Toward Competition in Phone Service

A Legacy of Regulatory Failure

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STATE REGULATORS across the country are facing petitions from local telephone companies for dramatic increases in local residential rates—and in a companion piece here Leland Johnson says this creates a dilemma for regulators. Specifically, he argues that local residential telephone rates will double or triple—to about $25 or $30 a month on average—if local phone service is priced to cover the total cost of supply. The dilemma he sees for regulators is that raising local residential rates to the levels necessary to avoid the inefficiencies of pricing below cost will create political pressure for relief from high prices, relief that can only come by creating new inefficiencies.

We agree that the petitions for increases in local telephone rates signal a regulatory dilemma. We also agree that, if regulators refuse to price all forms of telephone service efficiently, the ultimate costs of service will be too high, and some of the benefits of advancing technology may be lost. We disagree, however, with Johnson's analysis of why local rates are rising and of what the consequences of failing to grant the requested relief will be.

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Johnson blames past pricing distortions for the rate problems that regulators are facing today. In our view, however, despite serious problems with telephone company pricing, much of the pressure for higher residential rates is coming from a different source. The telephone companies are legally entitled to recover their total *book* costs, and those costs exceed total *economic* costs. As competition has spread to one service of the companies after another, local residential rate payers have become the last monopoly market from which the companies can recover these costs. Regulators now must decide how to deal with these high book costs as competition comes closer and closer to pro-

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viding substitute sources of supply for portions of local service, and thereby makes uneconomic book costs even more difficult to recover.

Costs and Efficient Prices

If local residential rates are not increased, Johnson says, there will be a shortfall in revenue that will have to be made up by charging long-distance and data services too much for their use of local access lines. Competitors of the local phone companies then will have incentives to supply build-around facilities that bypass the local companies' lines, even though the build-around facilities have higher economic costs than the local lines and thus are an inefficient use of resources. In other words, Johnson's call for higher local residential rates is based on the standard desire of economists for prices that reflect the actual costs of serving a consumer in order to send the correct signals to the market. He believes that the very large rate increases being requested would, if granted, "contribute to more efficient use of resources." Not surprisingly, the phone companies make the same claim.

Johnson supports his position with a widely held but never proven belief: that local residential rates are far below costs and have been subsidized by long-distance rates for at least the past twenty to twenty-five years. The evidence he presents on the costs of local service is based on data submitted by telephone companies in various rate cases. His reliance on this evidence implies that he accepts as valid two propositions: first, that the telephone companies' data represent the total economic costs of efficiently supplying these services today, and, second, that economically based methods have been used to allocate those costs to particular services, such as local, long-distance, and private line services. (For a brief description of the costing and pricing of telephone service, before and after January 1, 1984, see page 34.)

Neither of these propositions is correct. The cost data used by Johnson and others who agree with him are not the economic costs of supplying these services. They are, rather, the historical book costs actually incurred, allocated among service offerings according to a variety of often arbitrary and sometimes contradictory methods. Consequently, while residential rates of $25 or $30 a month might be necessary to cover stated costs, it is highly unlikely they would represent efficient prices in the sense usually meant by economists—the telephone companies' filings notwithstanding.

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These historic costs, even if not efficient, are driving local rates higher. The basic reason that large local rate hikes (particularly residential) are being proposed around the country is that telephone companies are *entitled*, under past court decisions, to an opportunity to recover all their historical book costs, plus the allowed rate of return on those investments, regardless of whether those book costs match economic costs. Competitive markets would long ago have forced the telephone companies to adjust their costs to reflect economic costs, even if that meant having to take capital losses on some of their past investments. But regulators have no choice as the law now stands but to let the companies try to recover these uneconomic costs from the last remaining captive monopoly customers—residential users. If the high levels of local residential rates are disturbing, legislators should look at this aspect of regulation, not attempt to recreate past "subsidies."

The Existing Cost Data

Like all monopoly firms subject to rate-of-return regulation, a telephone company begins its preparation for a rate request by calculating the net book value of all the past investments it is permitted to include in the rate base. The company is entitled to recover a revenue requirement composed of the allowed rate of return on its rate base, plus depreciation, justifiable expenses, and taxes.

Most of a phone company's investment is in common plant—switches, wire lines to cus-

tomers, and so forth—used to supply both monopoly and competitive services. The costs calculated for any one service depend on how these common costs are allocated. To examine the costs of providing the monopoly services, therefore, we must dissect the entire revenue requirement—looking at the rate base and the way it has been depreciated over time, as well as the justifiable expenses.

Such an examination is unlikely to find that the firm has invested over time in the most efficient technology for offering basic telephone service. As economists have shown in a long series of scholarly papers, beginning with a paper coauthored by Johnson ("Behavior of the Firm under Regulatory Constraint"), monopolies subject to rate-of-return regulation are unlikely to choose the most efficient technology or to operate it in the most efficient way. Rate-of-return regulation (coupled with legal barriers to entry by competing firms) cannot substitute for market discipline. On the contrary, it tends to give firms under its sway an incentive to invest far more capital than necessary as a means of increasing profits. Overinvestment appears in various guises: substitution of capital-intensive for more efficient labor-intensive production techniques, "gold-plating" of equipment, or overbuilding to meet peak demand stimulated by the distorted pricing structure of the regulated firm.

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Perhaps the greatest benefit a regulated firm receives from overinvesting in common plant is increased ability to cross-subsidize competitive services. The firm has an incentive to choose a technology that uses common equipment for both monopoly and competitive services—*even when that technology requires a larger investment and is not the most efficient from the standpoint of consumers.* By using common equipment the firm increases its flexibility to assign a small part of these common costs to the competitive service and, therefore, increases its flexibility to set a low price. It is virtually impossible for regulators to detect, let alone prevent, this sort of "embedded" cross-subsidy.

Not only have the phone companies made investment decisions without regard for lower-cost alternatives, but their accounting practices have overvalued their assets. For one thing, until quite recently their depreciation schedules have failed to take account of technological changes affecting the industry. Over the past ten years, as telephone companies have been installing progressively newer generations of electronic switching and terminal equipment, advances in semiconductors have been rapidly reducing the cost of that equipment. But the companies have not adjusted their depreciation schedules to take account of the reduction in the value of mechanical equipment and earlier vintages of electronic equipment that are still in use. As a result they have large amounts of equipment that is overvalued on the books.

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The companies have also artificially increased their rate base by treating as a capital asset the labor costs of wiring new homes for telephone services and of connecting customers who move into homes already wired. Those costs have not been paid directly by the customer, but instead have accumulated in a capital account that is now over $15 billion. The economic value of the assets in this account is at best a small fraction of that figure.

Granted, there have been some changes. Recently, the industry applied for and received an acceleration of depreciation schedules for regulatory accounting purposes, and it began to expense the labor cost of wiring and connecting homes. But the new depreciation schedules may still be too long, and the sunk capital costs of equipment and wiring from years back remain on the books. Any firm not subject to

rate-of-return regulation would have written these costs off as capital losses to its stockholders long ago—as Texas Instruments did recently in the case of its investment in the small computer market—and then reduced prices to bring them into line with existing costs of production.

In summary, during the fifty-odd years in which the telephone companies have been regulated monopolies, two to three generations of telephone technology have been invented, installed, and put on the phone companies' books, with managers all the while subject to incentives that lead away from least-cost technology and operations. Thus, it is highly likely that the companies have accumulated total (historical) book costs far greater than the total economic costs needed to provide adequate telephone service.

Cost Allocations

The difficulty with using total revenue requirement data to make judgments about efficient prices for a specific phone company service is further complicated by the lack of uniformity in the companies' methods for allocating total book costs among its various services. For competitive services offered within a state, a company normally tries to calculate what additional costs it incurs by offering the service, assuming that its competitive services are purely supplemental to its monopoly offerings. It then costs the monopoly offerings, using some method for fully distributing the remainder of the revenue requirement among them. Such computations require a number of assumptions about the proper way to assign costs to various services. In a given rate case a phone company will submit a number of different cost studies to support rates, often making different, and sometimes contradictory, assumptions about how to assign or allocate costs for specific parts of the service.

A case in point is the way most phone companies allocate the costs of the wires that run between the telephone central office and the customer. These wires, now being called access lines, make up a major part of the book cost of local phone service, particularly local residential service. Yet telephone companies are submitting different cost computations for identical wires depending on whether the wires are used for Centrex service or for business lines.

How it does this provides a good example of phone company incentives and tactics. Centrex is a service that competes with private branch exchange (PBX) equipment sold by both telephone companies and independent suppliers. With Centrex service, each of a customer's phones is connected to the central office switch by its own wire, just as if it were an independent line, and central office switching directs outside calls to the proper phone, handles intercom calls between phones, and provides special services such as speed dialing. With PBX equipment, many fewer lines to the central office are needed to handle the same number of telephones and outside calls, because it is the PBX that switches outside calls to the phones, handles intercom calls, and provides special services. Thus, if a PBX is used, there is a saving in the amount that is spent on wires.

Yet this saving is not apparent in telephone company cost studies because the companies

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do not assign the same cost to a wire used for Centrex as they do to an identical wire used for business service and attached to a PBX. The per line cost used for business or residential lines is assigned only to the number of Centrex lines that equals the number of lines the company says Centrex customers would have used if they had bought a PBX. The remaining, identical Centrex lines are assigned a much lower cost. Because the cost of Centrex wires is understated, cost studies seem to show that Centrex service returns more net revenue to the phone company than PBX service for similar size customers, even though the charge for PBX lines is higher and the investment in phone company facilities much lower.

Another reason not to rely on the costs the companies show for particular services is that their methods for allocating the costs of equipment used by more than one service are frequently flawed. When several services share equipment, some services may not need all of its capabilities. Local exchange switches, for example, have many capabilities that are needed not for local service but only to handle long-distance or international calls or to provide enhanced services in competition with equipment used by customers. The costs of the switch, however, are allocated to local, long-distance, or enhanced services based on limited characteristics such as relative use. It is not at all clear that such cost allocation methods accurately assign cost responsibility among the many telephone company services that use central office capacity.

Have Local Phone Rates Been Subsidized?

We began by noting Leland Johnson's argument that residential rates have to rise because competition from new technologies makes it impossible to continue the subsidy from long-distance service that has existed for many years. But has the subsidy in fact existed? Those who think so rely indirectly on the basic cost data and the methods of allocating those costs discussed above. For the interstate portion of the alleged subsidy, they often point directly to the cost "separations" process and the revenue flows to the local operating companies that result. Yet, while many people believe there has been a subsidy from long-distance to local service, there has never been a comprehensive study establishing either its existence or its amount. Furthermore, even if the alleged revenue flow from the interstate to the intrastate jurisdictions is reduced in the future, and similar flows from intrastate long-distance calling are also reduced, that will not demonstrate that the prices of local services have been set below economic cost.

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To determine whether long-distance service has provided a subsidy, two basic issues would have to be investigated. First, the economic costs that the local companies had to incur to supply long-distance service would have to be carefully calculated. Second, for the interstate portion, *all* revenue flows between the local companies and AT&T would have to be properly evaluated. In addition to the monies that flowed through the separations process, the operating companies also bought equipment and services from AT&T at prices that were not always equal to economic costs. The relevant sums to examine are thus the net flows from AT&T to the operating companies, rather than only the flows that resulted directly from the separations process.

Even if it were clear that the net revenue flow from the interstate to the intrastate jurisdictions were greater than the economic costs the local operating companies incurred in supplying interstate service, it still would not follow that local rates were below the economic costs of providing local service. To begin with, local exchange service has not been the only offering of the phone companies; they have also provided private lines and a number of so-called vertical services—Centrex intercommunications, call-forwarding, call-waiting, and a wide variety of business and residential telephone instruments. If the interstate jurisdiction paid more than the economic costs it imposed on the local companies, the excess may well have gone to cover some of the losses

on those other offerings. Moreover, and probably much more important, the argument assumes that historical book costs equaled economic costs. But that assumption is wrong. Therefore, even if the net revenue flow to the local operating companies exceeded the economic costs that long-distance services imposed, the excess may simply have covered some of the uneconomic portion of total costs. It is possible, in other words, that local rates may already be high enough to cover the current economic costs of supplying local service, but not high enough to cover all the historical uneconomic costs.

"Subsidies," Local Rates, and Efficiency

The issue of historical subsidy flows will probably never be resolved. The coming divestiture, along with the change from the separations process to access charges, will alter the way the books are kept on telephone costs as well as how customers pay for services. What is important about the issue, however, is that, because so many people think a subsidy has existed, policies are being considered that would either attempt to replace it or would block further technological change in a vain effort to preserve it. Indeed, legislators, regulators, and phone company managements seem to have entered a topsy-turvy world where they expect the companies' competitive services—such as supply of telephone equipment—to subsidize the monopoly local exchange services.

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If past "subsidies" remain the focus of attention, the real forces driving up local residential rates—uneconomic book costs—will be ignored, to the detriment of all. The rates currently being requested are designed to cover as much of their historical book costs as the companies think they can get away with imposing on local residential subscribers. And the legal history of rate-of-return regulation may well force the regulators to allow the companies to try to recover the whole amount, no matter how much in excess of economic cost it may be.

If this regulatory failure goes unexamined and uncorrected, politically unpopular levels of local residential telephone rates will not be the only unpleasant result. Worse still may be the policy makers' reactions to those rates. Legislators and regulators are already talking about trying to protect the monopoly revenue base of the existing phone companies by impeding new technologies that perform the same functions as local telephone services. And some are proposing to reduce local rates by undoing the FCC's recent access charge decision or by adding a permanent subsidy charge to the amount some or all long-distance carriers have to pay even if they do not use local exchange facilities.

Moreover, if telephone companies are free to engage in competitive activities while barriers are erected to preserve their monopoly bases, it is likely that the barriers will end up preserving the costing practices the companies use to justify rates. And if the existing practices are left intact, residential subscribers may end up covering more and more of the costs of the companies' competitive ventures. Those practices, even when faithful in theory to the economist's notion of efficiency, in practice are often manipulated so as to justify uneconomic provision of competitive services. There is simply no way to keep a regulated telephone company that faces little or no threat of entry from choosing technologies that in retrospect demonstrate that competitive services are covering marginal costs (and providing "a contribution" to the costs of monopoly services), but in reality actually lead to far higher costs and rates for monopoly services.

In summary, if the policy debate continues to focus on the wrong issues, three outcomes are predictable. Legal barriers to entry will be imposed to try to protect telephone companies from competition, and the companies will be required to price their services inefficiently. Technology and ingenuity will find ways around those barriers (albeit at some cost in efficiency). And the local residential rate payer will suffer the longest and the most from this failure to deal with regulatory failure. ■