5

Pricing of Telephone Services

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The decade of the 1980s provides an excellent opportunity for studying the political forces that shape the development of economic regulatory policies. The changes in federal telecommunications policy during this period, especially the most financially significant divestiture ever accomplished under the antitrust statutes, amount to nothing short of a cataclysmic change in the underlying philosophy of government involvement in the industry. Moreover, as the FCC has moved towards deregulating interstate telecommunications services, the largely cooperative federal-state relationshp in telecommunications regulation has all but dissolved, while the relative influence of state regulation has increased. As a result, for the first time since state regulation was

adopted more than a half-century ago, state regulators have had to develop comprehensive policies about pricing and competition. These developments provide something of a natural experiment for testing hypotheses about the political and economic forces that shape state regulatory policies.

Until late 1981, while the FCC was clearly moving to increase the role of competition in the industry, the eventual result of procompetitive policies—the vertical separation of the local telephone companies from AT&T—was regarded as a long shot. Indeed, during both the late Carter and early Reagan years, the Antitrust Division of the DOJ was under considerable pressure from other influential members of their administrations to abandon the quest for wholesale divestiture. Both the FCC and the NTIA, while believing AT&T had violated the antitrust laws, did not support the scope of divestiture favored by the DOJ, and the DOJ opposed total divestiture. Instead, it favored a minor divestiture, such as spinning off one large operating company, combined with injunctive relief and more stringent regulatory rules to protect against anti-competitive actions by AT&T in the future. This position had considerable support in Congress and among state regulators.

As the Reagan administration took the reigns of power, pundits first believed the case would be settled with a whimper, much as the Eisenhower administration quickly settled the Western Electric case when it took office. When Assistant Attorney General for Antitrust William Baxter promised to "litigate to the eyeballs," it was widely expected that other members of the Reagan administration, working with Congress, would undermine the pending case by enacting legislation which would force the case to be dropped. This almost occurred in the summer of 1981, when Baxter was forced to put the case on temporary hold as Congress came within a whisker of passing legislation.[1]

The importance of these developments is that when divestiture was announced in the settlement agreement of January 1982, it was a largely unanticipated event that was forced upon the states. At the end of 1981, the FCC's procompetitive policies had not yet had much of an effect on local telephone service and other activities in the domain of state regulators. Moreover, state and federal regulators had managed to retain a largely cooperative relationship in defining the boundaries of state and federal authority, including the allocation of the industry's revenue requirements between them.[2] In large measure this was because a vertically and horizontally integrated AT&T managed to work out many of the inherent conflicts between federal and state officials. With AT&T Long Lines and the BOCs advocating essentially identical

policies, compromise and coordination among regulators were more easily accomplished.

In hindsight, the seeds of disruption in federal-state regulatory relationships were sowed long before divestiture, and state regulators ought to have been aware of them before December 1981. Perhaps most regulators even recognized that the world had been permanently and dramatically altered a decade earlier when the FCC began to allow competition in long-distance, domestic satellites, and customer equipment. But in 1981, whatever the deeply held views of state regulators, state regulatory policy remained essentially unchanged. Yet these policies could not remain unchanged in the 1980s, for procompetitive policies were becoming financially significant to the local telephone companies, and through divestiture, the policy integrating power of a vertically integrated AT&T quickly disappeared.

The primary effect of divestiture and federal deregulation was reduced prices for customer equipment and for services that were becoming competitive.[3] In order to maintain the financial health of local telephone companies, other prices had to be increased to offset the revenue loss from competitive products. The policy question facing state regulators in the 1980s was how to apportion the inevitable rate increases. The twin issues to be decided were the pattern of price increases, and decisions about whether to disallow or disadvantage competition where possible for the purpose of sustaining supercompetitive prices in these services, so that prices elsewhere could be held down.

The telecommunications sector has persistently experienced declining real prices for as long as detailed price data have been collected. Table 5.1 shows the average annual rate of change in several price indexes for the half-century before competition and divestiture, and the first few years thereafter. Throughout the entire period, telecommunications prices rose substantially less rapidly than all consumer prices, and less than prices for the other major utility services, gas, and electricity. During the late 1970s and early 1980s, all prices increased more rapidly than they had in the previous three decades; however, the relative price of telecommunications services continued to decline at approximately the same rate it had before. Meanwhile, the relative price performance of the other utilities deteriorated in comparison to telecommunications.

A focal point of the policy debate regarding telecommunications pricing has been the rate charged to residences for basic monthly service. Table 5.2 shows the average monthly residential rate for unlimited service from a sample of cities for the period 1940–1988. From

TABLE 5.1
Annual Rates of Change for Various Price Indexes

	1935 to 1988	*1978 to 1988*
CPI all goods and services	4.2%	6.1%
CPI all services	4.6	7.5
CPI telephone services	2.2	4.3
CPI piped gas	3.8	7.1
CPI electricity	2.4	6.2

Source: Industry Analysis Division, Common Carrier Bureau, "Trends in Telephone Service," Federal Communications Commission, February 15, 1989, p.4.

1940 to 1970, local residential rates increased very slowly, averaging approximately the same annual rate of increase as is reported for all telephone services in table 5.1. During this thirty-year period, the basic rate increased by only 70 percent (a little less than 20 percent per decade, taking into account compounding). Since 1970, the rate of increase has been much more rapid. The basic monthly rate increased fifty percent during the 1970s, and then doubled in the 1980s.

The period since 1970 corresponds to the new era of competition in telecommunications; however, the differences in price trends reflect more than this. Competition was not plausibly a major factor affecting most telecommunications services until the late 1970s. Until the *Execunet* decision in 1978, AT&T's competitors were too small and too limited in the services they offered to have much of an effect. Competition in customer equipment was permitted shortly after long-distance competition, and it also became important only in the late 1970s.

During the 1970s the Ozark Plan governing separations was in place. This plan established a new formula for taxing long-distance services to help pay for the costs of the local exchange. Between the late 1960s and 1984, the fraction of non-traffic-sensitive local exchange costs paid from long-distance revenues increased from 10 to 26 percent, at which time the FCC froze the federal share at 25 percent. Had Ozark not been in place, by the early 1980s nearly another dollar per month of local exchange costs would have been collected somewhere else in the price structure, and most probably in large measure from the basic monthly rate. One implication of these data is that local exchange costs rose substantially more rapidly in the 1970s than the rate of increase in local service rates.

TABLE 5.2
Charge for Unlimited Local Service

January		*January*		*January*		*October*	
1940	$3.44	1955	$5.29	1970	$5.87	1983	$11.58
1941	3.63	1956	5.34	1971	6.16	1984	13.35
1942	3.70	1957	5.37	1972	6.51	1985	14.54
1943	3.83	1958	5.44	1973	6.79	1986	16.13
1944	3.84	1959	5.60	1974	7.14	1987	16.66
1945	3.84	1960	5.64	1975	7.31	1988	16.59
1946	3.84	1961	5.70	1976	7.77		
1947	3.87	1962	5.71	1977	7.98		
1948	4.09	1963	5.75	1978	8.16		
1949	4.20	1964	5.76	1979	8.19		
1950	4.47	1965	5.78	1980	8.32		
1951	4.69	1966	5.77	1981	8.82		
1952	4.83	1967	5.71	1982	9.73		
1953	5.18	1968	5.72	1983	11.14		
1954	5.18	1969	5.79				

Source: James L. Lande, "Telephone Rates Update," Industry Analysis Division, Common Carrier Bureau, Federal Communications Commission, February 3, 1989, p. 16. Monthly rate increased 50 percent during the 1970s, and then doubled in the 1980s.

Note: Data excludes equipment rental, but includes estimates of state and local taxes. Data for 1983–1988 do not include maintenance of inside wiring. Data for 1940–1983 (January) from AT&T; remaining data from FCC survey of 95 cities.

Table 5.3 provides additional detail on the trends in the different types of telephone services during the period of competition and divestiture. As is apparent in the table, basic residential service experienced two major rate shocks during this decade. The first, from 1980 until 1982, probably had very little to do with federal policy changes. The period 1978–1981 witnessed unusually high inflation in the United States; moreover, interest rates reached all-time peaks. The effect on telecommunications prices was delayed by regulatory lag. In the early 1980s, however, all categories of service show a rate catch-up to accommodate inflation. The second rate shock occurred in 1984–1986, and probably was a direct consequence of divestiture, competition, and accommodating FCC policies. Unlike previous periods of large increases in local service prices, the mid-1980s saw dramatic reductions in prices for interstate services, with the drop in real prices averaging about 10 percent per year.

TABLE 5.3
Changes in Telephone Price Indexes, 1978–1988

Year	CPI	*All Telephone Services*	*All Local Charges*	*Monthly Residential Service*	*Interstate Toll*	*Interstate Toll*
1978	9.0%	0.9%	1.4%	3.1%	−0.8%	1.3%
1979	13.3	0.7	1.7	1.6	−0.7	0.1
1980	12.5	4.6	7.0	7.1	3.4	−0.6
1981	8.9	11.7	12.6	15.6	14.6	6.2
1982	3.8	7.2	10.8	9.0	2.6	4.2
1983	3.8	3.6	3.1	0.2	1.5	7.4
1984	3.9	9.2	17.2	10.4	−4.3	3.6
1985	3.8	4.7	8.9	12.4	−3.7	0.6
1986	1.1	2.7	7.1	8.9	−9.5	0.3
1987	4.4	−1.3	3.3	2.6	−12.4	−3.0
1988	4.4	1.3	4.5	4.5	−4.2	−4.2

Source: Industry Analysis Division, Common Carrier Bureau, "Trends in Telephone Service," Federal Communications Commission, February 15, 1989, p. 5–7.

The state regulation component of the local service rate shock appears to have been over by the end of 1986. Table 5.4 shows some further details of how states altered basic access rates during the divestiture period. Since 1986, the basic state rate has actually declined; however, it has been more than offset by small increases in the Subscriber Line Charge (SLC), which is administered by the FCC, and by state and local taxes. Precisely the same pattern is seen for monthly business rates, for installation charges, and for so-called "lifeline" rates. For pay telephones, all of the rate shock apparently took place in 1984, the year of the divestiture, when prices rose by about one-third.

A common belief at the time of divestiture was that the BOCs were the major losers. In the MFJ, this belief was manifested when Judge Harold Greene, responding to requests from state regulators, gave the local companies Yellow Pages, cellular telephones, and the right to retail customer equipment. Apparently the same concern caused state regulators to give an initial rate relief to the BOCs that quickly proved to be excessive. Table 5.5 shows the amount of rate increases given to BOCs in each year since divestiture. After receiving revenue increases of $5 billion in 1984–1985, the BOCs were then required to give back nearly $2 billion in 1987–1988.

TABLE 5.4
Local Rate Levels for October of Years Shown

	1983	*1984*	*1985*	*1986*	*1987*	*1988*
Residential rates[a]						
Unlimited service	$10.50	$12.10	$12.17	$12.58	$12.44	$12.33
SLCs		0.00	1.01	2.04	2.66	2.67
Taxes	1.08	1.25	1.36	1.51	1.56	1.59
Total	11.58	13.35	14.54	16.13	16.66	16.59
Lowest generally available rate	5.37	5.62	5.75	5.96	5.81	5.62
SLCs		0.00	1.01	2.04	2.66	2.67
Taxes	0.56	.58	0.70	0.84	0.94	0.91
Total	5.93	6.20	7.46	8.84	9.41	9.20
Connection[b]	35.01	43.71	44.32	45.63	44.04	42.98
Taxes	1.75	2.19	2.22	2.28	2.20	2.11
Total	36.76	45.90	46.54	47.91	46.24	45.09
Business Rates[c]						
Representative rate	29.15	32.73	33.40	34.25	33.65	33.42
SLCs		0.00	1.01	2.04	2.68	2.69
Taxes	3.35	3.76	3.96	4.17	4.18	3.95
Total	33.50	36.49	38.37	40.46	40.51	40.06
Average charge for 5-minute same zone daytime business call	.085	.090	.090	.092	.092	.091
Connection[c]	56.04	68.91	70.90	73.01	72.23	72.30
Taxes	3.08	3.79	3.90	4.02	3.97	3.89
Total	59.12	72.70	74.80	77.03	76.23	76.19
5-minute pay phone call	.168	.212	.222	.225	.228	.230

Source: Lande, table 2, p. 15.

[a]The residential rates shown in this table do not include touch tone services.

[b]The business rates include touch tone service. The "representative" rate is the single line rate for unlimited service where offered, and the measured service rate with 200 messages in other cities.

[c]Connection charges do not include drop line and block charges.

The preceding descriptive material provides the background for our investigation of state pricing decisions after divestiture. Obviously, the real action in post-divestiture price changes occurred in the period 1984–1986. It is during this period that we ought to be able to detect

TABLE 5.5
Bell Operating Company Rate Requests and Outcomes

Year	*Rate Increases Requested ($M)*	*Rate Increases Granted ($M)*	*Rate Requests Pending ($M)*
1984	4,023.7	3,875.5	3,672.3
1985	1,627.2	1,154.9	1,437.3
1986	643.7	290.0	322.6
1987	146.3	−519.0	124.7
1988	378.9	−1,366.4	219.5

Source: Industry Analysis Division, Common Carrier Bureau, "Trends in Telephone Service," Federal Communications Commission, February 15, 1989, p. 11.

how the economic and political circumstances of the states affected their adjustment in pricing policy to accommodate the new realities.

By the time divestiture was implemented in 1984, the challenge facing state regulators contained the following elements. First, the divestiture agreement prohibited the BOCs from participating in a wide variety of competitive markets, thereby reducing the effective power of state regulators in regulating these markets even in cases where they retained some authority.[4] Second, in implementing divestiture, the FCC renounced the policy of burdening services in the federal jurisdiction with an ever-growing subsidy of services in the jurisdiction of the states. Third, divestiture imposed the "equal access" requirement on local telephone companies, with the effect of requiring them to undertake massive investment plans. Together these new federal policies undermined the historical pricing policies of the states. The first requirement reduced the current and prospective profits of local telephone companies from services that were becoming competitive. The second requirement reduced subsidy flows from federal to state services. The third requirement imposed new costs because it forced premature retirement of switches that could not cheaply be converted to equal access. Thus, prices for monopoly services regulated by the states had to be increased—and relatively quickly—or local telephone companies would be forced to experience significant reductions in profits.[5]

The economic theory of politics, particularly the "new institutionalism" in economic models of policy formulation,[6] provides two in-

sights that are particularly useful to understanding how regulatory policy adjusts to major changes in a regulated industry. One is that, because majority-rule decisionmaking is inherently unstable, democratic political processes are designed to make policy change slow and difficult. The second is that, because in large democracies a single voter is essentially powerless, policy decisions tend to accord greater weight to the preferences of organized groups, which can coordinate their political actions. These two insights suggest several hypotheses about the response of state regulated prices to divestiture and deregulation. First, local telephone companies ought to have fared relatively well. Politically astute state regulators should be more responsive to regulated firms located in the state than to either unorganized customers or national telecommunications firms with principal places of business elsewhere. Second, because ex ante prices reflect the historical political forces in a state, state regulators can be expected to minimize the extent to which changes in federal policy force changes in the structure of state-regulated prices. This implies that the states would strive to maintain the status quo with respect to cross-subsidies. The means for retaining the status quo are to erect barriers to competitive services in the state jurisdiction, and to use carrier access charges for long-distance and other services within the states as a means to generate revenues to offset some local service costs. Third, to the extent that price increases for basic access services were necessary, the pattern should be a "spread-the-pain" policy across customer classes, in an effort to keep price increases below the threshold for motivating political response.[7] Fourth, reflecting the more ambivalent views of business towards regulated price increases,[8] changes in prices for business services would be expected to be larger than changes in residential prices. Fifth, reflecting the change in political representation that has occurred since the pre-divestiture price structure was adopted,[9] prices should be expected to increase more rapidly in rural areas than in large cities. Sixth, any connection between these changes in prices and the service-specific costs of local telephone companies would be coincidental, and driven by the new constraints facing state regulators owing to such factors as federal procompetitive policies and the competitive opportunities created by new technology.[10]

Superficially, the first hypothesis is supported by the initial round of state rate hearings after the announcement of divestiture and several facilitating policy changes by the FCC. Local telephone companies responded by proposing massive rate increases for basic local service, most of which were granted by state regulators (table 5.5). The subsequent profit performance of the divested BOCs was sufficiently strong

that, two years later, large rate reductions were ordered, and the BOCs all but stopped asking for further price increases.

The second hypothesis is confirmed by the initial reactions of most states to the attempt to introduce competition against local telephone companies. Peter Huber's report to the DOJ documents the tendency of most states to prevent competition in intraLATA long-distance and in many competitive forms of network access.[11] The exceptions seem to be related to the creation of relatively narrow competitive niches to serve intensive business users of telecommunications services, such as the metropolitan area fiber optic networks in New York City. Again, this is consistent with the interest-group model of regulatory processes, whereby well-organized groups with intense interests in regulatory policy are provided for. But for most customers, competitive alternatives for local services are generally not permitted, or are not feasible given the nature of regulatory restrictions. Examples are the absence of equal access requirements for facilitating intraLATA long-distance competition, the presence of "block or pay" rules or similar provisions to prevent intraLATA long-distance competition, and restrictions or prohibitions on shared tenant service, whereby groups of residences or small businesses could form a cooperative local system for purchasing access and other services from either local telephone companies or their competitors.

The third, fourth, and fifth hypotheses pertain to the pattern of price changes during the 1980s. To examine whether the patterns and trends in rates conform to these expectations, we have collected single-line service rates for business and residential customers for all BOCs. Single-line business service reveals the price structure for small businesses that generally will not want, or have the opportunity to acquire competitive services. The data were taken from the 1980s series of *Exchange Service Telephone Rates,* an annual compilation of telephone prices assembled by NARUC. Data were collected for all BOCs for the years 1980 through 1988, except for 1984 when the NARUC compendium was not published. From 1980 through 1983, the NARUC data report rates as of June 30 of the year in question; since then, the rates are those that apply as of December 31 of that year. Data were obtained on all states except Alaska and Hawaii, plus the District of Columbia, and on fifty-four separate companies.

Each operating company has separate rates for each type of service and for each of several size categories of local service areas. However, the size categories differ from company to company. To facilitate comparisons among states, rates were collected from each company according to a predetermined set of hypothetical sizes of local service areas.

Ten sizes were used, beginning with the smallest reported area and the rate for an area with one thousand customer terminals, and ending with a locality of one million terminals. The bottom three size categories represent small towns and rural areas.

Many states have no large cities or, if they do, do not offer flat-rate basic service in large metropolitan areas. These states do not quote rates for large local service areas. Hence, sample sizes are larger for rates in small areas than in large ones. In addition, some states report rates for sizes of local areas that do not correspond to any actual communities served by a company within its jurisdiction. These rates were included in the sample only for exchange sizes that are smaller than the largest exchange. The rationale for this decision is that regulators are less likely to have thought through pricing policies for an exchange size that has never existed in the state, but will have given thought to an exchange size that some community has passed through and others may soon enter.

In a few states, the NARUC data pertain to more than one local operating company. Each company within a state is reported as a separate observation, so that more companies are included in the sample than there are states. All of the local companies in the sample are part of the Bell System because, since 1985, only BOCs are included in the NARUC survey.

Table 5.6 reports the average rates for a single-line residential and business service in each year for the ten size categories of local service areas. These averages are unweighted by the number of customers or communities of each size category in each state, and so do not represent the average prices actually paid by customers nationwide. Instead, the table shows the trends in state decisions about price structure. The last three columns show the change in rates between 1980 and 1986, between 1983 and 1986, and between 1986 and 1988 for each size of locality. The last row shows the difference in price in each year between the smallest and largest communities.

The patterns are consistent with the expectations described above concerning the political forces for rate reform. As the decade begins, both business and residential rates are higher in large areas, even though large areas have lower costs of service.[12] This is especially true for business service, for which rates were about twice as high in large localities as in small ones for the entire period before divestiture (through 1983). In all categories of service prices rose dramatically from 1980 to 1986, a trend that was detectable before divestiture was announced. Given the lags in regulatory processes, the 1982 and 1983 data probably do not reflect any effects of *U.S. v. AT&T;* the settlement was an-

TABLE 5.6
Rates for Single-Line Service: Averages for All Companies

	Business										
Size of Locality (No. of Terminals)	*Pre-Divestiture*		*Divestiture Plans*		*Post-Divestiture Plans*				*Change*	*Change*	*Change*
	1980	*1981*	*1982*	*1983*	*1985*	*1986*	*1987*	*1988*	*1980–86*	*1983–86*	*1986–88*
Smallest	$14.33	$15.23	$17.04	$19.98	$25.18	$26.04	$25.83	$25.63	$11.71	$6.06	$−0.41
1,000	14.71	15.62	17.44	20.31	25.45	26.29	26.08	25.87	11.58	5.98	−0.42
5,000	16.33	17.26	19.02	21.80	26.68	27.41	27.19	26.99	11.08	5.61	−0.42
25,000	19.23	20.23	22.08	25.33	29.69	30.34	30.00	29.77	11.11	5.01	−0.57
50,000	20.97	22.14	24.39	27.54	32.32	32.78	31.99	31.74	11.81	5.24	−1.04
100,000	22.93	24.11	26.27	29.64	34.47	34.72	34.22	34.04	11.79	5.08	−0.68
250,000	25.29	26.96	29.25	32.52	37.66	38.05	37.55	37.27	12.76	5.53	−0.78
500,000	27.82	29.54	30.78	34.43	39.08	38.86	38.74	38.33	11.04	4.43	−0.53
750,000	27.91	29.20	33.43	35.23	38.61	37.69	37.49	36.95	9.78	2.46	−0.74
1,000,000	31.55	34.21	34.06	37.56	38.40	37.34	37.22	36.33	5.79	−0.22	−1.01
Difference	17.22	18.98	17.02	17.58	13.22	11.30	11.39	10.70	−5.92	−6.28	−0.60
No. of Companies	50	50	51	50	48	48	48	48			

Residential											
Size of Locality (No. of Terminals)	*Pre-Divestiture*		*Divestiture Plans*			*Post-Divestiture*			*Change*	*Change*	*Change*
	1980	*1981*	*1982*	*1983*	*1985*	*1986*	*1987*	*1988*	*1980–86*	*1983–86*	*1986–88*
Smallest	$6.49	$6.69	$7.42	$8.64	$10.68	$10.92	$10.78	$10.67	$4.43	$2.28	−0.25
1,000	6.60	6.82	7.54	8.76	10.78	11.01	10.86	10.76	4.41	2.25	−0.25
5,000	7.05	7.25	7.97	9.20	11.15	11.36	11.21	11.11	4.31	2.16	−0.25
25,000	7.84	8.05	8.82	10.11	11.95	12.13	11.96	11.85	4.29	2.02	−0.28
50,000	8.26	8.54	9.43	10.73	12.60	12.71	12.52	12.40	4.45	1.98	−0.31
100,000	8.70	9.02	9.92	11.21	12.94	13.07	12.86	12.78	4.37	1.86	−0.29
250,000	9.38	9.72	10.56	11.76	13.64	13.76	13.54	13.44	4.38	2.00	−0.32
500,000	9.87	10.31	10.97	12.27	13.99	13.95	13.68	13.56	4.08	1.68	−0.39
750,000	9.74	10.02	11.33	11.95	13.12	13.11	12.94	12.76	3.37	1.16	−0.35
1,000,000	9.56	9.94	10.37	11.41	13.08	13.28	13.27	12.98	3.72	1.87	−0.30
Difference	3.07	3.25	2.95	2.77	2.40	2.36	2.49	2.31	−0.71	−0.41	−0.05
No. of Companies	52	53	54	54	51	51	51	51			

Source: National Association of Regulatory Utility Commissioners, *Exchange Service Telephone Rates*, 1980 through 1983, and *Bell Operating Companies Exchange Service Telephone Rates*, 1985 through 1988.

nounced in January 1982, but the details were not completed for almost another year. Yet prices increased substantially during the early 1980s, reflecting primarily the effects of inflation and high interest rates, rather than the effects of divestiture and the procompetitive policies at the FCC.

For both business and residential service, the magnitudes of price increases were approximately the same for all sizes of localities during the early 1980s; however, after 1983, business prices in the smaller areas experienced larger increases, both absolutely and percentage-wise, than they did in the larger areas. The effect was to reduce sharply the disparity in prices between small and large communities. For business customers, the difference in prices between the largest and smallest communities fell by about one-third between 1983 and 1986. For residential customers, this reduction was about one-fourth and spread more evenly over the decade. Then in 1987 and 1988, small price reductions were spread more or less equally among all communities, thereby preserving the changes that had just taken place in relative rates. Thus, on a nationwide basis, the trend since 1983 was to reduce the extent to which small towns and rural areas are differentially advantaged in the price structure. This pattern is consistent with the expectation that redistricting can be expected to have reduced the relative influence of rural areas. Nevertheless, the price increases in the early 1980s exhibit no such tendency. Moreover, even by 1988, substantial benefits to smaller communities remained. Prices are still lowest in areas with the highest costs. In fact, the narrowing of price differences by the size of the local area is probably rather small compared to the magnitude of the subsidy to small communities.

Finally, price increases have been substantially larger for business customers than for residential service. (The price cuts in 1987 and 1988 were a little larger for business customers, but not as a fraction of the 1986 prices.) The most interesting aspect of this comparison is that in all but the smallest communities, business rates are now above all extant estimates of the average cost of service. These data confirm the hypothesis that, as a political matter, price increases for small business are more palatable than increases in residential prices.

One difficulty in interpreting table 5.6 is that relatively few states have localities with as many as one million terminals; hence, the averages for small communities are not strictly comparable to the entries for large communities. Tables 5.7, 5.8, and 5.9 report the same data as in table 5.6, but for three categories of states, according to the size of the largest local service area. The results are quite different when the states are so categorized.

Table 5.7 shows prices for states with no large exchanges. (A local exchange of 100,000 terminals corresponds to a population of about 200,000.) Here rates in all size categories have generally risen more rapidly than the national average; however, the pattern of increases has not produced as much of a narrowing of the price differentials between communities of different sizes. This is consistent with table 5.6, which shows that most of the narrowing in rate differentials is accounted for by smaller price increases in the largest communities, none of which is located in the states summarized in table 5.7.

Table 5.8 shows the same data for states in which the largest local service area contains either 250,000 or 500,000 terminals. For the 1980–1986 period, rate increases were greatest for the small exchanges and smallest for the largest exchanges. Most of the reduction shown in the "Difference" row is accounted for by smaller price increases in the largest exchange (500,000 terminals). But the pattern of increases during 1983–1986 was much different than it was during 1980–1983. In the earlier period, the change in prices was approximately equal in all communities; however, in the later period the magnitude of price increases was larger in the smaller localities, especially for business services. Finally, the 1987–1988 rate reductions were essentially equal for all exchanges, except the largest exchange category. The effect was to take back about one-fourth of the reduction in the gap in business prices between large and small exchanges that had opened in the 1983–1986 period. Three-fourths of the reduction in the gap for residential services was taken back. This is not consistent with the hypothesis of declining rural influence; however, the largest price cuts did go to communities in the mid-range of exchange sizes, which correspond to smaller standard metropolitan statistical areas. These results are consistent with the hypothesis.

Table 5.9, showing the states with the largest local service areas, exhibits a small change in the spread in rates between the smallest and largest communities. During 1980–1986, price increases tended to be greater for larger communities, except for relatively small increases for businesses in the very largest areas. Moreover, virtually all of the reduction in the differences in business rates between small and large communities took place before 1983, and it was confined solely to exchanges with one million terminals. The gap between small exchanges and other larger exchanges increased during the 1980s. Finally, the 1987–1988 price reductions were smaller in these states.

Comparison of all the tables reveals that price increases are generally lower in the states with large communities. Indeed, rates in small communities were *lower* in the states with no large cities in 1980–

TABLE 5.7
Rates for Single-Line Service: States With No Large Cities

Business

Size of Locality (No. of Terminals)	*Pre-Divestiture*		*Divestiture Plans*		*Post-Divestiture*				*Change*	*Change*	*Change*
	1980	*1981*	*1982*	*1983*	*1985*	*1986*	*1987*	*1988*	*1980–86*	*1983–86*	*1986–88*
Smallest	$13.04	$13.77	$15.44	$18.56	$25.55	$26.42	$26.22	$26.35	$13.38	$7.86	$−0.07
1,000	13.94	16.64	16.14	19.28	25.99	26.87	26.66	26.80	12.92	7.59	−0.07
5,000	16.66	17.24	18.66	21.25	27.73	28.18	27.95	28.10	11.52	6.93	−0.08
25,000	19.70	20.57	22.36	25.29	32.32	32.64	32.03	32.05	12.94	7.35	−0.59
50,000	22.14	23.33	25.90	28.26	36.72	36.85	36.20	36.24	14.71	8.59	−0.61
100,000	23.14	24.15	26.10	28.80	35.56	36.05	35.70	35.71	12.91	7.25	−0.34
Difference	10.10	10.38	10.66	10.24	10.01	9.63	9.48	9.36	−0.47	−0.61	−0.27
No. of Companies	12	13	13	14	12	12	12	12			

Residential											
Size of Locality (No. of Terminals)	*Pre-Divestiture*		*Divestiture Plans*			*Post-Divestiture*			*Change*	*Change*	*Change*
	1980	*1981*	*1982*	*1983*	*1985*	*1986*	*1987*	*1988*	*1980–86*	*1983–86*	*1986–88*
Smallest	$5.99	$6.05	$6.78	$7.87	$10.40	$10.76	$10.69	$10.75	$4.77	$2.89	$−0.01
1,000	6.23	6.31	6.96	8.13	10.54	10.90	10.84	10.89	4.67	2.77	−0.01
5,000	7.02	7.05	7.68	8.87	11.30	11.57	11.49	11.55	4.55	2.70	−0.02
25,000	7.96	8.08	8.83	10.07	12.53	12.80	12.72	12.78	4.84	2.73	−0.02
50,000	8.56	8.89	9.85	10.98	13.90	14.13	14.05	14.12	5.57	3.15	−0.01
100,000	8.78	9.42	10.20	11.38	13.60	13.95	13.80	13.80	5.17	2.57	−0.15
Difference	2.79	3.37	3.42	3.51	3.20	3.19	3.11	3.05	0.40	−0.32	−0.14
No. of Companies	12	13	13	14	12	12	12	12			

Source: National Association of Regulatory Utility Commissioners, *Exchange Service Telephone Rates*, 1980 through 1983, and *Bell Operating Companies Exchange Service Telephone Rates*, 1985 through 1988.

TABLE 5.8
Rates for Single-Line Service: States With Mid-Size Cities

Business

Size of Locality (No. of Terminals)	*Pre-Divestiture*		*Divestiture Plans*		*Post-Divestiture*				*Change*	*Change*	*Change*
	1980	*1981*	*1982*	*1983*	*1985*	*1986*	*1987*	*1988*	*1980–86*	*1983–86*	*1986–88*
Smallest	$16.48	$17.61	$19.54	$23.68	$29.50	$31.78	$31.01	$29.71	$15.30	$8.10	$−2.07
1,000	16.82	17.97	20.07	23.94	29.76	31.96	31.18	29.87	15.14	8.04	−2.09
5,000	18.17	19.41	21.45	25.12	30.70	32.95	32.15	31.24	14.78	7.83	−1.71
25,000	21.42	22.82	24.78	28.61	33.68	35.77	34.96	34.34	14.35	7.16	−1.43
50,000	23.14	24.59	26.81	30.82	34.82	36.43	35.56	34.65	13.29	5.61	−1.78
100,000	25.41	26.97	29.38	33.28	37.70	39.22	38.27	37.42	13.81	5.94	−1.80
250,000	26.98	28.79	31.16	35.01	39.55	41.21	40.37	39.47	14.23	6.20	−1.74
500,000	31.12	33.42	33.81	38.47	41.09	41.96	42.39	40.94	10.84	3.49	−1.02
Difference	14.64	15.81	14.27	14.79	11.59	10.18	11.38	11.23	−4.46	−4.61	1.05
No. of Companies	19	18	18	17	17	16	16	18			

Residential

Size of Locality (No. of Terminals)	*Pre-Divestiture* 1980	1981	*Divestiture Plans* 1982	1983	1985	*Post-Divestiture* 1986	1987	1988	*Change* 1980–86	*Change* 1983–86	*Change* 1986–88
Smallest	$7.26	$7.50	$8.01	$9.77	$11.99	$12.69	$12.31	$11.85	$5.43	$2.92	$−0.84
1,000	7.38	7.62	8.18	9.86	12.08	12.74	12.37	11.90	5.36	2.88	−0.84
5,000	7.76	8.01	8.58	10.19	12.30	12.98	12.60	12.18	5.22	2.79	−0.80
25,000	8.52	8.79	9.37	11.01	13.10	13.68	13.28	12.90	5.16	2.67	−0.78
50,000	8.96	9.24	9.96	11.63	13.40	13.82	13.41	13.06	4.86	2.19	−0.76
100,000	9.57	9.83	10.62	12.24	14.06	14.52	14.10	13.86	4.95	2.28	−0.66
250,000	10.09	10.42	11.09	12.64	14.76	15.25	14.85	14.66	5.16	2.61	−0.59
500,000	11.00	11.54	11.56	13.41	15.55	15.39	15.22	15.27	4.39	1.98	−0.12
Difference	3.74	4.04	3.55	3.64	3.56	2.70	2.91	3.42	−1.04	−0.94	0.72
No. of Companies	19	19	19	18	18	17	17	19			

Source: National Association of Regulatory Utility Commissioners, *Exchange Service Telephone Rates*, 1980 through 1983, and *Bell Operating Companies Exchange Service Telephone Rates*, 1985 through 1988.

TABLE 5.9
Rates for Single-Line Service: States With Largest Cities

Business

Size of Locality (No. of Terminals)	*Pre-Divestiture* 1980	1981	*Divestiture Plans* 1982	1983	1985	*Post-Divestiture* 1986	1987	1988	*Change* 1980–86	*Change* 1983–86	*Change* 1986–88
Smallest	$12.98	$13.96	$15.82	$17.71	$21.07	$21.22	$21.46	$21.06	$8.24	$3.51	$−0.16
1,000	13.08	14.06	15.92	17.81	21.26	21.40	21.64	21.26	8.32	3.59	−0.14
5,000	14.29	15.23	17.20	19.20	22.47	22.56	22.80	22.07	8.27	3.36	−0.49
25,000	16.78	17.58	19.61	22.41	24.61	24.73	24.91	23.81	7.95	2.32	−0.92
50,000	18.26	19.19	21.62	24.36	28.14	28.20	27.18	26.90	9.94	3.84	−1.30
100,000	20.04	21.06	23.42	26.38	30.60	30.28	30.14	30.03	10.24	3.90	−0.25
250,000	22.81	24.43	27.10	29.67	35.64	34.72	34.72	34.75	12.08	5.22	−0.14
500,000	24.79	25.97	28.61	31.32	37.57	36.71	36.50	36.36	11.92	5.39	−0.35
750,000	27.79	28.11	31.99	33.86	38.61	37.69	37.49	36.95	10.49	3.83	−0.74
1,000,000	30.18	32.07	30.33	34.88	38.40	37.34	37.22	36.33	7.16	2.46	−1.01
Difference	17.20	18.11	14.51	17.17	17.33	16.12	15.76	15.27	−1.08	−1.05	−0.85
No. of Companies	19	19	20	19	19	20	20	18			

Residential											
Size of Locality (No. of Terminals)	*Pre-Divestiture*		*Divestiture Plans*		*Post-Divestiture*				*Change 1980–86*	*Change 1983–86*	*Change 1986–88*
	1980	*1981*	*1982*	*1983*	*1985*	*1986*	*1987*	*1988*			
Smallest	$6.07	$6.36	$7.29	$8.22	$9.72	$9.65	$9.65	$9.51	$3.58	$1.43	$−0.14
1,000	6.11	6.41	7.34	8.27	9.80	9.73	9.72	9.59	3.62	1.46	−0.14
5,000	6.41	6.68	7.65	8.59	10.09	10.01	10.00	9.84	3.60	1.42	−0.17
25,000	7.15	7.37	8.36	9.39	10.67	10.59	10.56	10.34	3.44	1.20	−0.25
50,000	7.49	7.75	8.82	9.92	11.40	11.31	11.26	11.04	3.82	1.39	−0.27
100,000	7.88	8.13	9.26	10.33	11.80	11.71	11.64	11.44	3.83	1.38	−0.27
250,000	8.64	8.98	10.07	10.96	12.57	12.48	12.41	12.16	3.84	1.52	−0.32
500,000	9.12	9.49	10.65	11.64	13.17	13.19	12.99	12.52	4.07	1.55	−0.67
750,000	9.61	9.80	11.00	11.65	13.12	13.11	12.94	12.76	3.50	1.46	−0.35
1,000,000	9.33	9.60	9.80	10.93	13.08	13.28	13.27	12.98	3.95	2.35	−0.30
Difference	3.26	3.24	2.51	2.71	3.36	3.63	3.62	3.47	0.37	0.92	−0.16
No. of Companies	21	21	22	22	21	22	22	20			

Source: National Association of Regulatory Utility Commissioners, *Exchange Service Telephone Rates*, 1980 through 1983, and *Bell Operating Companies Exchange Service Telephone Rates*, 1985 through 1988.

1981, but were *higher* by 1985–1988. As a result, most of the narrowing of the price differential between large and small communities is due to the fact that rates have increased more rapidly in states with no large local service areas. To the extent that federal policy is the force behind the trends in prices, it is causing the differential to narrow primarily by pushing up prices more rapidly in states that do not have large cities. Only in the middle category of states has there been a substantial narrowing of price differentials between small and large communities since divestiture.

The pattern of price changes after divestiture is consistent with the third and fourth hypotheses. For each customer class (residence and small business), most states have more or less increased prices across the board, as predicted by the "spread-the-pain" view. And increases have consistently been greater for businesses than for residential customers. In small and medium-sized states, prices have increased a little less in communities with 100,000 terminals or more, as is consistent with the hypothesis concerning the relative decline of the political importance of rural constituencies; however, as of 1988, this effect was still relatively small.

Finally, in the most populous states, relative rates in small and large communities have not changed very much, and price increases have been lower than in other states. Apparently regulators in these states are under less pressure to raise rates generally, and have had the greatest success in preserving the old pattern of cross-subsidies within the rate structure. The somewhat surprising result is that rural customers now pay lower prices in the most urbanized states, where their political influence is presumably not as great.

The last bit of data regarding post-divestiture price decisions by the states is the pattern of carrier access charges for interLATA toll within the states, as shown in table 5.10. These are the prices charged by local telephone companies for connecting customers to their long-distance telephone company for intrastate long-distance calls between LATAs. As shown in the table, these charges are substantially lower in the largest states, but the meaning of these data is difficult to ascertain. Generally speaking, interLATA carriers have interconnection interfaces with local exchange carriers only in larger cities. Hence, the shorter mileage distances typically connect customers in larger cities to their long-distance carrier, whereas the longer distances are for connections to smaller cities or rural areas. In general, the price structure is consistent with the view that smaller states faced a greater rate shock from divestiture and deregulation, and so imposed a bigger surcharge

TABLE 5.10
Carrier Charges for Premium Switched Access for Intrastate InterLATA Toll, 1987

Local Transport Distance in Miles	AVERAGE TOTAL COST OF SWITCHED ACCESS PER MINUTE OF USE BY SIZE OF LARGEST METROPOLITAN AREA			
	Small	*Medium*	*Large*	*Average*
under 1	$.065	$.062	$.051	$.059
2	.072	.063	.054	.062
6	.072	.066	.054	.062
11	.076	.067	.057	.065
16	.082	.070	.059	.069
21	.082	.070	.059	.069
31	.091	.079	.068	.078
51	.101	.089	.076	.087
101	.111	.096	.081	.094
Total Number of States[a]	7	15	20	42

Source: MCI Communications, Inc.

[a]Eight states and the District of Columbia have a single LATA and, hence, no established carrier access charges for intrastate interLATA toll.

on long-distance interconnection as part of a general "share-the-pain" strategy.

The data also are consistent with a tendency for less populous states to impose a greater price increase for longer distance (and, on average, more rural) service. This reflects a constraint imposed by federal policy, which permits long-distance carriers to provide bypass lines to their customers. This option is economically far more attractive when the customer is a relatively short distance from the carrier's point of presence in the LATA. Unfortunately, the data provide only weak evidence for these hypotheses, for the observed price differences might reflect only differences in costs. Larger states presumably have larger traffic volumes for interLATA calls, regardless of the length of local transport, and so may achieve greater economies of scale. Because pertinent cost information is virtually nonexistent, the conclusions drawn from these prices must be regarded as speculative.

The last hypothesis concerning prices is that only through inadvert-

ence will they reflect costs of service, other than through the requirement that total revenues equal total costs. As with transport costs for carrier access, the actual costs of local service are a matter of considerable uncertainty and controversy. An assessment of this debate is beyond the scope of our discussion. Suffice it to note that the range of estimates is very large. For our purposes, we can simply use estimates of the average cost of local service provided by local exchange carriers (LECs) in various rate hearings during the mid-1980s. Average costs can be compared with prices to determine whether a class of customers is, on balance, subsidized. The estimated average monthly cost from LECs is in the range of $25 to $30 for most states, with lower estimates of under $20 for companies primarily serving only large cities, and high estimates of over $40 from the least densely populated states. These data indicate that in larger urban centers, BOC data would show average costs in the neighborhood of $20. Cost estimates from LECs tend to be at the high end of the range of estimates, so that they can be used as a conservative baseline for identifying customer classes that pay more than average cost for access service.

The comparison between these estimates and the price data in tables 5.6 through 5.9 is interesting, because it indicates for one class of customers—small businesses in areas serving more than 40,000 terminals—divestiture and deregulation may have driven prices away from costs. In these areas, business customers were paying more or less the cost of serving them in the early 1980s (with prices perhaps above average cost in the largest cities); however, by 1985, business customers in all but the smallest areas were paying prices substantially above any estimate of their average costs. Indeed, in localities with more than 250,000 terminals, the price of small business service is between $10 and $20 a month more than estimates average cost.

Much less can be said about residential service prices. The data in tables 5.6 through 5.9 exclude the FCC's customer access charges. If these are added to the prices in the table, residential prices in communities with over 100,000 terminals fall into the range of controversy concerning average costs; however, there is no controversy that for the smallest localities prices were substantially below costs in 1986, yet they were reduced in 1987 and 1988. Thus, divestiture can be said initially to have driven residential prices toward costs, but the effect was small compared to the tendency for small-business prices to be pushed above average costs, and proved to be transitory.

Of course, none of these trends has had much of an effect on the efficiency of the market for access to the telecommunications network. Both residential and small-business demand for service is highly insen-

sitive to price. By contrast, carrier access charges for long-distance companies, to the extent that they exceed the traffic-sensitive costs of access, do create inefficiencies. Thus, the primary import of the pattern of single-line price differences and their relationship to costs is what they reveal about the politics of allocating cost responsibilities among classes of customers. It is unambiguously clear from these data that business customers in all but the smallest communities are paying more than the average cost of service, and that residential and business customers in small exchanges continue to receive a very large subsidy.

In summary, the first responses of state regulators to the new policy environment created by divestiture and federal deregulation reveal the complexity of the politics of regulatory policy. The price increases and the protections against competition which states have given to local exchange carriers provide support for the traditional "capture" theory of regulation. But it is apparent that state regulation of telephones does more than help out regulated firms.

The special provisions for large users in larger states provide support for the influence of organized buyer interests in shaping regulatory policy. The data on single-line pricing also reveal a pattern of pricing that is responsive to another form of political influence—the possibility that the price performance of a regulated industry could be used by a political entrepreneur as a symbol of the overall policy preferences and performance in office of an incumbent politician. The "share-the-pain" pattern of price increases, and the differential increases between residential and business users, are consistent with the response-threshold characterization of the susceptibility of regulatory policy issues to becoming politically salient.

Finally, the somewhat larger price increases for rural customers provide only weak confirmation of the view that declining representation of rural interests should cause the structure of prices to shift against them. However, this effect is quantitatively very small. Most likely this reflects the fact that the impact of federal policy changes on state regulation has thus far been too mild to force serious reevaluation of the overall pricing policies practiced by the states, or that regulatory officials still adhere to the long-standing policy of using telephone prices to redistribute income to rural communities.

State regulation does not show much of a tendency to move prices toward costs of service, or toward other forms of more efficient prices such as Ramsey pricing. This conclusion is tentative, of course, because so little is known about costs. Trends in the rate structure suggest a movement of rural and residential prices toward costs. But urban business prices are moving away from average costs, and rural prices are

not moving much closer to urban prices despite higher costs in rural areas. The difference in business rates across cities is especially strong evidence against the proposition that pricing efficiency is a major force in state regulatory policy.

The prospects are very good for further exploitation by researchers of state decisions about telephone regulation after divestiture to develop a richer model of the politics of regulation. By collecting more data about pricing, policy institutions, and the economic structure of states, a more sophisticated test of political theories of regulation is clearly feasible. It is apparent that the changes in federal policy of the 1980s provide a rich natural experiment for improving our knowledge of the dynamics of regulation by the states.

Almarin Phillips

Roger Noll and Susan Smart provide a study containing interesting and incontrovertible facts about post-divestiture trends in the prices of telecommunications services. They then explain these facts in terms of several hypotheses suggested by the "economic theory of politics." While I have no objection to explorations of this kind, I find it easy to restrain my enthusiasm for the outcome.

The main problem is that the hypotheses put forth by Noll and Smart are not really operational; it is easy to conduct tests that would either confirm or refute them. This difficulty is compounded because, as I show below, the pricing events described in their study can be as well explained by old-fashioned, elementary microeconomics as by the proffered "economic theory of politics."

Before addressing the explanatory value of Noll and Smart's hypotheses, I want to note two more homely hypotheses about the American political behavior. The first is that it is risky in the American political system "to get too big for your britches." This applies to firms and to politicians alike. It is an element in the American scene that AT&T seems not to have learned, despite a prolonged sequence of events that attested to this very fact. AT&T had ample evidence of the mounting pressures for change—*Above 890,* the response to *Telpak, Carterfone, MCI,* and *Specialized Common Carriers* to name a few—but it did little to alter its conduct. Then it found to its dismay in late 1981 that the handwriting was on the wall. We ended up with a remedy that might well have been avoided if the company had been more

introspective about its place in society and, on its own initiative, instituted more modest reforms.

The second hypothesis concerns what I will call the "kick them while they're down (or going down)" syndrome. This behavior appears in the political and regulatory responses to the cataclysmic downfall of a powerful player. Many of Charles Brown's remarks in chapter 1 suggest that AT&T was late discovering this type of behavior, too. Attainment of the goals AT&T sought through divestiture has surely been far more difficult than had been anticipated when the terms of the settlement were arranged in January 1982.

Let me turn now to Noll and Smart's analysis. Noll and Smart's fourth, fifth, and sixth hypotheses are the easiest to criticize. Instead of saying in the fourth that businesses have experienced larger rate increases than residential subscribers because of "the more ambivalent views of business towards regulated price increases," one could more simply attribute the phenomena to the fact that the demands of businesses are generally less price elastic than are those of residential users. And why ought this be true? Not ambivalence at all, I think, but rather because of familiar aspects of the derived demands for inputs that Alfred Marshall clarified about a century ago. If this were not enough, one could add the supplementary note that businesses, to a degree, can internalize the network externality of their having a telephone through the prices charged for goods and services.

Noll and Smart argue that the larger relative price increases in rural areas are attributable to "the change in political representation . . . since the pre-divestiture price structure was adopted." Well, maybe, but there are other equally inviting explanations. It was in the rural areas that the costs of service were (and are) the highest. The cross-payments from the pre-divestiture intrastate-interstate separations process and from intrastate toll pooling arrangements were essential to offset those high costs. The events of the late 1970s—*Execunet II* and the deregulation of CPE, for example—and then divestiture made it clear that this type of revenue sharing would end. The inevitable move of rates towards costs obviously meant that rates would go up most where the ratio of price-to-cost was the lowest (and vice versa).

The sixth hypothesis is either poorly stated or faulty. It is indeed true that "new constraints facing state regulators" have "driven" some of the rate changes for specific services. Overall, however, Noll and Smart show what they claim cannot be shown. Their data and other information indicate that rate changes can be explained by the magnitude of the differences between revenues from specific services and

perceived (but inaccurately measured) service specific costs and/or to differences in demand elasticities. This is true of the general rebalancing between toll and local services and the rate of restructuring within local services. Operator assisted services, maintenance, and installation charges have gone up to reflect costs; rural rates have gone up more to reflect relatively higher costs; business rates—especially small businesses with no bypass alternatives—have gone up more than residential rates because of elasticity consideration. Moreover, with "competitive" interexchange service, AT&T is no longer in the position of being able to internalize the gains in toll traffic that may flow from low access (local) rates. Hence, its incentives for supporting high cost local service to foster interexchange service have been weakened.

I do not question the accuracy but do question the relevance of the first hypothesis, that "politically astute state regulators should be more responsive to regulated firms located in the state. . . ." The problem is that the state regulators lost the battle against rate rebalancing even as AT&T lost its battles. For the most part, NARUC and AT&T fought as one and lost as one. And the second hypothesis, that "states . . . would strive to maintain the status quo with respect to cross-subsidies," if it is different from the first, tells the same story.

The third hypothesis is that a " 'spread-the-pain' policy across customer classes" would prevail "to the extent price increases for basic access services were necessary." Given that Noll and Smart go to some length to explain divergences in price increase across customer classes, one must wonder what this means. If they mean that the rates for all basic local services went up due to general prices, with some going up more than others, they are, of course, correct. But then "spread-the-pain" does not mean anything beyond there having been a general component to the cost increases that affected all basic services. And that, too, is correct even if somewhat ambiguous.

I also have some reservations about interpreting the price trends and political factors noted by Noll and Smart as forecasts of things to continue into the future. Although the facts to date do seem clear, I question whether the regulatory framework and industry structure that gave rise to these so-called trends are themselves sustainable. Is what Noll and Smart show us anything like an equilibrium in either the economic or the political sense? I suspect it is not.

Congruent with the "kick them while they're down" syndrome, the deregulation that AT&T anticipated at the time of the MFJ has not materialized. While price cap regulation now seems assured, AT&T will still be subject to far more rate regulation than are its rivals. Similarly, and also contrary to what had been anticipated, the deregu-

lation of AT&T with respect to enhanced service offerings has not yet materialized, whatever one thinks of *Computer Inquiries II* and *III*. Less noted, but perhaps of no less consequence, AT&T may be bearing a disproportionate part of the cost of service to low-traffic density areas, and to low-volume subscribers. This results from AT&T's carrier-of-last-resort responsibilities and the continuation of rate averaging for ordinary MTS.

I am certain the costs of serving high-density routes and, in fact, the costs of serving large volume customers generally are well below the prevailing rates. This relationship between rates and costs is creating continuing pressure for selective rate reductions, with competitive emphasis on the areas and the customers where large volumes of traffic and significant contributions to profits may be gained. As this continues, we will see greater rate disparities among visible customer groups, with a small number of subscribers receiving high rates (for low call volumes). The availability and the prices for enhanced services will be similarly distributed, with obvious failures to achieve near-universality. Moreover, with the continued handicapping of "dominant firms" —AT&T and the BOCs—I doubt that the structural outcome will reflect comparative efficiencies. More importantly, I also consider it unlikely that the continuation of these trends will reflect the character of regulation, as the structure of the industry will continue to change, partly as a consequence of the rate changes now being observed. Unfortunately, while I make this general prediction with some confidence, I have no idea of the nature of the changes that will occur.

This leads to an additional criticism of Noll and Smart's political analysis. Their "economic theory of politics" is invoked post hoc to explain the past. So far as I can see, it is very limited in its application as a predictive device to forecast the coalitions, the organizations and the political and regulatory pressures that will develop in days to come. It does not tell us in advance which groups will be effective in creating a "saleable political commodity," or help to predict what is likely to happen to the regulatory structure.

Finally, Noll and Smart see divestiture and recent FCC policies as moves "towards deregulating interstate telecommunications services" and as "procompetitive policies." I believe this is an inaccurate representation of the changes that have occurred. All one needs to do is spend an hour or so studying FCC decisions under the rules of *Computer Inquiries II* and *III*, or its handling of pricing issues in AT&T's Tariff 15 to know that we are a long way from deregulation and open competition. The handling of the FTS 2000 matter is another case in point.

Overall, I end up with the feeling that political theories may be useful in explaining the attacks on AT&T in the 1960s and 1970s, but that these theories add little to the explanation of what has happened in telecommunications market places since then.

Ronald G. Choura

Noll and Smart address an important issue today in telecommunications. However, I find myself in disagreement with a substantial portion of their conclusions. Like many authors who review the regulatory process, Noll and Smart only look at a portion of the facts and base conclusions on desired results, instead of looking at the same facts the regulators used to make their decisions. My perspective is that of a state or federal staff regulator.

There is no question state and federal regulators, prior to the early 1970s, coexisted with little conflict. AT&T and the BOCs were able to work out many of the problems associated with the two regulatory jurisdictions. Compromises between the interexchange and exchange carriers helped significantly in maintaining harmony between state commissions and the FCC. If obtaining these compromises is considered "running the process," then AT&T did just that prior to 1980. However, AT&T was losing some of its control by the late 1970s.

AT&T's loss of control over state and federal regulators began with the concern that costs were being allocated unfairly with respect to both the intrastate jurisdiction and between services. On the state side, this concern was first evidenced in the early 1970s, with the issues of license contracts between AT&T and the BOCs, the integration of Alaska and Hawaii rates to those of the mainland states, and allocation of central office circuits plus cable and wire facilities between the state and interstate jurisdiction. As early as 1973, state regulators were asking the FCC to set up a Joint Board, as provided for in paragraph 410(c) of the Communications Act of 1934, to review many of these cost-allocation issues. The FCC did set up a Joint Board for the Alaska and Hawaii issues in the 1970s, and later again in the mid-1980s (in Docket 83-1376). And after significant pressure, the FCC finally set up a Joint Board to look at all the cost-allocation issues in June 1980 (in Docket 80-286). Most of these events occurred prior to the announcement of the divestiture settlement.

The states were very vocal about the settlement agreement AT&T worked out with the Justice Department. In fact, state regulators did not like many of the original decree conditions, such as the LATA

boundaries, allocation of Yellow Pages and assets to be transferred to AT&T. If it were not for the Justice Department and Judge Greene deciding in favor of the states position, AT&T would have done things differently. Reflecting this division of opinion, the discussions and negotiations between the regulators and AT&T were very much less than friendly during the 1982–1989 period.

As for the allocation of costs between the federal and state jurisdiction, the only real issues raised during divestiture were the cost of divestiture and the cost of implementing MFJ-mandated equal access service. Again, the final outcome differed significantly from what AT&T had advocated. Federal and state regulators were philosophically light years apart on the proper long-distance cost allocation procedures, and only the intervention of Congress led to an eventual compromise settlement.

Noll and Smart indicate that states faced significant rate increases at the time of divestiture. In fact, rate increase requests began in the early 1970s, at a time when the country was suffering from an economic recession and telephone companies were facing cutbacks in employees and expense spending. Most telcos were earning below authorized rates of return and were going to file rate increases whether divestiture occurred or not. Pre-divestiture rate increases were the result of a number of factors, such as rural upgrade programs for multi-party to one-party; upgrades from electromechanical to electronic equipment; the need to expand equipment to meet the increasing demand for telecommunications in the economic development of the country; the introduction of competition in selected services markets which forced rate restructuring; and the consumer demand for a higher quality of telephone service in all areas, not just urban. These factors and others contributed to significant differences of opinion between state and federal regulators, which are not explored by Noll and Smart.

Noll and Smart discuss how the regulation of telecommunications is a political process and mention various factors driving that process. I agree strongly that telecommunications regulation is a political process, but it is not limited to the factors addressed by Noll and Smart. There are many other important externalities that also drive the process. One consideration not mentioned is coverage by the local media. Is telecommunications being covered, or are other concerns such as nuclear abandonment, water problems, sewer problems, or electrical energy problems attracting more attention? An absence of telecommunications coverage by the media usually enables the industry to control the process more.

Yes, economics also drives the process. The "bottom line" is among

the most important, if not the number one factor. If rates are increasing for any user group, that group usually gets concerned. And the greater the financial importance of telecommunications to the user, the more vociferous the user will be in trying to reduce or eliminate the proposed rate increase. If rates are going down, users and consumers generally do not get as aroused.

Noll and Smart cite divestiture and federal deregulatory policies as the primary catalysts for change. There is no question these have been extremely significant influencing factors. However, other factors may have been equally important. We are facing an information explosion, and the telecommunications industry is an integral part of information delivery. Increasingly, people need and demand telecommunications in order to conduct daily business. The more users depend upon telecommunications service and notice the effects of service changes, the more they will learn how the telecommunications policy process works and how to manipulate it in order to achieve their own goals. For example, the new enhanced service providers (ESPs) want to find a way to access the telecommunications network more cheaply. Most of them are large corporations with lobbyists and people who are well-educated in the regulatory and governmental arena, and they have learned the policy process very well. They were thus able to avoid paying access charges paid by the majority of carriers or competitors to AT&T.

Noll and Smart state that business rates are rising. Although rates are going up for some business customers, the real question is "which business rates?" Are these higher rates paid by small businesses who have not figured out how to manipulate the policy process to their advantage? What about the rates for the big businesses? General Motors and IBM have not experienced rate increases. Those contract rates, such as Tariff 15 mentioned by Almarin Phillips, have decreased to levels significantly below average cost. It is the large companies who benefit the most from the federal subscriber line charge implementation on the local residential and small business customer—who now pays billions of dollars once paid by big business. These large companies can negotiate special contracts for telecommunications service and get basic Centrex service at per-line cost below those paid by residential and small business customers. None of these costs are considered by Noll and Smart.

Noll and Smart conclude that service costs have little or no role in state regulation. That is not true for those states in which state commissions require cost filing. For years, Michigan, like many other states, has required cost study support to be provided for new service offerings as well as for backup to major rate restructurings. State commissions

also have developed intrastate cost allocation procedures for intercompany settlements, even separating out individual service cost. In Michigan, we are making the process open to public review by setting specific open proceedings to review the cost allocations.

Issues of cost and cost allocation are becoming increasingly important and will merit even more attention as the political process becomes less opaque. Once the customer and businesses learn how cost allocations work, understand all those little acronyms the telephone people use, and know how to play the game with the state regulators, their interest in costs will become even greater. This will be especially true if competition continues to exist in only a portion of the telecommunications service market. In this environment, customers as well as the competitors will be concerned about cross-subsidization.

The real issues seem to be whether the prices businesses and residential customers pay for telecommunications services have been increasing or decreasing, and the overall economic effect of the current trend of deregulation on the telecommunications infrastructure in this country. The readers of this volume should be able to make their own judgments based on the services they buy and use. What is your opinion? On a per person basis for the access to telecommunications services, do you think it is cheaper to live in New York City or in Lansing, Michigan? The question becomes very simple. Is telecommunications easier and cheaper to provide in the big urban areas or in the small rural communities? There are a wide variety of cost studies generating numerous different figures. It is necessary to ask if the people who develop the figures develop them correctly and depict the true picture, rather than producing and manipulating them for self-serving ends.

We regulators see all kinds of cost studies. For example, four or five years ago, when there was no competition in pay phones, telephone companies went before every state commission and claimed a rate increase to twenty-five cents per call was absolutely necessary, to avoid continuing to lose money on every call from public telephones. Now telcos are saying public pay telephones make money, and providers can afford to pay substantial commissions to keep the telephones in business owners' locations. When COCOTs threatened their markets, the telephone, companies submitted cost studies with only two or three line items. Whereas, they had included everything except the kitchen sink only five years before. What happened to all those other line items? This illustrates why cost studies will become an important part of the policy process in the future.

The primary issue here is very clear; as competition is introduced in the big markets, there is an incentive for telecommunications providers

to cross-subsidize the competitive service offerings with service revenues from the less competitive markets. That is the essence of the Noll and Smart discussion. The telephone companies and regulators feel they have to cross-subsidize somewhere, and thus the question becomes how far and how fast they can do it and still survive politically. Basically, competition drives prices either to cost or to anticompetitive pricing—which one of them I am not certain.

State regulators are left with two options to avoid anticompetitive pricing: either initiate cost studies and address the problem to make sure it does not happen, or get out of the business of regulation and leave the customers to fend for themselves. Both courses of action are being pursued on the state level. The last few years have seen half of the regulators getting out of the business of regulation, and the other half conducting extensive cost studies to try to prevent the anticompetitive and captive customer abuse activities.

Unquestionably, small business and residential customers are going to get hit hard because they have not yet learned how to lobby effectively for their concerns. Big businesses in the competitive areas will fare well because they have the resources and technical expertise to get what they need, such as special contract deals for Centrex and Tariff 15s.

Noll and Smart assume state regulators are not concerned about costs. I disagree. The number of resolutions NARUC passed in 1988 and 1989 with regard to costs demonstrates that regulators do care. They will continue to do so as they get better information and as cross-subsidization becomes more prevalent with the introduction of more competition in selected markets of the existing dominant carriers.

Dennis L. Weisman

Noll and Smart's analysis is both insightful and thought-provoking, and is one with which I find myself in substantial agreement. If one writer were to suggest a "shadow title" for their discussion, it might be something like "Neither Political Rents Nor Monopoly Rents Are Parted With Easily." This seems to represent the central theme. My comments will, of necessity, cover some aspects of regulation and competition in order to do the pricing issue justice.

In the beginning of their study, Noll and Smart make the salient point that, until the FCC embarked on procompetitive policies and certainly prior to divestiture itself, the policies governing intrastate and

interstate telecommunications were closely aligned. However, if once upon a time the FCC and the state public service commissions were marching to the same drummer, they certainly are not today. This raises the question of whether the regulatory structure currently in place is actually sustainable.

I contend that technology and competitive entry in telecommunications markets are rapidly blurring any meaningful distinction between interstate and intrastate telecommunications. Arguably, the only entities that possess LATA maps today are the regulators and the declining portion of the industry they regulate. The history of telecommunications regulation over the last two decades is fraught with examples, from *Above 890* through *Carterfone* to *Execunet,* of technology pushing competition further and faster than the regulatory and judicial decisions initially envisioned.

A recurring theme, and one that figures prominently in the comments of William Baxter and Charles Brown in this volume, is that there are "too many regulators" in telecommunications today. While the inference has been that Judge Greene—the "third and uninvited" regulator—should perhaps step out of the picture because he is upsetting the balance of power, it is entirely possible that two regulators are, in fact, one too many. If one looks carefully at the current structure of telecommunication regulation, it seems peculiar that there is a separation of powers between control over market entry and control over ratemaking. This is by no means a new phenomenon, but it is perhaps more critical today than it was in the past. For example, the effect of the FCC's *Above 890* decision in 1959 was to sanction competition in both interstate and intrastate telecommunications markets. And yet, the ratemaking powers for intrastate telecommunications were reserved for the state Public Service Commissions, who were not necessarily as enamored with the benefits of competition as was the FCC.

The dichotomous regulatory structure is not unlike a tandem bicycle, with the rider in front and the rider in back pedaling in different directions. Each rider may have a perfectly good reason for pedaling in the direction he has chosen, but the end result is still the same—pedaling in place with little progress over the desired route. Whatever this regulatory structure yields, and regardless of the good intentions of those who believe "their policies are serving the public interest," it is less than clear the collective social good is being served by this morass of regulatory authority.

Coalitions of individual users are building their own private networks and thereby bypassing not only the common carriers, but the regulatory process as well. The effect of this proliferation of private

networks is a degree of fragmentation of our telecommunications infrastructure far beyond that which we would expect with economically efficient rates structures in place, and with a consensus on the direction of telecommunications policy. Increasingly, users cite "regulatory uncertainty" as one of their primary reasons for bypassing.

Telecommunications, quite unlike other regulated industries, such as natural gas and electric power, is a service jointly consumed in a spatially diverse manner. In this respect, telecommunications is probably more like air travel than it is like electric power or natural gas and we can conceive of the telecommunications network as the "skies" through which messages travel. Suppose commercial air travel were regulated in the same way as telecommunications—i.e. on a jurisdictionally specific basis. The FAA directs all eastbound commercial aircraft to fly at odd altitudes (e.g., 33,000 or 35,000 feet) and all westbound aircraft to fly at even altitudes in order to diminish the likelihood of midair collisions. Safety is the principal motivation for regulating air travel in this manner and there is some obvious logic in this type of regulation. But suppose a (hypothetical) state aviation administration (SAA) summarily decides to reserve the authority to regulate intrastate air travel. In doing so, the SAA decides the public interest is best served if eastbound commercial aircraft fly at even altitudes, and westbound aircraft fly at odd altitudes. I think it is clear there is a very high social cost indeed when interstate and intrastate regulation are out of sync with one another in this fashion.

The dichotomous regulation of state and interstate telecommunications presents a similar problem. This is why the insight of Noll and Smart regarding consistency between state and federal regulatory policies is so critically important. As long as the two sets of regulators were in policy harmony with one another, it was as if we had only one set of regulators and the structure was sustainable. Although many observers would look at the state of telecommunications regulation today and say that the dichotomy serves as checks and balances, separation of powers or "little laboratories"—I do not believe it is really any of these. It is a gridlock that will be broken in a most inefficient manner due to the distorted economic incentives being propagated through this multi-tier regulation.

I will move on from the benchmark of regulation today to the trends in local service rates, for which Noll and Smart provide some interesting data. Although state regulators appear to set prices according to some Ramsey pricing rule, unfortunately, the elasticities they use are not price elasticities, but political fallout elasticities. The Ramsey pricing rule states that, should departures from marginal costs be necessary

in order to sustain a firm subject to a specified profit constraint, welfare losses are minimized when the departures from marginal costs are set in inverse proportion to the absolute values of the price elasticities of demand. In other words, departures from marginal cost are greatest in the least elastic markets, and least in the most elastic markets. This so-called Ramsey-Optimal rule is not generally practiced in the telecommunications industry today; if it were, toll and switched access prices would be set at much lower levels and basic local service rates set at much higher ones. In fact, quite the opposite is true, and this has resulted in welfare losses estimated at about $10 billion annually in telecommunications markets.[13] Another interpretation is that it costs society about $10 billion annually because telecommunications prices are set in accordance with a Ramsey-Political as opposed to a Ramsey-Optimal pricing rule.

The central theme of Noll and Smart suggests, instead of following a Ramsey-Optimal rule for setting telecommunications prices, regulators "appear" to be setting prices in a manner that minimizes "political fallout." We could define a political fallout elasticity as the ratio of the percentage change in votes (or electoral support) to the percentage change in the price of particular telecommunications services. Prices set in a manner to minimize political fallout—or equivalently in inverse proportion to the absolute value of the political fallout measures—are therefore set according to a Ramsey-Optimal pricing rule.

From the Noll-Smart analysis, it appears that price elasticities of demand for specific telecommunications markets run exactly opposite to the political fallout elasticities. It is important to inquire why this occurs. Local rates for telephone service have always been a politically charged issue. When the performance of regulatory commissioners in protecting the "public interest" is held up to public scrutiny, their stance on local rate increases almost always receives the most attention. Although we may want to say "no, it really does not work that way," the data is, at the very least, seemingly consistent with the Ramsey-Political rule. We may not be able to accept the hypothesis, but we certainly must fail to reject it.

One very interesting dimension of the Noll-Smart analysis is the hypothesis that state regulators do not rely upon costs of service to any great (or perhaps discernible) extent in setting rates. Ronald Choura vigorously challenges this hypothesis, and emphasizes that the Michigan Commission requires Michigan Bell to file very extensive cost studies. There are, of course, literally an infinite number of different cost study methodologies, including studies of fully distributed, incremental or embedded costs. Rates based on any one of these cost studies

could legitimately be referred to as "cost-based," but this is quite misleading. It can be truly said some of the greatest sins of man have been committed under the guise of "cost-based pricing."

For the economist, the term cost-based pricing means something very specific—prices that are based on some measure of marginal or incremental cost. The key attribute, of course, is that the relevant measure of costs is grounded in the principle of causality. All of these other measures of cost—based on some fully distributed cost methodology—are little more than meaningless manipulations of data (or revenue requirements) designed to rationalize some predetermined outcome. One can call them costs, it really does not matter what one calls them, but they are meaningless, or worse, from the perspective of economic efficiency.

Choura goes on to castigate Michigan Bell for filing cost studies for coin phones that showed dramatic differences before and after competition entered the market. I do not know the details of the example in question, but he raises an issue that should be addressed. I submit that his complaint is simply a manifestation of cost studies that are not grounded in sound economic principles. Arbitrary cost methodologies can be used to justify virtually any rate structure. The inference, of course, is that the cost study was conducted in such a way as to advantage Michigan Bell vis à vis its competitors in the coin-phone market. Assuming the cost study were able to be altered in this manner (in fact Michigan Bell did so), and given that the Commission has authority both to require and review specific cost studies (as it most surely does), then Choura has only succeeded in attesting to the Commission staff's inability to properly monitor the output of an arbitrary costing methodology.

Another area for discussion is the prospect for change in state regulation and how this will drive change in the pricing of telecommunications services. Competition will be the major factor influencing changes in pricing at the state level, and we are already starting to see signs of the dam breaking. Peter Huber's report, which examined the nature of competition in the telecommunications industry, concluded that the telecommunications marketplace is poised for significant, profound and surely irrevocable changes.[14]

As for the equity/efficiency aspects of telecommunications pricing, I believe that once competition is allowed in a market, there ceases to be any meaningful equity/efficiency pricing tradeoff. This does not imply that some form of subsidy is not warranted, but such measures should be targeted to economically disadvantaged households, as needed, rather than to the service class as a whole (i.e., one party flat-rate residence

service). Competitors frequently argue that incumbent firms should be required to set prices with a view toward equity considerations as defined in the regulated monopoly era. These statements, however, are frequently little more than thinly veiled attempts to promote their own interests by enjoining the regulated carriers to inefficient prices that in turn favor their own services. Since competition is most intense precisely for those customer classes supporting the majority of the cross-subsidies, any attempt to maintain this level of subsidy in competitive markets will only result in the burden of the revenue requirement falling disproportionately on those customers for whom regulators hold the most steadfast equity interest—small business and residence ratepayers.

What about the prospects for convergence between Ramsey-Political and Ramsey-Optimal pricing? There are two primary forces that will serve to cause price elasticities and political fallout elasticities to converge. First, state legislatures are increasingly interested in attracting new businesses to their states in order to promote economic development. To the extent that economically efficient pricing is a key factor in the location decisions of businesses, regulators could be expected to look upon such a rate structure more favorably. Second, competition will ultimately cause the political interests of the regulator to be more closely aligned with the economic efficiency interests of the economist. In other words, what the regulator views as equitable pricing under competition will increasingly begin to look like economically efficient pricing.

Some rather significant changes in the structure of telecommunications pricing will occur over the next five years. The vast majority of costs are caused not in providing actual use over the network but in providing the option of use. When costs are incurred in providing the option of use, while services are being sold primarily on the basis of actual use, "transactions asymmetry" exists. This is a source of financial risk for firms in competitive or transitionally competitive markets, such as telecommunications, because capital is being deployed with the expectation that demand will materialize to recover investment. The more competitive the market, the greater the financial risk for any individual firm. We should therefore expect firms subject to increased risk to alter the structure of their sales transactions in a manner that brings about a greater degree of "transactions symmetry," which in turn will reduce their overall level of market risk.

The implications of this "transactions symmetry" hypothesis for the future of telecommunications pricing are two-fold. First, an increased emphasis will be placed on the use of two-part and multi-part tariffs,

where the first part of the tariff is a buy-in or option fee, and the second part is usage charge that varies inversely with the price of the option. Second, there will be an increased use of explicit contracts between carriers and customers. In large measure, these explicit contracts serve the role that the "regulatory contract" served prior to competition (i.e., to restrict competition and thereby reduce market risk). Undoubtedly these transactions changes will occur first in the high risk or competitive segments.

Optional calling plans are probably just the beginning of this phenomenon. These plans incorporate buy-ins or option fees for the purchase of blocks of calling time, or simply offer discounts off the standard usage price. Extended area service and expanded local calling scopes, wherein intraLATA toll is shading into local service, are further examples of this trend.

Finally, as Almarin Phillips suggests, the carrier of last resort issue will figure prominently in the evolving telecommunications marketplace. We are not that far away from the time when carriers will charge their customers for the option of standing by as carriers of last resort. This is a prime example of a situation in which regulators will be forced into efficient pricing in order to preclude inequity for residential and small business customers. This is because failure to charge for carrier of last resort services in a competitive marketplace will actually result in a flow of subsidies from residual customers to bypassers. Under strict usage sensitive pricing, those customers partaking of bypass and private networks—predominantly large and medium business —will receive a de facto "free insurance" policy for stand-by service, paid for by small business and residence customers who do not have such an array of options. While regulators will probably view this as inequitable, it is also economically inefficient. Customers using competitive alternatives should pay directly for stand-by options that insure service provisioning, but impose substantial costs on the carriers.

Susan D. Fendell

Roger Noll and Susan Smart postulate that recent rate increases are essentially due to various political and economic forces. To the extent that the RHCs have significant influence over regulators and those who appoint them, Noll and Smart are correct.

The RHCs are enormous corporations, each with approximately a billion dollars in revenue each year. In contrast, residential consumers

are less organized and have fewer resources than large businesses, be they large business customers or the BOCs. Indeed, the resources, both political and economic, of the RHCs and AT&T should never be underestimated. Compared to consumer groups, their funding is limitless.[15] Compared to legislators and regulators, the RHCs and other companies' longevity is eternal. Even with respect to the courts, the telephone industry is overpowering in money, lawyers, technical expertise, and to a certain extent, persistence.

Furthermore, these corporations employ brilliant tacticians. For example, telephone companies sponsor legislation permitting, though not requiring, the regulating agency to deregulate telecommunications services or companies. This variety of legislation is difficult to lobby against because it does not require deregulation, but merely allows the agency with the most familiarity with the subject to consider deregulation as an "alternative." This type of legislation also curries favor with regulators, who, of course, have no doubt as to their ability to be just, reasonable, and wise in their determination when to deregulate.

The telephone companies are also masters of public and press relations. They have access to widely viewed advertising, not only in the form of telephone bill inserts, but also (more importantly perhaps) on television and radio. Local newspapers are hungry for pre-written editorials, and most reporters (on small and large papers alike) are woefully ignorant of the telephone issues currently being debated, except for the little information gleaned from company spokespeople and press releases.

Additionally, charitable donations provide telephone companies an inexpensive means of garnering community support. The telephone companies also improve their relations with their communities by establishing consumer councils composed of community leaders, who usually have little or no expertise in telecommunications. The overt purpose of these councils is to provide the companies with community feedback on their services. However, these councils also conveniently provide the companies with an allegedly neutral forum in which to feed community leaders a steady stream of pro-company information, usually about the wonders of new services.

The motives of companies for establishing links with consumer groups should not be misinterpreted. A 1988 AT&T document on the management of consumer affairs spells out the company's motives and tactics:

> The advisory committee (on consumer affairs) began its work by focusing its mission and clarifying its objectives. The committee

> agreed that it should only address organized consumer movements, not consumers as end users. Further, it was agreed that the overriding goal of consumer affairs should be to help AT&T achieve its business objectives. . . . Mitigating the negative influence of national consumer organizations on AT&T's business objectives should be the number one priority for consumer affairs.

The document goes on to say that liaison work with national consumer organizations (specifically naming the American Association of Retired Persons (AARP) and United States Public Interest Research Group (US PIRG), among others) is "imperative" and "will produce less opposition from these organizations and their leaders."[16]

Perhaps the telephone industry's public relations coup is the shaping of the language used to discuss its essentially self-interested deregulation initiatives. While the term "deregulation" may conjure up images of corporations attempting to avoid societal oversight in order to reap higher profits, the terms the industry uses to describe its deregulation initiatives invoke images of the public good. The terms by which various forms of deregulation are known include: social contract, incentive ratemaking, price caps, alternative regulation, and streamlined regulation. Social contracts might be more accurately referred to as "retention of excess earnings plans."

Together, deregulation and the rate increases granted to the local BOCs in the years proximate to divestiture have combined to raise local rates and raise the overall bill of residential customers. In August 1989, the FCC reported the average telephone ratepayer was paying 52 percent more for flat-rate local telephone service than just prior to divestiture.[17]

The BOCs, which offer a combination of competitive and monopoly services, naturally seek to lower the prices of their more competitive services and make up the difference by raising the prices of monopoly services. According to the Federal-State Joint Board, local service charges (including subscriber line charges) increased at an annual rate of 1.9 percent for the first ten months of 1988, while the price of interstate toll calls fell at an annual rate of 1.5 percent, and the price of state toll calls fell at an annual rate of 4.8 percent.[18]

The BOCs and others claim that sufficient competition exists to alleviate the need for regulation to control prices. Advocates for residential customers disagree on the following premises. First, effective competition does not exist for most telecommunications services. Most persons agree that basic local exchange service is not competitive. Second, more than the presence of competition is necessary to justify

the abandonment of regulation of what has become a basic necessity.

Telephone companies are not seriously competing for the residence market. The rate changes since divestiture confirm this. They also confirm that residential customers lack political and economic power comparable to the BOCs and big business customers. For example, business customers use long-distance services more than residential customers. Charges for local exchange service account for less than half of the average monthly bill of small businesses.[19] Since divestiture, long-distance phone rates dropped 33 percent, while local rates increased in an average of 47 percent.[20] According to a study performed for the Small Business Administration, those interstate and intrastate toll reductions that have occurred tended to favor business customers[21]

Telephone companies are competing for big business customers who use high-tech services. Digital switches are not being deployed by the BOCs just to provide equal access, but to provide end-to-end digital connectivity to allow for error-free data communications. With business usage and revenues—both local and long-distance—growing faster than residential usage,[22] the BOCs are merely responding in a rational manner to current market conditions.

The legitimate fear that monopoly services will cross-subsidize the more competitive service offerings is another reason why consumer advocates oppose deregulation. Many consumer advocates believe basic local service has been subsidizing long-distance and enhanced services. For years, residential rates were set on a residual basis. Thus, basic local exchange service was, and is, often unjustly saddled with common and joint costs not directly attributable to any particular service.[23]

Cross-subsidization also occurs due to the manner in which rates of return are set. The level of the rate of return reflects the risk of investment. Services that are competitive are more risky than services which are not, yet the same rate of return is incorporated in the rates of all services. This unfairly burdens basic local exchange ratepayers—the BOCs' monopoly customers—with the risk associated with competitive services.

In addition, residential ratepayers subsidize business services when the investment costs incurred to provide data and enhanced services for business are allocated to basic local exchange service. Digital switches and fiber optics just are not necessary to provide plain old telephone service (POTS); therefore, the costs associated with switch replacements and other "modernization" should not be allocated to those services. Similarly, if depreciation rates are accelerated to account for the rapid replacement of plant and equipment to meet competition or

the needs of high-tech business customers, the customers of noncompetitive, basic services should not bear the higher expenses associated with that acceleration.

Many telephone company advocates, including Dennis Weisman, suggest that rates for competitive services must be set at marginal cost to optimize social welfare. However, cross-subsidies cannot be determined or prevented in the telecommunications industry if the rates for competitive or enhanced services are based on marginal costs. This is because whenever a large amount of undepreciated jointly-used equipment exists, the marginal cost of a service will always be less than its stand-alone and fully embedded costs.

Weisman also advocates Ramsey pricing. Ramsey pricing allocates overhead costs to those least able to avoid such costs. The proponents of marginal cost-based pricing and Ramsey pricing ignore the fact the adoption of such pricing schemes by commissions represents a severe distortion of their traditional regulatory role, which is to protect monopoly customers from exploitation.

A preferable means to set prices and to control cross-subsidization is for regulators to determine the stand-alone cost of providing each of a utility's services, and then determine the savings achieved by jointly offering the services. Those savings should then be allocated to the services based on the stand-alone costs of each.[24]

Ronald Choura notes that the Michigan Commission requires its utilities to submit detailed cost studies. However, the mere presence of cost studies does not uncover and prevent cross-subsidization. As Weisman states, "some of the greatest sins of man have been committed under the guise of 'cost-based pricing.' " Nonetheless, such studies should not be abandoned altogether or limited to incremental costs. Carefully structured, and with all assumptions exposed, stand-alone cost studies provide useful benchmarks for setting rates.

Unfortunately, most state utility commissions and the FCC permit cross-subsidization either through reliance on residual pricing or the allocation to basic local exchange service of costs associated with competitive business and enhanced services. This means that, if rates are frozen or prices capped at their current levels, rates for basic local exchange service will remain unfairly high.

Advocates for residential customers also oppose price caps and similar approaches to deregulation on the grounds that they do not recognize that telecommunications is experiencing declining costs. For example, the cost of fiber optic cable, which the companies are installing in lieu of or in addition to copper cable, has fallen dramatically. Moreover, the companies claim new technology reduces the cost of mainte-

nance and the building space required to house switches.[25] Walter Bolter and James McConnaughey in this volume describe additional cost reductions the telecommunications industry is experiencing.

Because the telephone industry is a declining cost industry,[26] the BOCs and other telecommunications companies prefer to avoid regulation that examines their profits. At the same time, consumers have an interest in maintaining routine regulatory review of utility profits and expenses to ensure that rates are no higher than the minimum necessary to meet constitutional requirements.

Provisions that tie rate increases to the CPI or similar indexes are particularly unjust.[27] There is simply no evidence that the CPI or any other such cost index is related to the cost of providing telephone service.[28] For the first ten months of 1988, the overall annualized CPI rose by 5.0 percent. During the same period, the CPI for telephone services increased at an annual rate of 0.1 percent.[29] A study by the New York State Public Service Commission staff indicated that if a price cap model allowing for such an indexing were in effect from 1978 to mid-year 1987, the rates for AT&T would have exceeded actual rates by approximately 150 percent. Even with a productivity adjustment of 3 percent per year, price cap rates would have exceeded actual rates under cost-of-service regulation by 70 percent.[30]

Consumer advocates have additional concerns with the trend toward deregulation. Universal service is yet to be achieved,[31] and the FCC's Lifeline and Link-Up programs are of questionable efficacy in attaining that national goal.[32]

Those of us who question the benefits of deregulation and point to the dangers of cross-subsidies will have a difficult time proving such cross-subsidies flourish where deregulation is permitted. Because the BOCs control—either directly or indirectly—information critical to such analyses, regulators must establish information-keeping guidelines for the companies that will allow the impact of deregulation to be monitored. The utilities must be required to keep adequate records of the expenses, investment, revenues, and network usage associated with both deregulated and regulated services. If the utilities fail to maintain such data, they will be able to evade review.[33]

One other issue in telephone pricing is local measured service (LMS). Suffice it to say many persons believe LMS raises the cost of providing local service and is particularly detrimental to low-income customers who rely on fixed monthly incomes. Telephone companies prefer mandatory LMS for a variety of reasons, particularly its revenue-enhancing abilities. But LMS has gotten a bad name and has even been outlawed in some states, so the companies have taken a different tack to achieve

the same ends. They do this by proposing rate plans that so limit the primary calling area (that area which can be called without unit or toll charges under flat-rate service) as to effectively implement measured service. Again, the companies are master linguists, cloaking their rate design strategy in terms of offering more options, while in reality laying the groundwork for charging higher prices for basic flat-rate telephone service that encompasses the customer's community of interest.[34]

The success of the BOCs and other telecommunications companies in pressing their ratemaking agendas to augment profitability is due, not to the inherent "rightness" of their positions, but to their economic and political power. Large business users are able to obtain their goals of lower rates for essentially the same reasons: they are economically and politically powerful and their agendas coincide with those of others in the same position. Residential customers, on the other hand, are powerful in neither sense: as monopoly customers, they lack the power of the pocketbook; as diverse, unorganized individuals they lack political clout.[35] At most, residential customers may be represented in rate cases by an underfunded, understaffed state agency.

Because the resources of consumer advocates are infinitesimal compared to the RHCs, only a strong, organized consumer movement can halt the trend of lower rates for big business at the expense of higher rates for residential customers.

ENDNOTES

1. For an account of the near termination of the case in late 1980 and early 1981, see Peter Temin, with Louis Galambos, *The Fall of the Bell System* (New York: Cambridge University Press, 1987).

2. For more details about how divestiture disrupted the relationship between federal and state regulators, see Roger G. Noll, "State Regulatory Responses to Competition and Divestiture in the Telecommunications Industry," in Ronald E. Grieson, ed., *Antitrust and Regulation* (Lexington, Mass.: Lexington Books, 1986).

3. For details about the effects of divestiture on prices, production costs, and market shares for competitive products and services, see Roger G. Noll and Bruce M. Owen, "*U.S. v. AT&T*: An Interim Assessment," in Stephen P. Bradley and Jerry A. Hausman, eds., *Future Competition in Telecommunications* (Boston: Harvard Business School Press, 1988).

4. For details on how and why the DOJ insisted on placing numerous constraints on the BOCs, see Roger G. Noll and Bruce M. Owen, "The Anticompetitive Uses of Regulation: *U.S. v. AT&T*," in John E. Kwoka, Jr., and Lawrence J. White, eds., *The Antitrust Revolution* (New York: Scott, Foresman, 1989).

5. An interesting issue is whether AT&T and the BOCs ought to have absorbed some of the revenue losses imposed by divestiture. After all, the pre-

divestiture AT&T was responsible for installing switches that were not capable of providing equal access without expending funds to alter or replace them. And, as post-divestiture pricing developments indicate, the vertically integrated AT&T had changed its local operating companies' supercompetitive prices for equipment (see Noll and Owen [1989b]). By allowing BOCs to continue to recover the costs of providing equal access, regulators were essentially rewarding pre-divestiture AT&T stockholders for the company's antitrust violations. Nevertheless, state regulators may not have been able to force the BOCs to absorb these costs. The reason is that *U.S. v. AT&T* was settled, rather than litigated to conclusion. Hence, AT&T and its operating companies were not actually convicted of violating the law, and the settlement agreement contained no requirement that the company ought to be punished. Thus, state regulators would have faced at least a long legal struggle and possibly ultimate defeat in court had they tried to prevent the full recovery of these costs. In any event, for whatever reasons, no state elected to fight this battle.

6. For more complete developments of this approach to the study of regulation, see Roger G. Noll, "Economic Perspectives on the Politics of Regulation," in Richard Schmalensee and Robert Willig, eds., *Handbook of Industrial Organization*, vol. 2 (New York: North-Holland, 1989); and Wesley A. Magat, Alan J. Krupnick, and William Harrington, *Rules in the Making*, (Washington: Resources for the Future, 1986), ch. 3. In his discussion for our analysis, Almarin Phillips suggests two additional hypotheses: "do not get too big for your britches" and "kick them while they are down." While we admire Phillips' imaginative turn of a phrase, we had difficulty following the proofs of his theorems.

7. For further analysis of why regulators especially seek to avoid visible price increases, see Paul L. Joskow, "Inflation and Environmental Concern: Structural Change in the Process of Public Utility Price Regulation," *Journal of Law and Economics* (October 1974), 17:291–327.

8. Like consumers, most businesses do not regard telephone prices as an important element of overall business costs. In industries in which telecommunications services are used intensively, interest-group arguments pertain: they will seek special price breaks for themselves, not overall reductions in prices for everyone. For other businesses, the signalling aspect of telephone prices is not as straightforward as it is for consumers. Higher telephone prices can be interpreted as signalling a generally favorable stance towards business. Hence, business may interpret a price hike for them (and the debate about it in a campaign) as indicating that the incumbent is inclined to work for their interests on matters of greater importance to them than monthly telephone rates. As long as the price increases for business customers are not substantially out of line with rate changes for residential customers, business users, then, might be expected to accept them.

9. In the 1960s, the Supreme Court issued a series of decisions regarding the constitutional requirements for legislative representation. In both the U.S. House of Representatives and state legislatures, legislative districts differed considerably in population, and in general the effect was to overrepresent rural constituencies compared to urban areas. The impact of the Court's decisions was that

by the early 1970s, House districts within a state and in both chambers of a state legislature had to be virtually identical in population. Only the U.S. Senate, by virtue of its definition in the Constitution, was exempted from this requirement. The result was a substantial shift in the political influence of rural constituencies, and more so in urbanized states than in the federal government.

10. The beneficiaries of regulation would prefer efficient pricing, all else equal, because efficiency maximizes the net economic welfare created by the industry and hence the wealth that the beneficiaries might be able to receive from regulation. Unfortunately, not all else is equal; the normal circumstances is that rules which maximize the welfare of the beneficiaries of regulation inevitably create inefficiency, so that efficiencies become at best of secondary interest to regulators. See Noll, supra at note 6.

11. For details about the anticompetitive actions of the states after divestiture, see especially Appendix B of Peter Huber, *The Goeodesic Network* (Washington, D.C.: U.S. Department of Justice, 1986).

12. The most recent study estimates that the annualized average incremental capital cost for local access and usage was $90 to $103 in communities with 10,000 lines ("small urban"), but only $54 to $78 in communities with 40,000 liens. See Bridger M. Mitchell, *Incremental Capital Costs of Telephone Access and Local Use* (Santa Monica, Calif.: Rand Corporation, 1989), p. 41. This translates to a monthly difference of about $3.

13. John Wenders and Bruce Egan, "Implications of Economic Efficiency for US Telecommunications Policy," *Telecommunications Policy* (March 1986), 10:33–40.

14. One of the more dramatic findings of this report is that the amount of private capacity in telecommunications today now exceeds that available from common carriers. This is a very significant finding, and is supported by some insightful research by Peter Grandstaff and John Watters at Southwestern Bell.

15. For example, Legal Service programs, which are dedicated to providing legal representation to poor people across the country on all civil matters (not just utility issues) have a total funding of only $305 million per year. The smallest of the seven Baby Bells, with assets of over $20 billion, earns profits of about $1 billion a year.

16. October 31, 1988 draft of *A Final Report: The Management of Consumer Affairs at AT&T*, AT&T Advisory Committee on Consumer Affairs.

17. Industry Analysis Division, Common Carrier Bureau, FCC, "Trends in Telephone Service," August 16, 1989, p. 9.

18. Staff of Federal-State Joint Board, "Sixth Monitoring Report," in CC Docket 80-286, reported in *National Association of Regulatory Utility Commissioners Bulletin*, January 30, 1989, p. 21.

19. *Telecommunications Reports*, September 12, 1988, p. 8.

20. "FCC Date Shows Taxes, SLCs Make Up 30 Percent of the Local Phone Bill," *State Telephone Regulation Report*, September 7, 1989, p. 9.

21. *Telecommunications Reports*, September 12, 1988, p. 4. See also *Wall Street Journal*, July 6, 1989, p. 64.

22. In 1986, business revenues grew 8 percent in the long-distance market,

but residential only grew 5 percent. *Business Week*, February 16, 1987, p. 28.

23. Long before divestiture, administrative proceedings discussed the costs incurred to accommodate toll calling. For example, a local call could be made just by dialing three or four digits. Toll calling required investment in new equipment that could switch the additional digits necessary to make toll calls. In addition, single wire iron conductors had to be replaced with paired copper conductors so that speech could be clearly heard over long distances. Thus, there is debate as to whether long-distance has been subsidizing local service or whether it is actually the other way around.

24. Other economists recognize that alternative means must be found to correct the current inequitable allocation of costs associated with enhanced services. See Nancy J. Wheatly, Dr. Lee Selwyn, and Patricia D. Kratvin, *Telecommunications Modernization: Who Pays?*, The National Regulatory Research Institute, September 1988.

25. See New England Telephone and Telegraph Co., D.P.U. 86-33, Phase II, Testimony of John A. Foresto, Exh. NET 98 at 16 and Transcript 48, p. 54.

26. The cost of providing telecommunications service has been falling by about 2 to 5 percent annually. *Telecommunications Reports*, August 15, 1988, p. 7. See also *Financial World*, April 18, 1989, p. 33.

27. Just as outrageous are social contracts that "freeze" local rates but permit adjustments in rates due to changes in taxes, separations, and labor contracts. The cost of each of these items is unlikely to decrease in the foreseeable future. Under these social contracts, local ratepayers lose the primary benefit of social contracts: protection against future rate increases.

28. The Consumer Federation of America (CFA) reported that the telephone industry historically earned a return over two points less than the Standard & Poor 400. CFA estimated that a straight CPI price cap would result in rates 20 percent higher over five years, and about 50 percent higher over ten years than traditional regulation.

29. The CPI for the local service component of telephone services, including subscriber line charges, increased at an annual rate of 1.9 percent, while the CPI for interstate toll calls fell by 1.5 percent and state toll calls by 4.8 percent. *National Association of Regulatory Utility Commissioners Bulletin*, January 30, 1989, p. 21. The increase of 1.9 percent in the CPI for local service is still far below the increase in the overall CPI of 5.0 percent.

30. *Comments of the State of New York Department of Public Service*, Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, pp. 16-17. AT&T prepared its own study comparing price caps and cost-of-service regulation, which indicated that consumers would realize lower rates under price caps. However, as the Consumer Federation of America points out, AT&T's study makes certain untenable assumptions, including a continuous decline in the evening and weekend discount under regulation.

31. The penetration rate for poor minority households ranges from 57.1 percent to 82.2 percent. United States Department of Commerce, Bureau of the Census, *Current Population Survey*, November 1983 to March 1989.

32. Problems with the programs include overly restrictive eligibility require-

ments and other factors that have led to limited low-income participation. See Staff of the Federal-State Joint Board, "September 1988 Monitoring Report," in Docket No. 87-339.

33. As Nina Cornell indicates in the previous chapter, companies will attempt to inhibit the preparation of intervenors' cases by designation of documents as "proprietary" or "competitively sensitive." Regulators should establish a standard for designating materials as "secret." The standard should be strict and the burden of showing a compelling need to maintain secrecy should be placed on the utility attempting to keep the information confidential. Furthermore, the regulatory agency should not limit public access to materials any more than is absolutely necessary under the circumstances.

34. The contraction of primary calling areas is not cost-justified according to BOC testimony. US West witnesses testified that it costs no more to place a call going ninety miles than one going less than a mile if both calls are interoffice calls. This testimony seems to assume either that the costs being referred to are marginal costs or that the network is fully depreciated.

35. Small business users have had uneven success. They benefit to the extent that their interests coincide with large business users, e.g., lower long-distance rates. Small business customers also benefit to the extent that rate classes are not categorized by amount of use, but type of use, e.g., residential versus business.