37. AT&T maintains that USTA's original model assumed a fixed cost of capital, and then adjusted capital stock to a cost-minimizing level. AT&T and Ad Hoc also assert that this treatment does not measure the actual level of capital input.[161] Therefore, rather than relying on any implicit rental price calculation, AT&T bases the weight placed on its capital input index relative to labor and materials on the price cap LECs' actual earnings. Specifically, AT&T bases the weight of the labor input index on total compensation, the weight of the materials input index on a materials price index, discussed further below, and the wight of the capital input index on total revenues minus the sum of total labor compensation and materials expense. According to AT&T, USTA's approach in effect allocates a fixed amount of revenue to capital, and this results in a guaranteed return on capital regardless of performance. AT&T argues this creates the same incentives as rate-of-return regulation.[162] Ad Hoc asserts that USTA's cost of capital measurement results in understating the input price differential.[163] AT&T's model treats the LECs' actual returns as an input cost that must be attributed to capital, labor, and material.[164] AT&T measures the cost of capital as equal to the amount by which total revenues exceed total costs.[165] AT&T asserts that its method of calculating the cost of capital is closer to BLS's method than USTA's method is.[166] Ad Hoc supports AT&T's method of basing the weights assigned to the three input indices on earnings.[167] Sprint alleges that USTA's definition of capital costs results in overweighting capital input prices.[168] Sprint maintains that USTA's opportunity cost of capital is not reasonable, because most telecommunications capital assets cannot be sold outside the telecommunications industry, and so USTA's treatment overstates the weight given to the capital input index relative to the labor and materials indices.[169]

38. USTA and a number of LECs assert that AT&T's weighting of the capital input index replicates the incentives of rate-of-return regulation, because it results in limiting carriers

[161] AT&T Comments at 19-20 and App. A at 31-45; AT&T Reply at 32; Ad Hoc Reply, Att. at 28-29.

[162] AT&T Comments at 20-22.

[163] Ad Hoc Reply, Att. at 30.

[164] AT&T Comments at 20-22 and Att. A at 31-47.

[165] AT&T Comments at 21.

[166] AT&T Reply, App. B at 48.

[167] Ad Hoc Reply, Att. at 27-28.

[168] Sprint Comments at 9.

[169] Sprint Reply, Att. A at 30.

to a particular rate of return.[170] USTA also claims that AT&T's cost of capital fluctuates with things such as changes in demand or booking the costs of an early retirement program, and asserts that it is unreasonable to permit this fluctuation in the cost of capital.[171] USTA maintains that it is inappropriate to use total revenue to estimate cost of capital in industries with non-constant returns to scale.[172] USTA and Bell Atlantic contend that AT&T uses the book value of capital, while the replacement value of capital is more economically meaningful.[173] USTA and NYNEX reply that it is reasonable to assume that firms in the telephone industry adjust capital inputs to cost-minimizing levels.[174] USTA also asserts that it is difficult to estimate the weight to assign to an input when it is not being used at its cost-minimizing level, and that this should not be used unless there is a strong indication that inputs are not being used at an optimal level in a particular industry.[175] Finally, USTA contends that AT&T's model contains several careless mistakes.[176]

39. MCI and TRA argue that the Commission has determined that the LECs' cost of capital is 11.25 percent, and the LECs should be required to continue to use this cost of capital until the Commission revises its determination.[177] TRA also argues that relying on the cost of capital determined by the Commission would be less administratively burdensome than trying to recalculate the cost of capital in every annual access filing.[178] Some LECs oppose adopting the prescribed rate of return as the cost of capital because it tends to tie the price cap plan to rate-of-return regulation.[179] Southwestern Bell argues that the prescribed rate of return was not

[170] USTA Reply at 20-21; Att. A at 17, Att. C at 4-6; NYNEX Reply at 15-16; BellSouth Reply, Att. at 23-29; GTE Reply at 9-10; Bell Atlantic Reply at 3; Southwestern Bell Reply at 10.

[171] USTA Reply, Att. B. at 8-9, 11-12.

[172] USTA Reply, Att. A at 16.

[173] USTA Reply, Att. A at 20-21, Att. B at 6-7, 9-11, Att. C at 14-15; Bell Atlantic Reply, Att. 1 at 6-7.

[174] USTA Reply, Att. C at 16; NYNEX Reply at 10.

[175] USTA Reply, Att. A at 15-16.

[176] USTA Reply, Att. B at 12-13.

[177] MCI Comments at 17-18; TRA Reply at 5. MCI also claims that, if the Commission were to conduct a represcription proceeding, it would find that the cost of capital has fallen to 9.54 percent. MCI Comments at 18 n.29.

[178] TRA Reply at 5.

[179] US West Comments at 13; GTE Comments at 16-17; BellSouth Comments at 13.

consistent over time.[180] US West argues that a rate-of-return represcription proceeding is administratively burdensome.[181] Ad Hoc and US West observe that, because the Commission does not represcribe the rate of return annually, it may not be an accurate measure of the cost of capital every year.[182] US West observes that BEA does update its cost of capital annually.[183] BellSouth and USTA deny that the prescribed rate of return is the "opportunity cost" of debt and equity, and claim that USTA's use of the National Income and Product Accounts results in a closer approximation.[184] On the other hand, Bell Atlantic asserts that the Commission's prescribed rate of return is an "economic" rate of return rather than an "accounting" rate of return, because it is based on cash flows and market values.[185]

40. AT&T claims that USTA appears to use average tax rates in its implicit rental price, and that this is less reasonable than using estimated marginal tax rates, as AT&T claims BLS uses.[186] Bell Atlantic alleges that AT&T's tax treatment of debt and equity implicitly assumes that the pre-tax cost of debt is equal to the post-tax cost of equity.[187] USTA asserts that it bases taxes on the tax expenses reported in Form M, and that its method adequately accounts for the differences between the tax treatment of debt and equity.[188] Sprint claims that the implicit rental price analysis used by USTA was developed to assist in tax analysis at the firm or division level, and argues that pre-tax capital consumption provides a more accurate measure of productivity. Sprint also claims that USTA distorts the value of capital relative to labor and materials by treating those two inputs as before taxes.[189]

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[180] Southwestern Bell Comments at 7. Southwestern Bell also asserts that some parties in earlier phases of this proceeding did not use a consistent approach when comparing the LECs' cost of capital with the costs of capital in other industries. Southwestern Bell Comments at 7-8.

[181] US West Comments at 13. See also USTA Comments at 18.

[182] US West Comments at 13; Ad Hoc Comments, Att. at 19.

[183] US West Comments at 13.

[184] BellSouth Comments at 12; BellSouth Reply, Att. at 25-26; USTA Comments at 17-18; citing Barbeau, Grimm, Phillips and Selzer, Railroad Cost Structure Revisited, 28 Transportation Research Forum 237 (1987); USTA Reply, Att. B at 4-5.

[185] Bell Atlantic Reply at 10.

[186] AT&T Reply, App. B at 49.

[187] Bell Atlantic Reply, Att. 1 at 7-8.

[188] USTA Reply, Att. A at 13-15.

[189] Sprint Reply, Att. A at 29-32.

41. USTA opposes AT&T's method of equating total cost and total revenue. USTA maintains that this improperly assumes that LECs always earn no more than their opportunity cost of capital.[190] USTA also maintains that by assuming that cost equals revenue, AT&T's model measures past changes in prices rather than past changes in productivity.[191] USTA claims that AT&T's measure of the cost of capital overstates the X-Factor by 1.7 percent from 1988-94, and 2.2 percent from 1989-94.[192]

b. Labor

42. USTA asserts that creating more disaggregated labor indices would complicate the TFP calculations without improving their accuracy.[193] USTA also contends that management and non-management hours are not publicly available data, and so replaces USTA's two labor indices in its original TFP study with one index, number of employees as reported in ARMIS.[194] USTA observes that creating only one labor index moots the issue of how to weight two or more categories.[195] Finally, USTA maintains that the simplified TFP method captures the effects of "outsourcing" in the materials index.[196]

43. Sprint contends that USTA improperly compares LEC-specific labor-cost growth with BLS data for the economy-wide costs of labor. According to Sprint, it would be more appropriate to compare the economy-wide BLS data with BLS data for labor costs in the transportation and public utilities industries. Sprint argues that USTA has incorrectly concluded that the LECs' labor costs have grown more quickly than for the economy as a whole, when in fact those labor costs have grown more slowly than for the economy as a whole.[197]

44. Ad Hoc claims that USTA's treatment of OPEB accounting changes and voluntary early retirement programs should be amortized over some period, to avoid overstating the actual

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[190] USTA 1997 Comments, Att. 6 at 5-6.

[191] USTA 1997 Comments, Att. 6 at 6-7.

[192] USTA 1997 Comments, Att. 6 at 7.

[193] USTA Comments at 23. See also GTE Comments at 20-21; US West Comments at 15.

[194] USTA Comments at 23-24. See also GTE Comments at 20; US West Comments at 15.

[195] USTA Comments at 24.

[196] USTA Comments at 24.

[197] Sprint Reply, Att. A at 37-41.

growth of labor inputs, and thus understating TFP growth.[198] GTE replies that Ad Hoc's determining which labor inputs were incurred prudently or imprudently would treat labor inputs inconsistently with other inputs.[199] USTA and GTE claim that booking costs associated with OPEBs and voluntary retirement programs is consistent with GAAP and RAO Letter 24.[200] According to Lincoln, if LECs are not permitted to claim OPEB costs as an exogenous cost, they should be permitted to include OPEB costs in their labor input costs.[201] Lincoln contends that it would be unreasonable to exclude the costs associated with voluntary retirement programs while including the efficiencies gained by reducing the number of employees.[202] USTA asserts that any further amortization would not change the amount of labor inputs, but would simply smooth the data. USTA contends that smoothing is not necessary in this case.[203] According to Lincoln, the X-Factor will not be based on expected future levels of inputs, so one-time costs should not skew the results.[204]

c. Materials

45. USTA and some LECs argue that creating disaggregated materials indices would be a very complicated task, that there are no publicly available data on which to base such indices, and assert that GDP-PI is a reasonable proxy for materials prices.[205] Sprint and AT&T deny that GDP-PI is an accurate surrogate for LEC materials input prices.[206] Sprint provides data showing that the inputs used most by LECs are not the same as those reflected the most in GDP-PI, and that using GDP-PI for materials prices grossly overstates the change in material input prices experienced in telecommunications.[207]

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[198] Ad Hoc Comments, Att. at 28. See also Sprint Reply at 9-10.

[199] GTE Reply at 14. See also Lincoln Reply at 11 (determining whether to include or exclude any given input cost might make TFP calculations unnecessarily complex).

[200] USTA Reply at 18-19; GTE Reply at 13-14, citing RAO Letter 24, 9 FCC Rcd 1676 (Com. Car. Bur., Accounting and Audits Div., 1994).

[201] Lincoln Reply at 10-11.

[202] Lincoln Reply at 11-12.

[203] USTA Reply at 18-19.

[204] Lincoln Reply at 11.

[205] USTA Comments at 25; US West Comments at 16; GTE Comments at 21.

[206] Sprint Reply at 10; AT&T Reply, App. B at 48.

[207] Sprint Reply, Att. A at 32-36. See also Ad Hoc Comments, Att. at 29.

46. AT&T developed a LEC-specific materials input price index based on BLS interindustry accounts for the goods and services it believes are purchased by LECs.[208] USTA replies that AT&T's materials index is based on complex and unverified calculations, and is based only on transactions between telecommunications firms and other firms.[209]

47. USTA claims that AT&T's materials price index includes data from IXC purchases, and purchases of radio and television broadcasters, and so is not a good proxy for purchases made by LECs.[210] USTA claims that this overestimates the X-Factor by 0.4 percent from 1988-94, and 0.9 percent from 1989-94.[211] AT&T admits that its materials price index is not perfect, but claims that it is much better than USTA's use of GDP-PI.[212]

d. Weighting of Materials and Labor Indices

48. USTA claims that AT&T improperly calculates materials expense because it used the change in depreciation reserves instead of actual recorded depreciation and amortization expense, and total compensation instead of wage, salary, and benefit expense. USTA claims that materials expense is underestimated because total compensation includes labor costs capitalized in the construction of new facilities that are not included in total operating expense. USTA claims that changes in depreciation reserves understates depreciation expense and thus causes an overstatement of materials expense. USTA claims that labor expense is overstated by total compensation. USTA maintains further that misstating labor and materials expenses results in misstating the weight placed on the capital input index, because capital is weighted residually by subtracting the weights places on labor and materials from total revenues. USTA claims that these alleged errors in AT&T's model are offsetting, and so have no effect on the X-Factor in AT&T's model. USTA claims further that these errors result in an understatement of 0.2 percent in TFP for the period from 1988 to 1994, and an understatement of 0.3 percent for the period from 1989 to 1994.[213] In its 1997 reply, AT&T states that it has switched to depreciation and amortization expense, rather than using change in depreciation reserves as it had previously.[214]

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[208] AT&T Comments, App. A at 18-19.

[209] USTA Reply at 20 and Att. A at 21-22.

[210] USTA 1997 Comments, Att. 6 at 20-23.

[211] USTA 1997 Comments, Att. 6 at 20-23.

[212] AT&T Reply in CC Docket No. 96-262, App. G at 30.

[213] USTA 1997 Comments, Att. 6 at 17-20.

[214] AT&T 1997 Reply, App. G at 34-35.

D. Other X-Factor Calculation Issues

1. Input Price Differential

49. Several parties support including the short-term input price differential.[215] Ad Hoc argues that rates in competition would reflect only short-term input price differential rather than the general inflation rate, and so the input price differential information preceding divestiture is not relevant.[216] According to Ad Hoc and other parties, the local exchange industry is much more capital intensive than the economy as a whole. Ad Hoc also maintains that USTA's data indicates that labor input prices have grown more rapidly than capital input prices from 1984 to 1992, and concludes from this that LEC input prices must have grown more slowly than economy-wide input prices.[217]

50. AT&T calculated the input price differential for the period from 1985 to 1994, using BLS statistics rather than relying on data from Christensen's study as the Commission did, and found it to be 2.54 percent.[218] Ad Hoc contends that the input price differential for the period from 1984 to 1993 is 2.1 percent based on USTA's data, or 3.4 percent based on USTA's data corrected for certain errors alleged by Ad Hoc.[219] Ad Hoc contends that USTA's conclusions are based on improper use of dummy variables.[220] BellSouth alleges that AT&T improperly compares input price levels rather than growth in input prices.[221] BellSouth and Bell Atlantic assert that AT&T's hedonic adjustment results in overstating capital input growth, which in turn understates capital input price increases, and so artificially inflates the input price differential.[222] According to Bell Atlantic, adjusting for the effects of AT&T's hedonic adjustment reduces its

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[215] US West Comments at 7; AT&T Comments at 11-12 and App. A at 6-17; AT&T Reply at 8-11 and App. B at 15-19; US West Reply at 13; GSA Reply at 5-7; NCTA Reply at 7-8; CCTA Reply at 15-16.

[216] Ad Hoc Comments, Att. at 30-34; Ad Hoc Reply, Att. at 12-13.

[217] Ad Hoc Comments, Att. at 34-35; Ad Hoc Reply, Att. at 16-17. See also GSA Reply at 6; AT&T Reply, App. B at 7-8; CCTA Reply at 16-17.

[218] AT&T Comments at 12-13 and App. A at 17-22.

[219] Ad Hoc Reply, Att. at 12.

[220] Ad Hoc Reply, Att. at 18-25.

[221] BellSouth Reply, Att. at 13-14.

[222] BellSouth Reply, Att. at 8-9; Bell Atlantic Reply, Att. 1 at 8-9. See also Ad Hoc Reply, Att. at 18.

input price differential from 2.54 percent to 0.91 percent.[223] USTA asserts that 2.54 percent is not statistically significant.[224] When Sprint compared its price indexes for capital, labor, and materials to its economy-wide input price index, it found that the five-year moving averages for the period from 1985 to 1993 ranged from 1.64 percent to 0.84 percent.[225]

51. Most of the LECs argue that the long-run input price differential is not statistically different from zero.[226] According to USTA, AT&T places too much emphasis on the point estimate of 2.2 percent, and not enough emphasis on the fact that zero is within the 95 percent confidence interval.[227] USTA also asserts that AT&T's and Ad Hoc's results stem from differences in the method by which certain data series are collected, rather than any real long-term input price differential.[228] USTA claims that the Commission did not place adequate weight on a February 1995 ex parte statement, which purports to show that there has been very little difference between LEC input price changes and economy-wide input price changes from 1948 to 1992.[229] Some parties allege that the Commission committed methodological errors in Appendix F of the LEC Price Cap Performance Review.[230] AT&T argues that USTA's LEC input prices for capital and materials are closely related to GDP-PI, and so artificially reduces the input price differential.[231] AT&T alleges that there are discrepancies between USTA's data and the data it used for the period from 1949 to 1984, and questions whether USTA did in fact

[223] Bell Atlantic Reply, Att. 1 at 10-11. See also USTA Reply, Att. B at 22-23 (removing effects of hedonic adjustment results in input price differential of 0.28 percent).

[224] USTA Reply, Att. B at 23-24.

[225] Sprint Reply, Att. A at 41-43.

[226] USTA Comments at 26 and App. C at 3-6; US West Comments at 7, 16; Southwestern Bell Comments at 11; NYNEX Comments at 21; BellSouth Comments at 14-16; Bell Atlantic Comments at 11-12; Lincoln Comments at 4; Ameritech Comments at 4-5; GTE Comments at 11 and App. B, App. F; NYNEX Reply at 5; USTA Reply, Att. A at 23-25; Pacific Reply at 4, citing California PUC Opinion at 68-69. USTA contends that the model it presented to the California PUC contained some revisions, but these revisions were only updating the model, and they had minor effects on the results of the model. USTA Reply, Att. A at 28-31.

[227] USTA Reply, Att. B at 17-19.

[228] USTA Reply at 11-13.

[229] USTA Comments at 26-27. See also USTA Reply, Att. A at 26-28.

[230] USTA Comments at 26 and App. C at 10-14; GTE Comments at 11-14; Southwestern Bell Comments at 12; Pacific Comments at 6.

[231] AT&T Reply, App. B at 25-28.

take its input price data from BLS.[232] AT&T also alleges that USTA has improperly used total private sector data for the period from 1985 to 1993, rather than total private non-farm sector data.[233] AT&T claims that the Commission did consider the data in USTA's February 1995 ex parte statement.[234] AT&T replies that USTA's criticism of the data used by the Commission in Appendix F is irrelevant, because the Commission focused on the post-1984 period, and found a statistically significant input price differential using both sets of data relied on by USTA.[235]

52. A number of LECs assert that the input price differential was a temporary effect of divestiture, and lasted only from 1984 to 1989.[236] AT&T disagrees.[237] AT&T alleges that the data Bell Atlantic used to support this point are not the same as the data used in USTA's study, and that the regression analyses Bell Atlantic conducted cannot be interpreted to support the proposition that the input price differential was a temporary effect of divestiture.[238] Ad Hoc argues that divestiture was a major change in the industry, and that it is unreasonable to assume that such a change would result in merely a temporary change.[239] In its reply, USTA claims that the input price differential is not related to divestiture at all, and that the input price differential started to increase in 1980 and began declining in 1990.[240] Ad Hoc also maintains that it is inconsistent for USTA to focus on TFP growth only since 1984, but to focus on long-term input price differences.[241] USTA and Bell Atlantic reply that only use of long-term input price differential data can provide an accurate picture of LEC input price trends.[242]

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[232] AT&T Reply at 19-20 and App. B at 8-13.

[233] AT&T Reply, App. B at 11-13.

[234] AT&T Reply at 12-16.

[235] AT&T Reply, App. B at 14-15. See also Ad Hoc Reply, Att. at 14-15.

[236] USTA Comments at 26 and App. C at 6-10; BellSouth Comments at 14-16; Bell Atlantic Comments at 12-13 and Att. 2; Lincoln Comments at 4-7 and Att. A; Bell Atlantic Reply at 4-5 and Att. 1 at 1-2.

[237] AT&T Reply at 20-21.

[238] AT&T Reply, App. B at 20-25.

[239] Ad Hoc Reply, Att. at 13.

[240] USTA Reply, App. B at 14-15.

[241] Ad Hoc Comments, Att. at 43-45; Ad Hoc Reply at 3 and Att. at 11-13. See also TRA Reply at 3-4 (use of long-term data for input price differential hides the effects of divestiture.)

[242] USTA Reply at 10-11 and Att. A at 22-26; Bell Atlantic Reply at 4.

53. Some parties assert that USTA's study was not designed to measure input price differential, and so the Commission's use of USTA's study in Appendix F did not produce reliable results.[243] Ad Hoc denies that the Commission's results are not reliable simply because USTA did not intend its study to be used to derive the input price differential.[244]

54. Several parties assert that the X-Factor should represent a prediction of the LECs' achievable future productivity growth, and that including the input price differential in the X-Factor would make it too volatile to have any predictive power, and could cause rate churn.[245] AT&T contends that the Commission considered whether volatility in input prices was so great that the input price differential was not statistically different from zero, and found this argument unsupported by the data in the record.[246] Some LECs assert that AT&T improperly assumes that they are asserting that changes in GDP-PI are identical to changes in LEC input prices. These commenters agree that the two are not identical, but argue that the differences balance out over the long run.[247] US West and GSA would not oppose using a five-year moving average for the input price differential.[248] USTA replies that using a moving average for the input price differential would not cause it to be significantly different from zero.[249]

55. US West and GSA note that the input price differential tends to pass through unit cost reductions.[250] Pacific argues that including the input price differential for this reason is inappropriate.[251] GTE contends that including the input price differential adds a term to the PCI formula, thus complicating the formula.[252]

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[243] Lincoln Comments at 4; Southwestern Bell Comments at 11; Southwestern Bell Reply at 11-13; USTA Reply at 12 n.4.

[244] Ad Hoc Reply at 13-14.

[245] Pacific Comments at 3-6; Pacific Reply at 4; US West Comments at 16; Lincoln Comments at 4; NYNEX Comments at 22; NYNEX Reply at 6; USTA Reply, Att. A at 22-26. See also Southwestern Bell Reply at 15 (past input price differential should not be relevant for setting future X-Factor).

[246] AT&T Reply at 16-18.

[247] USTA Reply at 9 and Att B at 16-17, 19-21; Bell Atlantic Reply, Att. 1 at 5-6; GTE Reply at 21-22; BellSouth Reply, Att. at 15.

[248] US West Comments at 16; GSA Reply at 6.

[249] USTA Reply, Att. at 21.

[250] US West Comments at 7; US West Reply at 13; GSA Reply at 5-7.

[251] Pacific Comments at 6.

[252] GTE Comments at 14-15.

2. Adjustment to X-Factor for Interstate-Only Activity

b. Discussion

56. Legal Considerations. AT&T argues that basing interstate rates on total company TFP calculations would exceed our jurisdiction under Section 2(b) of the Communications Act, 47 U.S.C. § 152(b).[253] AT&T and other parties also contend that Smith and its progeny requires carriers to make some reasonable allocation of its property between the interstate and intrastate jurisdictions, regardless of whether the Commission is employing rate-of-return regulation.[254] AT&T argues that the difficulty in distinguishing interstate from intrastate productivity growth does not justify adopting an inaccurate X-Factor method.[255] TRA and Ad Hoc assert that the inability of measuring interstate TFP growth is cause to reject TFP as a method for calculating the X-Factor.[256]

57. USTA contends that the Commission in the First Report and Order considered and rejected arguments that basing the X-Factor on total company TFP might exceed the Commission's jurisdiction.[257] USTA and other parties also assert that relying in part on intrastate data in regulating interstate rates does not mean that the Commission is attempting to regulate intrastate rates, and so such reliance does not violate Smith.[258] BellSouth claims that use of total company TFP does not exceed the Commission's jurisdiction because TFP is merely one component in the PCI formula. TFP by itself does not determine whether any particular tariff rate is just and reasonable, according to BellSouth.[259] A number of commenters reply that Smith requires only that the Commission limit its regulations to interstate services, not that it is precluded from considering total company data.[260] USTA maintains that Smith limits only

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[253] AT&T Comments at 14-15.

[254] Ad Hoc Comments at 6-7; AT&T Comments at 15-17; MCI Reply at 8; Ad Hoc Reply at 8-9; TRA Reply at 5-6; LDDS Reply at 4-5; AT&T Reply at 30-31, citing, e.g., Smith v. Illinois Bell Telephone Co., 282 U.S. 133 (1930) (Smith).

[255] AT&T Reply at 26-27, 29. See also API Reply at 4, 7-9.

[256] TRA Comments at 3-6; Ad Hoc Reply, Att. at 11.

[257] USTA Comments at 29.

[258] USTA Comments at 29-30. See also Sprint Reply at 13-14; US West Reply at 29-33; Bell Atlantic Reply at 8, citing NARUC v. FCC, 737 F.2d at 1112.

[259] BellSouth Comments at 18-19.

[260] NYNEX Reply at 8-9; Sprint Reply at 13-14; Pacific Reply at 12-13.

state jurisdictions, and has no effect on Federal agencies.[261] USTA and Southwestern Bell argue that AT&T's interpretation of Smith would have precluded the Commission from including GNP-PI in the original price cap formula.[262] GTE and Sprint note that the Commission has historically examined total company data when determining the LECs' cost of capital for prescribing the rate of return for interstate services.[263]

58. Systematic Downward Bias. Some parties argue that interstate productivity has grown faster than total company productivity, and so basing TFP on total company data would tend to create downward bias in productivity growth measurements.[264] AT&T asserts that this difference results in part in a difference in labor inputs required to provide interstate and intrastate services.[265] AT&T also contends that the LECs' interstate services have a higher markup than their intrastate services, and so make a greater contribution to productivity growth.[266] CCTA argues that intrastate productivity growth is likely to be less than interstate productivity growth because some states employ rate-of-return regulations or impose sharing obligations, both of which tend to blunt efficiency incentives.[267] Sprint suggests basing such an adjustment on marginal or incremental costs.[268] BellSouth asserts that capital inputs have grown faster than labor or materials inputs. According to BellSouth, if interstate services are more capital-intensive than intrastate services, then AT&T's assumption that interstate and intrastate input growth are equal would tend to overestimate interstate input growth.[269]

[261] USTA Reply at 15-16, citing MCI v. FCC, 750 F.2d at 141.

[262] USTA Reply at 16-17; Southwestern Bell Reply at 10.

[263] GTE Reply at 32; Sprint Reply at 14.

[264] TRA Comments at 3-6; Ad Hoc Comments, Att. at 46-48; API Comments at 4-5; AT&T Comments at 13-14, 17; NCTA Reply at 7-8; TRA Reply at 3; API Reply at 3-6; LDDS Reply at 5; Ad Hoc Reply, Att. at 6-7; MCI Reply at 8; GSA Reply at 4-5; AT&T Reply at 21-26, and App. C at 3-5. See also NYNEX Comments at 20-21 (although interstate TFP may not be economically meaningful, higher interstate output growth may warrant some TFP adjustment).

[265] AT&T Reply at 24 and App. C at 7.

[266] AT&T Reply, App. C at 6-7. See also NYNEX Reply at 9.

[267] CCTA Reply at 11-12.

[268] Sprint Reply at 17-18.

[269] BellSouth Reply, Att. at 20-23.

59. Ad Hoc and API argue that basing the X-Factor on total company TFP might give LECs a windfall unless the states also adopt regulations based on total company data.[270] BellSouth contends that the Commission and state regulatory authorities have never coordinated their ratemaking methods before, and adopting a TFP-based X-Factor would not require such coordination now.[271]

60. Various commenters maintain that there is no economically meaningful way to develop separate interstate and intrastate production functions, or to allocate joint and common costs between the interstate and intrastate jurisdictions.[272] AT&T and Ad Hoc argue that it is possible to develop an interstate TFP measurement, by developing an interstate output index based on interstate services, and assuming that interstate inputs and intrastate inputs grow at the same rate.[273] Ad Hoc argues that, because separations rules require a relatively constant share of total investment and expenses, approximately 25 percent, to be allocated to the interstate jurisdiction, it is reasonable to assume that interstate and intrastate input growth are equal for purposes of calculating an interstate TFP adjustment.[274] API asserts that USTA has not employed economically meaningful data to develop its intrastate output indexes.[275] Ad Hoc alleges that some LECs have calculated intrastate TFP measures in proceedings before state public service commissions.[276]

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[270] Ad Hoc Comments, Att. at 48-49; API Comments at 5.

[271] BellSouth Comments at 19-20. See also USTA Comments at 30.

[272] USTA Comments at 27-29 and App. C at 14-17; GTE Comments at 21-22; Bell Atlantic Comments at 13-14; BellSouth Comments at 17-18; Lincoln Comments at 9-10; NYNEX Comments at 18-19; Southwestern Bell Comments at 12-14; US West Comments at 7, 17; Pacific Reply at 10-12; GTE Reply at 29-30; US West Reply at 28-29; Bell Atlantic Reply at 6-7 and Att. 1 at 3-4; BellSouth Reply, Att. at 15-16.

[273] AT&T Comments, App. A at 23-27; AT&T Reply at 26-28, App. B at 34-43, App. C at 11; Ad Hoc Comments, Att. at 49-50; Ad Hoc Reply at 3, 8-9, Att. at 8-11. See also API Comments at 6.

[274] Ad Hoc Comments, Att. at 49-50; Ad Hoc Reply at 3, 8-9, Att. at 8. According to Ad Hoc, the investment allocation to the interstate jurisdiction has fluctuated between 25.10 percent and 25.48 percent from 1991 to 1994, and expenses between 23.70 percent and 24.35 percent over this period. Ad Hoc Comments, Att. at 50.

[275] API Reply at 6-7, citing USTA Comments at 14.

[276] Ad Hoc Reply, Att. at 10-11.

61. In their replies, several commenters assert that there is no basis for assuming that interstate input growth and intrastate input growth are equal.[277] According to USTA, if it were possible to separately measure interstate and intrastate productivity growth, faster growth in interstate outputs might have resulted in faster growth in interstate inputs, so that there might not be any difference between interstate and intrastate TFP growth.[278]

c. TFP Adjustment for Differences in Regulated and Nonregulated Productivity Growth

62. USTA asserts that, to the extent that Part 64 rules identify non-regulated costs that are not joint or common with regulated costs, it is possible to develop a separate production function for non-regulated services.[279] USTA and Southwestern Bell also claim that any allocation of joint and common regulated and non-regulated costs is inherently arbitrary.[280] According to BellSouth, basing the X-Factor on the industry-wide average, and employing a five-year moving average, would make it difficult for a LEC to benefit from strategic activities such as investing in unprofitable unregulated business activities.[281] Ad Hoc claims that the initial investment required to begin providing certain nonregulated services or video services could increase capital inputs, and thus decrease measured TFP growth.[282]

d. Reporting

63. BellSouth opposes expanding reporting requirements to include total company data. BellSouth argues that the reporting requirements need not be any more extensive than the TFP Review Plan attached to USTA's comments.[283] In general, Southwestern Bell recommends eliminating reporting requirements, which it contends are relevant only for rate-of-return regulation or sharing.[284]

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[277] USTA Reply at 13-14; Lincoln Reply at 9; Bell Atlantic Reply at 7 and Att. 1 at 4-5; Southwestern Bell Reply at 10; US West Reply at 29 and Att. A at 5-7; GTE Reply at 30-32; NYNEX Reply at 7-8; BellSouth Reply, Att. at 16-20.

[278] USTA Comments, App. C at 20-21.

[279] USTA Comments, App. C at 21-22. See also Southwestern Bell Comments at 14-15.

[280] Southwestern Bell Comments at 15; USTA Comments, App. C at 22.

[281] BellSouth Comments at 21-22.

[282] Ad Hoc Comments, Att. at 50-51.

[283] BellSouth Comments at 20, citing USTA Comments, App. B.

[284] Southwestern Bell Comments at 32-33. See also USTA Comments at 30-31; Ameritech Reply at 6.

3. Effect of Universal Service and Other Subsidy Programs on LEC TFP

64. A number of commenters argue that total company TFP captures the effects of any universal service fund or subsidy programs, and so no special adjustments are needed.[285] BellSouth contends that changes in universal service fund requirements are treated exogenously, and supports continuing this treatment.[286] CCTA notes the 1996 Act mandates universal service fund revisions, and asserts that the Commission is considering universal service fund issues in another proceeding.[287]

4. Inclusion of Other Firms in Study

65. Ad Hoc and API recommend including data from other industries in the TFP calculations, to limit LECs' ability to adjust their productivity to influence the X-Factor.[288] API also argues that LECs are not yet subject to meaningful competition, and including data from more competitive industries would cause the X-Factor to replicate a competitive market better.[289]

66. Other parties argue that it would be difficult at best for a LEC acting by itself to manipulate its productivity growth to influence the industry average TFP.[290] Other commenters argue that including non-LEC data in the TFP calculation would make the X-Factor a less accurate measure of LEC productivity growth.[291] NYNEX opposes collecting non-LEC data because it would be administratively burdensome.[292] GTE argues that including other industries would be inconsistent with the Commission's treatment of AT&T's X-Factor, and with ICC precedent.[293] Because it might be difficult to collect data from other industries, API recommends

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[285] Southwestern Bell Comments at 15-16; GTE Comments at 25; USTA Comments at 31-32; US West Comments at 18.

[286] BellSouth Comments at 22.

[287] CCTA Reply at 21, citing 1996 Act, Section 254.

[288] Ad Hoc Comments, Att. at 52; API Comments at 7-8.

[289] API Comments at 6-7.

[290] BellSouth Comments at 22-23; Frontier Comments at 5 n.7.

[291] US West Comments at 18; GTE Comments at 23-24.

[292] NYNEX Reply at 11-12. See also Southwestern Bell Comments at 16-17; Ad Hoc Comments, Att. at 52 (do not oppose including other firms in the TFP calculation, but do not believe adequate data are available).

[293] GTE Comments at 23.

resolving any other issues regarding the calculation of the X-Factor in a way that results in the highest possible X-Factor.[294]

5. Consumer Productivity Dividend

67. AT&T argues that both its and USTA's models rely in part on data from periods preceding the adoption of price caps, and argues that the CPD is still necessary to encourage productivity growth higher than that under rate-of-return regulation.[295] USTA and GTE assert that retaining the CPD to capture part of any additional productivity growth that might result from eliminating sharing would be arbitrary.[296] USTA also alleges that the CPD simply forces prices down rather than increasing efficiency incentives.[297] In addition, GTE and BellSouth claim that there was no principled basis on which to select 0.5 percent as the CPD.[298]

68. Several parties assert that the CPD was adopted originally because of uncertainty regarding whether the X-Factors in the original price cap plan would transfer a sufficient portion of the benefits of lower unit costs to customers, or to ensure that productivity growth under price caps exceeds growth under rate-of-return regulation. These commenters maintain that the CPD in the original price cap plan has served its intended purpose, and that it is no longer necessary.[299] Ameritech expects increased competition in the future to obviate the need for a CPD.[300] USTA argues that the price cap plan properly balances shareholder and ratepayer interests without the CPD.[301] Other parties argue that the simplified TFP method of calculating the X-Factor proposed by USTA, together with a moving average, would transfer all

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[294] API Comments at 8-9.

[295] AT&T Comments at 35-36; AT&T Reply at 41. See also MCI Comments at 7 (consumer productivity dividend necessary to help drive rates to economic costs).

[296] USTA Comments at 13; GTE Reply at 34-35.

[297] USTA Comments at 13-14. See also USTA Reply at 4-6; Frontier Reply at 4.

[298] GTE Comments at 35-36; BellSouth Reply, Att. at 39.

[299] USTA Comments at 12-14 and App. C at 33; GTE Comments at 36; Bell Atlantic Comments at 13; NYNEX Comments at 27-28; USTA Reply at 25; Bell Atlantic Reply at 5-6; GTE Reply at 33; Frontier Reply at 3-4; NYNEX Reply at 14; Frontier Comments at 7, citing Policy and Rules Concerning Rates For Dominant Carriers, Further Notice of Proposed Rulemaking, CC Docket No. 87-313, 3 FCC Rcd 3195, 3407-08 (para. 386) (1988).

[300] Ameritech Reply at 4.

[301] USTA Reply at 26.

productivity gains to consumers, and so eliminates the need for the CPD.[302] Ad Hoc denies that basing the X-Factor on a moving average would be an effective substitute for the CPD.[303]

69. GTE does not expect LECs to be able to achieve productivity growth 0.5 percent higher than historical levels.[304] AT&T argues that the LECs have installed new technology in recent years, and expect the LECs to discover more efficient uses for that technology as time goes on.[305] AT&T also replies that the CPD is a realistic estimate of additional productivity growth that LECs should be expected to be able to achieve.[306]

6. Effects of Access Reform

70. According to USTA, productivity estimates based on historical studies overstate the productivity potential of price-cap LECs under competition.[307] According to USTA, as incumbent LECs lose customers to competition, their output will decline, and as a result their measured productivity will decline. Therefore, USTA recommends basing the X-Factor on a five-year moving average of the TFP, so that reductions in productivity resulting from competition would be reflected in the X-Factor.[308] USTA claims that the TFP differential (TFP of LECs minus TFP for US economy as whole) is 2.7 percent, and will decrease by 0.4 percentage points each year if the Commission adopts USTA's recommendations for restructuring the CCL charge and the TIC.[309] Most incumbent LECs support USTA.[310] BA/NYNEX argues that productivity growth will decrease as a result of competition unleashed

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[302] USTA Comments at 13; US West Comments at 19-20; Bell Atlantic Comments at 13; Ameritech Comments at 8; BellSouth Comments at 28, Att. 1, Att. 2; Southwestern Bell Comments at 20-21; NYNEX Comments at 28; USTA Reply at 25-26; NYNEX Reply at 14-15; Bell Atlantic Reply at 6; BellSouth Reply, Att. at 38-39.

[303] Ad Hoc Reply, Att. at 40.

[304] GTE Comments at 36-37; GTE Reply at 33-34.

[305] AT&T Comments at 35-36; AT&T Reply at 42.

[306] AT&T Reply at 42-43.

[307] USTA 1997 Comments at 19.

[308] USTA 1997 Comments at 20.

[309] USTA 1997 Comments at 21. See also USTA 1997 Reply at 41-42; US West 1997 Comments at 46-49; SWBT 1997 Reply at 37.

[310] BA/NYNEX 1997 Comments at 58-60; BellSouth 1997 Comments at 50 n.93; SNET 1997 Comments at 28-30; US West 1997 Comments at 46-49; Aliant 1997 Reply at 3-4; BellSouth 1997 Reply at 41-42; SNET 1997 Reply at 24-25.

by the 1996 Act, and so basing the X-Factor on a five-year moving average TFP would likely overstate future achievable productivity.[311] Alternatively, BA/NYNEX argues that we could rely on a fixed TFP-based X-Factor for a short period of time, until Bell competition will enable us to deregulate incumbent LECs completely.[312] GTE and SNET contend that growth in competition and recovering more costs through flat rather than usage sensitive rates, will likely depress measured TFP growth.[313]

71. AT&T notes that it recommended at least 8.8 percent in its pleadings filed in response to the Price Cap Fourth Further Notice.[314] Several commenters recommend setting the X-Factor at 9.9 percent, on the basis of the pleadings of the CARE Coalition filed in response to the Price Cap Fourth Further Notice.[315] Ad Hoc also recommends increasing the X-Factor for the reasons it explained in its comments in the Price Cap Fourth Further Notice.[316] MCI also supports increasing the X-Factor to 9.9 percent, but only for five years, after which MCI argues that the X-Factor should be based on TFP.[317] A number of price cap LECs maintain that the X-Factors recommended by AT&T and MCI greatly exceed their actual productivity growth under price cap regulation.[318] USTA has identified several purported computational and methodological errors in AT&T's, MCI's, and Ad Hoc's X-Factor proposals in its pleadings filed in response to the Price Cap Fourth Further Notice.[319] Ad Hoc recommends making any fundamental changes to price cap regulation in the price cap proceeding, and focusing on access reform in this proceeding.[320] According to GTE, AT&T and Ad Hoc maintain that incumbent LECs' interstate productivity is greater than their intrastate productivity, and included in their

[311] BA/NYNEX 1997 Comments at 59. See also US West 1997 Comments at 46.

[312] BA/NYNEX 1997 Comments at 59; BA/NYNEX 1997 Reply at 29-30.

[313] GTE 1997 Comments at 57-58; SNET 1997 Reply at 25-26.

[314] AT&T 1997 Comments at 70. In its reply, AT&T increases its X-Factor recommendation to 9.0 percent, on the bases of updated data. AT&T 1997 Reply at 35 and Att. G.

[315] API 1997 Comments at 27-28; ICA 1997 Comments at 4; WorldCom 1997 Comments at 91; API 1997 Reply at 18.

[316] Ad Hoc 1997 Comments at 70; Ad Hoc 1997 Reply at 7-14. Ad Hoc also replies that its Price Cap Fourth Further Notice pleadings discredited USTA's X-Factor studies. Ad Hoc 1997 Reply at 9-14.

[317] MCI 1997 Comments at 25.

[318] BellSouth 1997 Comments at 50; BA/NYNEX 1997 Reply at 27-29; SWBT 1997 Reply at 37-39; Aliant 1997 Reply at 3.

[319] USTA 1997 Reply at 42-44. See also BA/NYNEX 1997 Reply at 30-31.

[320] Ad Hoc 1997 Reply at 7-8.

X-Factor recommendations an interstate TFP adjustment to account for this alleged difference in productivity. GTE further opposes any interstate TFP adjustment, because there incumbent LECs provide interstate and intrastate services using the same network, and so it would make no economic sense to assume that interstate productivity is greater than intrastate productivity.[321]

72. PacTel and Aliant propose setting the X-Factor equal to GDP-PI.[322] Sprint argues that the Commission should discontinue the use of the current productivity factor for all baskets except common line, once all access charges have been reduced to geographically deaveraged TELRIC levels.[323] AT&T anticipates that access reform would increase productivity growth, because reducing rates to cost-based levels would stimulate demand.[324]

IV. PRICE CAP STRUCTURE ISSUES

B. Sharing Obligations

1. Flow-Through Mechanism

73. Several parties maintain that a moving average ensures that all reductions in unit costs are eventually passed through to access customers.[325] Ad Hoc emphasizes that it is important to include some flow-through mechanism in the price cap plan, and recommends either sharing, the consumer productivity dividend (CPD), or both.[326] Ad Hoc and AT&T maintain that the five-year moving average with a two-year lag would flow through productivity improvements more slowly than the a competitive market would.[327]

74. SNET argues that competition has become strong enough to act as a pass-through mechanism.[328] GSA disagrees, and supports retaining sharing until competition is sufficiently

[321] GTE 1997 Reply at 27-28.

[322] PacTel 1997 Comments at 41-42; Aliant 1997 Comments at 8.

[323] Sprint 1997 Comments at 53.

[324] AT&T 1997 Reply at 35-36.

[325] USTA Comments at 40; Southwestern Bell Comments at 22; Ameritech Comments at 7; USTA Reply at 23-24; BellSouth Reply, Att. at 38-41; NYNEX Reply at 13, 19; GTE Reply at 38; Bell Atlantic Reply at 12.

[326] Ad Hoc Comments, Att. at 62-64; Ad Hoc Reply, Att. at 40.

[327] Ad Hoc Comments, Att. at 66-68; AT&T Reply at 50-52.

[328] SNET Comments at 13.

developed to warrant removing price cap constraints.[329] BellSouth asserts that the Commission has placed excessive emphasis on unit costs. BellSouth also maintains that competition has driven some rates to efficient levels, regardless of unit costs, and that we should not attempt to recapture past productivity gains.[330] Ameritech opposes requiring LECs to pay a "premium" in the form of a higher X-Factor for the elimination of sharing, and alleges that any "premium" would be unreasonable given that competition is likely to increase in reaction to the 1996 Act.[331]

2. Backstop Mechanism

75. Some parties maintain that, unless we can be certain that the X-Factor is accurate, we should retain a backstop mechanism.[332] AT&T argues that we should retain sharing as a backstop mechanism until we gain experience with a TFP-based X-Factor.[333] Ad Hoc argues that, without sharing, there is no way to determine whether access rates are just and reasonable or excessive when compared with the LECs' cost of capital.[334] MCI and Ad Hoc assert that some backstop mechanism is necessary in the long-term plan because they believe X-Factors have been set too low in the past.[335] ICA argues that firms in competitive markets use earnings to measure their performance, and so LECs have no basis for opposing an earnings-based backstop mechanism in the price cap plan.[336]

76. USTA, Bell Atlantic and US West maintain that a moving average is adequate to replace the backstop function of sharing.[337] Some commenters assert that, to the extent that parties advocate sharing to prevent overearnings, those arguments are inconsistent with the

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[329] GSA Comments at 10-11.

[330] BellSouth Comments at 8-9.

[331] Ameritech Reply at 5-6.

[332] TRA Comments at 7-8; Ad Hoc Comments, Att. at 68-69; TRA Reply at 8; Frontier Reply at 2-3.

[333] AT&T Reply at 44-45, 47-48, 52 n.106. See also Ad Hoc Reply at 6.

[334] Ad Hoc Comments at 7-8. Ad Hoc also maintains that it would be less concerned about the elimination of sharing if the X-Factor were sufficiently high and if the consumer productivity dividend were retained. Id.

[335] MCI Comments at 20-21; Ad Hoc Comments, Att. at 60-62. Specifically, MCI argues that the sharing mechanism is necessary to force rates to economic costs. MCI Comments at 19.

[336] ICA Comments at 7-8. See also LDDS Reply at 4.

[337] USTA Comments at 40; Bell Atlantic Comments at 5-6; US West Comments at 24-25; USTA Reply at 24.

theory underlying price caps.[338] These parties also argue that accounting rates of return are not an accurate reflection of performance, and that any measure of performance should be based on an "economic" rate of return.[339] NYNEX maintains that the court has rejected contentions that sharing must be retained to ensure just and reasonable rates.[340] Some parties reply that there is sufficient data in the record, and that the Commission has sufficient experience with price cap regulation, that a backstop mechanism is no longer necessary.[341] GTE argues that sharing is not necessary because TFP will produce accurate X-Factors.[342] BellSouth also argues that any further need for sharing as a backstop mechanism should be outweighed by concerns over blunting efficiency incentives.[343] According to NYNEX, Congress identified price cap regulation as a mechanism to encourage infrastructure investment when it adopted the 1996 Act, and eliminating sharing would further encourage infrastructure investment.[344]

3. Low-End Adjustment Mechanism

77. AT&T advocates eliminating the low-end adjustment mechanism because it has not proved necessary to protect LECs from underearnings.[345] AT&T alleges that some LECs have abused the low-end adjustment mechanism by, for example, using it to recoup expenses incurred during voluntary corporate downsizing.[346] A number of LECs advocate eliminating the low-end adjustment mechanism as an unneeded vestige of rate-of-return regulation.[347] USTA and AT&T

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[338] USTA Reply at 4-6 and Att. C at 6-7; GTE Reply at 35-36; Bell Atlantic Reply at 8-9, 12, citing AT&T Performance Review, 8 FCC Rcd at 6970.

[339] Bell Atlantic Reply at 9-10; GTE Reply at 36-37; USTA Reply, Att. C at 8-13. USTA claims that the Commission recognized the difference between economic and accounting costs when it revised the exogenous cost rules in the LEC Price Cap Performance Review. USTA Reply, Att. C at 12, citing LEC Price Cap Perfromance Review, 10 FCC Rcd at 9090-91 (para. 295). USTA also claims that the "economic" rate of return for the LECs from 1991 to 1994 was 8.94 percent. USTA Reply, Att. C at 13-14, 22-23.

[340] NYNEX Reply at 21, citing National Rural Telecom Association v. FCC, 988 F.2d 174 (1993).

[341] USTA Reply at 24; BellSouth Reply, Att. at 39-40; GTE Reply at 37.

[342] GTE Comments at 40.

[343] BellSouth Reply, Att. at 40-42.

[344] NYNEX Reply at 21, citing Section 706(a) of the Telecommunications Act of 1996, 47 U.S.C. § 706(a).

[345] AT&T Comments at 39-40; AT&T Reply at 53-54.

[346] AT&T Comments at 40; AT&T Reply at 53-54.

[347] USTA Comments at 43; US West Comments at 25; Southwestern Bell Comments at 34-35; BellSouth Comments at 41; Frontier Comments at 10; US West Reply at 34.

argue that LECs facing potential underearnings may make an above-cap tariff filing, or seek a waiver of the price cap rules, and so it is not necessary to retain the low-end adjustment mechanism.[348]

78. NYNEX and Bell Atlantic assert that, if we retain sharing, we should also retain the low-end adjustment mechanism for regulatory symmetry.[349] NYNEX also denies that it has ever abused the low-end adjustment mechanism.[350] Finally, NYNEX asserts that the Commission considered and rejected in the LEC Price Cap Perfromance Review contentions that above-cap filings make the low-end adjustment mechanism superfluous.[351]

C. Number of X-Factors

79. Several parties recommend establishing multiple X-Factors, maintaining that one X-Factor would not adequately account for the fact that LECs face different circumstances in their service regions.[352] Sprint argues that more than one X-Factor is necessary because not all LECs' productivity growth will meet or exceed the industry average.[353] Lincoln asserts that a single X-Factor might discourage non-price cap LECs from adopting price caps.[354] Cincinnati Bell agrees with Lincoln, and recommends establishing a separate set of X-Factor options for small and mid-sized LECs.[355]

80. NYNEX proposes multiple X-Factors and permitting carriers that lower barriers to competitive entry to use a lower X-Factor, arguing that this would encourage the development

[348] USTA Comments at 43; AT&T Comments at 41; AT&T Reply at 54.

[349] NYNEX Reply at 22; Bell Atlantic Reply at 11-12.

[350] NYNEX Reply at 22-23.

[351] NYNEX Reply at 23, citing LEC Price Cap Perfromance Review, 10 FCC Rcd at 9058-59 (para. 223).

[352] SNET Comments at 7, 9-11; Lincoln Comments at 11-12; AT&T Comments at 30-31; US West Comments at 8, 21-22; NYNEX Comments at 7; US West Reply at 14-15; Lincoln Reply at 3.

[353] Sprint Comments at 10. See also US West Reply at 13-14 (a single X-Factor unfairly rewards or penalizes LECs at each end of the range).

[354] Lincoln Reply at 3.

[355] Cincinnati Bell Reply at 3-5.

of competition.[356] Ameritech and SNET make similar proposals.[357] Because NYNEX believes that productivity growth is affected by competition, it also advocates permitting LECs to use different X-Factors in different parts of their service areas, and different X-Factors for switched and special access services.[358] Pacific argues that requiring carriers to use the same X-Factor in both competitive and non-competitive parts of their service regions prevents LECs from lowering rates in their competitive regions and making up this revenue shortfall in non-competitive regions.[359] MCI contends that there is no evidence that LECs' productivity varies by geographic area.[360]

81. A number of commenters support only one X-Factor because it would obviate the need for sharing as a matching mechanism.[361] Some LECs maintain that one X-Factor better replicates the incentives of a competitive market, because it gives everyone an incentive to achieve productivity growth higher than the industry average.[362] Similarly, Ad Hoc argues that permitting less productive LECs to choose a lower X-Factor enables those LECs to avoid the penalty that inefficiency would bring in a competitive market.[363] BellSouth observes that variations in productivity growth among LECs may be caused by factors other than regional

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[356] NYNEX Comments at 4-5; NYNEX Reply at 28. Specifically, NYNEX recommends permitting carriers to use a lower X-Factor if they have met certain items listed in the "competitive checklist" on which we sought comment in the Second Further Notice. NYNEX Comments at 11, citing Second Further Notice, 11 FCC Rcd at 906 (para. 108). NYNEX would permit a LEC to use an X-Factor of 75 percent of the baseline X-Factor if it has met the checklist criteria in 75 percent of the service area, and at least one competitor is operational in the region. NYNEX would permit a LEC to use an X-Factor of 60 percent of the baseline X-Factor if there is a "competitive presence" in areas representing 40 to 50 percent of the LEC's business access lines. NYNEX Comments at 11.

[357] SNET Comments at 6-9; Ameritech Comments at 10-12. Similarly, Pacific argues that it has already removed barriers to entry in its region, and argues that it should be permitted to choose a lower X-Factor now rather than delaying while it goes through some certification process. Pacific Comments at 8-9.

[358] NYNEX Comments at 12. See also Pacific Reply at 6-7, citing California PUC Opinion at 40-41, 43, 48-49.

[359] Pacific Comments at 7-8; Pacific Reply at 5-6.

[360] MCI Comments at 26.

[361] Southwestern Bell Comments at 25, 27, 33; BellSouth Comments at 40-41 and Att. 1 at 11; Bell Atlantic Reply at 12-13; BellSouth Reply, Att. at 42-43.

[362] GTE Comments at 37-39; Bell Atlantic Comments at 11-12; BellSouth Comments at 34, 37; Bell Atlantic Reply at 12.

[363] Ad Hoc Comments at 8-9.

economic differences, and many of those factors are within the LECs' control.[364] BellSouth assumes the purpose of multiple X-Factors would be to create an "equality of outcomes" among LECs, and argues that this could substantially decrease efficiency incentives.[365] BellSouth maintains that developing a set of "economically meaningful" X-Factors other than the baseline X-Factor would be complex and controversial.[366] GTE argues that one X-Factor would be consistent with the approach adopted by the ICC.[367]

V. UPDATING THE X-FACTOR

82. Several parties maintain that a moving average ensures that the X-Factor accurately reflects the LECs' potential productivity growth, and so eliminates the need for sharing as a backstop mechanism,[368] and the need for scheduled performance reviews.[369] Some commenters maintain that a moving average is useful for smoothing out volatility in TFP.[370] Southwestern Bell and BellSouth contend that a moving average replicates the effects of a competitive market, in that it permits carriers to retain productivity benefits for a short period of time, and then flows through those benefits to consumers.[371] Bell Atlantic opposes performance reviews, arguing that as long as earnings are used to check the performance of price caps from time to time, the perverse incentives of rate-of-return regulation will not be eliminated completely.[372] Bell Atlantic argues that this blunts efficiency incentives, and tends to shift the risk of investment from shareholders to ratepayers.[373]

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[364] BellSouth Comments at 36-37.

[365] BellSouth Comments at 36-37, Att. 1 at 22-24.

[366] BellSouth Comments, Att. 1 at 11-20.

[367] GTE Comments at 38.

[368] USTA Comments at 34-35; BellSouth Comments at 38-40; Bell Atlantic Comments at 9-10; SNET Comments at 12-13; Ameritech Comments at 10; US West Comments at 20; NYNEX Reply at 12-13.

[369] USTA Comments at 34-35; GTE Comments at 44; Southwestern Bell Comments at 24, 40; Ameritech Comments at 13; BellSouth Comments a 30-31; US West Comments at 20; NYNEX Reply at 13-14; Bell Atlantic Reply at 3.

[370] Bell Atlantic Comments at 9-10; Ameritech Comments at 6; GTE Comments at 28-31.

[371] Southwestern Bell Comments at 21-22; BellSouth Reply, Att. at 41-42.

[372] Bell Atlantic Comments, Kahn Aff. at 9-10.

[373] Bell Atlantic, Kahn Aff. at 10-12.

83. Some parties maintain that a moving average gives LECs an incentive to manipulate their costs to reduce their short-term measured productivity growth.[374] Some parties argue that an X-Factor based on a moving average does not give LECs an incentive to lower rates to "economic costs," but merely measures how much the LECs have cut their rates in the past.[375] USTA and a number of LECs assert that an individual LEC's behavior would have limited effect on a five-year moving average, and so the incentives for LECs to increase efficiency would outweigh any benefit that a LEC might achieve by limiting its productivity growth.[376]

84. AT&T contends that a moving average, with or without a lag, will understate the LECs' productivity in the current period, and so deprive consumers of some of the benefits of productivity growth.[377] AT&T also opposes a moving average to the extent that the parties supporting it base their support on adopting USTA's method of calculating the X-Factor.[378] USTA maintains that a moving average would flow through the benefits of productivity growth more quickly than performance reviews.[379] BellSouth replies that updating the X-Factor only in periodic performance reviews would not necessarily result in an accurate X-Factor in any given tariff year.[380] BellSouth also points out that a moving average would tend to understate productivity only while productivity growth continues to increase, and that a moving average would overstate productivity growth during declining periods.[381]

85. MCI maintains that recalculating TFP annually is likely to be more administratively burdensome than conducting a performance review every four years, and asserts that reviewing annual TFP filings would as administratively burdensome as reviewing cost and demand projections in a rate-of-return filing.[382] GSA agrees that updating TFP

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[374] AT&T Comments at 34; TRA Reply at 7.

[375] MCI Comments at 11-12; TRA Comments at 6-7; LDDS Reply at 4; TRA Reply at 7.

[376] USTA Comments at 35; BellSouth Comments at 30; USTA Reply at 27; NYNEX Reply at 13; GTE Reply at 25; BellSouth Reply, Att. at 38.

[377] AT&T Comments at 33-34.

[378] AT&T Reply at 52.

[379] USTA Reply at 26-27.

[380] BellSouth Reply, Att. at 35-36.

[381] BellSouth Reply, Att. at 36-38.

[382] MCI Comments at 14-17. See also TRA Reply at 7-8; Ad Hoc Reply, Att. at 40.