged "competitive cost of capital" would not have been permitted by the Commission's rules. See FNPRM at 14, footnote 62.

capital estimates produced by the Staff's proposed methodology. Both the 1999 Staff TFP Study and the Staff Imputed X Study are contaminated by these absurd estimates, and must be rejected.

A. The 1999 Staff TFP Study Is Fundamentally Flawed And Biased

1. The Staff Study Misstates The LECs' Opportunity Cost Of Capital

Although the 1997 Staff TFP Study was not challenged before the Court of Appeals, the FNPRM asks for comment on a new 1999 Staff TFP Study. Despite the Commission's claim that the 1999 Staff TFP Study merely "corrects" errors in the 1997 Staff TFP Study, the fact is that there is hardly a variable left unaffected. Professor Gollop has analyzed the 1999 Staff TFP Study for USTA. He notes that:

Revenue, output, total labor expense, compensation per employee, the rental price of capital, capital expense, material expense, operating expense, taxes, and even the BLS input price series for the U.S. nonfarm sector are changed. The staff argues that each change is required to address "errors" in the 1997 model adopted by the Commission. Interestingly, the incremental effect of each and every proposed "adjustment" leads to an increase in the X-Factor otherwise found in the Commission's 1997 model.⁹⁶

Professor Gollop's report examines each of the changes proposed in the 1999 Staff TFP Study. With two exceptions, he concludes that the 1999 Staff TFP Study violate "both economic theory and productivity accounting rules."⁹⁷ Professor Gollop developed a simulation of the 1999 staff model that properly implements these two methodological changes while correcting for other modeling and data errors by the Staff. The resulting average X-Factors for the 1991-98 and 1994-98 periods are 3.29 percent and 3.76 percent, respectively.

The most significant error in the Staff 1999 TFP Study is its treatment of the cost of capital. Economic theory requires that if an external rate of return is used in a TFP model, it

⁹⁶ Gollop at 4, Introduction.

⁹⁷ Gollop at 4, Introduction. The two exceptions are the staff's call for adoption of an external rate of return and a new measure for local output.

should measure the opportunity costs of the LECs. Opportunity costs are defined as the return an investor can expect on the next best use of its funds. Professor Gollop finds the Moody's Baa bond rate to be a poor metric for LEC opportunity costs. He suggests that the rate of return series reported by Value Line for its Industrial Composite of 875 U.S. non-financial firms better represents the movement in LEC opportunity costs, since if the LECs exited the telecommunications market they would not likely be passive bond owners but proactive owners of some industrial enterprise. He charts the difference in the Value Line series and the Moody's Baa bond yields. In the post-1991 period, the trends diverge markedly. While inflation and interest rates have been under control, the economy has enjoyed record-setting growth. As a result, bond rates have trended downward while corporate earnings have increased. Professor Gollop finds that the earnings of large corporations better reflect the opportunity costs of the LECs than bond yields.⁹⁸

Professor Gollop identifies a fundamental error in economic and accounting principles made by the staff in the 1999 Staff TFP Study. The staff takes its estimated change in opportunity costs and applies it to the entire capital input, rather than to just opportunity costs. Professor Gollop notes that in addition to opportunity costs, the capital input includes compensation for depreciation, amortization, rental payments, business transfers, capital gains and losses on assets, property taxes, and federal, state and local income taxes.⁹⁹ Based on data submitted by USTA, Professor Gollop determined that depreciation, amortization and income taxes alone account for approximately 70 percent of property income. Earnings (including interest payments), property taxes, rent paid, and business transfers account together for the

⁹⁸ Gollop at 7, Sect. 1.a.

⁹⁹ Gollop at 9, Sect. 1.b. Professor Gollop notes that the very authority cited by the Staff in Appendix B makes clear that the rental price of capital includes far more than opportunity costs.

remaining 30 percent. For purposes of his simulation, Professor Gollop applied an external rate-of-return to 30 percent of property income, although he noted that formal adoption of the staff's methodology would require a far more detailed analysis of the LECs' capital accounts. The intensive effort required to properly adopt an external rate of return may have been one reason the Commission adopted an internal rate of return in the 1997 Staff TFP Study.¹⁰⁰

Professor Gollop expresses bewilderment as to why the author of the 1999 Staff TFP Study adjusted the opportunity cost of capital for the years 1985-90, a period in which the LECs were subject to rate of return regulation.¹⁰¹ He notes that the staff adjustment produces an opportunity cost of capital nearly five full percentage points below the returns earned under rate of return regulation in 1986 and 1987. This should have raised a "red flag" for the authors of the staff study that their Baa bond yield methodology was flawed.¹⁰²

Professor Gollop also notes that the 1999 Staff TFP Study errs by modifying LEC revenues, taxes, and operating expenses when converting to an external rate of return framework. According to Professor Gollop, this "not only is incorrect but makes absolutely no sense."¹⁰³ For example, Professor Gollop notes that:

...the author's reassignment of some fraction of dollar earnings from the 'normal' (opportunity cost) to 'excess' categories will have absolutely no impact on the Internal Revenue Service's view of the LECs income tax liability.¹⁰⁴

Professor Gollop also notes that converting LEC capital accounts from an internal to an external rate of return framework requires symmetric adjustments to the capital accounts of the

¹⁰⁰ Gollop at 12, Sect. 1.b.

¹⁰¹ Most states in BellSouth's region continued to apply rate of return regulation into the 1992-93 time frame.

¹⁰² Gollop at 15, Sect. 1.c.

¹⁰³ Gollop at 15, Sect. 1.d.

¹⁰⁴ Gollop at 16, Sect. 1.d.

nonfarm business sector. This is another reason why the Commission may have opted to use an internal rate of return in the 1997 Staff TFP Study.¹⁰⁵

2. The Staff Mistakenly Disallows Labor Severance Costs

The second area of major adjustment to the 1997 Staff TFP Study proposed in the FNPRM is a downward adjustment to reported LEC labor expense for the years 1991-98 to reflect LECs' severance payments. The staff justifies disallowing billions of dollars of actual labor severance payments in two sentences:

To have a labor price series meaningful for TFP analysis, it is necessary to adjust for the impact of exogenous changes in labor compensation and accounting rules. This is accomplished by adjusting the labor compensation series to net out one-time charges for such things as buy-outs and accounting rule changes.¹⁰⁶

Professor Gollop notes that the first sentence is simply wrong. Incentive payments made to departing employees are not "exogenous" events imposed on management from an outside source.¹⁰⁷ They were management decisions reflecting the need to reduce labor costs to increase productivity. Moreover, even if a cost were "exogenous", that would be no valid grounds for disallowing the cost in calculating labor expense. Professor Gollop cites an increase in social security benefits as an "exogenous" cost that must still be included in the calculation of labor expense. The proposed disallowance reflects a fundamental misunderstanding of the economic

¹⁰⁵ Gollop at 17, Sect. 1.e.

¹⁰⁶ FNPRM, Appendix B at 50. The Staff simply "assumes" that any increase in the proportion of benefits above 20% "to be the amount attributed to buyouts, accounting rule changes, and so on," and then characterizes these amounts as "excess benefits." *Id.*

¹⁰⁷ Gollop at 18, Sect. 2. The test for "exogenous" treatment has two prongs. "First, are the costs not within the control of the price cap carriers? And second, are the costs not reflected in the price cap formula, for example, in the GNP-PI?" In the Matter of Treatment of Local Exchange Carrier Tariffs Implementing Statement of Financial Accounting Standards, "Employers Accounting for Post Retirement Benefits other than Pensions", CC Docket No. 92-101, Memorandum Opinion and Order, FCC 93-47, released January 22, 1993, ¶ 52. Severance benefits fail both prongs of this test. They resulted from management decisions. Further, since

principles underlying input price measurement in proper TFP modeling, according to Professor Gollop:

Derived either from production or cost functions, the TFP model requires that the measured input price for labor reflect the incremental cost that a cost-minimizing firm would incur to hire additional labor and/or retain its existing labor force. The last phrase is critical and explains why the LECs willingly incurred (and incur) real severance payments instead of simply firing sizeable numbers of laborers. Absent these payments, two effects would result. First, morale among retained workers would decline. Second, it would become increasingly difficult (i.e. expensive) to hire quality laborers. The first translates to lower marginal productivity; the second results in higher wages and salaries to compensate workers for the risk they would now bear through uncompensated separation. In short, the LECs rationally incur severance payments just as do so many companies throughout the economy.¹⁰⁸

To place the LEC downsizing in context, it is necessary to examine what other firms operating in the U.S. economy were doing during the 1990s. The following chart was compiled by Jonathan Lurie at Princeton University. Mr. Lurie identifies 38 firms that underwent significant downsizing during the time period in question. This shows that downsizing is not unique to the LECs, nor atypical of the conduct of competitive firms in the labor markets.

corporate downsizings were made by many companies in the U.S. economy, their impact is reflected in economy-wide measures of productivity.

¹⁰⁸ Gollop at 19, Sect. 2.

Company	Downsizing	Company	Downsizing
Apple Computer	1,300	Lockheed	17,000
Boeing (Feb. 1993)	28,000	3M	5,000
Boeing (Dec. 1993)	3,000	Philip Morris	14,000
Bank of America (1992)	12,000	Navistar	3,000
Bank of America (1993)	3,750	Nortel	5,200
Bank of America (1996)	3,700	NYNEX	16,800
Baxter	3,000	Pacific Bell	10,000
Bell South	10,200	Procter & Gamble	13,000
Chemical Bank	12,000	Rubbermaid	1,260
Delta	18,000	RJR Nabisco	6,000
DuPont	2,900	Sears	50,000
DEC (1994)	20,000	AT&T	40,000
DEC (1996)	7,000	US Air	2,500
Eastman Kodak	16,800	UNISYS	4,000
General Dynamics	27,000	US West	9,000
General Motors	74,000	Wells Fargo	7,000
GTE	17,000	Warner Lambert	2,800
IBM	60,000	Xerox	10,000
Kimberly-Clark	6,000	Woolworth	13,000

Nor were the LEC severance packages unusually lucrative. In Attachment 1 BellSouth has compiled a summary of newspaper articles describing early retirement offers made by U.S. companies in the 1991-1993 time frame. As can be seen, offers of up to five years age and five years service credit and/or up to a year's salary were commonplace.

In early 1998, AT&T significantly downsized its force. Despite being no longer subject to price cap regulation, AT&T offered its employees a generous, voluntary separation package to induce them to leave. The New York Times published an article on AT&T's offer, and the reasons for it.¹⁰⁹

Noting the "corporate vogue" of white-collar layoffs at a variety of companies, the Times described the severance plans as "a kinder, gentler kind of downsizing." The Times noted that

¹⁰⁹ Seth Suhiesel, "Earning it: A Leaner Company Without a Crash Diet," The New York Times, February 8, 1998, Section 3; Page 11; Column 3.

involuntary layoffs can be damaging to the company. Describing the reaction to a previous set of involuntary layoffs by AT&T in 1996, The Times stated: “Morale at the company was crippled; Robert E. Allen, then AT&T’s chairman, found his picture on the cover of Newsweek magazine, in a police-style lineup under the headline ‘corporate killers.’”

The Times stated that “enhancing buyout packages can be vital to shoring up shaky employee morale.” John A. Challenger, executive vice president of Challenger, Gray & Christmas, an outplacement firm, was quoted as saying: “Companies are recognizing that they run a real risk of losing the goodwill of the employees who remain, who are friends with the people who leave,” said Challenger. “They run the risk that the people who remain, who are being asked to work longer and harder, are going to resent that, especially since they no longer feel they necessarily have lifetime job security.”

The LECs’ decision to pay severance benefits to departing employees has been previously recognized by the Commission as management decisions not to be second-guessed by regulators applying price caps. The Staff’s proposed disallowance of actual LEC severance payments in the Staff 1999 TFP Study is arbitrary and capricious, and must be rejected by the Commission.

3. The Use Of DEMs To Measure Local Output Is Inappropriate

Because of rising Internet usage, the staff proposes to substitute Dial Equipment Minutes (“DEMs”) as the measure of local output rather than call volume, which is the measure of local output in the 1997 Staff TFP Study.¹¹⁰ Professor Gollop agrees that a measure of local output that captures the changing calling patterns fostered by the explosive growth of the Internet is

¹¹⁰ The use of call volumes as a measure of local output in the 1997 Staff TFP Study is another aspect of the AT&T TFP Study adopted by the Commission. AT&T’s incessant lobbying of the Staff to replace call volumes with DEMs as the measure of local output contradicts AT&T’s own evidence and is simply another bald attempt by AT&T to artificially inflate the X-Factor.

appropriate. However, DEMs is not an appropriate output measure because it has little relationship to revenues:

Since X is used to cap prices and therefore revenue, output in the X-Factor calculation must be defined as closely as possible to the unit measure on which market price is based. It is the specific source of local revenue that forms the proper external standard defining the measure of local output.¹¹¹

Professor Gollop was provided by the LECs a comparison of the source of local revenue which indicated that 80 percent of local revenue is flat rate or line volume related, whereas only 20 percent of local revenue is related to usage. Since much of the growth in access lines are second lines used to access the Internet, Professor Gollop recommends use of access lines as the new measure of local output. “If the Commission is intent on changing the measure of local output but wants a single quantity measure, the number of access lines is the only economically meaningful choice.”¹¹²

DEMs is not revenue related since most local service is provided on a flat rate basis. To the contrary, growth in DEMs over flat rated lines causes costs to increase with no increase in revenue.¹¹³ In such circumstances, DEMs growth acts to overstate output, and thus, productivity. Professor Gollop’s use of access lines is revenue related, thereby providing an appropriate means to reflect Internet growth in the TFP process.

4. The Staff Uses An Incorrect BLS Input Price Series

Professor Gollop identified an apparent Staff error in the identification of the appropriate input price series used by BLS in its calculation of TFP growth for the U.S. nonfarm sector. Professor Gollop contacted BLS and confirmed that the input price series provided to him by

¹¹¹ Gollop at 20, Sect. 3.

¹¹² Gollop at 21, Sect. 3.

¹¹³ Indeed, in those states that require incumbent LECs to pay reciprocal compensation for calls to the Internet, huge losses are incurred with DEMs growth.

BLS and used by him in the USTA update to the 1997 Staff TFP Study filed with the Commission on September 10, 1999 is the correct and most recently updated series produced by BLS. Professor Gollop uses the correct BLS input price series in his simulation.¹¹⁴

5. The Staff Includes Incorrect And/Or Inconsistent Data Points

In addition to the methodological errors discussed above, Professor Gollop identified a number of data errors introduced by the author of the 1999 Staff TFP Study. Dr. Gollop identifies these errors in detail in Appendix A to his report. Professor Gollop uses corrected data in his simulation.¹¹⁵

6. Professor Gollop's Corrected 1999 Staff TFP Model

In Appendix B to his report, Professor Gollop recalculates the 1999 Staff TFP Study using appropriate economic TFP modeling principles and correcting methodological and data errors in the 1999 Staff TFP Study. In Table 6, he illustrates the differences in X-Factor calculations that result from modeling errors. The time period summaries of the three models are set forth below. The first column is the 1997 Staff TFP Model, updated by USTA in its September 10, 1999 filing with the Commission. The second column is the uncorrected 1999 Staff TFP Study. The third column is the 1999 Staff TFP Study, corrected for the errors and changes identified by Professor Gollop.

<u>Time Periods</u>	<u>1997 Staff TFP Study</u>	<u>1999 Staff TFP Study</u>	
	<u>USTA 9/99 Update</u>	<u>Uncorrected</u>	<u>Corrected</u>
1986-90	5.43%	5.51%	5.58%
1991-98	4.12%	6.33%	3.29%
1994-98	4.06%	6.02%	3.76%

¹¹⁴ Gollop at 23-24, Sect. 4.

¹¹⁵ Gollop at 31, Sect. 5.

Professor Gollop concludes that the X-Factor is quite sensitive to modeling errors. He notes that the comparison in Table 6 should be considered to be an illustration only. If the Commission chooses to switch from an internal rate of return methodology adopted in the 1997 Staff TFP Study to an external rate of return model, considerable additional effort will be required to accurately model the X-Factor.¹¹⁶

7. Recent BEA Revisions Reduce The X-Factor

Professor Gollop notes that the Bureau of Economic Analysis has revised its Gross Domestic Product accounts in October and November, 1999. The revisions add an additional 0.5 percentage points per year to nonfarm productivity growth. BLS is expected to release revised multi-factor indices during the spring. Professor Gollop notes that the revisions will reduce both the measured TFP growth differential and the measured X-Factor. He urges the Commission to make provision now for incorporating the BLS revisions into its X-Factor calculations.¹¹⁷

Dr. Gollop concludes that both the FCC's 1997 Staff TFP Model and a properly designed and implemented 1999 Staff TFP Model lead to the same policy conclusions: the present 6.5 percent X-Factor is not justified by any meaningful measure of LEC productivity. Indeed, both models indicate the LECs have never achieved a 6.5 percent X-Factor in any year since price caps began.¹¹⁸

B. The Staff Imputed X Study Is A Repudiation of Price Cap Regulation

In addition to the highly questionable and obviously biased 1999 Staff TFP Study discussed above, the FNPRM also presents what is called the Staff Imputed X Study. This study represents a radical departure from the fundamental principles of price cap regulation embraced

¹¹⁶ Gollop at 31, Sect. 6.

¹¹⁷ Gollop at 33, Sect. 7.

¹¹⁸ Gollop at 34-35, Sect. 8.

by the Commission for more than a decade. Indeed, it is a thinly disguised return to rate of return regulation. In the FNPRM, the Commission describes the 1999 Staff Imputed X Study:

[W]e could ... directly determine, from aggregate interstate expenses and revenues, the X-Factor that, if it had been prescribed from the inception of price caps, would leave capital compensation at the competitive level at the end of the study period.¹¹⁹

That is bureaucrat-speak for cost of service regulation.¹²⁰ Indeed, the FNPRM freely acknowledges as much:

While price caps provide incentives for cost reduction similar to those of competition, they do not guarantee that revenues will follow a similar path.¹²¹

That, of course, is precisely the point of price cap regulation. Price cap regulation regulates prices. Cost of service regulation regulates revenues. Revenue is equal to price times quantity. The whole point of price cap regulation is to provide incentives for the regulated firm to increase its output (quantity), and hence earnings, without increasing its prices beyond those permitted by the price cap. Thus, the firm has incentives to utilize inputs more efficiently. It has an incentive to invest in new technology that permits it to offer new products and services desired by its customers. It has incentives to market its products and services to stimulate demand. It is precisely these incentives that price cap regulation was designed to stimulate. This fact has been recognized and extolled by the Commission¹²² and the Courts¹²³ for over a decade. The Staff's

¹¹⁹ FNPRM at 7.

¹²⁰ Compare, *National Rural Telecom Ass'n. v. FCC*, 988 F.2d 174, 177-78 (D.C. Cir. 1993) ("Rate-of-return regulation is based directly on cost. Firms so regulated can charge rates no higher than necessary to obtain 'sufficient revenue to cover their costs and achieve a fair return on equity.'")(Citations omitted.)

¹²¹ FNPRM at 9.

¹²² See, e.g., 1995 LEC Price Cap Performance Review 10 FCC Rcd at 8973-74, para. 28. ("The price cap limits are set by the Commission to ensure that rates remain within a zone of reasonableness. Prices are held to a maximum level by the cap, much as they are by the rivalry among companies in competitive markets. The carrier gains the opportunity to earn higher profits by operating more efficiently or by developing new services customers want, not by raising overall prices. This opportunity to increase its profits in turn encourages the carrier to

Imputed X Study would eviscerate these incentives by returning to the cost of service paradigm-- the regulation of revenues rather than prices. The Staff Imputed X Study would use the cold, dead hand of cost of service regulation to snuff the life out of the incentive structure that the Commission has nurtured for the last decade.

USTA has asked Dr. William E. Taylor, Senior Vice President of National Economic Research Associates, Inc. to evaluate the theoretical validity of Staff Imputed X Study and its impact on incentive structure that price cap regulation was designed to foster. Dr. Taylor concludes:

The Staff's imputed X study is theoretically unsound and inferior to the use of total factor productivity ("TFP") growth to determine the appropriate X-factor in the Commission's price cap plan primarily because it relies on jurisdictionally separated data and an interstate-only calculation makes no economic sense. In addition, using accounting measures of the productivity gains realized under price caps to recalculate the firm's price cap productivity target would eviscerate the productivity incentives for which price cap regulation was implemented. If the Staff's imputed X study were used to determine a value of X going forward, the price cap LECs would face perverse productivity incentives—essentially the same disincentives of traditional cost-plus regulation. Such a plan would re-impose the need to collect detailed accounting data from the regulated firm (and all the associated difficulties with separating common costs) and would represent a step backward, slowing the transition toward a competitive marketplace where market forces determine outcomes and consumers benefit.¹²⁴

apply its resources in the most efficient manner possible, providing more and better service at lower cost. By increasing its productivity, the carrier can increase its profitability.”)

¹²³ See, e.g., *National Rural Telecom Ass'n. v. FCC*, 988 F.2d 174, 178 (D.C. Cir. 1993): (“Under a price cap scheme, the regulator sets a maximum price, and the firm selects rates at or below the cap. Because cost savings do not trigger reductions in the cap, the firm has a powerful profit incentive to reduce costs.”); *Bell Atlantic Telephone Companies v. FCC*, 79 F.3d 1195, 1198 (D.C. Cir. 1996) (“Price cap regulation is intended to provide better incentives to the carriers than rate of return regulation, because the carriers have an opportunity to earn greater profits if they succeed in reducing costs and becoming more efficient.”); *USTA v. FCC*, 188 F.3d 521, 524 (D.C. Cir.1999) (Price caps “sets rate ceilings and, with some qualifications, allows the utilities to keep whatever profits they can make while charging rates at or under the cap.”)

¹²⁴ Comments of William E. Taylor, Ph.D. on Behalf of United States Telephone Association (“Taylor”) at 3, ¶ 4.

Dr. Taylor notes that the regulation of prices rather than revenues provides the regulated firm with both technical efficiency and dynamic efficiency incentives that are muted under cost-of-service regulation.¹²⁵ However, in order for those incentives to operate, the regulator must commit to allowing the “regulatory contract” to operate over a sufficient period of time for the regulated firm to recognize the rewards or punishment from its implementation of its business plan. He notes that the “incessant recontracting” that has characterized the Commission’s implementation of the LEC price cap plan “severely undercuts its ability to induce the type of behavior (with respect to investment in new infrastructure technology, pricing, implementation of new services, etc.) that we would see in unregulated, competitive markets.”¹²⁶

In theory, X should be set at the beginning of the price cap plan, using the best information available regarding historical changes in unit costs, and then left alone. In contrast, the FCC has proposed or adopted five different methods for calculating X since 1990, with values that differ by nearly a factor of 4. Even ignoring the inference a price-cap LEC might draw from the consistent increase in the proposed values of X, no LEC could safely assume that its current earnings were irrelevant to the determination of future values of X, given the Commission’s history of past revisions.¹²⁷

Evaluating the Staff’s Imputed X Study, Dr. Taylor concludes that the study “has no basis in economics” because it relies on accounting costs that have been jurisdictionally separated, and is inconsistent with the Commission’s stated goal of relying less on regulatory accounting and earnings data.¹²⁸

¹²⁵ Taylor at 4, ¶ 6: “The fundamental reason why telecommunications regulation in the U.S. has evolved away from rate of return principles is its promise of improved incentives for regulated firms to achieve two important economic goals: use the fewest resources possible to achieve a given level of output (technical efficiency) and develop and introduce innovative new products and services (dynamic efficiency). Since price cap regulation does not link permitted revenues to realized production costs, the regulated firm has the proper incentive to use the cost-minimizing level and mix of resources to provide a given level of output.”

¹²⁶ Taylor at 5, ¶ 7.

¹²⁷ Taylor at 7-8, ¶ 10.

¹²⁸ Taylor at 12, ¶ 19.

Adopting the Staff's imputed X study would provide price cap LECs with perverse productivity incentives—essentially the same disincentives of traditional cost-plus regulation. Using the productivity gains realized under price caps to recalculate the firm's price cap productivity target is inconsistent with price cap regulation and is a step backward away from a transition towards a competitive marketplace where market forces determine outcomes and consumers benefit. In order to maximize the economic surplus and gains available to consumers and the firm, the Commission should not penalize price cap LECs in the future for efficiency improvements in the past.¹²⁹

Dr. Taylor notes that the Staff Imputed X Study is simply a variant on AT&T's Historical Revenue Method that the Commission justly criticized when it was first proposed in 1995 and affirmatively rejected in the 1997 LEC Price Cap Performance Review.¹³⁰ He notes that in justifying the adoption of a TFP approach to the Court of Appeals, the Commission implicitly rejected the Historical Revenue Method.¹³¹ He notes that even the current FNPRM acknowledges Commission rejection of the Historical Revenue Method, and the Staff has made no attempt in Appendix C to refute the Commission's earlier criticisms of this method.¹³²

The Staff Imputed X Study is also flawed because it is an attempt to estimate an interstate-only X. The Commission has previously recognized that attempting to measure interstate-only productivity is economically meaningless, since the production of both interstate and intrastate output relies on common input. The Commission defended this finding to the Court of Appeals in response to MCI's appeal, and the Court of Appeals agreed.¹³³ The Staff makes no attempt to address or refute this concern in Appendix C, choosing instead to repudiate

¹²⁹ Taylor at 13, ¶ 22.

¹³⁰ Taylor at 13, 15-16, ¶¶ 23, 25, 29-30.

¹³¹ Taylor at 16-17, ¶ 31, citing FCC's Brief for Respondents at 12.

¹³² Taylor at 17, ¶ 32.

¹³³ See *USTA v. FCC*, 188 F.3d at 528: "[I]t is not clear that 'interstate productivity,' as opposed to total company productivity, is measurable, or even economically well-defined. This is so because direct productivity measurement requires measurement of inputs, and there is no obviously meaningful way to segregate LEC interstate and intrastate inputs because, as is

the TFP method itself. In light of the status of this case on remand from the Court of Appeals, the Commission would have a tremendous burden of persuasion to justify abandoning its recently adopted TFP method that was approved by the Court. Dr. Taylor provides an extensive discussion demonstrating that an interstate-only X-Factor calculation is conceptually incorrect.¹³⁴

Dr. Taylor also demonstrates that the use of interstate accounting earnings to measure the X-Factor results in erroneous conclusions. He notes that LEC earnings as measured by regulatory accounting do not measure economic profit and are a poor proxy for it. This is because economic profit is not defined for interstate services because there is no economic basis upon which to divide the common costs between interstate and intrastate services, regulatory earnings are affected by numerous accounting conventions that provide no forward-looking information about profit opportunities, and accounting costs reflect regulated depreciation rates that both currently and historically are too low and inflate accounting profits.¹³⁵

Specifically, accounting earnings are dependent on the investment and expenses that have been separated and allocated to the inter- and intrastate jurisdictions. The Commission's Part 36 Rules do not jurisdictionally separate costs for the purpose of setting forward-looking prices. They do not accurately reflect cost causation, and interstate costs do not even approximate the economic forward-looking cost of supplying interstate services. Earnings growth measures based on separated costs would be distorted by changes in the separations formulas and factors and would provide no meaningful information about the earnings growth of interstate services.¹³⁶

Dr. Taylor cites as an example Internet-bound calls, which the Commission has determined are jurisdictionally interstate, but which the Staff has required the LECs to book to the intrastate jurisdiction. He notes that SBC was recently required to reassign approximately 23

undisputed, 'interstate and intrastate services are usually provided over common facilities.' *1997 Order*, 12 FCC Rcd at 16,685, para. 107."

¹³⁴ Taylor at 18-21, ¶¶ 34-41.

¹³⁵ Taylor at 21-22, ¶ 42.

¹³⁶ Taylor at 23, ¶ 45.

billion dial equipment minutes associated with Internet traffic from the interstate to the intrastate jurisdictions. This had the effect of shifting approximately \$117.5 million in costs to intrastate, giving the appearance of increased interstate earnings. Likewise, NECA pool members reported a \$170 million misallocation of costs to the intrastate jurisdiction resulting from incorrect assignment of interstate, Internet traffic to the intrastate jurisdiction. Such traffic is growing rapidly, thereby causing increasing distortions in reported interstate earnings.¹³⁷ Even the current impact of assigning interstate, Internet-related costs to the intrastate jurisdiction can have an enormous impact on reported interstate earnings. In a study based on June, 1999 data, BellSouth determined that treating interstate traffic to Internet Service Providers as intrastate artificially inflates BellSouth's reported interstate earnings by 400 basis points. Such anomalies in the separations process make reliance on interstate accounting earnings wholly inappropriate for policy-making decisions by the Commission.

Finally, Dr. Taylor notes that the Staff Imputed X Study is upwardly biased because the staff added stimulated revenues without adding any additional costs. Dr. Taylor shows that operating costs, such as measurement, rating and billing, would certainly go up with each additional call. Repair and maintenance expenses would also go up, even in the short run. Even if short run marginal capital costs are low, the permanent increases in demand assumed in the staff model would affect the timing of capital additions. In short, the staff's assumption that additional output generates revenues but not expenses biases its estimate of X upward.¹³⁸

¹³⁷ Taylor at 24-25, ¶¶ 47, 49.

¹³⁸ Taylor at 26, ¶ 50.

C. The Commission Should Eliminate The CPD Prospectively

As BellSouth demonstrated above with regard to the remand period, the CPD cannot be justified for purposes of the reinitialization ordered by the Commission in the 1997 LEC Price Cap Performance Review.¹³⁹ In his Comments on behalf of USTA, Dr. Taylor demonstrates that the CPD should be eliminated prospectively. The CPD was never meant to be a permanent part of the price cap plan. It's purpose was to ensure that access customers received the first efficiency gains from the switch from cost of service to price cap regulation.¹⁴⁰ However, once the Commission gained historical experience over a period that included all price cap years, the addition of a CPD simply double-counts expected productivity gains.¹⁴¹ This point was essentially conceded by the Commission staff in the FNPRM.¹⁴²

With regard to the incentives created by the elimination of sharing, Dr. Taylor notes that price cap LECs have had a no-sharing option in the price cap plan since 1995. In 1995, virtually all of the price cap LECs elected a no-sharing option.¹⁴³ Dr. Taylor also notes that few of the states that have adopted price cap regulation since 1994 have required sharing and currently only

¹³⁹ Indeed, because the X-Factor for the remand period justified by the record does not exceed 4.86 percent, the entire concept of a "reinitialization" was unjustified and should be abandoned by the Commission.

¹⁴⁰ In addition, the sharing mechanism also required LECs to reduce rates if earnings reached prescribed thresholds.

¹⁴¹ Taylor at 27, ¶ 52.

¹⁴² See FNPRM, Appendix B at 43: "Note, however, that increased efficiency incentives related to the switch from rate of return regulation to price caps will dissipate when price caps have been in effect for some time and the historical period evaluated is one where price caps were in place. In this case, the historical data are already reflecting the increased incentives for efficiency created by price caps."

¹⁴³ This point was also conceded by the Commission before the Court of Appeals in *USTA v. FCC*. See FCC Brief for Respondents at 49: "The 1996 annual access tariff filings indicate that 'substantially all' of the large LECs had selected the 5.3% X-Factor option under the previous interim regime and thus had already removed themselves from any sharing obligations."

one, New Jersey, imposes a sharing obligation. Therefore, the incentive impact resulting from elimination of sharing is already fully embedded in the historical X-Factor calculations and the CPD should be eliminated.

Giving consumers the “first benefits” of the change to price cap regulation has clearly been accomplished over the years that the CPD has been in effect. The CPD, however, is cumulative in effect and becomes permanently embedded in the PCI each year. Over the past decade, the PCI is significantly lower than it would have been if no CPD had been imposed. Access customers have enjoyed the benefits of the CPD since 1991, and will continue to benefit from the embedded reductions in the PCI from prior CPDs, even if the CPD is eliminated prospectively.¹⁴⁴

D. The Commission Should Adopt A Conservative X-Factor.

The FNPRM and most of the discussion thus far in these comments assumes that the Commission should set the future X-Factor at the level of the historically achieved X-Factor.¹⁴⁵ The FNPRM asks if the Commission should prescribe an X-Factor based on a “central tendency” of historical X-Factors, and if so which measure of central tendency to use.¹⁴⁶ However, there are several reasons why a simple assumption that past productivity gains are a good proxy for the future will overstate the appropriate X-Factor. The most obvious is that as the LEC markets become increasingly competitive, there is no reason to assume that the LECs will continue to be able to outperform the national economy on a continuing basis. As Professors Bernstein and Sappington note, while competitive pressures may speed technological progress, as a result of

¹⁴⁴ If the Commission adopts BellSouth’s recommendation for the remand period in Part VI above, it will have effectively removed the CPD for the remand period. Consumers will still receive prospectively the effect of the CPD that is embedded in the PCI for the years 1991-95.

¹⁴⁵ See discussion in FNPRM, Appendix B at 43-44.

¹⁴⁶ FNPRM at 7.

the loss of sales by an incumbent to a new entrant, “competition can reduce the incumbent supplier’s scale economies (p), particularly in the short run when the presence of fixed inputs limits the incumbent supplier’s ability to reduce inputs at the same rate that outputs decline.”¹⁴⁷ Indeed, new entrants are most likely to compete initially for the highest margin services in the densest geographic areas. The entry decisions by competing LECs and alternate access providers clearly demonstrates this pattern of behavior.¹⁴⁸

The market changes brought about by the 1996 Telecom Act also will suppress future productivity gains by the incumbent LECs. The requirement that incumbent LECs transfer portions of their networks (that portion serving their highest margin customers) to competitors in the form of UNEs at TELRIC rates will clearly reduce revenue growth. In addition, the incumbent LECs have incurred and will continue to incur huge uncompensated costs to accommodate new competitors in their networks and OSS systems. For the Bell Operating Companies, the Department of Justice and the Commission are insisting on “self-enforcing remedies” for failure to provide equal access to competitors that greatly increases the financial risk for these BOCs.¹⁴⁹

A significant factor contributing to past measured productivity growth by the price cap LECs was the recovery of non-traffic sensitive costs through a per-minute rate structure. When minutes grow faster than lines under such a rate structure, LEC revenues (output) grow faster

¹⁴⁷ Bernstein, J.I. and David E.M. Sappington, *Setting the X-Factor in Price Cap Regulation Plans*, located at the Internet site for Graduate Programs in Business, Warrington College of Business, Fisher School of Accounting, <http://bear.cba.ufl.edu/sappington/pprs2.html>.

¹⁴⁸ See *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, “UNE Fact Report” Submitted by USTA and authored by Peter W. Huber and Evan T. Leo, Parts I and II.

¹⁴⁹ See *In the Matter of Application of Bell Atlantic New York for Authorization Under Section 271 of the Communications Act to Provide In-Region, InterLATA Service for the State of New York*, CC Docket No. 99-295, Memorandum Opinion and Order, FCC 99-404 (released December 22, 1999).

than costs (input), resulting in increased measured productivity. In the Access Reform proceeding, the Commission rationalized the LECs rate structure, phasing out the Carrier Common Line charge.¹⁵⁰ While such rate structure changes enhance economic efficiency they also remove a significant source of historical productivity gains.¹⁵¹

Price cap LECs have already had a decade to “pick the low-hanging fruit,” making incremental productivity gains more difficult to obtain. For example, most of the price cap LECs have already engaged in substantial force cuts. These cuts result in increased productivity in the short-run, but are a one-time event that cannot be repeated in future years. USTA’s sensitivity analysis indicates that force reductions in the early 1990s increased measured productivity gains by nearly one percentage point annually.¹⁵² Obviously, force reductions of such magnitude cannot be repeated. Below is a chart showing the magnitude and timing of Bell Operating Company force reductions.

¹⁵⁰ *In the Matter of Access Charge Reform*, CC Docket No. 96-262, *Price Cap Performance Review for Local Exchange Carriers*, CC Docket No. 94-1, *Interexchange Carriers Purchases of Switched Access Services Offered by Competitive Local Exchange Carriers*, CCB/CPD File No. 98-63. (“Access Reform Proceeding”.)

¹⁵¹ In the Access Reform Proceeding, Dr. Taylor filed Comments on behalf of USTA on October 29, 1999 in which he demonstrated that growth adjustments (referred to as the “G-Factor” and “Q-Factor” in the FNPRM) are not justified for price caps, because they are already embedded in the historical X-Factors. BellSouth will not repeat that analysis here. See Access Reform Proceeding, Comments of W.E. Taylor, at pages 21-25.

¹⁵² *In the Matter of Access Charge Reform*, CC Docket No. 96-262, *Price Cap Performance Review for Local Exchange Carriers*, CC Docket No. 94-1, *Interexchange Carriers Purchases of Switched Access Services Offered by Competitive Local Exchange Carriers*, CCB/CPD File No. 98-63. (“Access Reform Proceeding”.)