67. We are concerned that reliance on total company TFP data to set price caps for interstate rates would be inappropriate if state commissions continue to regulate rates within their jurisdiction on the basis of solely intrastate data. We ask parties to comment on whether our reliance on a total company TFP method to set interstate rates should be contingent upon states' adoption of the same or similar methods for setting rates within their jurisdiction. Assuming that we do decide to rely on a total company TFP method prior to adoption of the same or similar methods by the states, would it be desirable to encourage states to adopt the same or similar methods as ours? If so, what can or should this Commission do to encourage states to adopt TFP-based regulations? We also seek comment on whether adoption of total company TFP for the purposes of setting interstate rates would result in a windfall (or deficit) to LECs if rates for intrastate services were based on intrastate costs and demand, such as those allocated to the state jurisdiction by Part 36 of the Rules.

68. Finally, we ask parties to comment on whether any of the Commission's monitoring or reporting requirements should be modified to reflect solely total company data, should we adopt a total company TFP approach; *e.g.*, ARMIS reporting requirements[83] or Form 492 reporting requirements.[84] We also ask for comment on whether sharing requirements, discussed in more detail below, should be modified to reflect total company performance, should we adopt a total company TFP approach.

> **Issue 1k:** Is there a valid distinction between regulated and nonregulated productivity, or the productivity associated with specific services, such as video dialtone, or groups of services, for the purposes of calculating a TFP index and an input price index? If so, does a satisfactory method exist to account for such differences?

69. As we discussed above, calculating TFP on a less-than-total-company basis may present both theoretical and practical issues. Our resolution of these issues may be related to our conclusions regarding the interstate TFP issue designated above. If we find that it is not possible to distinguish the productivity associated with interstate services from that associated with intrastate services, then it may not be possible to distinguish between the productivity associated with regulated services from that associated with nonregulated services, or to distinguish the productivity associated with any other service or group of services.

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[83] ARMIS is a database containing detailed investment and expense information reported by LECs on a regular basis. *See, e.g.*, Automated Reporting Requirements for Certain Class A and Tier 1 Telephone Companies (Parts 31, 43, 67, and 69 of the FCC's Rules), CC Docket No. 86-182, 2 FCC Rcd 5770 (1987); *First Report and Order*, para. 55 n.74.

[84] Price cap LECs are required submit Form 492 on an annual basis to report rate of return information the Commission. Sections 1.795 and 65.600(d) of the Commission's Rules, 47 C.F.R. §§ 1.795, 65.600(d).

70. Regardless of whether we decide to use our Part 36 rules to distinguish interstate from intrastate costs and demand for purposes of calculating interstate TFP, it might be reasonable to use our Part 64 rules to distinguish regulated from nonregulated costs and demand for purposes of calculating regulated TFP, or develop some other allocation mechanism to identify the costs and demand associated with a specific service and exclude those costs and demand from the TFP calculation. It may be possible and reasonable to exclude some or all nonregulated services from the TFP calculation even though we decide to include intrastate services in the calculation. For example, we may find that it is not possible to develop separate TFP measures for interstate and intrastate services based on separate production functions for those services, because those services share a relatively large amount of joint and common costs. This may also be true of the relationship between regulated services and some unregulated services. With respect to other unregulated services, however, the production functions may differ substantially from those of regulated services since nonregulated services include foreign service offerings and noncommunications services. We solicit comments on these issues. In addition, we seek comment on whether including nonregulated services in the TFP calculation would create an incentive for LECs to engage in relatively less profitable business activities than they would otherwise, because of the expectation that losses in those businesses would lower their productivity growth as measured by TFP, and thus might be offset in part by reductions in the X-Factor.

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

Issue 1*l*: How do state and federal universal service and other subsidy programs implemented by the LECs affect the industry's TFP? Should the TFP be adjusted to account for such effects?

71. The FCC and state regulatory commissions require LECs to participate in various universal service programs that are designed to increase access to the public switched network. The FCC, for example, oversees the operation of the Universal Service Fund, which provides financial assistance to LECs whose unseparated loop costs significantly exceed the nationwide average.[85] In addition, the FCC's rules permit LECs to offer other services that are designed to advance the same overall goals. The Commission's rules, for example, authorize LECs to waive the End User Common Line charge for low income end users who satisfy a means test, provided that the state regulatory commission permits the LEC to waive the end user's state monthly exchange access charge of at least the same amount.[86] Certain rules governing the jurisdictional separation of investment used to provide interstate and intrastate services are

[85] 47 C.F.R. 36.631.

[86] 47 C.F.R. 36.711.

designed, in part, to further specified public interest goals.[87] Similarly, individual states have universal service or similar subsidy programs.[88]

72. In light of the size and scope of these authorized programs, we invite parties to comment and, if possible, quantify the impact of such programs on the LECs' productivity. We also seek comment on whether, and to what extent, LECs' participation in such programs affect or should affect the calculation of LEC productivity under TFP or alternative methods for calculating productivity.

g. Inclusion of Other Firms in Study

Issue 1m: Should the productivity of firms other than LECs be included in a TFP-based X-Factor calculation?

73. In an *ex parte* statement submitted on February 2, 1995 during the first phase of this proceeding, Ad Hoc suggested expanding the TFP study to include firms other than LECs, such as interexchange carriers (IXCs), CAPs, "value-added network service providers," and other unspecified telecommunications service providers.[89] Ad Hoc argued that a moving average X-Factor based only on LEC data might encourage excessive network investment, and thus might lead to "gold-plating" incentives similar to those created by rate-of-return regulation. Therefore,

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[87] *See, e.g.,* 47 C.F.R. 36.125, Dial Equipment Minute (DEM) Weighting Rules (permitting LECs serving low-density study areas to weight (*i.e.,* multiply) interstate DEM so a higher percentage of local switching costs is allocated to the interstate jurisdiction, and may be recovered from interstate ratepayers, than would otherwise be allowed, reflecting the lack of economies of scale enjoyed by such LECs).

[88] *See* James L. Lande, Industry Analysis Division, Common Carrier Bureau, Federal Communications Commission, Reference Book: Rates, Price Indexes, and Household Expenditures for Telephone Service, at 29-30 (July 1994); National Association of Regulatory Utility Commissioners, Utility Regulatory Policy in the United States and Canada, Compilation 1993-94, Table 145; *see also, e.g.,* In the Matter of a General Order of the Oklahoma Corporation Commission Amending and Esablishing Certain Rules Governing Telephone Service, Order No. 880024, Cause No. RM 930000090 (Okla. Corp. Comm'n, February 8, 1994) (adopting Okla. Admin. Code 165:55-13-14); Cal. Public Utilities Comm'n. Res. T-15588, Aug. 3, 1994; Cal. Public Utilities Comm'n. Res. T-15703, Dec. 21, 1994; Re Ohio Bell Telephone Company, 157 PUR4th 595, Case Nos. 93-497-TP-LT, 93-576-TP-CSS (Ohio Public Utilities Comm'n, Nov. 23, 1994); Re Ameritech Michigan, 1994 WL 746854, Case No. U-8987 (Mich. Public Services Comm'n., Dec. 16, 1994).

[89] Letter from Colleen Boothby, Counsel for Ad Hoc Telecommunications Users Committee (Ad Hoc), to William F. Caton, Secretary, in CC Docket No. 94-1 (Feb. 2, 1995) at 17. *See also First Report and Order*, para. 124.

Ad Hoc recommended including other telecommunications service providers in the TFP calculation if the Commission were to adopt USTA's proposal in some form.[90]

74. We ask parties to comment on Ad Hoc's proposal. Parties favoring Ad Hoc's approach should identify the firms or industries that should be included in the expanded TFP study, the sources of the data that would be required to perform the expanded TFP study, and whether such data would be accurate and publicly available on a timely basis.

h. Alternative Methods for Calculating TFP

Issue 1n: Are there superior alternatives to Christensen's method of calculating TFP?

75. We invite parties to recommend alternatives to Christensen's method of calculating TFP to the extent that these alternatives are more consistent with the criteria discussed in the section, "General Criteria," above. These criteria include economic validity, simplicity of administration, and flow-through of productivity gains to consumers. For example, in recent economic literature TFP is measured using econometrics. Econometric estimation of TFP involves the application of statistical techniques to economic data in order to estimate changes in TFP over time. Specifically, under this method, we would require carriers to specify a "production function," or an equation explaining the mathematical relationship between inputs and outputs. Carriers would then derive TFP from this equation. We invite comment on whether sufficient data are available to conduct such a study satisfactorily. In Appendix F of the *First Report and Order*, econometric techniques were used to determine whether the input price differential was significantly different than zero. Commenters should discuss relationship of econometric estimation of TFP to the econometric analysis contained in Appendix F.

76. We also seek comment on whether a simplified version of the Christensen Study would satisfy the general criteria discussed above better than would the version submitted by USTA in this proceeding. Commenters should discuss the advantages and disadvantages of such a study with regard to accuracy of result, simplicity of administration, public availability of data, and auditability of data. For example, simplification could include direct measurement of physical outputs and aggregation of asset classes. We request parties recommending simplified TFP studies to provide examples of such studies and demonstrate their methods in sufficient detail to enable the Commission and interested parties to replicate the results of their studies. We also request parties to provide a comparison between their results and the results from Christensen's study submitted by USTA in an *ex parte* statement in the first phase of this proceeding on February 1, 1995.

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[90] *See First Report and Order*, para. 124.

4. Other X-Factor Calculation Methods

a. Historical Revenue Method

77. Although the *First Report and Order* tentatively concluded that the X-Factor should be developed using a TFP method, we noted that there were other methods that could be used to develop an X-Factor that required more study and a more developed record. AT&T offered its own model for setting the X-Factor, called the Direct Model. In this phase of the proceeding, we will refer to this approach as the Historical Revenue Method. This method derives an X-Factor based on LECs' revenues and costs using publicly filed data in the Commission's ARMIS data base and in the Tariff Review Plans accompanying each annual access tariff.[91]

78. The Historical Revenue Method essentially determines the X-Factor that would be needed to reprice LECs' access services to achieve an 11.25 percent rate of return for the LEC industry as a whole under price caps.[92] The rate of return of 11.25 percent is the rate of return adopted in the *Represcription Order* in 1990 for rate-of-return carriers[93] and used to initialize price cap rates. We seek comment on this alternative method of setting the X-Factor, as specified below.

Issue 2a: Is the Historical Revenue Method superior to a TFP-based approach for developing an X-Factor?

79. We invite parties to discuss the advantages and disadvantages of using the Historical Revenue Method instead of a TFP method for the long-term price cap plan, in light of the general criteria discussed above. In particular, we seek comment on the following issues.

80. The price cap rates were initialized to earn a rate of return of 11.25 percent. In the *First Report and Order*, we stated that we would seek comment on how to incorporate future changes in capital costs into the price cap formula,[94] although we decided that it was not necessary to adjust the sharing mechanism or access rates under the interim plan in response to

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[91] *First Report and Order*, para. 127.

[92] *See generally First Report and Order*, paras. 127-28.

[93] *See* Represcribing the Authorized Rate of Return for Interstate Services for Local Exchange Carriers, CC Docket No. 89-624, 5 FCC Rcd 7507 (1990) (*Represcription Order*), *recon.*, 6 FCC Rcd 7193 (1991), *aff'd sub nom. Illinois Bell Telephone Co. v. FCC*, 988 F.2d 1254 (D.C. Cir. 1993). We stated in that Order that all LECs, including price cap LECs, must reflect the 11.25 percent rate of return in their annual access filings. *Id.* at 7507 (para. 1).

[94] *First Report and Order*, para. 233.

changes in interest rates.[95] Parties favoring the Historical Revenue Method should discuss whether it would be reasonable to continue to use 11.25 percent as the target rate of return for this method in the future. If not, should we conduct a represcription proceeding, or are there other possible methods of selecting a target rate of return? We recently adopted revisions to our represcription rules that apply to LECs under rate-of-return regulation. We also adopted a rule specifying the conditions under which we will consider initiating a represcription proceeding for those companies.[96] Should these rules be adopted for use in setting the target rate-of-return to be used in the Historical Revenue Method?

81. The Historical Revenue Method basically reprices access services over a historical period to achieve a target rate of return. To the extent that increases in earnings resulting from increases in productivity would increase the X-Factor, the Historical Revenue Method may not create adequate incentives for increasing productivity. Does the Historical Revenue Method provide adequate incentives for LECs to increase productivity and become more innovative?

82. Over the historical period examined in the Historical Revenue Method, higher rates would have tended to reduce demand, while lower rates would have tended to increase demand. As proposed by AT&T, the Historical Revenue Method does not account for these demand shifts. Should the effects of these demand shifts be incorporated in the Historical Revenue Method? If so, what would be the best way to incorporate them? What impact would stimulation or repression of demand have on the X-Factor computed by the Historical Revenue Method?

83. In order to understand the effects of using the Historical Revenue Method on the incentives of price cap LECs, we need to understand more precisely the economic significance of the X-Factor produced by this method. We are also interested in whether and under what conditions a TFP-based X-Factor would equal an X-Factor based on the Historical Revenue Method. In particular, we are interested in whether it is possible to derive TFP mathematically from the X-Factor computed by the Historical Revenue Method. We invite the parties to comment on these issues.

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[95] *First Report and Order*, paras. 229-32.

[96] Section 65.101(a) of the Commission's Rules, 47 C.F.R. § 65.101(a). Specifically, whenever the monthly average yields of ten-year United States Treasury securities remain for six consecutive months 150 basis points above or below the average for the six months prior to the current effective date of the prescription, the Commission must issue a notice inquiring whether to initiate a represcription proceeding. *See also* Amendment of Parts 65 and 69 of the Commission's Rules to Reform the Interstate Rate of Return and Enforcement Processes, CC Docket No. 92-133, 10 FCC 6788 (1995) (*Represcription Reform Order*).

b. Historical Price Method

84. In the *First Report and Order*, we identified a third possible method for developing X-Factors, namely, the historical price method that we used to establish the X-Factor in the original price cap plan.[97] The Commission in that Order selected a baseline productivity factor (before addition of the CPD) of 2.8 percent, based on the results of two historical studies conducted by the Commission staff. The Frentrup-Uretsky short-term study examined LEC switched access rates in the tariff years 1984-1990 and derived a productivity factor of 3.5 percent. The Spavins-Lande long-term study derived a productivity factor of 2.1 percent from telephone industry price data during the period of 1928-1989. The Commission averaged the two studies in establishing the baseline productivity factor of 2.8 percent.[98]

85. The short-term study was designed to determine the X-Factor that would yield the same trend of prices under the Commission's price-cap plan as was observed after divestiture under rate-of-return regulation for interstate switched access. The study took a trend of LEC unit costs along with observed GNP-PI data and calculated the X-Factor that would have produced prices equal to unit costs, given the price-cap rules. Unit costs were set at a target rate of return of 12.00 percent, the authorized rate of return at the time the study was conducted, for the entire study period. The X-Factor computed by the study, however, is not technically a productivity factor. Rather, the resulting factor combines productivity and input price information for the industry relative to the economy as a whole, to determine a cost differential between the LEC industry and the economy. It is, therefore, technically more precise to describe the X-Factor produced by the Frentrup-Uretsky historical study as a cost-differential factor rather than a productivity factor.[99]

86. In the *First Report and Order*, we corrected the baseline productivity factor from the original plan to 3.5 percent, or 4.0 percent including the CPD, for the interim plan.[100] We found that we erred in the *LEC Price Cap Order* by including anomalous data from 1984 in the Frentrup-Uretsky Study, and corrected that study to remove the anomalous 1984 data point.[101] We then averaged the results of this corrected Frentrup-Uretsky Study with the results of the

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[97] *First Report and Order,* para. 164.

[98] *LEC Price Cap Order*, 5 FCC Rcd at 6798 (para. 99).

[99] *First Report and Order*, Appendix D.

[100] *First Report and Order*, para. 209.

[101] *First Report and Order*, paras. 208-09 and Appendix D. We also made a few technical revisions to the way the X-Factor was estimated in the original short-term historical study. *Id.* at Appendix D.

Spavins-Lande long-term historical study.[102] (We shall refer here to the method used to calculate the X-Factor by the Frentrup-Uretsky study, as revised in the *First Report and Order*, as the "Historical Price Method.") We seek comment on using the Historical Price Method for calculating the X-Factor, as described below.

> **Issue 2b:** Is the Historical Price Method superior to the TFP approach for developing an X-Factor?

87. We invite parties to discuss the advantages and disadvantages of using the Historical Price Method instead of a TFP approach for the long-term price cap plan, in light of the general criteria discussed above. In particular we seek comment on the following issues.

88. In the *LEC Price Cap Order*, the Historical Price Method utilized unit costs of switched access service only to estimate the cost differential factor.[103] We were unable to include special access service because of a discontinuity in the time-series of special access data as well as problems with the reliability of the data.[104] If we adopted the Historical Price Method, would it be necessary to reflect special access service in the X-Factor? What modifications to the Historical Price Method would be required to incorporate special access service? Can reliable and accurate data be identified for special access? Given that special access service and local transport service were combined into a trunking basket in 1992,[105] what changes to the Historical Price Method are required in order to incorporate the modification to the trunking basket? We also seek comment on whether there are any other data discontinuities that would detract from the accuracy of the Historical Price Method and whether adjustments could be made to the data that would mitigate the effects of any discontinuities and enable us to establish a valid trend of unit costs.

89. In the Frentrup-Uretsky Study, unit costs for all time periods were calculated using a rate of return of 12.00 percent, the authorized rate of return at the time that the study was conducted. The rate of return was held constant over time in order to normalize the unit cost data for changes in the prescribed rate of return. We seek comment on whether such an approach should be continued if the Commission adopts the Historical Price Method, and if so,

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[102] *First Report and Order*, para. 209 and Appendix D.

[103] *LEC Price Cap Order*, 5 FCC Rcd at 6796 (paras. 75-76), and Appendix C.

[104] That discontinuity resulted from the inclusion of WATS data beginning in 1986-87. *LEC Price Cap Order*, Appendix C, 5 FCC Rcd at 6886 n.5.

[105] *See Transport Order*, 7 FCC Rcd 7006 (1992) (*Transport Order*), *modified on recon.* 8 FCC Rcd 5370 (1993) (*First Transport Reconsideration Order*); 8 FCC Rcd 6233 (1993) (*Second Transport Reconsideration Order*); 10 FCC Rcd 3030 (1994) (*Third Transport Reconsideration Order*); FCC 95-404 (released Sept. 22, 1995) (*Fourth Transport Reconsideration Order*).

what rate of return should be used. We also seek comment on alternatives that would be preferable to the approach used in the Frentrup-Uretsky study.

90. We also seek comment on whether the Commission should continue to average the long-term Spavins-Lande Study with a short-term Historical Price Study. If so, should we weight the long-term and short-term studies equally, as we did in the *LEC Price Cap Order*? If not, what weights should be assigned to the short-term and long-term studies? If consideration of both the Spavins-Lande and a short-term study is appropriate, should we update the long-term study? What period of time should the long-term study cover? Is the Spavins-Lande indirect method of calculating productivity appropriate? How might the Spavins-Lande method be improved and implemented? Can reliable data be identified for purposes of deriving a long-term productivity measure using a Spavins-Lande method?

c. Other Options

91. We seek comment on a possible method that would combine elements of the Historical Revenue Method and the Historical Price Method. Under this approach, the Historical Revenue Method would be modified to create a time series of average weighted PCIs for the common line, traffic sensitive, and trunking baskets, adjusted to earn a target rate of return for each year. The time series essentially would be a trend of unit costs that could be incorporated into the Frentrup-Uretsky model to determine the X-Factor. This is a potentially desirable approach because, unlike the original short-term study that the Commission used in the *LEC Price Cap Order*, this modified approach would include special access, as part of the trunking basket. We seek comment on whether this approach is feasible and desirable.

92. We also invite comment on whether we could and should adopt as our long-term plan the scheme adopted in the *First Report and Order* as the interim plan. Parties supporting this approach should discuss whether the interim plan requires any modifications before it could be used as the long-term plan.

93. Finally, we invite interested parties to propose other X-Factor methods in addition to the ones we have discussed above. Parties proposing such methods should address, among other things, why their proposal would be preferable to a TFP-based approach, how well the proposal would replicate the incentives created by competition, and how well the proposal would conform to the guidelines under "General Criteria."

d. Consumer Productivity Dividend

Issue 2c: Should the X-Factor in the long-term price cap plan include a consumer productivity dividend?

94. In the *LEC Price Cap Order*, we included a CPD of 0.5 percent in the X-Factor, to assure that the initial benefits of the price cap plan would flow to customers in the form of

lower rates.[106] The X-Factor that we derived from averaging the short-term and long-term studies was based on industry performance prior to the establishment of an incentive regulation. We reasoned, therefore, that there would be improvements in productivity under the incentive plan over and above those reflected in the studies. The CPD was included in the X-Factor to reflect improvements in productivity that we believed would occur under price caps and to flow through some of the benefit of those anticipated improvements immediately to consumers.

95. Given the fact that the CPD was established to reflect anticipated improvements in LEC performance in the price cap period, is it appropriate to continue to include a CPD in X-Factors based on actual data from the price cap period? If the Commission anticipates further improvements in LEC productivity (*e.g.*, due to added incentives that might be created if the Commission eliminated sharing requirements),[107] should these anticipated improvements be reflected in a CPD? If a CPD is included in the X-Factor as part of the long-term plan, what should its value be?

5. Updating of X-Factor

96. In the *LEC Price Cap Order*, we established two X-Factors that remained in effect for the initial four-year period of price cap regulation.[108] In an *ex parte* statement filed on January 18, 1995, USTA proposed updating the X-Factor annually, based on a moving average of past productivity.[109] We tentatively concluded in the *First Report and Order* that there were a number of benefits to adopting a moving average X-Factor. This approach would eliminate the need to review and revise the X-Factor during periodic performance reviews, which consume substantial public and private resources. We also found that a moving average might allow us to reduce or eliminate sharing by flowing through unit cost savings to customers on a lagged basis.[110] Accordingly, we solicit comment on the following issues:

> **Issue 3a:** Should we base the X-Factors in the long-term plan on a moving average, or should we establish fixed X-Factors to be reviewed and revised periodically in performance reviews?

97. The *LEC Price Cap Order* adopted fixed X-Factors based on historical performance that we believed could be equaled or exceeded by the LECs in the first price cap period. In other words, the X-Factor was chosen as a predictor of the LECs' future performance, rather

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[106] *LEC Price Cap Order*, 5 FCC Rcd at 6799 (para. 100).

[107] *First Report and Order*, paras. 188-91.

[108] *LEC Price Cap Order*, 5 FCC Rcd at 6835 (para. 394).

[109] *See First Report and Order*, paras. 150-54.

[110] *First Report and Order*, para. 153.

than as a mechanism to flow through unit cost reductions achieved in the pre-price cap period. Adoption of a moving average X-Factor conceivably could serve as both an accurate predictor of future performance as well as a mechanism to flow through recent unit cost reductions to customers. This is because, to the degree that the recent past is an accurate predictor of the future, a moving average X-Factor could be used to set a standard for future performance. Also, because the moving average reflects changes in unit costs in the recent past, a moving average X-Factor could be used to flow through such changes to the LECs' customers. We seek comment on whether the adoption of a moving average X-Factor would be, in fact, superior to a fixed X-Factor in achieving both purposes.

98. Furthermore, if the moving average is based on industry performance as a whole, the performance of an individual LEC might affect the average only minimally. If this is the case, each LEC would have an incentive to be as productive as possible, because its success in so doing would not increase significantly the industry average X-Factor to which it would be subject in succeeding years. In recent years, however, GTE and Contel have merged, as have United and Centel. Further consolidation among LECs would give each LEC's performance a greater effect on the industry average. In addition, as mentioned above, Ad Hoc in the first phase of this proceeding argued that each LEC's performance does have an effect on the industry average, so that a moving average X-Factor based only on LEC data would create an incentive for inefficient investment. We invite parties to comment on whether a moving average X-Factor would strengthen or weaken the LECs' efficiency incentives.

99. We also solicit comment on the administrative burdens that would be created by a moving average X-Factor relative to a fixed X-Factor. If we adopt a moving average X-Factor, would it be necessary to establish a procedure for correcting errors or otherwise updating the data from prior years? If so, what should that procedure be? Finally, if the LECs' productivity is relatively stable over time, it may not be necessary to update the X-Factor every year. We seek comment on whether it would be reasonable to recalculate the moving average X-Factor less frequently than annually, and, if so, how often it should be updated.

Issue 3b: If we adopt moving average X-Factors, how many years of data should be included in the average?

100. USTA proposed including five years of data in its moving average, arguing that this would be sufficient to smooth out short term fluctuations in data.[111] Southwestern Bell suggested that a moving average should be based on a minimum of five years, because at least five years is necessary to deploy equipment throughout a LEC's network.[112] We seek comment on whether five years is an optimal period of time for calculating a moving average

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[111] *First Report and Order*, para. 118.

[112] *First Report and Order*, para. 121.

X-Factor. What factors should be considered in deciding how many years would be optimal to include in a moving average X-Factor determination?

101. We also seek comment on whether the moving average would be optimally structured by assigning equal weight to each year in the moving average. In other words, can we conclude that the more recent years included in the moving average are more indicative of current productivity and input price changes than older data would be? If so, should we place more weight on the more recent years in the moving average? Alternatively, should we place less weight on data from more recent years, because those data may be preliminary and therefore subject to revision? Are there other reasons for assigning different weights on the years in a moving average? If we do place different weights on the years in a moving average, what should those particular weights be? Finally, USTA did not discuss whether it would base its moving average on tariff years or calendar years.[113] Are there any reasons for favoring tariff years over calendar years, or vice-versa?

Issue 3c: If we adopt moving average X-Factors, should there be any lag? If so, how long should that lag be?

102. USTA proposed a two-year lag in its moving average calculation, so that data from the third to the seventh years prior to the annual tariff filing would be included in the moving average, but data from the two years immediately preceding the annual tariff filing would not.[114] USTA argued that this is necessary because the Bureau of Labor Statistics (BLS) data on which it based its X-Factor calculations often are not available sooner.[115] Commenters should discuss the lag that would be necessary to accommodate the availability of the required data for the X-Factor method they propose. Is there any principled reason to retain a lag other than to adjust for the availability of data?

Issue 3d: If we adopt a moving average X-Factor based on TFP, should there be one moving average for the X-Factor, or separate moving averages for distinct components of the TFP calculation?

103. Under the TFP method, the X-Factor is based on both the TFP differential and the input price differential. The input price differential appears to be more volatile over time than the TFP differential. Volatility could be reduced by averaging over a longer period of time. If we base the X-Factor determination on a moving average of TFP, should we establish separate

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[113] USTA *Ex Parte* Statement, January 18, 1995, at Attachment 1.

[114] *First Report and Order*, para. 117.

[115] *First Report and Order*, para. 117. For example, USTA stated that BLS did not release the 1991 or 1992 U.S. economy TFP results until the summer of 1994. USTA *Ex Parte* Statement, January 18, 1995, Attachment 1 at 2 n.3. BLS had not released 1993 U.S. economy TFP results as of January 1995. *Id.* at 1 n.1.

moving averages for the TFP differential component and the input price differential component? If so, how many years would be reasonable to include in each moving average? Parties should also discuss whether there should be any "lag" in either or both of these separate moving averages, and if so, how long the lag or lags should be.

Issue 3e: If we adopt fixed X-Factors, on what time period should the studies to determine the X-Factor be based?

104. The various studies placed in the record by the parties and the studies undertaken by the Commission have relied on a variety of different time periods for calculation of the X-Factor. USTA's TFP study included productivity from 1984-1992, and was revised to include 1993. USTA modified the original Frentrup-Uretsky study, which was based on data from 1984-1990 to include 1991 and 1992. USTA also provided a study of the input price differential that used several decades of data. The AT&T Historical Revenue Model used data from 1991 through 1993, revised to include the first half of 1994. The Spavins-Lande model, included in the *LEC Price Cap Order*, relied on data from 1928-1989.

105. Accordingly, we seek comment on the relevance of data from different time periods to the calculation of a fixed X-Factor. The time period of data relevant to the calculation of a fixed X-Factor may be different than that of a moving average X-Factor. USTA has recommended using a moving average X-Factor to automatically flow through changes in unit costs that have occurred under price caps to customers. A fixed X-Factor would not serve this function and thus the time period on which it could be based may not be as constrained as that used in a moving average X-Factor. A critical concern with a fixed X-Factor is its value as a predictor of future productivity. The record is not settled on whether data from a long or short time period yields the most accurate predictor. Although one might assume that the optimal predictor of the future is the recent past, USTA has argued that this is not the case for at least one component of the X-Factor, *i.e.*, input prices.

106. In light of these considerations, we seek comment regarding the optimal time-period for studies used to calculate a fixed X-Factor. For instance, should the studies submitted in this phase of the proceeding include or exclude data from the period prior to divestiture or prior to price caps? Are there reasons in economic theory to prefer one time period over another? Are there any other reasons that need to be considered for determining the time period for which the X-Factor studies should be conducted? For instance, are there unavoidable constraints on our ability to get data?

Issue 3f: If we adopt fixed X-Factors, when should the next performance review be scheduled?

107. In the *LEC Price Cap Order*, we scheduled a performance review to begin approximately three years after the adoption of the price cap plan. What are the benefits and disadvantages of shorter or longer periods of performance review? Commenters recommending continued reliance on scheduled performance reviews should discuss whether three years of

experience provided an adequate basis to review the initial price cap plan. If we plan another performance review, should it be scheduled approximately three years in the future, or should we wait to develop more historical data on which to base that review?

6. Number of X-Factors

108. In the *LEC Price Cap Order*, LECs were permitted to choose between an X-Factor of 3.3 percent and an X-Factor of 4.3 percent on an annual basis.[116] In the *First Report and Order*, we permitted LECs to choose from three X-Factors in the interim plan.[117] Also in the *First Report and Order*, we concluded that we should base the X-Factor in the long term plan on an industry-wide measure of performance, because doing so would advance our goal of replicating the incentives created by competition.[118] At the same time, we found that, due to heterogeneity among LECs, a single X-Factor might not be appropriate.[119] We tentatively concluded that the long-term plan should have at least two X-Factors.[120]

Issue 4: Should there be multiple X-Factors in the long-term price cap plan and, if so, how many should there be and how should they be determined?

109. In tentatively deciding to adopt a plan with multiple X-Factors, we reasoned as follows. At one extreme, we could establish an individually tailored X-Factor for each price cap LEC, based on its performance. This approach, however, would not encourage an individual LEC to improve its productivity, since an increase in a LEC's productivity would be reflected in an increase in the X-Factor, which in turn would lower the LEC's PCIs. At the other extreme, we could establish one X-Factor for all LECs. This would appear to replicate more closely the incentives created by competition, because LECs could increase their profits only by becoming more efficient than the average LEC. A single X-Factor, however, would not adequately reflect differences in the economic conditions faced by each LEC and thus could unfairly penalize or reward LECs which face conditions that differ from the industry average. For example, there are variations among the LECs' service regions with respect to level of growth in the overall economy, the proportion of rural and urban areas for which service is provided, and level of competition in the provision of telecommunications services. Multiple X-Factors allow the price cap plan to recognize that there are differences in the economic

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[116] *LEC Price Cap Order*, 5 FCC Rcd at 6802 (para. 126).

[117] *First Report and Order*, paras. 214-15. We note that, although the interim plan has three X-Factors, only the highest and lowest were selected by the LECs in their 1995 annual access tariff filings.

[118] *First Report and Order*, para. 146.

[119] *First Report and Order*, para. 165.

[120] *First Report and Order*, para. 165.

circumstances of the LECs. Thus, there is a strong argument for establishing multiple X-Factors in the long-term price cap plan, so that the plan can be made to fit the particular circumstances of each price cap LEC. Accordingly, we invite parties to comment on the desirability of establishing a single X-Factor or, alternatively, more than one X-Factor.

110. If the long-term plan contains multiple X-Factors, then we would need to determine the number and level of the X-Factor alternatives, and whether a LEC should have a choice among multiple X-Factors or would be assigned one of the X-Factors. The additional X-Factors could reflect adjustments upward or downward from the industry-wide average level of changes in unit costs. We seek comment on criteria and methods of evaluation that could be used to determine such deviations from the industry average. One approach might be to base adjustments to the industry average on demand growth in a LEC's service region, under the supposition that changes in unit costs are related to changes in demand levels. Another approach might be to determine the statistical variance in unit cost changes among the LECs and disaggregate the industry-wide average on that basis. Parties are invited to comment on this proposal, and to make other proposals regarding adjustment mechanisms. In replicating a competitive market, it is important to include adjustments to the average X-Factor only for circumstances outside the control of the LEC. Thus, parties making proposals on criteria for adjustments should discuss the extent to which the criteria they recommend are outside the control of the LEC. Commenters should discuss what incentives for improved productivity would be provided by the method of adjustment they recommend. We also seek comment on ways to derive multiple X-Factors other than by adjustment to an industry average.

111. In the *LEC Price Cap Order*, we set the lowest X-Factor to the average of our short-term and long-term unit cost studies.[121] We reasoned that the average of the studies was a conservative estimate of future unit cost levels and thus could serve as the lowest X-Factor.[122] In addition, we established a low-end adjustment mechanism in case the average turned out to be too difficult for certain companies to achieve. We then set an optional X-Factor at one percentage point higher than the lowest X-Factor in order to provide an option for companies that expected to achieve greater than average reductions in unit costs and wished, as a trade-off for selecting the higher X-Factor, to reduce their potential sharing obligations. In the *First Report and Order*, we developed the lowest X-Factor from the studies we used in the *LEC Price Cap Order*, corrected to remove the effects of anomalous 1984 data. We then set two optional X-Factors at 0.7 and 1.3 percentage points higher than the lowest option.[123] We relieved LECs electing the highest X-Factor from sharing obligations in order to encourage LECs anticipating greater than average reductions in unit costs to elect the 5.3 percent X-Factor. Similarly, we imposed more restrictive sharing obligations on LECs electing the lowest X-Factor to discourage LECs from electing 4.0 percent unless they anticipate that their changes in unit

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[121] *LEC Price Cap Order*, 5 FCC Rcd at 6798-99 (paras. 96-101).

[122] *LEC Price Cap Order*, 5 FCC Rcd at 6798 (para. 99).

[123] *First Report and Order*, paras. 205-09 and Appendix D.

costs warrant selection of this X-Factor.[124] In light of these considerations, commenters should discuss whether, if the Commission adopts a plan with multiple X-Factors, the industry average level of unit cost changes should be reflected in the lowest X-Factor, the highest X-Factor, or the X-Factor in some middle range. Commenters should support the reasonableness of their recommendation by discussing whether and to what degree each of the various X-Factors represent conservative estimates of unit cost changes. Commenters should also address whether their recommendation depends on the continued inclusion in the price cap plan of the low-end adjustment mechanism, which protects carriers that fail to meet the X-Factor benchmarks.

B. Sharing Requirements and Alternatives

1. Background

112. In the *First Report and Order*, we reached several conclusions regarding the sharing and low-end adjustment mechanisms. We found that sharing serves a number of purposes. It provides a "backstop" mechanism for the X-Factor, in case the X-Factors we established in the *LEC Price Cap Order* were substantially in error,[125] or in the event that a particular LEC's productivity varied substantially from the average.[126] Under the original price cap plan, if a LEC's productivity significantly exceeded the 3.3 or 4.3 percent X-Factor it selected, the sharing mechanism flowed through to customers part of the gains made by carriers in reducing their unit costs.

113. We further found that, in a price cap plan with multiple X-Factors, sharing provides one possible solution to the problem of matching individual LECs with the appropriate X-Factor. By "matching," we mean the selection of the appropriate X-Factor for each LEC, either by allowing the LEC to choose among various options or by mandatory assignment through procedures established by the Commission. We determined in the *First Report and Order* that, without some benefit associated with picking a higher X-Factor, a LEC would select the lower X-Factor regardless of its actual productivity rate.[127] The sharing mechanism provides an incentive for carriers to elect the X-Factor that most nearly matches their expected productivity growth. For instance, in the interim plan, sharing obligations are eliminated for LECs electing the highest X-Factor and more restrictive sharing obligations are established for LECs choosing the lowest X-Factor.[128] As a result, LECs that expect to achieve higher

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[124] *First Report and Order*, para. 222.

[125] *First Report and Order*, para. 185.

[126] *First Report and Order*, paras. 185, 193.

[127] *First Report and Order*, paras. 186, 194.

[128] *First Report and Order*, paras. 220-22.

productivity and, consequently, higher earnings will have an incentive to choose a higher X-Factor in order to enjoy less restrictive sharing requirements and keep more of their earnings.

114. We also found in the *First Report and Order* that the sharing mechanism blunts the efficiency incentives created by the price cap formula[129] by diminishing the profits that LECs can achieve by reducing unit costs. Accordingly, we established a long-term goal of eliminating sharing.[130] We also decided that, if we adopt a long-term plan with multiple X-Factors, one of those X-Factors should have no sharing obligations associated with it.[131] We also explored the possibilities for eliminating the sharing mechanism and replacing it with less efficiency-blunting mechanisms. We tentatively concluded that a properly constructed X-Factor based on a moving average could be such a mechanism. A moving average would incorporate changes in LECs' unit costs into the price cap formula annually, and so could reduce or eliminate the likelihood that any error in the X-Factor would lead to unreasonably high or low rates for the industry on average. In addition, because a moving average would reflect changes in unit costs under price caps, it would also serve the purpose of flowing through any gains to customers. Accordingly, we tentatively concluded that a moving average X-Factor might be a substitute for sharing, at least in so far as it ensures an accurate measurement of average industry changes in unit costs and flows through such changes to customers.[132] However, use of a moving average does not automatically solve problems related to differences in the economic circumstances faced by each LEC. A moving average does not, in itself, solve the problem of determining the correct number and levels of X-Factors for the long-term plan, nor does it solve the problem of matching each LEC with the appropriate X-Factor.

115. Accordingly, whether we use a moving average or not, we must determine how to best match LECs with the appropriate X-Factor. One alternative is to continue to use variations in sharing requirements to give LECs an incentive to choose the appropriate X-Factor. We stated in the *First Report and Order* that we would seek comment on alternatives to such a scheme.[133] Thus, we wish to explore whether there are any mechanisms other than sharing that would provide LECs with an incentive to pick the X-Factor that is most appropriate for its circumstances.

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[129] *First Report and Order*, paras. 187-89. We also found some evidence that reducing sharing obligations might encourage infrastructure development, although it was not clear from the record whether we could rely on that evidence. *First Report and Order*, para. 189.

[130] *First Report and Order*, para. 193.

[131] *First Report and Order*, para. 197.

[132] *First Report and Order*, paras. 191-93.

[133] *First Report and Order*, para. 197.

116. In summary, the sharing issues discussed below are related to our tentative decision to establish multiple X-Factors, at least one of which should have no sharing or automatic low-end adjustment mechanisms associated with it. If we establish multiple X-Factors, we must have some mechanism in place to ensure that LECs employ the X-Factor that most closely matches their actual performance. Although sharing appears to serve this purpose effectively, it has a potentially harmful side-effect in that it may inhibit LEC efficiency. Thus, we seek alternatives to sharing to encourage each LEC to elect the X-Factor that is most appropriate for its circumstances. We invite comment on our tentative conclusions that there should be more than one X-Factor and that at least one of the X-Factors should not have a sharing requirement or automatic low-end adjustment mechanism associated with it, absent clear evidence that it is not possible to develop an appropriate no-sharing X-Factor, as well as on the specific implementation issues designated below. In responding to the individual issues below, we also invite commenters to explain how their responses to each issue fit together with their responses to the other issues in this section.

2. Issues

Issue 5a: If we establish a plan in which LECs have a choice of X-Factor, what incentive mechanism should be used to encourage each LEC to choose an X-Factor that is appropriate for its economic circumstances? Is it possible to develop an incentive mechanism other than one based on sharing?

117. As discussed above, permitting LECs to choose an X-Factor creates a potential problem in that a LEC may select a lower X-Factor option than its expected change in unit costs warrants.[134] Apart from its other functions, the sharing mechanism ameliorates this problem by creating incentives for LECs to choose the appropriate X-Factor for their particular circumstances. However, it could also tend to blunt the incentives for efficient behavior that are created by price cap regulation.[135] We seek comment on whether the sharing mechanism is needed for at least some X-Factors in order to provide an incentive for LECs to choose an X-Factor that is appropriate for their economic circumstances.

118. We are interested in determining whether there are other alternatives to the sharing mechanism that could be used to fashion a plan in which LECs have an incentive to choose an X-Factor that is appropriate for their economic circumstances.[136] For example, would it be reasonable to permit additional pricing flexibility for carriers who elect a higher X-Factor? In the *Second Further Notice*, we solicit more detailed comment on several issues related to pricing flexibility. In particular, we ask whether we should increase pricing flexibility for LECs, either immediately or upon a showing of certain competitive circumstances, how should we determine

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[134] *First Report and Order*, paras. 194-95.

[135] *First Report and Order*, paras. 187-88.

[136] *First Report and Order*, paras. 194-95.

the extent to which a particular LEC faces competitive circumstances, and what competitive circumstances warrant what kinds of pricing flexibility. For the purposes of this notice, however, we seek comment on the more narrow issue of whether we could use enhanced pricing flexibility as an incentive for LECs to choose an X-Factor that most closely reflects their anticipated change in unit costs; and if so, what types of pricing flexibility would most reasonably or most effectively encourage LECs to select an appropriate X-Factor.

> **Issue 5b:** If we use sharing as an incentive mechanism, what sharing requirements should be associated with those X-Factors for which sharing is required? How should we structure sharing bands?

119. In the interim plan, there are no sharing requirements associated with the highest X-Factor (5.3 percent). For the middle X-Factor (4.7 percent), there is a 50 percent sharing requirement for earnings between 12.25 percent and 16.25 percent and a 100 percent sharing requirement for earnings above 16.25 percent. For the lowest X-Factor (4.0 percent), there is a 50 percent sharing requirement between 12.25 percent and 13.25 percent and a 100 percent sharing requirement above 13.25 percent.[137] On the assumption that the Commission adopts a long-term plan in which sharing continues to be used as an incentive mechanism, commenters should address which X-Factor levels should carry sharing obligations, and what those sharing obligations should be. Parties are invited to discuss whether we should revise the number and width of the sharing bands associated with any given X-Factor, as well as the amount of sharing required within each band. We also seek comment, in this context, on our tentative conclusion that at least one X-Factor should have no sharing requirement, as in the interim plan. Should the elimination of sharing be dependent on the value of the X-Factor that applies to a particular LEC?

> **Issue 5c:** If we establish a plan in which LECs have a choice of X-Factor, how much flexibility should LECs have to change their choice? Should we continue to allow annual selection?

120. We are concerned that permitting a carrier to change its choice of X-Factor annually could create opportunities for abuse. Such abuse could result from intertemporal cost shifting, *i.e.*, shifting costs from a period in which the carrier has elected a high X-factor with no sharing to a period in which the carrier has elected a lower X-factor with some sharing obligation. By doing this, the LEC might be able to avoid any sharing, and retain higher earnings without necessarily increasing its productivity growth. Abuse also might result from manipulation of depreciation rates.[138]

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[137] *First Report and Order*, paras. 220-22.

[138] In the *Depreciation Simplification Order*, we established streamlined procedures for prescribing depreciation rates, provided the rates fall within certain parameters. *Depreciation Simplification Order*, 8 FCC Rcd 8025. Specifically, we established streamlined procedures for

121. It is true that in the original price cap plan, we allowed carriers to revise their X-Factor selection on an annual basis.[139] LECs were free to choose between two X-Factors, the higher of which had slightly less restrictive sharing obligations. Because the differences in sharing obligations between the two options were not great, the possibility that LECs could unfairly "game the system" was not a primary concern. In the interim plan, LECs were free to choose among three X-Factors, the highest and lowest of which contrasted strongly in the degree of sharing required. If we adopt our tentative conclusion that there will be at least one no-sharing option in the long-term plan, there is also likely to be strong contrast in the degree of sharing required for the highest and lowest options in the long-term plan. Our concern about how much flexibility the LECs should be granted under the long-term plan to change their choice of X-Factor is, therefore, much greater than it was under the original price cap plan. While it is unlikely that these concerns are significant enough to preclude us from adopting a long-term plan with optional X-Factors, they may be significant enough to warrant limiting LECs' flexibility in changing their choice of X-Factor.

122. In light of the concern expressed above, we seek comment on whether, as part of the long-term plan, we should limit LECs' flexibility to change their choice of X-Factor or whether we should continue to allow annual selection among the X-Factor options. If we do limit the LECs' flexibility in changing their choice of X-Factor, how should it be limited? Should we require that the selection of the X-Factor be made on a less frequent than annual basis? Should we permit LECs to move to a higher X-Factor only, in order to limit potential

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approving depreciation rates proposed by price cap LECs, if those rates are based on values for future net salvage (FNS), projection life, and the survivor curve which fall within certain ranges. (FNS is the estimated gross salvage of the plant less any estimated cost of removal. The projection life is the life expectancy of new additions to plant, and the survivor curve describes the percentage of plant investment surviving at each age that the plant is in service.) We established such ranges for 22 plant categories in 1994, Simplification of the Depreciation Prescription Process, Second Report and Order, CC Docket No. 92-296, 9 FCC Rcd 3206 (1994), and have recently adopted ranges for an additional eight categories. Simplification of the Depreciation Prescription Process, Third Report and Order, CC Docket No. 92-296, 10 FCC Rcd 8442 (1995). (We have decided not to adopt ranges for the remaining four categories. Three of those accounts are "dying accounts," *i.e.*, accounts for equipment that is rapidly being replaced with newer equipment, and for the fourth, buildings, we concluded that the underlying factors are unlikely to change. *Id.* at 8449 (paras. 16-17).) We observed in the *Depreciation Simplification Order* that the sharing mechanism gives LECs an incentive to manipulate their depreciation rates to lower their rates of return, and thereby lower their sharing obligation. *Depreciation Simplification Order*, 8 FCC Rcd at 8036 (para. 27).

[139] *LEC Price Cap Order*, 5 FCC Rcd at 6802 (para. 126).

abuses as Sprint has suggested.[140] Commenters should also discuss whether there are other means than reducing the LECs' flexibility in changing their selection of X-Factors assigning an X-Factor to limit or prevent potential abuses.

123. We also invite comments on whether there are any other reasons for either limiting the LECs' flexibility to change their choice of X-Factors or continuing to allow them selection of any option on an annual basis.

> **Issue 5d:** Instead of allowing LECs to choose among several X-Factors, should we establish criteria and procedures by which we can assign an appropriate X-Factor to each LEC?

124. An alternative to sharing that could be used to match LECs with the X-Factor that is most appropriate for their economic circumstances is mandatory assignment of an X-Factor to each LEC. This would involve the potentially difficult tasks of identifying the proper criteria for assignment and developing procedures to evaluate the actual operations of LECs on the basis of such criteria. Because there is not a well-settled body of thought regarding such criteria and procedures, such assignments could be controversial, at least initially. Therefore, the assignment process could become very administratively burdensome. Assignment would make the sharing mechanism unnecessary, at least in regard to its function of matching LECs with the appropriate X-Factor, and so could help the Commission move towards its eventual goal of eliminating sharing as stated in the *First Report and Order*.[141]

125. One possible assignment mechanism would be to require LECs to use a higher X-Factor unless they can show that a lower one would be appropriate. We would expect any such showing to establish that a particular LEC has faced specific circumstances that have made it unable to achieve a particular level of productivity growth for several years. Possibilities for this showing include achieving a rate of return for the past several years that would warrant a low-end adjustment under the original price cap plan. Another possibility would be to adopt a standard similar to that required by rate-of-return carriers to avoid the prescribed unitary rate of return.[142] In other words, the Commission could permit a LEC to use a lower X-Factor if it can show that the higher X-Factor would produce confiscatory rates and would push the carrier's rate of return for exchange access services outside the zone of reasonableness.[143] The

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[140] We observed in the *First Report and Order* that Sprint proposed a price cap plan with three X-Factors. LECs choosing the highest X-Factor would not be permitted to elect lower X-Factors later. *First Report and Order*, para. 141.

[141] *First Report and Order*, para. 197.

[142] Sections 65.101 and 65.102 of the Commission's Rules, 47 C.F.R. §§ 65.101, 65.102; *Represcription Reform Order*, 10 FCC Rcd at 6823 (paras. 73-75).

[143] *Represcription Reform Order*, 10 FCC Rcd at 6823 (para. 73).

carrier would be required to show exceptional facts and circumstances that are not transitory and that would justify individualized treatment for at least two years.[144] A third possibility would be a showing of significantly declining demand for a sustained period of time. If we adopt a TFP-based method of calculating the X-Factor, another alternative could be assigning an X-Factor to each LEC based, to some degree, on its TFP growth relative to other LECs. However, such a plan would create disincentives to improve productivity that are similar to those created by sharing. We seek comment on the viability of the assignment mechanisms described in this paragraph.

126. We also invite proposals for assignment mechanisms that would be more accurate, less controversial, and easier to implement than the mechanisms described above. In framing proposals, commenting parties should keep in mind that, in accordance with price cap regulation's almost exclusive reliance on historical rather than projected data, we would expect that any assignment mechanism adopted by the Commission would rely exclusively on historical data.

Issue 5e: To what extent and under what conditions would it be possible to eliminate the sharing mechanism from the long-term price cap plan?

127. In the *First Report and Order*, we found that at least one X-Factor should be a "pure" option, with no sharing obligations or low-end adjustment mechanism[145] and tentatively concluded that sharing should "eventually" be eliminated.[146] We also tentatively concluded in that Order that a properly calculated X-Factor based on a moving average might eliminate one of the purposes for sharing altogether, *i.e.*, the "backstop" purpose, because changes in LECs' unit costs would be incorporated automatically into increases in the X-Factor.[147] We further determined that a moving average X-Factor might also incorporate changes in unit costs into the X-Factor automatically, and so could serve as a substitute for the "flow-through" purpose of sharing.[148] If we adopt a moving average X-Factor and we determine that the "proper X-Factor choice" function of sharing can be replaced with either another incentive mechanism or by assignment of the X-Factor, we propose to eliminate sharing completely. Parties also are invited to discuss whether there are other conditions under which it would be desirable to eliminate the sharing mechanism from the long-term price cap plan.

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[144] *Id.*

[145] *First Report and Order*, para. 197.

[146] *First Report and Order*, para. 197.

[147] *First Report and Order*, paras. 153, 192.

[148] *First Report and Order*, paras. 153, 191.

128. NYNEX in the first phase of this proceeding suggested reducing or eliminating sharing requirements for LECs facing certain levels of competition.[149] Although the issue of sharing is central to our inquiry in this Notice, we will consider NYNEX's proposal in our *Second Further Notice*. Our *Second Further Notice* proposes specific changes to LEC price cap regulation that are intended to encourage the pricing of services at competitive levels and to be responsive to changes in the level of competition faced by the price cap LECs. Parties supporting or opposing NYNEX's suggestion, or wishing to comment on other suggestions for tying sharing obligations and competition, should address those issues in our *Second Further Notice* in this docket.

Issue 5f: Should the low-end adjustment mechanism be eliminated?

129. In the interim plan, there is no low-end adjustment mechanism available to LECs selecting the 5.3 percent X-Factor, although it is available to LECs selecting 4.0 percent or 4.7 percent. We reasoned that the low-end adjustment mechanism was fair and prudent for LECs experiencing low earnings in order to avoid the extended rate investigation that would probably result from an above-cap tariff filing by the LEC to rectify low earnings.[150] We also thought that the low-end adjustment mechanism was reasonable, as part of a "backstop," to the extent we continue to retain sharing requirements.[151] Parties are requested to comment on whether either of these concerns warrant retaining the low-end adjustment mechanism for those X-Factors for which sharing is required on a long-term basis, or whether the LECs' ability under our rules to file tariffs for rate increases is adequate to prevent confiscatory rates. In the event we establish multiple X-Factors, parties are further requested to comment on whether the low-end adjustment may be necessary or appropriate for some X-Factors but not others. Finally, we seek comment on whether there are any other possible rationales for retaining or abolishing the low-end adjustment mechanism.

C. Common Line Formula

1. Background

130. Common lines are the local subscriber "loops" linking the customer's telephone to the local exchange office. We established a separate common line basket in order to balance the price cap goal of economically efficient prices with important social goals and programs, such

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[149] *First Report and Order*, para. 375.

[150] *First Report and Order*, para. 223, *citing LEC Price Cap Order*, 5 FCC Rcd at 6823-24.

[151] *First Report and Order*, para. 223; *citing AT&T v. FCC*, 836 F.2d 1386 (D.C. Cir. 1988). The Court of Appeals has since limited its holding in *AT&T v. FCC*. *See MCI v. FCC*, 59 F.3d 1407 (D.C. Cir. 1995).

as universal service, that were reflected in common line rates prior to the adoption of price caps.[152] The PCI formula for the common line basket is different than that for the other three baskets. Although common line costs are non-traffic sensitive, a portion of the cost is recovered through per minute rates.[153] After recovery of a portion of common line costs through flat rates charged to end users, the remaining common line costs are recovered by carrier common line (CCL) charges that are assessed on IXCs and other access customers based on minutes of use.[154]

131. An important issue in the *LEC Price Cap Order* was whether the common line formula should be a "per-line" formula or a "per-minute" formula, or some combination of the two. A per-line formula would pass through the reduction in average per-minute costs resulting from increases in common line demand to the IXCs in the form of lower CCL rates. A per-minute formula would permit LECs to retain the savings in per-minute costs resulting from demand growth, and thus shift all the benefits of increased demand to the LECs.[155] We originally concluded that both LECs and IXCs have the ability to influence common line growth, and so both LECs and IXCs should benefit from increases in demand. Accordingly, we adopted the "Balanced 50-50" formula, which splits both the gains and losses in usage per line between LECs and their customers, in order to provide incentives for both to stimulate demand.[156] Specifically, this formula reduces the common line PCI by a percentage representing half the growth in demand per line in the prior year.[157]

132. In the *First Report and Order*, however, we tentatively concluded that, since LECs have little influence over growth in common line usage,[158] a per-line common line formula is superior to a per-minute or balanced 50-50 approach. A per-line formula would properly

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[152] *LEC Price Cap Order*, 5 FCC Rcd at 6793 (paras. 56-57).

[153] *Id.*

[154] *Id.* We have recently granted NYNEX a waiver of the CCL rules for LATA 132 in New York State. *See* The NYNEX Telephone Companies, Petition for Waiver, Transition Plan to Preserve Universal Service in a Competitive Environment, 10 FCC Rcd 7445 (1995).

[155] *LEC Price Cap Order*, 5 FCC Rcd at 6794 (paras. 59-60).

[156] *Id.* at 6795 (paras. 68-70).

[157] *Id.* at 6795 (para. 73). The Commission did not adopt a common line formula based on an average of the per-line and per-minute approaches, because in some circumstances, this would have produced the anomalous result of CCL rates increasing in response to increases in demand. *Id.* at 6795 (paras. 71-73). The mathematics of the common line formula are explained in detail in Appendix E of the *LEC Price Cap Order*, 5 FCC Rcd at 6942-44.

[158] *First Report and Order*, paras. 268-69.

recognize that loop costs are not traffic sensitive.[159] We did not adopt a per-line common line formula for the interim plan, however, because of the interim nature of the plan. In the *First Report and Order*, we tentatively concluded that we should adopt a TFP approach to calculating the X-Factor and that an X-Factor based on a TFP approach might make a separate common line formula unnecessary. As a result, we were concerned that revising the common line formula for the interim plan would cause excessive rate churn if the separate common line formula was eventually eliminated.[160]

2. Issues

133. In light of the above discussion, we seek comment on the following issues.[161]

Issue 6a: Under what circumstances would the adoption of a particular X-Factor method justify elimination of a separate common line formula?

134. TFP in its simplest form is a relation between input growth and output growth. Since one key component of the current common line formula is demand growth, a PCI formula based on total company TFP would reflect demand growth in its output growth index. Thus, a separate common line PCI formula based on total company TFP and demand growth might result in double-counting of demand growth. On the other hand, we are considering possible adjustments to total company TFP to account for differences in interstate and intrastate productivity. If we conclude that such an adjustment is appropriate, then adjustment for interstate demand growth might require the use of a separate common line formula.

135. We seek comment on whether reliance on a TFP approach to calculating the X-Factor warrants elimination of a separate common line formula. We also seek comment on whether only certain TFP methods warrant eliminating the common line formula, or whether certain TFP methods preclude elimination of the common line formula. Commenters are requested to explain the relation between their responses to this issue and their responses to Issue 1j above regarding TFP adjustments to account for differences in interstate access growth and growth in other LEC services. We also request comments on whether X-Factor methods other than TFP warrant the elimination of a separate common line formula.

Issue 6b: Assuming we decide to retain a separate common line formula, should we adopt a per-line common line formula or some other formula? What should the mechanics of that formula be?

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[159] *First Report and Order*, para. 270.

[160] *First Report and Order*, para. 271.

[161] Any changes we adopt would be applied on a going-forward basis only.