

THE COSTS OF STATE REGULATION

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Since the early days of telephone regulation, state and federal agencies have shared regulatory powers and, predictably, their rules have been both complementary and conflicting. The most difficult issues that arise concern jurisdiction over joint and common costs shared in the production of intrastate and interstate services. Other complicated issues include regulation of operating and financial arrangements—a significant amount of cooperation and coordination is required to make the system work. Much of the cooperation and coordination functions occur through voluntary agreements to split regulatory responsibilities, either by direct state and federal negotiations or through NARUC, the ruling body of state regulatory agencies.

Over the years, as Noam and Geller discuss in later chapters, the courts have often had to rule on the proper separation of powers and jurisdiction. These court rulings are not only driven by issues of states' rights and interstate commerce, but also by concerns over public welfare and national security. The main problem today is defining, jurisdictionally, just what constitutes interstate commerce in telecommunications. Local telephone company (LEC) access lines and services often do not cross state boundaries; in fact, pursuant to the AT&T divestiture, those of the divested BOCs are generally not allowed to. Yet, the services and facilities of the LECs are clearly complementary to the provision of interstate service. An important conflict is brewing that promises to get even worse as new technology allows for network signals to follow software-driven "logical" paths through both public and private networks. It is becoming very difficult (and

perhaps soon, impossible) to reconcile these “virtual” network services with political or regulatory boundaries between states.

Although most court decisions have upheld the view that LEC network facilities used in conjunction with provision of interstate services are in fact jurisdictionally interstate, affirming the FCC’s power to regulate them, some courts (especially the Federal District Court for the Ninth Circuit) have ruled that physically intrastate facilities and services may be under the regulatory control of states and not the FCC. Such court decisions represent constraints on regulatory reform regarding the future split between state and federal powers in the name of economic and technological progress. Although Congress could rule on these jurisdictional issues, that seems unlikely.

Thus, any consideration of the costs of state regulation and policy recommendations to reduce its scope must account for the constraint of the judiciary’s interpretation of state’s rights in regulating telecommunications.

The broad goals of both state and federal regulation are generally considered to be to promote and protect the “public interest,” which is often construed to mean provision of high-quality, reliable utility services at affordable, nondiscriminatory prices. As discussed later, one of the problems with the public interest approach is that it often becomes the “political interest” once it is thrown into the regulatory system.

Historically, economic theory has been used to guide regulatory policy. Specifically, the implicit function of regulatory agencies is to substitute for free market competition. Economic theory suggests that the efficiency of free market competition leads to maximum social welfare, which is seen to be consistent with the notion of public interest, except perhaps when disadvantaged groups of the consuming public (e.g., poor and “captive” customers) are potentially affected adversely. In many cases public interest considerations of equity and politics drive regulatory policy just as much as economic efficiency. The classic trade-off between regulatory efficiency and equity in public telecommunications concerns the popular “Universal Service” doctrine, promoting broad rate subsidies to basic residential telephone service at the expense of economic efficiency.

We have two goals in this chapter: (a) to investigate the relative efficacy of state and federal regulation in both positive and normative aspects, and (b) make recommendations for changing current regulatory structures.

REDUCING THE COSTS OF STATE REGULATION

As the reader will see, our primary conclusion is that although both state and federal regulation will continue to coexist as institutions, we should try to minimize their impact on otherwise competitive market forces in the telecommunications industry and rely more on the general body of business law to govern any market abuses. Beyond this objective, whatever residual regulation is required

is probably best carried out under federal jurisdiction. Obviously, for a variety of reasons, state regulation cannot and will not simply disappear; however, it should be aimed toward (de)regulating to promote procompetitive market processes.

Regulation at both state and federal levels traditionally focused on issues of pricing, costing, and profit levels in a protected monopoly environment. In the new competitive era, regulation should be changed to focus on dynamic market processes. In this new environment, the old formulas for jurisdictional separation of costs and demand are obsolete as private bypass networks and new technological developments allow users to circumvent the old system. New regulatory regimes involving incentive schemes such as simple price ceilings should be adopted to replace traditional rate-base regulation. Regulation should concentrate more on policy coordination and monitoring activities of market players and focus more on the encouragement of market processes and synergies rather than designing new rules for cost allocations in a partially regulated market. Policy coordination and monitoring activities of regulators should be of a passive nature, concentrating on data gathering and dissemination of information. Traditional social issues of equity, universally available service, and public network subscriber complaints probably will continue to be the responsibility of state regulators.

The new regulatory focus should be on oversight of public network issues of compatibility, standards, interconnection, reliability, quality of service monitoring, privacy, security, and anticompetitive activity. It is natural that state regulators would resist such a redefining of their role because it appears to diminish their importance. Although this may be true, the role and political power of regulators will not be diminished greatly if they retain some authority for enforcement of public telecommunications policy.

Within this general refocusing of regulatory activity, there seem to be logical initial separations of state and federal regulatory powers and responsibilities based on their relative strengths to monitor, coordinate, and enforce public communication policy. For example, federal agencies will continue to be the primary coordinator for frequency spectrum policies, which are improving greatly from adoption of new market-based policies. Federal agencies will also be primarily responsible for the standards-setting process of private firms, including those for interconnection arrangements between all private and common-carrier networks.¹ The public telecommunications market is national in scope and coordination of standards is essential. Issues concerning depreciation and cost allocation should simply be eliminated from regulatory jurisdiction altogether as they encourage political mischief and probably worsen social welfare.

¹We do not recommend that government authorities actually get involved in determining appropriate industry standards, only that they devise rules for the private industry to follow that maximize technical progress and innovation and minimize political maneuvering of private interests.

States will continue to be responsible for coordinating their own infrastructure policies, such as promoting interconnection and technology adoption, as well as traditional quality and universal service issues, and any residual franchise and carrier of last resort obligations for local service providers; still, we strongly believe they should play a minimal role even in these areas. In any event, states should eliminate local franchising authority, which constitutes more of a barrier to entry than protection from “wasteful” competition.²

Pricing and profits should be gradually deregulated at both state and federal levels and left largely to market discipline from competition. Regarding new and enhanced service providers, neither the states nor federal regulators should be responsible for them; rather, the antitrust laws should be relied on, along with the monitoring and reporting function of regulators and their ability to bring suit or otherwise initiate litigation through state attorneys general.

Throughout the policy analysis to follow, the costs and benefits of regulation are highlighted with the purpose of contributing to the debate by asking what the relative efficacy of state and federal regulation in achieving the goals of regulation is.

THE DYNAMIC COSTS OF REGULATION GENERALLY

In order to discuss the cost of state regulation of telecommunications, we must set a standard for the measurement of costs. In economics, the concept of costs usually used is opportunity costs, or the cost of benefits forgone. This requires an assessment of the alternatives given up in the marketplace, including a specification of what alternative market structures—state or federal regulation or deregulation—are available.

One standard often used to assess economic costs is to measure the neoclassical welfare loss triangles that result from the mispricing of telecommunication services. This approach is instructive, but requires us to assume that static long-run, equilibrium, marginal-cost pricing is the relevant alternative.

Another way to analyze costs is to view the telecommunication marketplace as being in neoclassical long-run disequilibrium; recognizing that the disequilibrium nature of the market provides incentives for innovation and new products. The disequilibrium view notes that any market, no matter how imperfect from a neoclassical static viewpoint, generates ongoing welfare benefits in the form of realized gains from trade. Measures that focus on reducing neoclassical welfare costs may, in the long run, damage the disequilibrium engine that generates growing gains from trade over time, especially in a rapidly changing telecommunications market.

²Even though the franchising authority of state PUCs is generally not legally exclusive, it is often effectively so, due to bureaucratic processes restricting entry.

the 1990s, the number of people aged 65 and over in the United States has increased from 20 million to 35 million, and is projected to reach 50 million by 2020 (U.S. Census Bureau 2000). The number of people aged 65 and over in the United Kingdom is projected to increase from 5.5 million in 1995 to 7.5 million in 2010 (U.K. Census Bureau 1995).

As the population of the United States and the United Kingdom grows older, the number of people who are unable to perform the activities of daily living (ADL) will also increase. The number of people aged 65 and over who are unable to perform ADL is projected to increase from 1.5 million in 1995 to 2.5 million in 2010 (U.K. Census Bureau 1995).

As the number of people who are unable to perform ADL increases, the number of people who are unable to perform instrumental ADL (IADL) will also increase. The number of people aged 65 and over who are unable to perform IADL is projected to increase from 1.5 million in 1995 to 2.5 million in 2010 (U.K. Census Bureau 1995).

As the number of people who are unable to perform IADL increases, the number of people who are unable to perform basic ADL (BADL) will also increase. The number of people aged 65 and over who are unable to perform BADL is projected to increase from 1.5 million in 1995 to 2.5 million in 2010 (U.K. Census Bureau 1995).

As the number of people who are unable to perform BADL increases, the number of people who are unable to perform self-care ADL (SCADL) will also increase. The number of people aged 65 and over who are unable to perform SCADL is projected to increase from 1.5 million in 1995 to 2.5 million in 2010 (U.K. Census Bureau 1995).

As the number of people who are unable to perform SCADL increases, the number of people who are unable to perform mobility ADL (MADL) will also increase. The number of people aged 65 and over who are unable to perform MADL is projected to increase from 1.5 million in 1995 to 2.5 million in 2010 (U.K. Census Bureau 1995).

As the number of people who are unable to perform MADL increases, the number of people who are unable to perform cognitive ADL (CADL) will also increase. The number of people aged 65 and over who are unable to perform CADL is projected to increase from 1.5 million in 1995 to 2.5 million in 2010 (U.K. Census Bureau 1995).

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legal revenue requirements using optimal pricing rules (e.g., the inverse elasticity or “Ramsey” pricing rule). The regulatory rule that emerges from this approach is almost wholly a pricing standard. In contrast, the most important thing the competitive standard has to offer for regulation is not a set of pricing rules, but a set of rules by which the competitive process discovers, interprets, and conveys information, which propels the market and creates gains from trade.

The rationale for the pricing rule stems from a Marshallian view of the competitive process. We detail this process, not because we advocate regulators emulating it, but for the opposite reason; we think that, in contrast to Gabel’s argument in chapter 2, it is virtually impossible to do so. The reason is that the information requirements of the competitive process are unknown—indeed, unknowable—to an entity such as a PUC. The competitive process should not be viewed as a process for producing marginal cost pricing, but as a process that generates gains from trade, through time, by producing information and providing a mechanism by which market players can act on the basis of such information.

When prices are above the long-run supply price, new resources will earn abnormally high rewards, and therefore resources will be attracted to the market in question. Further, no matter what the state of the existing (observed) market, the lure of potentially high rewards will always induce suppliers to try new products and means of production. Therefore, the possibility of above-cost pricing both provides a lure for investment and innovation, and encourages competitive entry that may prevent it from lasting.

Conversely, when price is below the long-run supply price, the market will be unable to attract or hold productive resources. As resources become more valuable elsewhere or wear out, they will leave the market and not be replaced. This decline in productive capacity will ultimately force prices to rise toward long-run marginal cost.

This description submerges a good bit of useful economics. As stated, the process is timeless. How long it takes for investment, disinvestment, or innovation is simply not specified by the theory—nor can it be. However, some resources are specialized and durable in the short run, and entry and exit cannot be instantaneous. Thus, in trying to apply theory to reality we must understand that markets will usually, and quite naturally, be in long-run disequilibrium in terms of the model being applied.

THE FALLACY OF COST-BASED PRICING

In the process of allocating resources by encouraging entry and exit, competition is said to promote neoclassical economic efficiency by improving price–cost relationships. Maximum economic efficiency results when voluntary exchanges are maximized in any market, each of which leave both parties better off. Economic efficiency results when prices are cost-based, which is why regulators frequently want to set prices equal to marginal cost.

When economists use the term *cost-based pricing* in connection with public utilities, they usually mean long-run marginal cost. Because markets are almost always in competitive disequilibrium in the short run—even those that everyone agrees are reasonably competitive—prices may be either higher or lower than long-run marginal cost. Is it possible to reconcile this disequilibrium aspect of the competitive process with neoclassical economic efficiency? Only if one views the disequilibrium situation as a transitory aberration in the competitive process. First, it must be assumed that the positive or negative rewards associated with disequilibrium will necessarily induce corrective resource flows that always bring the market back into long-run equilibrium. Second, the long-run equilibrium state of affairs must be viewed as the normal state of affairs. In fact, markets are always in disequilibrium.

Thus, the idea of competition as a promoter of efficient cost-based pricing really is not accurate. The idea of pricing at cost, even if the relevant costs were discoverable independent of the competitive process, loses sight of both the dynamic forces that propel the market in the right direction when prices do depart from costs and the incentive that the possibility of above-cost pricing provides for entrepreneurial activity.

At any point in time, a competitive market will contain a variety of firms. Some will do well at fulfilling market demands at a cost level that leaves them with high profits. Others will not do well, and they will have an incentive to imitate and outcompete successful competitors to survive. At any time each firm may have some advantages, which is one desirable feature of competition. This diversity of talent and luck is submerged by the long-run price-should-equal-cost equilibrium view of the market, even though such a long-run view may adequately describe the direction in which the market is going. This is why the long-run, equilibrium view of the firm cannot be used to judge the short-run performance of a market that, by definition, is almost always in long-run disequilibrium.

The main point is that competition is a market process that reveals in a general way what market long-run marginal costs are. In fact, it is probably impossible to discover such costs *ex ante*; they may be only a theoretical reasoning point to explain what we observe and therefore may not be embedded in any data before us. Such costs are the result of the competitive process, not an input into it, and therefore are not discovered by looking at the firms in the industry at any point in time. It is useful to define market long-run marginal costs as the level to which the competitive process would drive price in the long run if a long-run equilibrium were ever achieved.

This discussion forces the question of where regulators will get the information necessary to regulate either competitive prices or processes in this industry. Unless they are omniscient, they cannot. Information is so decentralized, uncertain, and transitory, that it can only be revealed, if at all, *ex post* by market processes. In addition, such information may be irrelevant both to the *ex ante* choices that were in fact made, or to choices made in the future.

Another related point is important in telecommunications regulation. The set of resources and institutions necessary in a truly unregulated market is quite different from those relevant to a regulated market, even if price were equal to long-run marginal cost in each. A competitive market requires firms to prepare for the problems and opportunities encountered by disequilibrium. This implies different human and physical capital and institutions than would be required in a regulated environment, even if such regulation were perfect in the price = marginal cost sense.

Regulation often stifles the development of the capital and institutions necessary in markets perpetually in disequilibrium by not only suppressing the normal competitive alternatives but also the mechanisms by which alternatives develop, appear, and disappear. When a market is deregulated, even if long-run marginal-cost pricing has been the basis for past regulation, it invariably will be left in a state of competitive disequilibrium. Some temporary, neoclassical, welfare distortions may appear but should not be used as an excuse for continuing regulation because this short-run situation will be resolved by competitive forces. Competition is a process that operates from within, where the information and incentives are. It cannot be directed or controlled from without simply because no one can really determine what is going on (much less predict the future).

In summary, if regulators are to regulate according to a competitive standard, they should start emulating the disequilibrium process of discovery that is the heart of the competitive marketplace and economic welfare. This usually prompts economists to suggest that regulators should just deregulate entirely, especially in the fast-moving telecommunications industry. From a theoretical perspective, this is appropriate, but from a practical standpoint, it is not likely. Regulators *can* refocus from a historical, cost-based pricing perspective to one that emphasizes facilitating competitive processes. This would necessarily focus on allowing freedom of entry and exit, freedom of innovation, and the freedom to sell and resell services.

POLITICS IN TELECOMMUNICATIONS REGULATION

Prescribing regulatory reform does not assure that it will happen, in the political process of regulation. In the history of U.S. telecommunications, political competition altered the results of purely economic competition to produce a very politically popular toll-to-residence subsidy. The reason the subsidy scheme was, and is, so popular is that it taxes toll usage, where such usage is heavily concentrated among few subscribers, many of whom are businesses, and uses the proceeds to subsidize the many, politically potent, residential subscribers.

The median toll user (and voter) that drives the political process has far less toll usage than the mean toll user. The subsidy scheme was made possible by: (a) the fact that local residence subscribers are very aware of, and politically sensitive to, their local telephone bills; (b) rapid technological change in provision of toll calling allowed a large subsidy to be generated in toll markets at the same

time real toll prices actually fell; and (c) AT&T had little incentive to object to a plan that took revenues from its toll market, and put them into the local BOCs, effectively moving money from one pocket to another.

In a regulatory balance, firms received relatively safe, guaranteed profits and regulatory protection from competition and antitrust laws, and regulators got a cross-subsidy from the relatively few heavy toll users to the relatively many local residential subscribers. At the same time, the overpricing in toll markets created large efficiency distortions there, whereas underpricing removed competitive pressures in the local market. The protectionist policies of state regulators made local competition for many services simply illegal. Further, with no competitive pressures to match prices with costs, statewide averaging was the easiest way to price most local services, and some local prices—mostly business—ended up being well above the cost of providing local service with the newest technology.

In summary, these pricing developments have probably been politically efficient in getting votes to drive the political-regulatory mechanism. In order for substantive changes to be made, we must look to a change in the balance that produced this politically efficient outcome. It is not enough for economists to make utopian recommendations that presume an ideal political marketplace.

Historically, despite neoclassical welfare and dynamic losses, competition was opposed by nearly all parties: the Bell System, local regulators, Congress, and the FCC. Eventually the FCC, with significant prodding from the courts, succumbed to the market forces of competition. Local regulators did not. They continuously opposed nearly every concession to competition,⁴ and the FCC had to preempt numerous attempts by the states to assert their sovereignty in this regard. There have been some notable exceptions. For example, the Illinois Commerce Commission (1992) proposed a model for introducing local network competition called a Telecommunications Free Trade Zone (TFTZ), which, however, is limited to the downtown area of Chicago. Another exception is the relatively aggressive New York State Public Service Commission approach to easy and efficient access for independent private network operators to interconnect with the public switched telephone network.

The FCC today takes a broader view of telecommunications policy, in part because the FCC does not hear the median toll user as loudly as do state regulators. The FCC is more likely to look at all the costs and benefits of various alternatives in performing its inevitable balancing act. In this sense, then, more of an emphasis on federal regulation should be an improvement, *ceteris paribus*.

Still, the FCC oversees a toll market pricing regime that continues to include large static, neoclassical welfare losses. The FCC's attempt to reduce them with larger subscriber line charges has been stalled for the foreseeable future. There-

⁴A good example of state resistance to a key federal deregulatory policy is the well-known 1970 "cream-skimming" case, where NARUC filed suit to block the FCC's Specialized Common Carrier Decision allowing carriers like MCI to sell long-distance telecommunications on private networks to third parties.

fore, we do not think that, for example, having the FCC preempt and regulate all toll traffic and carrier access charges would change the current situation much, although interstate toll prices fell much more over the last decade than intrastate toll prices. Our hope is that market activity will continue to threaten to pick the separations and carrier access charge processes apart, upset the political-economic balance at the margin, and cause welfare-improving changes, such as those resulting from FCC decisions in the early 1980s.⁵

There is considerable evidence that state regulation is very costly, primarily because of the exclusive local franchise barriers to entry that persist in almost all jurisdictions. Thus, on the whole, the LECs and their state regulators have thwarted free entry and resale of local services that would prevail in an otherwise competitive environment. In the area of intrastate, interLATA toll, some states have deregulated retail toll services, but not as much as the FCC. And a number of states still flatly prohibit intraLATA toll competition.⁶

Although most states have flatly prevented some innovations, such as privately owned shared tenant services, this approach does not get to the main problem, which is that we simply do not know what states have prevented from happening. Until the market is opened up we cannot know what will emerge; we do not know what niches and latent demand are out there until entrepreneurs are allowed to explore the possibilities. No one could have predicted the latent demand for various kinds of terminal equipment and services that has emerged pursuant to the FCC's Registration program in 1972 or the niche found by value-added services such as the alternative Operator Service Providers (OSPs).

COMPARING FEDERAL AND STATE REGULATION

The rate at which regulators accommodate technological and competitive changes, rather than fighting such change, is an indicator of progressive (de)regulation. It is beyond the scope of this chapter to make a micro-assessment of the *ex ante* intentions of state and federal regulators in recent years.⁷ Rather we examine, *ex post*, the impacts of recent policy decisions in the postdivestiture period on productivity, prices, profits, service quality, and entry barriers.

⁵Such as the FCC's MTS/WATS Market Structure proceeding CC Docket 78-72 (the "access charge" case).

⁶What happens at the retail level becomes largely immaterial with carrier access charges in place to effect such a subsidy. In other words, the fact that there are many competitive alternatives at the retail level does not necessarily lead to an economically efficient outcome. The same situation exists in cellular mobile radio telephone service, which features many retail service vendors, but which is a duopoly at the wholesale level.

⁷There is some recent theoretical literature on modeling the pricing decisions of state regulators that may prove useful for predicting the outcome of simultaneous federal and state regulatory interaction. Garber (1990; Garber & Peterson, 1990) conducted positive theoretical analysis to investigate the incentives and intentions of regulators that give rise to specific policy preferences. This work presents some models of pricing behavior of state regulators and how they are affected by Federal pricing policies.

The literature on productivity trends is decidedly mixed. Crandall (1991) and other researchers find significant productivity gains due to deregulation and competitive entry. Others found little or even negative changes in productivity since the AT&T divestiture.⁸ The results of such productivity studies are highly sensitive to the data used, which is often of questionable reliability.

Price trends are easier to observe and evaluate. In Table 5.1 we show a summary of state rate case activity for local telephone companies from 1984–1991. The overall frequency and level of rate increase requests fell substantially after 1984 to almost nominal activity by 1987. This activity increased slightly from 1987 to 1989, and while rising substantially in 1990, was not sustained in 1991. These trends are indicative of the fact that LEC cash flow and net income have been quite high in recent years due to very low inflation, tax reform, certain accounting changes, and increases in depreciation allowances. In fact, as Table 5.1 shows, state regulators actually ordered overall rate reductions in the years 1987–1990.⁹

Even though the average total monthly bill of residential and business telephone subscribers has been stable since 1984,¹⁰ rates have been “rebalanced” with higher local and lower toll rates. The benefits of the lower toll prices have

⁸In a paper presented January 24, 1992, at the Columbia Institute for Tele-Information Conference on Private Networks at Columbia University, Greenwald suggested that most productivity study results were suspect and that his own examination of the data showed slower productivity growth in the industry postdivestiture. In a recent regulatory proceeding to determine the viability of competition in Canada (CRTC 92-12), a host of academic researchers presented studies and testimony on U.S. telecommunications productivity in the postentry period (after 1976) and postdivestiture period (after 1983) with mixed results and no firm consensus.

⁹One effect of the convenient coincidence of relatively low inflation and interest rates and unprecedented economic growth, with the industry-related factors of tax and accounting reform, was to stimulate many voluntary price cap regulatory contracts between state and federal regulators and telephone companies. Even though most states will no doubt actively consider regulatory reform in favor of incentive-based regulation, in practice the plans are really just modified versions of traditional rate base regulation. Of the more than 30 states that have implemented incentive plans, the majority of them do not completely eliminate price and profit controls typical of rate-of-return regulation. Rather, they only eliminate it on some discretionary services that represent a minor portion of the business. In fact, all of the plans in effect include periodic rate base calculations and profit reviews, effectively extending the regulatory lag of the old regimes.

It is not clear that the rapid rise in incentive-based regulation—as a voluntary agreement between telephone companies and regulators—would have occurred if inflation and recession prevailed during the postdivestiture period. The healthy cash flow situation of the LECs allowed many incentive regulation schemes to include large up-front reductions in basic subscriber rates, eliminating much of the potential consumer resistance. The staying power of the new regulatory regimes has not yet been tested for extended periods of low telephone utility earnings. There is one observation from recent history. New York Telephone experienced very bad earnings under their first experiment with price cap regulation and the company could not come to an agreement with state regulators to extend the price cap agreement. Nevertheless, the overall trend of states to move toward incentive regulation is still the right direction for improved economic efficiency.

¹⁰In fact, even the monthly bill of the poor and elderly has remained stable and in many other consumer groups it actually fell (although for median customers it likely rose). See: Larson, Makarewicz, and Monson (1989).

TABLE 5.1
State Telephone Rate Cases (Dollar Amounts Shown in Millions)

<i>Year</i>	<i>Revenue Requests</i>	<i>Increases Granted</i>	
1984	4,023.7	3,875.5	
1985	1,627.2	1,154.9	
1986	643.7	290.0	
1987	146.3	(519.0)	
1988	357.9	(1,366.4)	
1989	447.0	(838.5)	
1990	1,109.2	(451.1)	
1991	First	184.3	(Pending 372.4)
	Second	2.1	(Pending 219.2)

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given rise to large increases in toll calling with no decrease in basic local service subscribers. In fact, basic telephone penetration is up 2.4% since 1984.¹¹ The obvious result of all of these changes is large gains in economic welfare.

Table 5.2 shows nominal price change data for regulated local and toll telephone services for 1984–1991. Local rates rose about 45% (including the FCC mandated SLC) and interstate toll rates fell by about 39%. Intrastate toll rates fell by about 7% overall. Thus, the states have not rebalanced rates as much as the FCC in its interstate jurisdiction.

Interstate toll minutes of use rose an average 13% per year since 1984, and about 10% for intrastate toll.¹² Even though intrastate toll traffic historically exhibited lower growth rates than interstate traffic, increased competition in services and prices probably caused most of the growth differential. In the interstate market, alternative service options abound, especially in urban areas, as equal access has largely been achieved. In intrastate jurisdictions, the majority of states have allowed toll competition in both interLATA and intraLATA markets, but no state has yet implemented equal access for intraLATA toll services (which represents about one fourth of total switched toll minutes of use).

The postdivestiture competitive period gave rise to many new toll service options for customers, with about 450 toll carriers across the nation. At the same time, the overall quality of telephone service has been maintained or even improved. Overall customer satisfaction is higher and technical performance of the public network has improved when comparing 1989 to 1984 results.¹³

¹¹Of course, there were many “lifeline” discount rate plans implemented during this period.

¹²Data on growth rates for toll usage may be found in the FCC’s Semiannual Report on Telephone Trends (1991).

¹³See the quality of service trends in the FCC report *Update on Quality of Service for the Bell Operating Companies* (1990). Basic service installation delays, however, are up slightly over 1984 levels.

TABLE 5.2
Telephone Prices (Annual Rate of Change)

<i>Year</i>	<i>Local</i>	<i>Intrastate Toll</i>	<i>Interstate Toll</i>	<i>Access*</i>
1984	+17.2	+3.6	-4.3	—
1985	+8.9	+0.6	-3.7	-8.1
1986	+7.1	+0.3	-9.5	-14.3
1987	+3.3	-3.0	-12.4	-21.7
1988	+4.5	-4.2	-4.2	-8.5
1989	+0.6	-2.6	-1.3	-14.2
1990	+1.0	-2.2	-3.7	-3.8
1991	+2.9	-2.3	-2.2	-4.2
Total	+45.5	-7.5	-39.1	-74.8

*Interstate only.

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We can estimate static welfare gains from regulated rate rebalancing between 1984 and 1991. During this period, the FCC implemented an access charge plan in CC Docket 78-72. This plan phased in subscriber line charges (SLCs), effectively increasing residence and business local monthly charges, and phased out a portion of the subsidy from carrier access charges for interstate toll service—and in turn—the retail interstate toll rates of interexchange carriers. The exact (nominal) price changes that occurred in the rate rebalancing program appear in Table 5.3.

LEC switched access rates for toll carriers fell about 59% after 1984, from almost \$.17 per minute of toll usage to about \$.07 by 1992 (average of sum of total per-minute switched access charges for both originating and terminating ends). At the same time, AT&T retail residential toll rates fell more than 39% for interstate service. Carrier access charges represent some 30–50% of retail toll charges per minute of use. As such, the retail toll price reductions, in absolute terms, actually fell about the same as LEC switched access charges, which have fallen by almost 75%. Residential SLC went from zero to \$3.55 per line and business SLC went from zero to \$3.57 from 1984 to 1990.

Interestingly, during the same period *intrastate* interLATA switched access charges were about the same as interstate, and yet retail intrastate toll charges fell only nominally. The reason many state jurisdictions set intrastate access tariff rate levels at (or near) parity with interstate levels is concern over customers' arbitrage of the difference between the two rates. Due to operational problems, it is often difficult for LECs to distinguish interstate from intrastate toll minutes of use. One plausible explanation of why intrastate access tariff price reductions are not fully reflected in reduced intrastate toll retail tariffs is *intraLATA* toll prices (as distinguished from intrastate *interLATA*) are maintained at relatively high levels. Accurate price data on average *intraLATA* toll prices for the United States are not available.

TABLE 5.3a
Interstate Charges by Local Telephone Companies to Long-Distance Carriers
(National Average for "Premium" Service in Cents per Minute)

<i>Dates</i>	<i>Carrier Common Line Charges Per Originating Access Minute</i>	<i>Carrier Common Line Charges Per Terminating Access Minute</i>	<i>Total Traffic Sensitive Charges Per Access Minute</i>	<i>Total Charges Per Conversation Access Minute</i>
05/84 to 12/84	5.24	5.24	3.1	17.3
01/85 to 05/85	5.43	5.43	3.1	17.7
06/85 to 09/85	4.71	4.71	3.1	16.2
10/85 to 05/86	4.33	4.33	3.1	15.4
06/86 to 12/86	3.04	4.33	3.1	14.0
01/87 to 06/87	1.55	4.33	3.1	12.4
07/87 to 12/87	0.69	4.33	3.1	11.5
01/88 to 11/88	0.00	4.14	3.1	10.6
12/88 to 02/89	0.00	3.39	3.1	9.8
02/89 to 03/89	0.00	3.25	3.0	9.6
04/89 to 12/89	0.00	1.83	3.0	9.1
01/90 to 06/90	1.00	1.53	2.5	7.8
07/90 to 12/90	1.00	1.23	2.5	7.5
01/91 to 06/91	1.00	1.14	2.4	7.2
07/91 to 12/91	0.96	0.96	2.4	7.0

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TABLE 5.3b
Interstate Subscriber Line Charges (by Local Telephone Companies
to End Users, in \$ Per Month Per Line)

<i>Dates</i>	<i>Residential and Small Business</i>	<i>Multiline Business</i>	<i>Centrex</i>
05/84 to 06/84	0.00	4.99	2.00
06/85 to 09/85	1.00	4.99	2.00
10/85 to 05/86	1.00	4.97	2.00
06/86 to 12/86	2.00	4.97	3.00
01/87 to 06/87	2.00	5.12	3.00
07/87 to 11/88	2.60	5.12	4.00
12/88 to 03/89	3.20	5.12	5.00
04/89 to 12/89	3.50	4.94	6.00
01/90 to 06/90	3.48	4.84	6.00
07/90 to 12/90	3.48	4.83	6.00
01/91 to 06/91	3.48	4.77	6.00
07/91 to 12/91	3.49	4.74	6.00

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TABLE 5.3c
Average Monthly Residential Telephone Rates

<i>Charge</i>	1983	1984	1985	1986	1987	1988	1989	1990
Unlimited Local Calling	10.50	12.10	12.17	12.58	12.44	12.32	12.30	12.40
Subscriber Line Charge	00.00	00.00	1.01	2.04	2.66	2.67	3.53	3.55
Taxes	1.08	1.25	1.36	1.51	1.56	1.58	1.70	1.83
Total	11.58	13.35	14.54	16.13	16.66	16.57	17.53	17.78
Lowest Available Monthly Rate (includes SLC and taxes)	5.93	6.20	7.46	8.84	9.41	9.25	10.23	10.35

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Although it seems impressive that interstate switched access charges fell by 75% after divestiture, in fact the charges are still quite high in absolute terms (about \$.07/min). After 1989, political resistance against further SLC increases on local service has prevented the FCC from continuing this rate rebalancing.

Prior to divestiture, average intrastate toll prices were somewhat lower than the average price for interstate toll. Due to the rebalancing of rates between 1984 and 1991, interstate prices are now much lower than intrastate, even though the average distance of the call (and presumably the costs) is less in the case of intrastate. This shows how inconsistent regulatory policies between federal and state jurisdictions can seriously distort price-cost relationships across markets.

We present the data required to calculate the static welfare gains from rate rebalancing between 1984 and 1991 in Table 5.4.¹⁴ Our straightforward analysis of the data yields the welfare gains and losses presented in Table 5.5 for each market segment for real price changes since 1984. The sum of these changes in welfare is about \$11 billion. The combination of toll tariff rate reductions and inflation caused very large real price decreases and demand stimulation, all of which increase the welfare gains. Inflation since 1984 has nearly offset the nominal increases in business tariff rates for basic local service. Residential local

¹⁴Estimated price elasticities (E) for broad market segments are presented, along with nominal and real price (P) and quantity (Q) data. Prices given for local service are average monthly rates for basic service. Toll prices are average charges per minute of toll usage. Quantity data for toll minutes is for the year 1991, whereas for local service it is lines in service at the end of the year. The price changes (dP) are in real terms (the Consumer Price Index rose by 33% since the end of 1983). The marginal cost estimates are taken from prior studies and represent rough estimates of average incremental costs. Even if there is a great deal of error in the marginal cost estimates, the majority of changes in welfare are due to the very large differences in price elasticities, in which we have much more confidence.

TABLE 5.4
Input Data (1991)

	<i>Local</i>		<i>Toll</i>	
	<i>Business</i>	<i>Residence</i>	<i>Intrastate</i>	<i>Interstate</i>
	\$41.09/line/mon	\$17.78/line/mon	\$.23/min	\$.20/min
	\$30.89	\$13.37	\$.17	\$.15
	40M lines	100M lines	125B mins	147B mins
1983–1990 price change	+8.5%	+15.4%	–40.5%	–72.1%
Elasticity	–.10	–.04	–.6	–.8
Marginal Cost	\$25.00/line/mon	\$25.00/line/mon	\$0.03/min	\$0.04/min

service price increases have little effect on total welfare changes because of the very small price elasticity.¹⁵

The welfare gains in Table 5.5 are high compared to prior studies that showed welfare losses under predivestiture price structures to be in the range of \$2–10 billion.¹⁶ The reason is that substantial toll market growth since 1990 increased the total level of social welfare.¹⁷ This rough analysis illustrates the potential size of static welfare gains from rate rebalancing. Although these static gains are substantial, recall that dynamic gains from competitive markets that are in constant disequilibrium may yield much greater total welfare gains.

Returning to issues apart from rates, regulatory concerns that deregulation, competition, and price caps would cause levels of infrastructure investment, rates of technology adoption, and perhaps quality of service to fall dramatically, are not only unfounded, but, based on the experience of AT&T after 1983, the opposite of what actually happened. Infrastructure investment in public networks by LECs may in fact rise, and wasteful spending and expenses would fall, in response to the competitive threat from deregulation and open entry.

¹⁵There are other factors that make these welfare loss estimates conservative. Only tariff rate reductions are examined here. Presumably competitive entrants, many of which do not even file tariff rates, have lowered the effective market prices even more as they captured significant toll market share from AT&T and the BOCs over the study period 1984–1991. In addition, on the cost side of the calculation, technology has been advancing to decrease real unit costs for toll and local service, thereby lowering the assumed cost curve and increasing welfare gains even further.

¹⁶There are many different studies with markedly different assumptions leading to a wide range of welfare loss estimates. See, for example, Wenders and Egan (1986), Rohlfs (1979), and Griffin (1982).

¹⁷If the calculations were performed for the demand curve that existed prior to divestiture, the welfare gains would be cut by almost two thirds to about \$3.7 billion.

TABLE 5.5
 Estimated Changes in Social Welfare, 1991 (1983 price levels to 1991 price
 levels adjusted for inflation)

	<i>Local</i>		<i>Toll</i>	
	<i>Business</i>	<i>Residence</i>	<i>Intrastate</i>	<i>Interstate</i>
Change in welfare	\$-37 million	\$100 million	\$4.5 billion	\$6.5 billion

JURISDICTIONAL ISSUES

We have argued that minimal regulation is the preferred approach at all levels, but that federal regulators are more likely to pursue that policy. But, in the absence of explicit Congressional legislation, the courts are establishing the regulatory jurisdictions. In our view, they are moving in the wrong direction.

A 1990 court decision about enhanced services is especially problematic. The Federal District Court for the Ninth Circuit ruled that the FCC Computer Inquiry III decision was not appropriate and that the FCC cannot preempt state authority to regulate enhanced service providers. This decision implies that the FCC also cannot preempt the states on ONA and other policies. Absent the kind of coordination Noam and Geller call for in later chapters, this could result in a hodgepodge of state regulations that would adversely affect the national marketing plans of firms in the burgeoning enhanced services industry. It is alarming to think that national telecommunications policy may be based on a patchwork of case-by-case court decisions.

Uncertainty about market entry and restrictions increase risk for firms considering large capital expenditures. Competitors fear that if the giant LECs are allowed to enter new markets, they could get squashed. In turn, the LECs, spending their political energies on convincing policymakers to lift operating restrictions on entry into high-growth toll and information service markets, are slow to offer efficient interconnection and distribution facilities for the use of others who represent potential future competitors.

In the absence of a clear competitive policy, present regulations and court decisions provide a forum for rent-seeking and rent-defending activities as the various players jockey for advantage. Every time policymakers hand down a key policy decision involving adversarial parties, no matter how well intentioned, winners and losers are created. The winner enjoys a market advantage and the loser is crippled in its ability to compete. Over time, the winners become an entrenched interest group that fights hard to maintain their competitive advantage under the decision. This makes it difficult for policymakers to consider changing

the original decision in response to changed market or technological circumstances.¹⁸ The more regulators, the worse the problem becomes.

CONCLUSIONS

We recognize that complete deregulation is not feasible, and may not be completely desirable, but the best form of regulation would attempt to let the market operate wherever possible. Policymakers should pursue other policy goals in the least obtrusive fashion so that the dynamic gains of competition can be achieved. Federal regulators seem most amenable to this approach, and, therefore, we would like to see them making more of the critical decisions, and state regulators doing less. Court decisions moving in the opposite direction are misguided and likely to cause harm to consumers and society. Congress and the president can lead on this critical issue, but must be willing to fight difficult political battles they have not addressed successfully in the recent past.

In particular, we believe policymakers should: (a) remove telephone company line of business restrictions on toll, manufacturing, video, and information services; (b) remove exclusive franchises for cable television or telephone companies to promote competition; (c) abolish rules prohibiting financial and operating arrangements between cable and telephone companies, so that cooperation can occur (analogous to the Japanese model of "cooperative competition," where firms may cooperate but will be subject to direct competition from other such cooperatives); (d) develop and enforce rules for efficient nondiscriminatory interconnection and resale between competitive networks and public telephone networks; (e) implement price cap regulation to eliminate incentives for cross-subsidies among regulated and unregulated lines of business; and (f) play a more active role in helping firms to adopt appropriate technological standards for public network providers.

¹⁸The landmark ENFIA decision made two decades ago is a case in point. To "protect" new competitive long-distance carriers, the FCC ENFIA decision established a 55% discount on LEC access charges for all firms except AT&T to give them a competitive advantage at the margin. As the "winner" in the ENFIA decision, the competitive toll carriers fought hard to prevent the gradual phasing out of the ENFIA discount.

Similar results have occurred in many other key decisions. The Cable Television Act of 1984 is another example of an original decision designed to protect a fledgling industry that "grew up" and became a strong monopoly power with enough lobbying clout to keep the protectionist legislation in place until Congress lost patience with steady rate increases higher than the cost of living, and revoked much of the 1984 legislation with a reregulatory 1992 law.