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EX PARTE

May 5, 2000

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, S.W., Room TW-A325
Washington, D.C. 20554

RECEIVED
MAY 05 2000
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: Written Ex Parte Presentation
CC Docket Nos. 94-1, 96-262

Dear Ms. Salas:

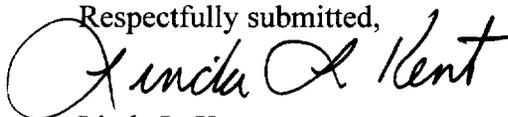
On February 24, 2000, AT&T submitted an ex parte presentation in the above-referenced proceedings purporting to respond to an analysis of AT&T's direct method of calculating an interstate-only X Factor conducted by Dr. William Taylor, Senior Vice President, National Economic Research Associates (NERA) and submitted by the United States Telecom Association (USTA).¹ AT&T's response does nothing to cure the infirmities and errors inherent in AT&T's interstate-only approach. In fact, just as Dr. Taylor pointed out in his analysis, the AT&T response readily admits that its direct method does not measure the productivity and input price components of the X-Factor. The direct method is a rate of return methodology designed to eliminate the incentives of price cap regulation. The Commission has already rejected it and there is nothing in the AT&T response to support a change in the Commission's position or that also could withstand the scrutiny of the U.S. Court of Appeals, which has already found that interstate productivity is neither measurable nor economically defined.

Attached hereto is a rebuttal of the AT&T response prepared by Dr. Taylor. Dr. Taylor... addresses the incorrect assertions repeated in the AT&T response regarding an interstate-only X Factor, the adjustment for interstate earnings and the consumer productivity dividend. As Dr. Taylor explains, a value of X based on interstate data has no valid productivity interpretation and is not equivalent to the FCC's T'P-based measure of X. Adjusting revenues for changes in accounting earnings cements the relationship between AT&T's Direct Method and the Historical Revenue Method previously rejected by the Commission because it eroded the incentives to reduce costs and increase productivity. Finally, AT&T's calculation of the historical CPD is clearly based on the unsupported assumption that changes in incentives give rise to proportional changes in outcomes and is thus incorrect.

¹ Reply Comments of USTA, CC Docket Nos. 94-1, 96-262, filed January 24, 2000 at Attachment 1.

The AT&T response confirms that the direct method is a drastic departure from the economically meaningful TFP approach taken by the Commission. It is certainly inferior to an economically meaningful TFP based X-Factor that recognizes the inseparability of total company joint and common costs. USTA urges the Commission to reject AT&T's direct method to calculate the X-Factor.

In accordance with Section 1.1206(b)(2) of the Commission's rules, an original and two copies of this notice and the attachment are being submitted herewith. Please include this notice in the public record of these proceedings.

Respectfully submitted,

Linda L. Kent
Associate General Counsel

Attachment

cc: Dorothy Attwood
Jordan Goldstein
Rebecca Beynon
Kyle Dixon
Sarah Whitesell
Larry Strickling
Jane Jackson
Rich Lerner
Jay Atkinson
Chris Barnekov
Aaron Goldschmidt
Florence Setzer
Noel Uri

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION**

IN THE MATTER OF)	
)	
PRICE CAP PERFORMANCE REVIEW FOR LOCAL EXCHANGE CARRIERS)	CC DOCKET NO. 94-1
)	
ACCESS CHARGE REFORM)	CC DOCKET NO. 96-26
)	

**EX PARTE COMMENTS OF
WILLIAM E. TAYLOR, Ph.D.**

**ON BEHALF OF
UNITED STATES TELECOM ASSOCIATION**

May 5, 2000

**EX PARTE COMMENTS OF
WILLIAM E. TAYLOR, Ph.D.**

CC DOCKET NO. 94-1 & 96-262

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Consulting Economists

EX PARTE COMMENTS OF WILLIAM E. TAYLOR, PH.D.
MAY 5, 2000

I. INTRODUCTION

1. My name is William E. Taylor. I am a Senior Vice President of National Economic Research Associates, Inc. (NERA), head of its telecommunications economics practice and head of its Cambridge office. I filed direct comments in this Docket on behalf of the United States Telecom Association (“USTA”) on January 7, 2000 and Reply Comments on January 24, 2000. On February 24, AT&T filed an *ex parte*, “Selected Issues in Calculating the X-Factor,” by Stephen Friedlander (“AT&T *ex parte*”), and USTA has asked to reply to some of the economic issues raised in AT&T’s submission. In particular, I address the assertions:

- that an interstate-only X can be calculated without measuring inputs or input prices and that X is equivalent to the FCC’s TFP-based measure of X,
- that adjustments for interstate earnings are necessary and appropriate in measuring an historical X, and
- that AT&T presented a valid measure of the consumer productivity dividend (“CPD”) associated with the elimination of earnings sharing.

On the contrary, a value of X based on interstate data has no valid productivity interpretation and is not equivalent to the FCC’s TFP-based measure of X. Adjusting revenues for changes in accounting earnings cements the relationship between AT&T’s Direct Method and the Historical Revenue Method previously rejected by the Commission because it interfered with the regulated firm’s incentives to reduce costs and increase productivity. Finally, AT&T’s calculation of the historical CPD is clearly based on the unsupported assumption that changes in incentives give rise to proportional changes in outcomes and is thus incorrect.

II. INTERSTATE-ONLY TFP GROWTH, AGAIN.

2. The flame of interstate TFP growth is still attracting moths. In its *ex parte*, AT&T extols the virtues of its Direct Method and attempts to respond to previous criticisms. Regarding its alleged merits, AT&T asserts that its “direct method yields essentially the same X-factors as does the FCC’s calculations”¹ but has several advantages compared with the FCC’s TFP-based method: (i) it is simpler and focuses attention on the variables that actually determine the historical X-factor, (ii) it can use interstate output and revenue “just as well” as total output and revenue so one needn’t calculate a “theoretically pure” measure of interstate productivity growth, and (iii) an interstate-only X is more appropriate for regulating interstate services. Each of these claims is incorrect.
3. First, while the calculation of X in the Direct Method may appear simpler, it actually diverts attention from the variables that determine the historical real rate of change of unit costs for telecommunications companies, namely the differential rates of growth of TFP and input prices for LECs compared with the US economy. Second, substituting interstate output and revenue for total company output and revenue in AT&T’s Direct Method imposes the constraint that interstate costs equal interstate revenues in every period, so we have not escaped from the need to identify interstate costs in an economically meaningful way. Though interstate TFP growth does not appear explicitly in the Direct Method formula, it nonetheless remains in the formula, in the sense that if interstate TFP growth is not defined, then the Direct Method formula is incorrect: i.e., using it will not cause prices to change at the same rate as unit costs. Third, after experience with price cap regulation using interstate-specific revenues and output, the FCC determined in 1977 that

an analysis that directly measured the growth of LEC productivity and input prices would provide a better basis for prescribing an X-Factor...[and that] we should base our X-Factor on a TFP-based measure of productivity and an input price differential.²

¹ AT&T *ex parte* at 1.

² *Price Cap Performance Review for Local Exchange Carriers*, Fourth Report and Order in CC Docket No. 94-1 and Second Report and Order in CC Docket No. 96-262, ¶ 8, (1997) (“1997 Price Cap Performance Review”).

The TFP-based method it adopted explicitly applied to all inputs and outputs of the LECs and made no attempt to apply separations concepts to the pricing of particular interstate services.

4. AT&T lists two related areas of criticism (at 2): (i) LECs claim that X or TFP should not be based on interstate data, and (ii) LECs ignore the fact that the Direct Method is mathematically equivalent to the X-factor used by USTA and the FCC and others. AT&T's essential complaint is that

[b]y ignoring the mathematical equivalence between the X-factor calculations of AT&T and those of the other TFP studies, Taylor's paper does little more than create confusion by portraying AT&T's method as fundamentally different from the other studies.³

The claim of spreading confusion by ignoring mathematical equivalence is then extended to my observations that "AT&T's study does not result in a measure of productivity growth at all" and that AT&T's "approach is nothing more than the Historical Price Method which...the Commission has already rejected."⁴ The facts are less confused than AT&T suggests.

5. First, there is no disagreement or confusion regarding the mathematical derivation that shows that X can be written in two ways: as a difference in growth rates of TFP and input prices between the LECs and the economy and as the difference in growth rates of real revenue and output for the LEC.⁵ That fact entirely explains AT&T's claim that its direct method "yields essentially the same X-factors as does the FCC's calculations." When applied to total company data, the methods are equivalent. When applied to interstate-only

³ AT&T *ex parte* at 2.

⁴ *Ibid.*

⁵ In a less litigious setting, Mr. Friedlander acknowledges previous work of mine that discusses this relationship: Stephen Friedlander, "The Use of Productivity Studies in Price Cap Regulation: What do the FCC's X-factor Calculations Really Measure?" 18th Annual Conference of the Center for Research in Regulated Industries, Rutgers University, May 27, 1999, ("Friedlander Rutgers paper"), footnote 18.

data, AT&T's direct method is no longer based on TFP growth and is equivalent to the Historical Price Method.⁶

6. Second, AT&T is almost correct that "the only substantive difference...is that AT&T uses interstate rather than total company data."⁷ However, its response to the LECs' "pious" objection that any concept of interstate productivity growth is economically meaningless is careful not to deny that assertion. Indeed, it can't: no trained economist in this debate claims that TFP can be defined for a subset of services of a firm when the production function for the firm is not separable in that subset. Rather, AT&T changes the subject, observing (correctly but irrelevantly) that firms don't set service prices on the basis of total company TFP but "on the basis of cost and market trends for individual services, despite the existence of common costs and production functions that may not be 'separable'"⁸. AT&T's conclusion that if productivity growth cannot be defined for subsets of services then it is "not a particularly useful concept for establishing pricing rules" underscores the difference between its Direct Method and the (total firm) TFP-based methods chosen by the FCC and advocated by USTA.
7. AT&T's justification for its Direct Method is thus unrelated to productivity growth. Its interstate X is reasonable, it says, because it measures the historical growth in (jurisdictionally separated) interstate revenue per unit of output relative to national inflation, which is precisely what the Historical Price Method measures. On the other hand, the FCC has recently determined that X ought to be based on historical TFP rather than on historical trends in prices.⁹ While AT&T observes (at 4) that the FCC's jurisdictional

⁶ There is no disagreement about either of these facts. AT&T does not claim that interstate TFP growth is meaningful, just that an X calculated from interstate data is meaningful. The equivalence with the Historical Price Method is mentioned on p. 2 of the AT&T *ex parte* and more clearly in the Friedlander Rutgers paper at 12: "Once it is recognized that the X-Factor is determined on the basis of growth in revenue per unit, and not growth in total factor productivity, the LEC argument is rendered moot. There is no reason why the FCC can not focus on the trend in interstate revenue (*or costs allocated to interstate via the separations process*) per unit of output, as it did when previously prescribing X-Factors via the *Historical Price Method*. [emphasis added, footnotes omitted]."

⁷ AT&T *ex parte* at 3. AT&T is not entirely correct that the application to interstate data is the only difference; AT&T also wishes to adjust the outcome to account for changes in interstate accounting earnings.

⁸ *Op. cit.* at 4.

⁹ 1997 *Price Cap Performance Review* at ¶23.

separations methods have been used for years to assign costs to services and jurisdictions; it carefully does not claim that separated costs are—or should be—used for pricing services. AT&T also claims there is no evidence regarding the direction of bias in the level or change in separated costs, but that assertion is also irrelevant. Consider the simple example of a firm that supplies usage services identically in the interstate and intrastate jurisdictions such that an increase in output in either jurisdiction lowers unit costs in both jurisdictions.¹⁰ In an unregulated competitive market, an increase in either interstate or intrastate output would cause interstate unit costs and prices to fall; however, the change in separated unit costs—and the change in interstate prices under AT&T's proposed price regulation scheme—would depend on which output increased. While an X-factor based on total company TFP growth—or on AT&T's Direct Method—would give the correct adjustment for the aggregate price level of the firm, neither method gives the correct answer when applied to interstate separated data.

8. AT&T's response mischaracterizes my testimony in a 1996 North Carolina state regulatory proceeding which observed that the FCC's X-factor (then 5.3 percent) was inappropriate for use for intrastate services because of differences between the productivity differential for interstate access services and intrastate services.¹¹ While AT&T acknowledges that I did not advocate basing an X-factor on an intrastate productivity study,¹² it nonetheless interprets my position as advocating "the need for X-factors to reflect jurisdictional differences in the mix of services being regulated." What AT&T ignores is the fact that the 5.3 percent X-factor set by the FCC was not determined by a direct TFP study based on either interstate or total firm data. Rather, the first two X-factors used by the FCC were set using the price method, averaging the long run rate of growth of real prices for all telecommunications services (the Spavins-Lande method) and the short run rate of growth

¹⁰ This example is discussed in my Comments, Attachment 1 to USTA's Comments, CC Docket Nos. 94-1, 96-262, January 7, 2000 at ¶¶37-38.

¹¹ AT&T *ex parte* at 5.

¹² On the contrary, "Local exchange carriers provide a variety of telecommunications services, each of which must be properly accounted for in the construction of an output index used in a Total factor Productivity study," Amended Direct and Rebuttal Testimony of Dr. William E. Taylor before the North Carolina Utilities Commission, Docket No. P-7, Sub 825; P-10, Sub 479, February 9, 1996 at 41.

of interstate carrier access prices (the Frentrup-Uretsky method).¹³ It is true that if one uses the Historical Revenue Method to set an X for intrastate services, the measured X will be sensitive to the relative growth rates and margins of the different services. That fact does not imply that an intrastate measure of TFP growth exists and depends on relative service characteristics or that a TFP-based productivity offset (a TFP-based X) can be calculated for intrastate services. The statements cited by AT&T are accurate with respect to historical X-factors measured as the FCC measured its X-factor of 5.3 percent; they do not apply to X-factors based on TFP measurements.

9. The problem with AT&T's analysis is that it makes the implicit assumption that revenues equal costs for whatever set of services to which its method is to be applied. When that assumption is invalid, the results of the Direct Method are invalid. Thus, in Table 1 of my Reply Comments¹⁴ when the X-factor implied by AT&T's Direct Method is compared with the X-factor actually in effect, we should not be surprised to see that the numbers differ significantly. The calculation is based on equation 9 from AT&T's Appendix A,¹⁵ and that equation explicitly requires that interstate revenue equal interstate cost in every period. Mr. Friedlander (at pp. 2-3) misreads my complaint to be that an index of LEC output index is biased. On the contrary, the point of this exercise is that the "price index implied by AT&T's approach" differs from the price index which changes by inflation – X in the price cap mechanism.¹⁶ While Mr. Friedlander claims that this anomaly cannot be ascribed to AT&T's method because that method is "mathematically equivalent to that of the FCC," he forgets that when AT&T's method is applied to interstate data, the method is no longer mathematically equivalent to anything calculated by the FCC.

¹³ *Price Cap Performance Review*, ¶¶137-141.

¹⁴ Reply Comments of William E. Taylor, CC Docket Nos. 94-1, 96-262, January 24, 2000 ("Taylor Reply Comments"), ¶19.

¹⁵ Comments of AT&T Corp., CC Docket Nos. 94-1, 96-262, January 7, 2000, ("AT&T Comments"), Appendix A at 6.

¹⁶ Taylor Reply Comments, ¶19.

III. INTERSTATE EARNINGS ARE IRRELEVANT FOR MEASURING X.

10. AT&T states its position very clearly:

While it is true that X-factors can be calculated on the basis of interstate revenues and output without having to allocate costs, AT&T believes that more accurate estimates are obtained by adjusting interstate revenues for excess earnings, based on costs allocated to the interstate jurisdiction.¹⁷

This belief follows the structure of the Historical Revenue Method, in which explicit adjustments to revenues were made in each period to keep measured interstate earnings constant at an authorized rate.¹⁸ However, that feature of the Historical Revenue Method was rejected by the FCC because its repeated use would

create substantially similar incentives to those under rate-of-return regulation, because the X-Factor would be explicitly linked to earnings. The Historical Revenue Approach also would re-create many of the administrative burdens of rate-of-return regulation, including a substantial reliance on accurate demand and cost forecasts. In addition, in the Price Cap Fourth Further Notice, we expressed concerns that the Historical Revenue Approach might not provide sufficient incentives for productivity growth, to the extent that increases in industry-wide earnings would increase the X-Factor...¹⁹

11. AT&T defends its earnings adjustment by asserting that accounting earnings are not economically meaningless and that regulatory depreciation rates have an ambiguous affect on the level of measured earnings and no predicable effect on the change in earnings over time.²⁰ The frailties of using accounting separated earnings as a measure of economic profit have been discussed at length in this proceeding²¹ and need no further flogging here. AT&T made the point sufficiently eloquently (when applied to its price cap plan):

A fundamental problem is that rate of return regulation in practice cannot ensure the economically “correct” level of earnings...that is, the return that would result

¹⁷ AT&T *ex parte* at 4, footnote 6.

¹⁸ See, e.g., *Policy and Rules Concerning Rates for Dominant Carriers*, CC Docket No. 87-313, 5 FCC Rcd at 6885 (Appendix C).

¹⁹ *Price Cap Performance Review* at ¶22.

²⁰ AT&T *ex parte* at 5-6.

²¹ See, e.g., Taylor Comments at ¶¶42-49.

in a competitive marketplace, allowing the regulated carrier to recover its real economic costs of capital. Rate of return regulation measures only accounting profits, based on historic or embedded costs, and not real economic rates of return.²²

12. Finally, adjusting the X-factor to account for measured interstate earnings is poor policy, not simply because the adjustment is economically meaningless or arbitrary but because it would destroy the very incentives which price cap regulation was implemented to foster. Again, AT&T said it well:

The whole point of price cap reform is to end the gratuitous cost and inefficiency of rate of return regulation. Retaining existing rate of return regulation in addition to price cap regulation obviously would achieve none of the administrative simplification and economy the Commission is seeking. More important, continued earnings limitations of this sort would perpetuate all of the inefficiencies and consumer losses occasioned by “cost-plus” earnings regulation. Such earnings limitations discourage efficiency and innovation by reducing the market incentive for improved performance, as the Commission and the majority of the parties have recognized.²³

13. AT&T claims that an example of the arbitrary nature of separated earnings in my Comments is incorrect.²⁴ As best I understand it, AT&T simply restates my point. The paragraph cites two separate examples in which interstate earnings would be overstated: (i) the incorrect assignment of Internet-bound traffic to the intrastate jurisdiction for separations purposes and (ii) the (hypothetical) more rapid growth of local usage than interstate.²⁵ AT&T then purports “[t]o refute this proposition” by citing a conclusion from a different hypothetical example (ATM switches in ¶¶39-40) in which growth in interstate usage is assumed to lead to lower unit costs for both interstate and intrastate services because technology diffuses more rapidly through the network. In the ATM example, economic (not accounting) unit costs and prices fall in both jurisdictions as interstate (or

²² AT&T Comments, CC Docket No. 87-313, October 19, 1987, at 23.

²³ AT&T Comments on Supplemental Submissions, CC Docket No. 87-313, February 10, 1988 at 3-4.

²⁴ AT&T *ex parte* at 6.

²⁵ As explained in ¶47 of *Taylor Comments*, the incorrect assignment of Internet-bound calls shifts costs from the interstate jurisdiction, increasing its measured rate of return. In ¶46 of *Taylor Comments*, I explain that if local traffic grew more rapidly than interstate, interstate earnings would incorrectly appear to increase as more fixed costs would be allocated to the intrastate jurisdiction, leaving fewer assigned to interstate.

intrastate) usage grows. However, misclassifying Internet-bound traffic as local increases separated intrastate unit costs while reducing separated interstate unit costs (compared to their levels if Internet-bound traffic were classified as interstate). Similarly, if intrastate traffic grows relative to interstate traffic, interstate unit costs fall (as shared fixed and common costs are allocated to the intrastate jurisdiction) but intrastate unit costs rise. When fixed costs are allocated based on relative use, there is no way that changes in separated costs will follow changes in economic costs.

IV. THE DIFFERENT MIX OF SERVICES IN THE INTERSTATE AND INTRASTATE JURISDICTIONS IS IRRELEVANT.

14. AT&T claims that the “mix of services under FCC regulation differs significantly from that in the intrastate jurisdiction” and thus that my example in which interstate productivity growth depends on intrastate output growth is “exceedingly misleading because it trivializes the issue.”²⁶ By “mix of services,” I assume AT&T means that interstate services have different characteristics from intrastate services; for example, Dr. Nadiri cites growth rates and margins as characteristics that differ between jurisdictions and that give rise to different rates of intrastate and interstate productivity growth. AT&T’s complaint involves a factual claim (that the mix of services differs across jurisdictions) and a theoretical assertion (that my example is misleading when the service mix differs across jurisdictions).
15. Facts first. Based on industry data, about 80 percent of the price cap LECs’ interstate access revenues are recovered on a flat-rate basis: the carrier common line charge, the TIC, Local Switching, tandem switched transport, Information Surcharge and interexchange rate elements together recover about \$4.5 billion annually on a usage basis, compared with \$19 billion recovered on a flat-rate basis from subscriber line charges, PICCs, trunk ports, dedicated transport and special access.²⁷ By comparison, according to USTA, only about

²⁶ AT&T *ex parte* at 7, citing M. I. Nadiri, “The Measurement of Productivity Growth for Interstate Access Services,” Appendix C to Reply Comments of AT&T, CC Docket No. 94-1, March 1, 1996.

²⁷ Coalition for Affordable Local and Long Distance Service (“CALLS”) *ex parte*, September 1, 1999, p. 28. AT&T is a member of CALLS.

67 percent of intrastate revenue is recovered on a flat rate or line-related basis.²⁸ Thus the interstate jurisdiction has a similar proportion of revenue recovered on a lines-related basis. In addition, Dr. Nadiri observed intrastate usage growth rates of 3 percent compared with interstate switched access growth rates of 10 percent. However, time and the Internet have reversed those growth rates: in 1997, intrastate usage grew at 11 percent compared with 6 percent growth in interstate switched access.²⁹ As a factual matter, the growth rate of interstate services no longer exceeds that of intrastate services. The important differences between jurisdictions in the mix of services discussed by Dr. Nadiri have largely evaporated.

16. Second, suppose contrary to fact that interstate services are comparatively high margin and high growth compared with intrastate services. Assume, following my example (Taylor Comments at ¶¶37-38), that one of the high-margin, high-growth interstate services is interstate usage, one of the low-margin, low growth intrastate services is intrastate usage and any increase in usage (irrespective of jurisdiction) reduces the (economic) unit cost of usage regardless of jurisdiction. For simplicity, assume intrastate usage is constant over time. By assumption, high-growth interstate usage will reduce the unit cost of usage, and unit costs (and prices, in competitive markets) would fall at the same rate in both jurisdictions. However, any jurisdictional-specific attempt to measure productivity growth would show slower productivity growth in the intrastate jurisdiction, despite the fact that economic unit costs and prices are constructed to fall at the same rate.

V. THE CONSUMER PRODUCTIVITY DIVIDEND

17. AT&T asserts that I mischaracterized its analysis which “does not rely on the assumption that productivity growth is proportional to the increase in incentives.”³⁰ Instead, AT&T says its analysis rests on the proposition that “elimination of sharing would increase LEC productivity growth by at least as much as had the initial adoption of price cap regulation”

²⁸ USTA Reply Comments at 8.

²⁹ FCC, *Statistics of Communications Common Carriers* (November 1999), Tables 8.6, 8.7.

³⁰ AT&T *ex parte* at 8.

based on the SPR study which showed that the elimination of sharing would increase LEC efficiency incentives by more than the original adoption of price cap regulation with sharing. As I read AT&T's Appendix C, it proposes a CPD of 1.5 percent (at 5) which it adjusts to 1.1 percent to remove double-counting. The 1.5 percent appears to be calculated explicitly based on the SPR study and corroborated by changes in measured productivity growth (at 3) and the size of the X-factor LECs chose to eliminate sharing in 1995 (at 4). As far as AT&T's use of the SPR study is concerned, it is clear that it assumes productivity growth is proportional to the change in incentives:

If we further assume that the LEC's potential productivity gain, X, is a linear function of the incentive for efficiency...the change from a price cap system with sharing to one without sharing should ultimately produce a much larger productivity increase—about three times as much (94/29)—as the change from the old ROR system to price caps with sharing.³¹

AT&T goes on to calculate the CPD by multiplying two different estimates of the change in productivity growth (stemming from the change from rate-of-return regulation to price caps with sharing) by 3. It first takes the FCC's estimate of 0.5 percent and—using the assumption that the change in X is proportional to the 3-fold change in incentives—proposes a CPD of 1.5 percent (at 2). Next, AT&T uses an alternative measure based on an observed productivity growth difference of 0.85 percent, multiplies it by 3 and arrives at a potential CPD of 2.55 percent (at 3). It is hard to imagine a sense in which AT&T's analysis does not “rely on the assumption that productivity growth is proportional to the increase in incentives.”

18. As pointed out in Taylor Reply (at ¶22), the SPR study on which AT&T continues to rely (i) overestimates the efficiency incentives under ROR regulation³² and thus underestimates the change in incentives from adopting price cap with sharing and (ii) underestimates the efficiency incentives under a 50/50 sharing plan.³³ Moreover, corroborating the SPR-based

³¹ AT&T Comments, Appendix C, p.2.

³² Because the SPR Study assumes that under ROR, a firm can earn above its required return and keep it all in subsequent periods.

³³ Because the SPR Study measures only efficiency incentives from sharing gains and ignores the additional incentives from sharing losses. See Taylor Reply at ¶¶30-31.

analysis using the difference between the 5.3 percent X-factor with no sharing and the minimum 4.0 percent X-factor with full sharing is wrong. There is a fundamental difference between an option for an annual choice and *mandatory* elimination of sharing. The year-to-year productivity growth of individual firms can vary considerably. With annual choice, the objective would be to provide an incentive to stretch to a higher level in otherwise above-average years. In contrast, a productivity target fixed over a number of years would have a correspondingly lower “stretch,” because the variation in the average over a number of years is smaller than annual variations. Therefore, because the Commission’s plan provided sharing as an annual option, its design provides no meaningful guidance for the establishment of a permanent CPD. Further, sharing (or no sharing) was based on *accounting* rather than economic costs. Accordingly, the price-cap LEC’s choices are, at best, only an indirect indicator of expected accounting performance, not expected productivity growth.

VI. CONCLUSIONS

19. AT&T’s proposed Direct Method disguises but does not eliminate the need to separate costs and revenues into meaningful buckets. Unless interstate revenue equals interstate costs in every period, the mathematical equivalence touted by AT&T no longer holds when the formula is used to calculate an X from interstate data. One cannot base a productivity offset in a price plan on interstate data and retain any tie to the observable economic drivers that determine price changes in unregulated, competitive markets, i.e., productivity growth or changes in unit costs.