

STATE OF TEXAS §

§

COUNTY OF TRAVIS §

AFFIDAVIT

DECLARATION OF DR. MARK N. COOPER

I, Mark N. Cooper, on my oath do hereby depose, swear and state as follows:

I. BACKGROUND

A. QUALIFICATIONS

1. My name is Mark N. Cooper. I am President of Citizens Research. I am also Director of Research of the Consumer Federation of America (CFA). Prior to founding Citizens Research in 1983, a consulting firm specializing in economic, regulatory and policy analysis, I spent four years as Director of Research at the Consumer Energy Council of America. Prior to that I was an Assistant Professor at Northeastern University teaching courses in Business and Society in the College of Arts and Sciences and the School of Business. I have also been a Lecturer at the Washington College of Law of the American University co-teaching a course in Public Utility Regulation.

2. I have testified on various aspects of telephone and electricity rate making before the public utility commissions of 29 states, the District of Columbia, and Manitoba as well as the Federal Communications Commission (FCC), the Canadian Radio-Television and Telephone Commission (CRTC) and a number of state legislatures.

3. For a decade and a half I have specialized in analyzing regulatory reform and market structure issues in a variety of industries including telecommunications, railroads, airlines, natural gas, electricity, medical services and cable television. This includes approximately 300 pieces of testimony presented to state regulatory bodies, federal legislative bodies, and federal administrative bodies.

4. I have written several major works on universal service and the impact of rising prices for utilities on consumer in general and low income households in particular. These include *Equity and Energy: Rising Energy Prices and the Living Standards of Lower Income Americans* (Westview Press: Boulder, 1982), "protecting the Public Interest in the Transition of Competition

in Network Industries," *The Electric Utility Industry in Transition* (Public Utilities Reports, Inc., 1994); *Universal Service: A Historical Perspective and Policies for the Twenty-First Century* (Benton Foundation and the Consumer Federation of America, 1996).

5. I have participated in each of the dockets cited in the caption to this Notice of Proposed Rulemaking.⁶⁴ The notice is in response to a proposal from a coalition (Coalition for Affordable Local and Long Distance Service, "CALLS") made up entirely of telecommunications companies. It would radically alter the Commission's approach to access charges and harm the majority of residential consumers.⁶⁵

6. The purpose of this affidavit is to outline the legal and economic problems underlying the CALLS proposal.

B. THE CALLS PROPOSAL RADICALLY RESTRUCTURES FEDERAL RATES

1. A Sharp Increase in Bottom-of-the-Bill Charges

7. The CALLS proposal would double the cap on the subscriber line charge (SLC) for primary lines. The industry estimates that the net increase in bottom of the bill charges would be about \$1.50 per month. In addition to the net increase, the proposal would shift the Primary Interexchange Carrier Charge (PICC) from the carriers to consumers. It would institutionalize the universal service fund payments as a line item on the bottom of the bill.

8. The proposal would also eliminate the Carrier Common Line Charge (CCL), by using the productivity factor to reduce that charge over time. As soon as the CCL is eliminated, the productivity factor would be eliminated and no further reductions in federal access charges would result from increasing productivity in the industry. The LECs, however, would be able to automatically increase rates to reflect inflation.

9. The proposal would "settle" an audit of the local exchange companies (LECs) which found billions of dollars of irregularities. Unfortunately for consumers, the proposal would not impose any penalties or lower rates to reflect phantom assets that are still embedded in the prices charged to consumers, or even set the rates at lower levels to reflect the overcharges. The CALLS

⁶⁴ Federal Communications Commission, Notice of Proposed Rulemaking, Access Charge Reform, CC Docket No. 96-262, Price Cap Performance Review for local Exchange Carriers, CC Docket No. 94-1, Low Volume Long Distance Users, CC Docket No. 99-249 In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45 (September 15, 1999).

⁶⁵ *Universal Service and Access Reform Proposal*, Coalition for Affordable Local and Long-Distance Service. For purposes of these comments, we refer to the rate proposal itself and Proposal. We refer to the justification offered as CALLS.

proposal wipes the slate clean.

2. The CALLS Proposal will harm the Majority of Residential Consumers

10. CALLS's proponents defend the proposal as "a form of social compact between the regulators and all market participants"⁶⁶ that "balances the public interests defined by the 1996 Act."⁶⁷ In truth the proposal is much more like the famous Washington D.C. tax game – "don't tax you, don't tax me, tax the guy behind the tree." In this case, the guy behind the tree is the typical American residential consumer whose long distance bill will go up as a result of the proposal when it should be going down.

11. The net effect of the CALLS proposal would be to give the long distance companies a free ride on the distribution plant of the local exchange carriers. The long distance companies would not pay for the facilities (loop plant) they use to provide the services that they sell to the public.

12. The CALLS proposal would increase the bottom-of-the-bill charges paid by residential consumers by about \$2 billion and institutionalize another \$2 billion in long distance company charges into line items sanctioned by the Federal Communications Commission (FCC or the Commission). If the CALLS proposal is implemented, it would increase Federal bottom-of-the-bill charges paid directly by consumers to local exchange companies to about \$12 billion in the residential market alone. This result is tantamount to a federal tax that is largely insulated from competitive pressures. Of this total, over \$7 billion will have been added since the passage of the Telecommunications Act of 1996. We do not think this is the balance that Congress had in mind.

13. Studies claiming that all consumers will benefit from the CALLS proposal, such as the study paid for by CALLS but issued under the name of the Alliance for Public Technology (APT),⁶⁸ are incorrect because they are based on assumptions that are contradicted by pricing behavior in the industry.⁶⁹ The APT study assumes that long distance companies will pass through reductions

⁶⁶ CALLS, p. 35.

⁶⁷ CALLS, p. 24.

⁶⁸ Pociash, Stephen B., *An Assessment of Consumer Welfare Effects of the CALLS Plan* (Joel Popkin and Company, October 25, 1999), p. 1, explains the interrelationship between APT, CALLS and the study.

⁶⁹ Joint Consumer Commentors have demonstrated that similarly unrealistic assumptions apply to several other recently released industry studies, particularly those by AT&T; *see* Joint Consumers Reply Comments, Federal Communications Commission, Notice of Inquiry, Low Volume Long Distance Users, CC Docket No. 99-249 (October 20, 1999).

in costs on a uniform per minute basis. The industry has not done so in the past nor does it commit to do so in the CALLS proposal. The proposal does not even give a guarantee that all of the reductions in access charges will be passed through to consumers, not to mention a commitment to pass them through in a manner that ensures low volume users will receive a fair share of any reductions. The CALLS signatories agree only to “commit to meet with the FCC to review the effects.”⁷⁰ Simply put, the APT study assumes that there is no price discrimination against low- to average-volume residential long distance consumers, when, in fact, price discrimination has been brutal.

14. Ironically, even if one assumes a uniform pass through, the APT analysis shows that over 85 percent of the so-called consumer benefit goes to businesses and upper income households. Because price discrimination has been rampant in the long distance industry, the actual outcome will be much worse for the majority of consumers.

15. The 70 million residential accounts with usage below the mean are likely to suffer a \$1 billion net increase in their long distance bills rather than a decrease because of the industry practice of price discrimination. The FCC’s own Synthesis Proxy Cost Model, which it has recently applied to deliver increased high-cost payments to the large local exchange companies, indicates that these same households should be receiving a net reduction in the federal recovery of costs on the order of \$1.5 billion.

16. The recommended increases in the subscriber line charge, the elimination of the PICC and CCL and the increase in, and insitutionalization of the universal service fund as a line item are illegal, arbitrary and capricious, uneconomic and unfair.

Illegal:

- ◆ The uncompensated use of facilities violates section 254 (k) of the Telecommunications Act of 1996 by allowing IXCs to use shared facilities without paying for them. It is contrary to the long standing interpretation of the requirements for reasonable recovery of shared costs which stretches back 70 years to Smith v. Illinois.
- ◆ The CALLS proposal undermines the Commission’s ability to ensure that rates are just and reasonable by “settling” the audit dispute without rate reductions and by eliminating the productivity factors which would force rates to reflect declining costs in the future. At the same time, the proposal includes a mechanism for automatic rate increases.

⁷⁰ Proposal, section 6.

- ◆ The proposal removes the obligation of telecommunications carriers to contribute to universal service, which contradicts the plain language of the Telecommunications Act of 1996 (the Telecommunications Act or the 1996 Act).

Arbitrary and capricious:

- ◆ The CALLS proposal claims to set switching at forward-looking economic costs. The Commission has recently used forward-looking economic costs to establish the high cost payments for large LECs. Yet, the CALLS proposal does not set recovery of loop costs at forward looking economic levels. In fact, it increases rates well above the forward-looking economic levels, as determined by the very same model used to estimate costs of switching and high-cost loops.
- ◆ It is arbitrary and capricious to lower switching costs to reflect forward-looking economic costs but raise loop rates, when the very same model indicates they should be reduced.

Uneconomic:

- ◆ The CALLS proposal ignores the integrated nature of modern telecommunications plant and the business plans of telecommunications companies to sell bundled local, long distance, and Internet services.
- ◆ The proposal would institutionalize federal charges for access that are far in excess of the economic cost of providing access as estimated by the Commission's own forward-looking cost model and would insulate a huge revenue stream from competitive pressures.

Unfair:

- ◆ The proposal shifts the burden of interstate cost recovery onto the shoulders of low-volume users.
- ◆ It indemnifies the companies against future inflation by establishing a mechanism to increase rates, while foregoing future productivity offsets, which could lower rates.
- ◆ It fails to ensure that bottom-of-the-bill line item increases will be offset in any reasonable way by long distance usage rate reductions.

II. THE ECONOMIC AND LEGAL NATURE OF LOOP COSTS

A. SHARING OF COSTS BETWEEN SERVICES THAT USE JOINT AND COMMON FACILITIES ACROSS JURISDICTIONS REMAINS SOUND ECONOMIC AND PUBLIC POLICY.

17. Conceptual definitions of costs, analysis of the historic patterns of investment and current, real world activity all indicate that the distribution plant is a shared facility whose costs should be recovered from all services that use it.
18. The loop is a common cost for all telecommunications services that utilize it. In our universal service comments we made the following observations.
19. The Commission has adopted a cost and pricing methodology that recognizes the fundamental economics of the modern telecommunications network. This approach involves (1) the recognition of the telecommunications network as a multi-product undertaking exhibiting strong economies of scale and scope; (2) the treatment of the loop as a common cost; and (3) the comprehension of competitive market behavior. The economic evidence that the telecommunications network is a multi-product enterprise enjoying economies of scale and scope is overwhelming.
 - ◆ On the supply-side all long distance calls use the network exactly the same way local calls do. Vertical services (like Call Waiting, Call Forwarding and Caller ID) are supported by all parts of the network. Basic service accounts for about one-quarter of total revenues generated per line because the line is shared by an ever-increasing array of services.
 - ◆ The demands on shared facilities are likely to accelerate as advanced services begin to share in the use of these facilities.
 - ◆ On the demand-side, customers expect to receive long distance service when they order telephone service. Vertical services are strong complements of basic service. If a provider sells basic service to a customer, competitors are very unlikely to sell that customer Call Waiting.

- ◆ Companies are eager to sell local service and long distance service bundled together.⁷¹ One-stop shopping is an integral part of providers' business plans. In such a bundle, why is local cost the "cost causer", as the LECs and IXC's claim?
20. A reasonable basis to determine the allocation of shared costs is to analyze the facilities and functionalities necessary and actually used in the production of goods and services. In order to produce a long distance call IXC's need distribution plant, as well as switching plant and transport plant. Instead of basing economic analysis on a guess about what consumers really wanted when they purchased a bundle of services, the Commission should rely on a "service pays" principle. That is, services that use facilities should be considered to benefit from the deployment of those facilities and every service that uses a facility should help pay for it.
 21. Historical analysis of why telecommunications investments were actually made shows that most telecommunications technologies were deployed for and used by business customers first. Hence, it is more reasonable to assume that those customers caused the investment. History shows that the integration of the long distance network into the local network (they actually started as two separate networks) raised the cost of the integrated network. Since the integrated network costs more as a result of the addition of long distance, it is reasonable to assume that long distance causes costs in the integrated network. In other words, complaints that business customers and long distance users pay too much actually ignore the historic pattern of cost causation.
 22. Now that the companies are intensely competing to sell bundles of services, the fiction that local service causes the loop cost should be put to rest once and for all. In truth, since the first decade of this century, the network, including the loop, has been consciously designed to serve local and long distance. Long distance was not an afterthought; it was always a forethought, included in the design, development and deployment of the network. Vertical services have been included in economic analyses of network design and architecture for over a decade.
 23. Although historical analysis demonstrates the fallacy of attributing loop costs to only basic local service, it is clear that efforts to unravel the network into cost causation categories are difficult. For that reason, the analysis of costs should be based on the only footing on which sensible economic analysis can be launched -- an assessment of the product, not the psychology of the customer. Regulators should analyze the facilities and functionalities necessary and actually used in the production of goods and services. They should rely on a service pays principle. That is, services that use facilities should be considered to cause the

⁷¹ Providers are also intensely interested in bundling many more services, such as Internet and data services, in addition to local and long-distance calling.

deployment of those facilities. Assumptions about prime movers are arbitrary. There should be no free rides; every service that uses a facility should be required to share in the recovery of the cost of that facility on a reasonable basis.

- As a matter of economics, costs for joint and common facilities should be recovered on the basis of the nature and quality of use that each service makes of those facilities.
- As a matter of public policy from a universal service docket perspective, recovery of joint and common costs should be structured in such a way as to promote universal service by keeping basic service affordable. Adding line items to the bottom of the bill or increasing them makes connectivity to the network more expensive and less affordable.

24. Although some theoretical economists chafe at the thought of recovering shared costs across a range of products, common sense and real world experience demonstrates that this is the way markets work. Moreover, the SLC and other fixed charges make no sense in a competitive market when competitors sell bundled local, toll, and long distance service. The fictions that the FCC has established among these “classes” of service will no longer be relevant and will be unable to exist in a competitive market where the line has been blurred between jurisdictional offerings. Competitors will not be selling “local” service or “long distance”; they are and will be selling a bundled package of telephony along with cable, data and Internet services.

B. LEGAL PRINCIPLES

1. Federal and State Law

25. The Telecommunications Act of 1996 certainly understood the economics of the industry and sought efficient entry across a broad range of services.

- The Act promotes the deployment of advanced telecommunications services and information technologies and insists on a sharing of joint and common costs.
- The Act repeatedly recognizes that advanced services and basic service are linked.
- The Act recognizes that competitive and non-competitive services will be commingled on the network and its purpose is to advance this multi-product network.

26. The law directly addresses the revenue responsibility of these various services. The cross-subsidy and joint cost language of 47 USC 254 (k) addresses this point.

Subsidy of Competitive Service Prohibited – A telecommunications carrier may not use services that are not competitive to subsidize services that are subject to competition. The Commission, with respect to interstate services, and the States, with respect to intrastate services, shall establish any necessary cost allocation rules, accounting safeguards, and guidelines to ensure that services included in the definition of universal service bear no more than a reasonable share of the joint and common costs of facilities used to provide those services.

27. This policy recognizes two distinct steps that are necessary to have fair and efficient pricing in an emerging, partially competitive environment -- a strict prohibition on below cost pricing and a reasonable recovery of joint and common costs across services that share facilities. The Conference Report states this principle more vigorously. The Conference Committee Report clarifies the standard for cost allocation by adopting the Senate report language –

The Commission and the states are required to establish any necessary cost allocation rules, accounting safeguards, and other guidelines *to ensure that universal service bears no more than a reasonable share (and may bear less than a reasonable share)* of the joint and common facilities used to provide both competitive and noncompetitive services.⁷²

28. In pursuit of universal basic service, this language establishes a reasonable share of joint and common costs allocated to basic service as an *upper* limit.
29. The FCC, the states, and the courts have found consistently and repeatedly that the loop is a common cost. The courts recognized this almost three quarters of a century ago in Smith v. Illinois.⁷³ Many of the states have formally recognized this in comments in federal proceedings,⁷⁴ and in their own cost dockets.⁷⁵

⁷² Conference Report, p. 129, *emphasis added*.

⁷³ 282 U.S. 133 (1930).

⁷⁴ Two of the Regional Bell Operating Companies take this point of view (Bell Atlantic and NYNEX), as do a number of state regulators: the Texas Public Utility Commission, the Nebraska Public Service Commission, the New Hampshire Public Utilities Commission, the New Mexico State Corporation Commission, the Utah Public Service Commission, the Vermont Department of Public Service and Public Service Board, and the Public Service Commission of West Virginia. In the Matter of Federal-State Joint Board on Universal Service, Before the Federal Communications Commission, FCC 96-93, CC Docket No. 96-45, April 12, 1996 p. 18; "Comments of the State of Maine Public Utility Commission, the State of Montana Public Service Commission". Virtually all other Consumer Advocate commentors share this view in their initial comments. "Comments of the Idaho Public Service Commission" In the Matter of Federal-State Joint Board on Universal Service, Before the Federal Communications

30. The failure to take legitimate joint and common costs into account would frustrate the purposes of the 1996 Act. Allowing incumbents to recover joint and common costs excessively from fixed charges on the bottom of the bill discourages efficiency and frustrates competition by allowing incumbents to price more competitive services at an artificially low level. Contrary to the basic premise of the 1996 Act, allowing incumbents to recover an unreasonable share of joint and common costs from basic service insulates incumbents unfairly from market forces.

Commission, FCC 96-93, CC Docket No. 96-45, April 12, 1996, p. 17; "Comments of the Public Utility Commission of Texas" In the Matter of Federal-State Joint Board on Universal Service, Before the Federal Communications Commission, FCC 96-93, CC Docket No. 96-45, April 12, 1996, p. ii; "Initial Comments of the Pennsylvania Public Utility Commission to the Notice of Proposed Rulemaking and Order Establishing Joint Board" In the Matter of Federal-State Joint Board on Universal Service, Before the Federal Communications Commission, FCC 96-93, CC Docket No. 96-45, April 12, 1996, p. 7.; Florida, p. 22; "Initial Comments of the Virginia Corporation Commission," In the Matter of Federal-State Joint Board on Universal Service, Before the Federal Communications Commission, FCC 96-93, CC Docket No. 96-45, April 12, 1996, p. 5; "Comments of the Staff of the Indiana Utility Regulatory Commission" In the Matter of Federal-State Joint Board on Universal Service, Before the Federal Communications Commission, FCC 96-93, CC Docket No. 96-45, April 12, 1996, p. 9.

⁷⁵ "Report of Glenn P. Richardson, Senior Hearing Examiner, Application of GTE South Incorporated For Revisions to Its Local Exchange, Access and IntraLATA Long Distance Rates, Commonwealth of Virginia State Corporation Commission, Case No. PUVC950019, March 14, 1997, p. 84; Application of the Mountain States Telephone and Telegraph Company doing Business as U.S. West Communications, Inc., for Approval of a Five-Year Plan for Rate and Service Regulation and for a Share Earnings Program, Colorado Public Utilities Commission, Docket Nos. 90a-665T, 96A-281T, 96S-257T, Decision No. C97-88, January 5, 1997, pp. 42-43; Decision and Order Rejecting Tariff Revisions, Washington Utilities and Transportation Commission v. U.S. West Communications Inc., Docket No. UT-950200, April 11, 1996 pp. 83-84; Department of Utility Controls' Investigation Into the Southern New England Telephone Company's Cost of Providing Service, Department of Public Utility Control, Docket No. 94-10-01, June 15, 1995, pp. 24-25; Report and Order, In Re: US West Communications, Inc., Utah Public Service Commission, Docket No. 95-049-05, November 6, 1995, p. 95; Final Decision and Order, In Re US West Communications Inc., Iowa Utilities Board, Docket No. RPU-95-10, May 17, 1996, p. 295, 306; Final Decision and Order, In Re US West Communications Inc., Iowa Utilities Board, Docket No. RPU-94-1, November 21, 1994; In the Matter of the Application of GTE Southwest Incorporates and Contel of the West, Incorporated to Restructure Their Respective Rates, New Mexico State Corporation Commission, Docket NO. 94-291-TC, Phase II, December 27, 1995, pp. 11, 14-15; New England Telephone Generic Rate Structure Investigation, New Hampshire Public Utilities Commission, March 11, 1991, DR 89010, slip, op., pp. 39-40; Order No. 18598, Re: Investigation into Nontraffic-Sensitive Cost Recovery, Florida Public Service Commission, 1987; Docket No. 860984-TP, pp. 258, 265-266; Order No. U-15955, Ex Parte South Central Bell Telephone Company, Docket No. 1-00940035, Louisiana Public Service Commission, September 5, 1995, p. 12; In Re Formal Investigation to Examine and Establish Updated Universal Service Principles and Policies for Telecommunications Services in the Commonwealth, Docket No. 1-00940035, September 5, 1995, p. 12; In the Matter of a Summary Investigation into IntraLATA Toll Access Compensation for Local Exchange Carriers Providing Telephone Services Within the State of Minnesota, Minnesota Public utilities Commission, Docket No. P-999/CI-85-582, November 2, 1987, p. 33.

31. In the residential sector alone, the CALLS proposal would transform over ten billion dollars of the cost of distribution facilities into a bottom-of-the-bill mandated federal payment to local exchange companies. Once these costs appear on the bottom of the bill, they tend to become institutionalized and are much less likely to be competed away. These line items become a floor that the industry starts with, rather than a cost to be attacked by competition.
32. Having concluded that the loop is a shared cost, we turn to the question of how the share of those costs that are allocated to uses that fall within the federal jurisdiction should be recovered. The CCL is a charge to cover the use of a joint and common facility, the loop.
33. If the CCL is transformed into either an increase in the SLC or into a draw on the universal service fund, the long distance companies (IXC) will be getting a free ride on the loop.⁷⁶ The IXC would be allowed to use a joint and common facility -- the loop -- while passing all of the costs through to consumers as fixed per line charges. Eliminating the CCL clearly violates the policy that services included in universal service bear only a reasonable share of joint and common costs. Given the high levels of usage of interLATA long distance service and the demands placed on the network by these services, the CCL is not too high. Indeed, the interLATA use of the loop may already exceed the percentage of loop costs recovered through the CCL.

III. THE CALLS PROPOSAL RESULTS IN RATES THAT ARE ILLEGAL

B. EMPIRICAL ANALYSIS SHOWS THAT THE CURRENT RECOVERY OF COSTS IN THE FEDERAL JURISDICTION IS EXCESSIVE

1. The Principles Articulated by the FCC have Been Upheld in the Courts and Practical Tools for Implementation are Available

34. In the three and one-half years since the passage of the Telecommunications Act of 1996 the Commission has articulated a paradigm for the estimation, allocation and recovery of costs that faithfully balances the complex goals of the Act. Through a long series of orders in the universal service, local competition, and access charge reform dockets the Commission's paradigm has identified the following essential principles (in order of their magnitude of importance measured by their impact on rates or the size of the universal service fund):

⁷⁶ Notice, ¶ 114, pp. 46-47.

- ◆ Forward-looking economic costs must be the basis for establishing prices and universal service support ⁷⁷
- ◆ The loop is a shared cost – shared by all of the services that utilize it.⁷⁸
- ◆ Actual competition is the trigger for action, not theory.⁷⁹

35. With the development of the Synthesis Proxy Cost Model (SPCM) and a Supreme Court ruling upholding the concept of forward-looking economic costs, the end is in sight. Now is the time to implement the above principles.

⁷⁷ Joint FNPRM

We agree with the Joint Board that we should use forward-looking costs as a starting point in determining support amounts. We believe that basing support levels on forward-looking costs will send the correct signals for investment, competitive entry and innovation, and that a single national cost model will be the most efficient way to estimate forward-looking cost levels (§ 11).

We adopt the Joint Board's recommendation that forward-looking economic costs should be used to estimate the costs of providing supported services (§ 48).

⁷⁸ The most explicit statement can be found at Federal Communications Commission, In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing, End User Common Line Charges: Notice of Proposed Rulemaking, CC Docket Nos. 96-262, 94-1, 91-213, 95-72, ¶ 237

For example, interstate access is typically provided using the same loops and line cards that are used to provide local service. The costs of these elements are, therefore, common to the provision of both local and long distance service

⁷⁹ Joint FNPRM.

Support based on forward-looking models will ensure that support payments remain specific, predictable, and sufficient, as required by section 254, particularly as competition develops. To achieve universal service in a competitive market, support should be based on costs that drive market decisions, and those costs are forward-looking costs. (§ 50)

The model currently suggests that, using this methodology, a cost benchmark level near the center of the range recommended by the Joint Board would provide support levels that are sufficient to enable reasonably comparable rates, in light of current levels of competition to preserve and advance the Commission's universal service goals. (§ 99)

We also seek comment on whether we should calculate costs at the study area level. In recommending that the federal support mechanism calculate costs at the study area level, the Joint Board suggested that the level of competition today has not eroded implicit support flows to an extent as to threaten universal service. (§ 105).

36. The FCC has received substantial evidence that rates should be declining because productivity has exceeded the rate of inflation by a substantial margin for the past decade. The most extensive studies of local costs commissioned by Public Counsels across the country show even higher productivity increases than the Commission found in the interstate jurisdiction.⁸⁰ The Commission should consider reductions in the SLC and the universal service package, rather than rate increases.
37. Now is the time for the subscriber line charge to be eliminated so that the playing field can be leveled for competition. In this way, loop costs would be recovered from two entities, local and long distance companies, who are soon to be competing with one another. Recovering these input costs from suppliers will also place local and long distance companies on an equal footing with other potential providers of loop services. New entrants who provide loop cannot charge consumers a subscriber line charge. Eliminating the subscriber line charge eliminates the wedge between the cost of loop and the costs incurred by the traditional service providers (ILECs and IXC) who use it.

2. The Failure to Lower the Loop Costs Recovered in the Federal Jurisdiction would be Arbitrary and Capricious

38. With the legality of forward-looking economic costs as the basis for federal action established and a model for estimating those costs in place, the Commission should move forward by applying that model to all costs in the federal jurisdiction. Indeed, the Commission has already applied this model to loop costs in the high cost proceeding.⁸¹ Although the Commission said in its high cost proceeding that its use of the model there does not require it to apply the model in other proceedings, the CALLS proposal would force the Commission to apply the model in this proceeding.

⁸⁰ "Rebuttal Testimony of Dr. Marvin Kahn, on Behalf of the Office of the Attorney General," Before the State Corporation Commission of Virginia, In the Matter of Evaluating Investigating the Telephone Regulatory Case No. PUC930036 Methods Pursuant to Virginia Code S. 56-235.5, Cause No. PUC930036, March 15, 1994 and "Prefiled Testimony of David Gable on Behalf of the Indiana Office of Utility Consumer Counselor," Before the Indiana Utility Regulatory Commission, In the Matter of Petition of Indiana Bell Telephone Company, Incorporated for the Commission to Decline to Exercise in Part Its Jurisdiction Over Petitioner's Provision of Basic Local Exchange Service and Carrier Access Service, to Utilize alternative Regulatory Procedures for Petitioner's Provision of Basic Local Exchange Service and Carrier Access Service, and to Decline to Exercise in Whole Its Jurisdiction Over all other Aspects of Petitioner and Its Provision of All Other Telecommunications Service and Equipment, Pursuant to IC 8-1-2.6, Cause Number 39705, January 1994, estimate the productivity offset in the rate of 7 percent per year in the late 1980s and early 1990s.

⁸¹ Large LEC high cost.

39. The CALLS proposal claims to set switching costs closer to forward-looking economic cost levels.

To the extent the Commission seeks to set rates based on some measure of cost forward looking cost, itself a matter of debate appropriate cost measures have been particularly difficult to determine. In addition to its origin as a negotiated level, the target rates are within a range of projections that have been suggested as a potential estimate of the economic cost of switched access. Regardless, the targets are clearly closer to forward looking economic costs than current rates.⁸²

40. The level proposed is consistent with the SPCM. To fail to set loop costs at their forward-looking economic levels in this proceeding, when switching costs are being set at that level, would be arbitrary and capricious.
41. The CALLS proposal makes repeated reference to forward-looking costs and to the various models for estimating those costs.⁸³ The very same models as described in Exhibit 1, demonstrate that the economic cost of local service is well below claimed embedded costs. The SPCM produces an estimate well within a range of reasonableness. There can be no justification for using the very same models to lower switching costs but not loop costs.

3. Current Cost Recovery In The Federal Jurisdiction Is Excessive

42. The CALLS proposal is based on an incorrect premise about the subscriber line charge and its relationship to other rates. It assumes, incorrectly, that the current recovery of costs in the federal jurisdiction is inadequate to cover the costs properly assigned to it.
43. The economic evidence before the Commission shows that the current recovery of costs is excessive (see Exhibit 1). I arrive at this empirical result in the following fashion. Exhibit 2 is based on the cost of loop and port as calculated by the SPCM at the wire center level. It shows the cumulative percentage of lines falling below a specific dollar figure.
44. The statewide average for Texas is \$18.22 per month. Since 25 percent of these costs have been allocated to the Federal Jurisdiction, the Federal charges should cover \$4.55 per month. Similar estimates for over a dozen states representing almost two-thirds of the lines in the country are presented in Exhibit 3. This analysis shows that Texas is typical of the nation.

⁸² CALLS, p. 36.

⁸³ CALLS, pp. 26, 27, 36.

45. Before we estimate how much is collected from residential ratepayers in Texas, there is one observation we would like to make. These data are somewhat old, apparently reflecting 1996 line counts and costs. For example, the data imply that only 4 percent of households have second lines. This would be consistent with 1996 data. By 1997, which is the latest period for which the FCC has data, the percentage on a national basis had increased to about 12 percent.⁸⁴ In the 18 months since then, the momentum for second lines has increased. SBC is one of the leaders in selling second lines. For the purpose of this analysis, we use a conservative figure of 20 percent⁸⁵ for second lines. This is particularly appropriate since the impact of the FCC decisions that would flow from the instant proceeding will be next year and beyond.⁸⁶
46. The addition of second lines has a dramatic effect on loop costs. The incremental cost of providing the second line is considerably lower than the first, because most of the capital equipment is deployed. This is especially true of loop and port costs. Consider the following example, which we believe is reasonable. Assume that second line penetration has moved from 4 percent to 20 percent. This assumption is supported by a recent national survey that indicated 24 percent of respondents have a second line.⁸⁷ Further assume that the second line costs half as much as the first line. This is a conservative assumption supported by testimony before the FCC and the cost model itself. The statewide average cost for loop and port in Texas would decline from \$18.20 to \$16.60. In other words the average cost recovery in the federal jurisdiction should be closer to \$4.15.
47. If the Commission implements its decision to utilize forward-looking economic costs and treat the loop as a common cost, it must conclude that fixed end-user charges (*i.e.*, the subscriber line charge and the PICC) should not be increased but decreased.

⁸⁴ Federal Communications Commission, Trends in Telephone Service (February, 1999), table 20.4

⁸⁵ See Application of Southwestern Bell Telephone Company for Rate Group Reclassification Pursuant to Section 58.058 of the Texas Utility Code, (Jan. 26, 1999), General Counsel Exhibit No. 1 at pg. 23. SWBT indicates that improved marketing of additional [second] phone lines resulted in sales which accounted for approximately 14% of new access line in 1993, 18% of new access lines in 1994, 25% of new access lines in 1995, and 29% of new access lines growth in 1996, in Texas. A recent national survey conducted for Joint Consumer Commentors indicates that 24 percent of respondents have more than one line. This is consistent with the assumed 80% primary and 20% non-primary lines.

⁸⁶ Trends, Table 20.4, gives year end figures of 114.4 million for residential loops and 17.9 million for additional lines. The figure of 20% for year end 1999 is derived from setting second lines at approximately 25 million and total lines at 123 million. This acceleration of second lines is consistent with the acceleration in Texas as noted in footnote 8.

⁸⁷ The October 1999 national survey was conducted by Opinion Research Corporation for Joint Consumer Commentors. The results of this survey are discussed in the Reply Comments, In the Matter of Low-Volume Long-Distance Users, CC Docket No. 99-249 (October 20, 1999).

- Based upon the results of the default runs of the Synthesis Cost Proxy Model for Texas, we conclude that at least 80 percent of residential lines in Texas are covering 100 percent of the forward looking economic costs of loops and ports (*i.e.*, the non-traffic sensitive portion of costs) that are allocated to the Federal jurisdiction.
48. Exhibit 4 presents our estimate of the amount collected from residential customers for access in the federal jurisdiction. We assume that 80 percent of the lines in the state are first lines and that 20 percent are additional lines. Based upon the estimates provided by the CALLS, we estimate that in excess of \$6.00 per residential account is being collected for access – including the SLC, the PICC and the CCL. In addition, about \$2 billion of high cost support is already being recovered in the federal jurisdiction. Since the above analysis looks at average loop costs, that include high cost support, this adds another \$.25 to \$.50 per month to the overrecovery of costs.⁸⁸
49. The charges exceed the costs that should be recovered for the vast majority of residential lines in Texas. The federal charges should cover \$4.15 to \$4.55 per month. However, the federal jurisdiction is collecting over \$6.00 per residential account. In other words, based on forward-looking economic costs, the federal jurisdiction is overrecovering \$1.50 to \$2.00 per month from residential consumers.
50. Texas is used as an example because it is a large state that is very close to the national average in forward-looking costs. We reach similar conclusions for other states as well (*see* Exhibit 3). These results show that between three-quarters and nine-tenths of the residential customers already cover the loop costs allocated to the federal jurisdiction. There are a few instances of high-cost states in which a much smaller percentage of the residential customers cover the costs allocated to the federal jurisdiction. That is an issue to be addressed by high cost fund policy.
51. In summary, over-recovery of costs falls in the range of \$1.50 to \$2.00 per month per residential line. The total falls in the range of \$2.25 to \$3 billion annually. Instead of increasing the bottom-of-the-bill charges by almost \$2 billion in the residential sector, charges should be decreasing by \$2 to \$3 billion.

⁸⁸ The CALLS proposal seeks to “settle” the question of subsidies in other rates at the level of \$650 million. This works out to about \$.21 per line. In the debate over subsidies, estimates run as high three times that level.

52. The closest that the CALLS proposal comes to offering a justification for the increase in the SLC is to point out that increasing the SLC would simply allow it to catch up with inflation.

Furthermore, the initial proposed SLC cap of \$5.50 is the equivalent, in inflation adjusted terms, of a \$3.50 SLC in 1984 dollars, the year the SLC was instituted.⁸⁹

53. While that would be the arithmetic result, there is no underlying economic justification. Telecommunications costs do not track inflation and never have. Technological progress has made the industry a declining cost industry. Over the period since divestiture, the spread of digital line carrier systems, increasing population densities and the growth of second lines have spurred a dramatic decline in costs.
54. The FCC has erroneously applied all of the increased productivity to the carrier common line component of the federal cost recovery mechanism since it adopted price cap regulation. This has resulted in a dramatic reduction in usage charges (see Exhibit 5). As a result, the compromise that the FCC struck between recovery of federal costs on a fixed and usage basis has been destroyed. In 1984 when the subscriber line charge was instituted, the costs were split on a 50/50 basis. Today, the fixed charges exceed 80 percent of the total.
55. It is interesting to note that basic local rates, which are largely determined by loop costs, have not tracked inflation since divestiture. Like the subscriber line charge, they have been essentially flat. In other words, state regulators have recognized the declining cost nature of the industry, to a significant degree. In short, there is no economic justification to increase the SLC and there is strong evidence that the recovery of costs in the federal jurisdiction is excessive.

IV. OTHER ELEMENTS OF THE CALLS PROPOSAL RENDER IT ILLEGAL

56. At least four other elements included in the CALLS proposal would call into question the fairness and reasonableness of the rates it would impose on the public.
57. The CALLS proposal would eliminate the clear requirement in the statute that carriers make a contribution to universal service. It shifts the entire cost of universal service onto end users. The federal statute makes no provision for the federal government to recover telecommunications service provider contributions for universal service from ratepayers in the form of a line item surcharge on ratepayers' bills. The federal statute is quite clear that it is telecommunications service providers who must contribute

⁸⁹ CALLS, p. 17.

Sec. 254. (d) Telecommunications Carrier Contribution - Every telecommunications carrier that provides interstate telecommunications services shall contribute, on an equitable and nondiscriminatory basis...

Sec. 254. (f) STATE AUTHORITY - A state may adopt regulations not inconsistent with the Commission's rules to preserve and advance universal service. Every telecommunications carrier that provides intrastate telecommunications services shall contribute.

58. If subscribers are forced to pay a line item surcharge then telecommunications service providers are not contributing, as required by the Telecommunications Act of 1996. Claims that only a line item on a consumer's bill can meet the requirement that universal service is explicit is a thinly veiled effort to avoid the responsibility the law placed on telecommunications service providers. If a telecommunications service provider is assessed a contribution explicitly to be paid to a universal service fund administrator and pays no other universal service support in any of the prices it is charged, then the funding is explicit. The law does not say funding must be explicit to the customer, it says it must be explicit to the service provider.
59. As long as all providers are assessed a fair share of the costs of universal service in an explicit rate element, the requirements of the statute will be met. Assessing providers allows them to decide how to recover the universal service costs. Some might pass it through in the form of usage charges. Some might pass it through in the form of customer charges. Still others might not pass it through in an effort to gain market share.
60. The CALLS proposal purports to settle the dispute over the audit of LEC accounting records which revealed substantial irregularities. The FCC found that assets that were on the books could not be accounted. These phantom assets are associated with costs that have been imposed on consumers. Yet, the CALLS proposal make no adjustment in rates to take account of the unjustified charges levied on consumers. There is no reason that consumers should be required to pay for assets that do not exist. Indeed, to the extent that these phantom assets have depressed the apparent overall rate of return of the LECs, consumers have been overcharged.
61. The Commission cannot simply ignore the audit. To do so would force consumers to pay rates that are not just and reasonable.
62. The CALLS proposal eliminates the productivity factor. The productivity factor is the key element in the Price Cap regulatory regime that ensures that rates are just and reasonable. If costs decline as a result of increases in productivity in an environment in which competition is not effective, and there is no productivity factor to ensure that rates follow costs, excess profits will be earned. Consumers would be charged rates that exceed those which would prevail in

a competitive market because neither competition nor regulation will require incumbent LECs with market power to share the fruits of increasing productivity. The practical experience since the creation of the price cap regime is that productivity increases have been substantial.

There is every reason to believe they will continue into the future, with the growth of second lines and increasing call volumes. Thus, the failure to include a productivity factor will result in substantial overcharging of consumers.

63. The market for exchange access has not been found by the Commission to be effectively competitive, nor could it be. Indeed, the Commission has not even found any local market to be irreversibly open. The Commission cannot eliminate the productivity factor on the hope that this market will be competitive at some time in the future and demonstrate that the resulting rates would not result in prices that include excess profits and, therefore, are unjust and unreasonable.

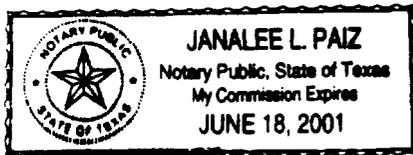
64. The mistreatment of consumers in the CALLS proposal goes even farther. There would appear to be up escalators, to protect the LECs from inflation, but no down escalators to share in productivity increases. The LECs are allowed to increase rates when costs rise but they are not required to decrease rates when they fall. This scheme is clearly unjust.

Further, the affiant sayeth not.

Mark Cooper

Mark. N. Cooper

SUBSCRIBED and sworn to before me this 11th day of November, 1999



Janalee L. Paiz
Notary Public, State of Texas

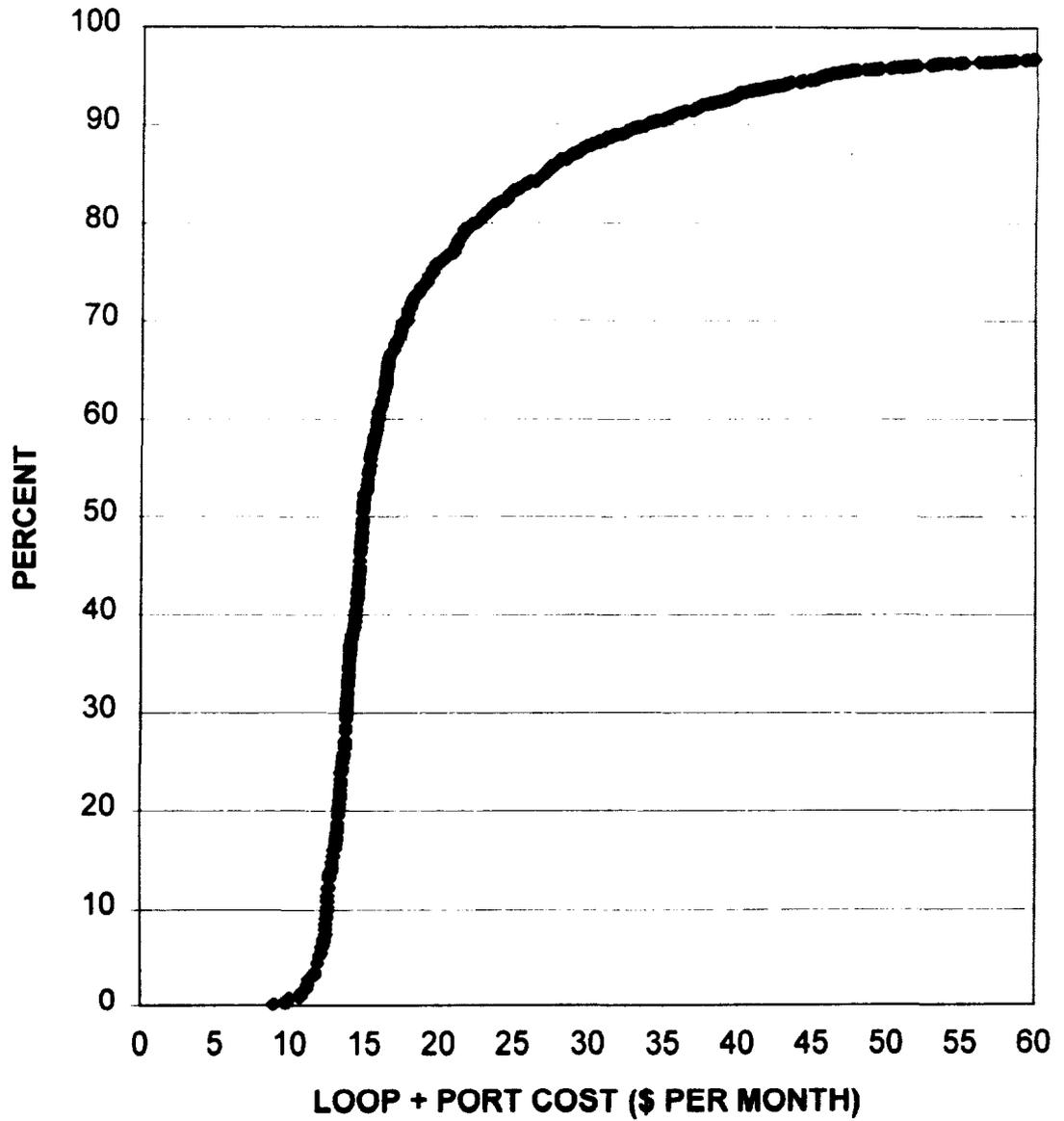
Exhibits

EXHIBIT 1
ESTIMATION OF OVERRECOVERY OF COSTS FOR LOOP AND PORT:
EMBEDDED COSTS COMPARED TO FORWARD LOOKING COSTS

STATE	COST ESTIMATES						EFFICIENCY GAINS					
	EMBED FCC		BCM			FCC	HTFLD	"1995"		"1998"		FCC
	BCPM	HAT	ARMI	HTFL	HTFL	SPCM	"5.0"	LOW	HIGH	LOW	HIGH	SPCM
AL	36.38	30.98	29.31	26.46	19.19	28.86	26.06	9.92	17.19	5.40	10.32	7.52
AR	43.48	34.48	28.08	33.56	24.34	26.95	24.93	9.92	19.14	9.00	18.55	16.53
AZ	31.18	27.49	21.33	21.26	15.41	17.94	17.22	9.92	15.77	3.69	13.96	13.24
CA	27.97	20.26	18.18	18.05	13.09	15.60	13.65	9.92	14.88	7.71	14.32	12.37
CO	35.72	27.82	24.33	25.80	18.71	20.40	19.93	9.92	17.01	7.90	15.79	15.32
DC	21.11	16.62	13.35	11.19	8.11	11.65	11.77	9.92	13.00	4.49	9.34	9.46
DE	31.85	24.61	21.37	21.93	15.90	18.96	17.92	9.92	15.95	7.24	13.93	12.89
FL	30.32	23.60	19.09	20.40	14.79	17.12	15.34	9.92	15.53	6.72	14.98	13.20
GA	37.41	26.83	23.24	27.49	19.93	21.36	19.94	9.92	17.48	10.58	17.47	16.05
IA	41.50	29.31	23.37	31.58	22.90	21.04	18.72	9.92	18.60	12.19	22.78	20.46
ID	50.86	32.68	27.60	40.94	29.69	25.25	22.38	9.92	21.17	18.18	28.48	25.61
IL	30.65	22.44	19.58	20.73	15.03	15.67	14.85	9.92	15.62	8.21	15.80	14.98
IN	30.50	25.88	20.65	20.58	14.93	20.53	17.76	9.92	15.57	4.62	12.74	9.97
KS	42.93	31.28	25.38	33.01	23.94	22.86	22.58	9.92	18.99	11.65	20.35	20.07
KY	35.37	31.25	29.73	25.45	18.46	29.45	24.12	9.92	16.91	4.12	11.25	5.92
LA	36.37	29.12	25.68	26.45	19.18	24.11	21.94	9.92	17.19	7.25	14.43	12.26
MA	23.04	22.09	20.01	13.12	9.52	16.23	15.82	9.92	13.52	0.95	7.22	6.81
MD	28.48	23.35	21.08	18.56	13.46	17.88	17.29	9.92	15.02	5.13	11.19	10.60
ME	44.16	32.06	31.36	34.24	24.83	29.40	27.66	9.92	19.33	12.10	16.50	14.76
MI	32.87	25.09	20.69	22.95	16.64	19.10	16.86	9.92	16.23	7.78	16.01	13.77
MN	39.36	26.23	22.99	29.46	21.36	20.53	20.13	9.90	18.00	13.13	19.23	18.83
MO	38.35	27.07	23.56	28.43	20.61	21.38	20.39	9.92	17.74	11.28	17.96	16.97
MS	41.96	39.10	38.61	32.04	23.24	38.34	34.22	9.92	18.72	2.86	7.74	3.62
MT	64.50	42.39	32.29	54.58	39.58	29.95	26.55	9.92	24.92	22.11	37.95	34.55
NC	37.24	26.84	23.28	27.32	19.81	21.47	20.53	9.92	17.43	10.40	16.71	15.77
ND	60.52	35.79	28.92	50.60	36.69	24.37	25.07	9.92	23.83	24.73	35.45	36.15
NE	46.45	31.18	31.39	36.53	26.49	25.19	29.69	9.92	19.96	15.27	16.76	21.26
NH	38.23	28.08	26.41	28.31	20.53	23.61	22.74	9.92	17.70	10.15	15.49	14.62
NJ	26.78	20.14	18.36	16.86	12.23	14.99	13.88	9.92	14.55	6.64	12.90	11.79
NM	44.59	31.85	27.40	34.67	25.14	23.55	22.82	9.92	19.45	12.74	21.77	21.04
NV	39.09	32.48	31.81	29.17	21.15	23.74	26.48	9.92	17.94	6.61	12.61	15.35
NY	26.50	21.74	19.64	16.58	12.02	16.03	11.69	9.92	14.48	4.76	14.81	10.47
OH	31.32	24.03	19.41	21.40	15.20	17.58	15.90	9.92	16.12	7.29	15.42	13.74
OK	36.51	31.41	27.90	26.59	19.28	24.69	24.46	9.92	17.23	5.10	12.05	11.82
OR	37.91	27.35	23.94	27.99	20.29	19.87	19.27	9.92	17.62	10.56	18.64	18.04
PA	30.16	23.57	21.16	20.24	14.67	17.61	16.86	9.92	15.49	6.59	13.30	12.55
RI	27.59	24.12	20.25	17.67	12.82	17.22	15.75	9.92	14.77	3.47	11.84	10.37

SC	38.47	29.31	25.54	28.55	20.70	24.66	22.09	9.92	17.77	9.16	16.38	13.81
SD	60.94	38.97	32.06	51.52	37.00	27.30	27.39	9.42	23.94	21.97	33.55	33.64
TN	37.19	38.80	26.34	27.27	19.77	24.96	22.48	9.92	17.42	-1.61	14.71	12.23
TX	35.06	26.15	21.39	25.14	18.23	19.07	17.78	9.92	16.83	8.91	17.28	15.99
UT	37.93	25.72	22.04	28.01	20.31	18.55	17.68	9.92	17.62	12.21	20.25	19.38
VA	29.77	24.98	21.74	19.85	14.39	19.17	18.64	9.92	15.38	4.79	11.13	10.60
VT	45.94	33.91	33.34	36.02	26.12	31.47	29.62	9.92	19.82	12.03	16.32	14.47
WA	33.40	25.32	21.35	24.48	17.02	18.33	17.15	8.92	16.38	8.08	16.25	15.07
WI	37.10	24.29	19.05	27.18	19.71	18.75	15.50	9.92	17.39	12.81	21.60	18.35
WV	41.36	36.39	32.51	31.44	22.80	34.03	33.23	9.92	18.56	4.97	8.13	7.33
WY	58.06	45.87	39.30	48.14	34.91	33.55	33.41	9.92	23.15	12.19	24.65	24.51
AVG.	32.71	25.37	21.89	22.81	16.51	19.27	17.66	9.90	16.19	7.34	15.05	13.44

**EXHIBIT 2:
TEXAS,
CUMULATIVE PERCENTAGE OF LINES
BY LOOP + PORT COST
(BASED ON WIRE CENTER ANALYSIS)**



Source: FCC, SPCM.

EXHIBIT 3
ESTIMATES OF COST AND COST RECOVERY

STATE	FORWARD LOOKING LOOP + PORT COST (STATE AVERAGE) COSTS AT \$5.50	PERCENT OF LOOPS COVERING FEDERAL
TX	\$18.22	81%
CA	14.84	94
NY	14.92	91
UT	16.83	90
IL	17.28	87
AZ	15.67	92
MD	16.55	86
FLA	16.67	91
PA	17.17	80
CO	17.70	84
WA	17.89	88
GA	19.99	77
MI	20.16	75
KS	19.82	76
IN	22.55	72
ID	24.17	65
MO	24.32	71
AR	25.93	58
WY	31.03	41

SOURCE: Federal Communication s Commission, *Synthesis Proxy Cost Model*

EXHIBIT 4

ESTIMATED ACCESS COST RECOVERY FOR THE
TEXAS RESIDENTIAL MARKET PROJECTED FOR 2000

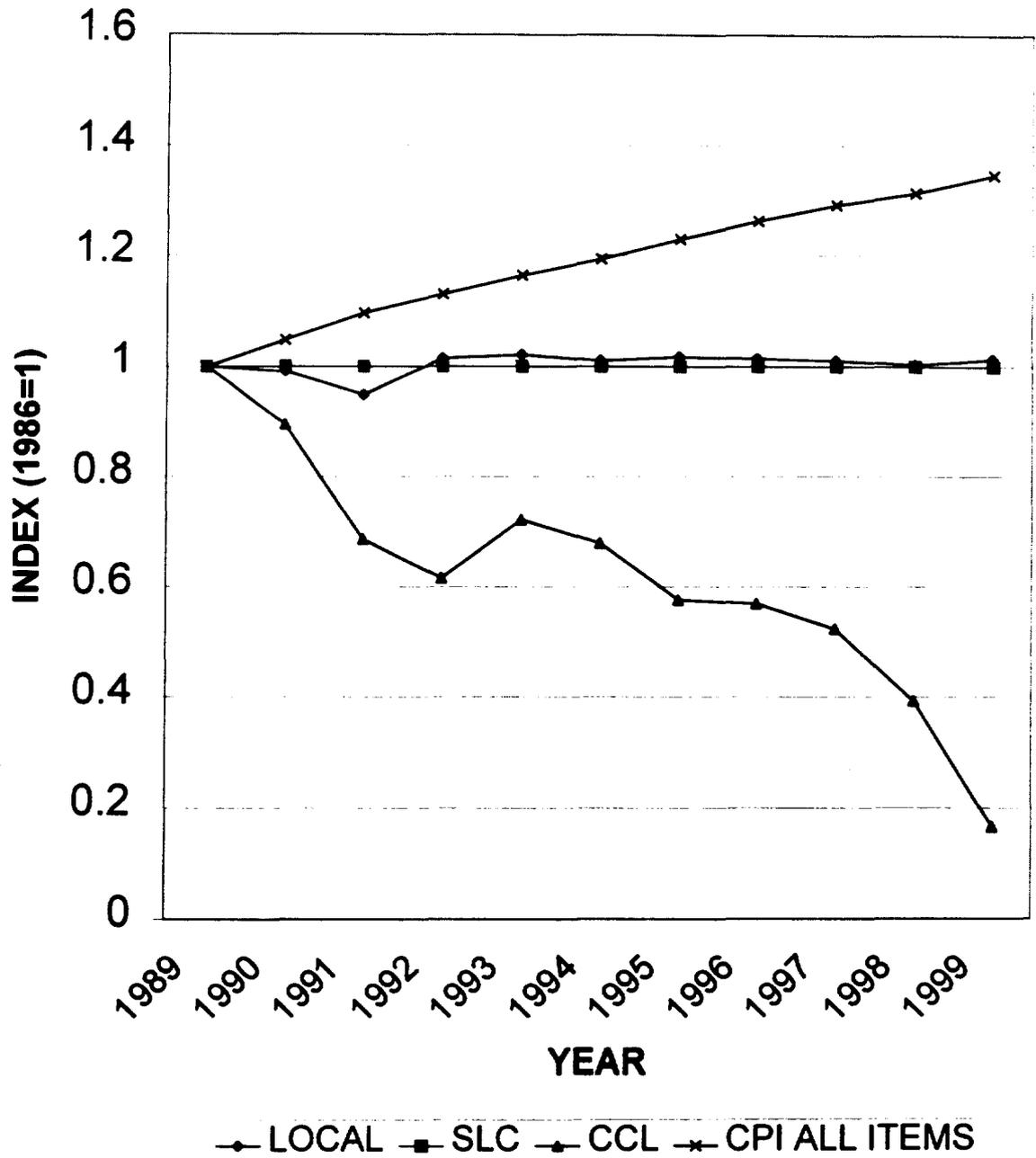
	(1) PROPORTION OF LINES	(2) UNIT COST PER LINE	(3=1x2) WEIGHTED COST
SUBSCRIBER LINE CHARGE			
	(a)	(b)	
First Line	1.0	\$3.50	\$3.50
Second Line	.24	6.07	<u>1.47</u>
Average Per line	1.0		\$4.97
PICC			
Average Per Line			\$.75
FIXED CHARGES PER LINE			\$5.72
USAGE CHARGES			
CCL (100 Minutes @.002/Minute)			.20
Other "subsidiaries"			<u>.21</u>
TOTAL			\$6.13

(a) Derived from Federal Communications Commission, Trends in Telephone Service, February 1999, Table 20.4, as described in text.

(b) Trends, Table 1.2.

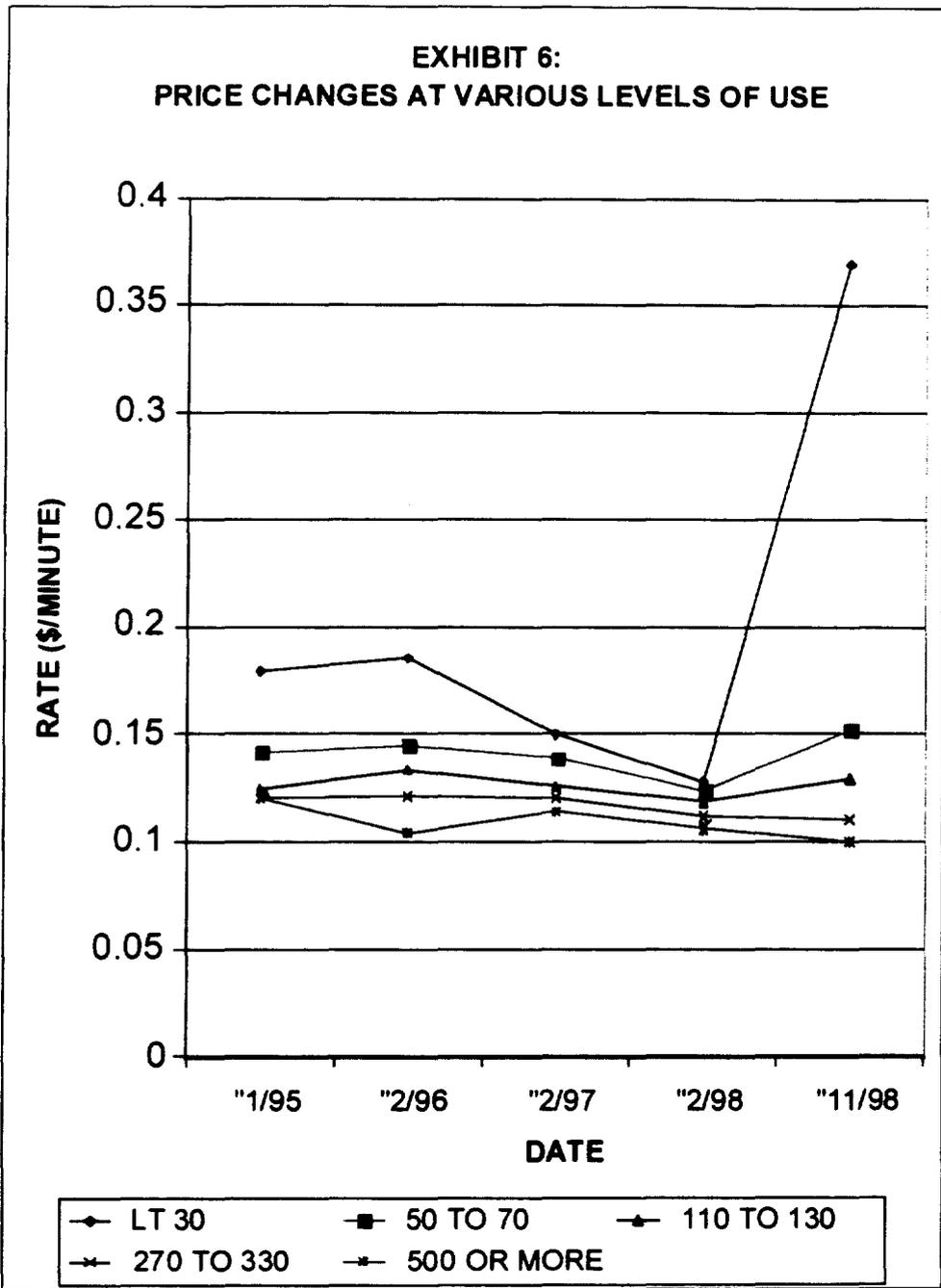
(c) Trends, Table 1.2, adjusted for July 1, 1999 increases.

**EXHIBIT 5:
INDICES OF RATES**



SOURCE: Bureau of Labor Statistics, *Consumer Price Index*.

**EXHIBIT 6:
PRICE CHANGES AT VARIOUS LEVELS OF USE**

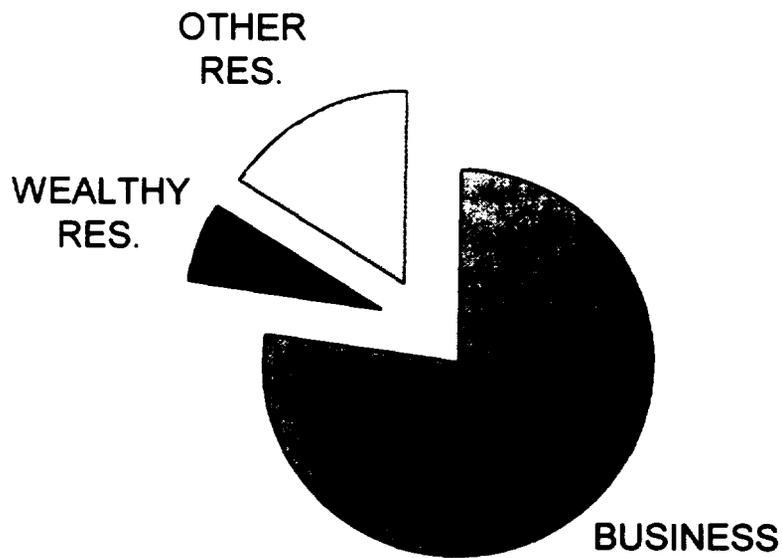


SOURCE: FCC, *Trends in Telephone Service*, June 1999, Table 2.4.

EXHIBIT 7
 ESTIMATE OF INCREASE IN NET LONG DISTANCE BILLS
 FOR RESIDENTIAL USERS WITH BELOW AVERAGE USAGE
 CAUSED BY THE CALLS PROPOSAL
 BASED ON THE 1998 EXPERIENCE OF ADDING PICC AND USF CHARGES
 TO THE BOTTOM OF CONSUMER BILLS

LEVEL OF USE	MILLIONS OF HOUSEHOLDS	TOTAL ANNUAL INCREASE RESULTING INCREASES IN BOTTOM OF THE BILL CHARGES (\$ MILLIONS)	
		1998: \$2.00 INCREASE (PICC AND USF ONLY, MUR NOT INCLUDED)	CALLS: \$1.50
ZERO	15	\$360	\$252
1-30 MINUTES	15	360	252
30-50 MINUTES	20	454	318
50-75 MINUTES	20	454	318
TOTAL	70	1628	1140
NET OUT LIFELINE	5.4		91
NET INCREASE	64.6		1049

**EXHIBIT 8
DISTRIBUTION OF GAINS ASSUMING EQUAL
PASS THROUGH**



SOURCE: See text for the derivation of these estimates.