The Effects of Deregulation on Competition: 
The Experience of the United States 

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Abstract

Most economists agree that the net effect of the deregulation movement in the United States has been to increase efficiency, with resulting increases in consumer welfare. Because deregulation contemplates the substitution of competition for regulation as the “regulator” of the deregulated markets, deregulation increases the importance of antitrust law as a means of preventing unregulated firms from eliminating competition among themselves by mergers or price-fixing agreements. This is a particularly important point to remind Europeans, in view of the fact that historically antitrust has played a smaller role in European than U.S. law. It is important that ‘competition’ be understood in its correct economic sense, lest antitrust become another form of regulation. Competition is not a matter of many sellers or low prices or frequent changes in prices or market shares. It is properly regarded as the state in which resources are deployed with maximum efficiency, and it is not so much the existence of actual rivalry, let alone any specific market structure or behavior, as the potential for rivalry, that assures competition. The proper role of antitrust law is to protect that potential by limiting mergers, preventing the formation and operation of cartels and other horizontal price-fixing or market-dividing agreements or modalities, and, to a limited extent, preventing abusive tactics by individually powerful firms. If that role is played effectively, then most and perhaps all programs of public utility and common carrier regulation can be dismantled without economic loss — indeed with considerable economic gains. That at least appears to be the lesson of the U.S. deregulation movement.
I. THE ECONOMIC ANALYSIS OF THE LAW APPROACH

THE EFFECTS OF Deregulation ON COMPETITION: THE EXPERIENCE OF THE UNITED STATES

Richard A. Posner*

Determining the effects of deregulation on competition and on economic performance more broadly is a relatively straightforward task—if the effects of regulation are known. The undoing of those effects, after a period of transition, is what deregulation brings about, is the effect of deregulation. At least this result is true on the plane of theory. It is important to check the theory against experience, so far as that is known. A complicating factor is that deregulation often is only partial, and the effects of partial deregulation can be particularly complex and sometimes perverse. But the starting point of analysis should surely be to try to grasp the effects of regulation.

Unfortunately for clarity, “regulation” is not a single thing, even if attention is confined to a single country, as I shall be doing. Understood most broadly, as government intervention in social activity, regulation is pervasive, embracing the whole of criminal, tort, contract, property, labor, securities, antitrust, and environmental law, and a great deal besides. If regulation is un-

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1. The most important example is in the banking industry, where the relaxation of regulatory control enabled banks and savings and loan associations to make riskier loans, while federal insurance of deposits remained in force and was not experience rated—that is, the insurance premiums did not vary with the riskiness of the financial institution’s policies. This situation created an ultimately fatal temptation to excessive risk taking because depositors were shielded from loss and the owners of the institution would reap the entire profit from using this cheap source of funds (cheap because no risk premium had to be paid) to make high-interest loans. See generally Alan Gart, Regulation, Deregulation, Reregulation: The Future of Banking, Insurance, and Securities Industries 25-26 and ch. 7 (John Wiley & Sons 1993).
derstood in its broadest sense, to speak of deregulation becomes misleading. In the United States at least, there is no general movement toward reducing government intervention in the lives of its citizens. Deregulation in the United States means the removal or reduction of comprehensive controls over particular industries. These industries are what U.S. lawyers call the "regulated industries," while recognizing that all industries were (and are) regulated to a greater or a lesser extent. It was the relative handful of comprehensively regulated industries that became and has remained the focus of the deregulation movement, which began in the late 1970s in the airline industry\(^2\) and has continued ever since.\(^3\) The deregulation movement has actually coincided with increased regulation of health, safety, and the labor markets, which is why to speak of "deregulation" in the large is misleading—regulation has changed rather than diminished.

The industries that were (some still are) comprehensively regulated, and that thus have been the focus of the deregulation movement, are found largely in four sectors of the U.S. economy. These are transportation, including aviation, trucking, railroads, barges, pipelines, and taxi service; communications, including telephony and its data counterparts, television, and particularly cable television; power, especially electrical power and natural gas; and financial institutions, primarily banks but also bank substitutes such as savings and loan associations. The details of regulation vary from industry to industry and a further complication is that there is overlapping state and federal regulation, often of the same companies. But there is a paradigmatic form of comprehensive regulation, usually called public utility or common carrier regulation or both. I will focus on that and indicate the principal variants.

\(^2\) Actually the first deregulatory measure did not occur in the airline industry; it was the abolition by the Securities and Exchange Commission in 1975 of fixed stockbrokerage commission rates. *See Gart, supra* note 1, at 77. And beginning earlier, in the late 1960s, a series of minor, but cumulatively significant, relaxations of the regulation of interstate and international communications by the Federal Communications Commission. *Id.*

It is particularly important for a European audience to understand that the vast majority of the enterprises that are subject to comprehensive regulation in the United States, that is to public utility or common carrier regulation—compendiously, "rate of return" regulation—are private, profit-making companies. There is some public ownership, in particular of local electrical power companies, but it is very much the exception and I will ignore it. Enterprises that in Europe are commonly and until recently almost always publicly owned are in the United States almost always privately owned. But when subject to rate of return regulation, these industries have less freedom than the standard capitalist enterprise. Most obvious, but not most important, their profits are constrained to the regulatory agency's conception of a "reasonable" level, that is, one that will cover their costs with a margin large enough to attract the capital that the regulated firm needs. The result is a regime of cost-plus pricing to the extent of the agency's ability to monitor the firm's costs and effectuate prompt downward adjustments. These qualifications are important. To the extent either that the agency cannot prevent profits from being disguised as costs, or cannot bring about prompt reductions in the regulated firm's prices during periods of falling costs, the aim of placing the regulated firm's pricing on a cost-plus basis will be blunted, whether for good or for ill.

The control of profits is just the beginning of rate of return regulation. In addition, and of particular importance, an agency decides what prices the regulated firm shall be permitted to charge to particular categories of customer in order to generate the allowed return. Inevitably, the agency is also given the power to limit the entry of new firms into the regulated firm's market. The inevitability lies in the fact that without such power the agency's control over the firm's pricing structure would be ineffectual. Suppose as in the telephone industry that the agency or, in that case, agencies—telecommunications are regulated on both the federal and the state level—decided that business customers should pay more than residential customers, that local calls should be priced below long-distance calls without regard to cost, and that within each local area price should be invariant to cost. When price is divorced from cost, some prices will be well below cost and others well above cost. The latter will attract new entrants by offering them the prospect of earning supracompeti-
The prospect of supracompetitive profits is not only a magnet but also a mirage, as it will induce increased output until prices fall to a level at which all the supracompetitive profits have been competed away. The disappearance of these profits will make it economically infeasible for the regulated firm to serve customers in other markets below cost because it deprives the firm of the profits that it needs to offset its losses in those markets. In other words, competition invites "cream skimmers," who undermine the system of "cross-subsidization" by which regulated firms are able to serve some customers below cost without losing money overall. This is why without regulatory control over entry, regulatory control over price structure tends to collapse. The cream skimmer is a type of arbitrageur, preventing a type of price discrimination; arbitrage, when feasible and permitted, is fatal to discrimination.

We should not suppose the regulated firm passive in the face of regulatory controls. Its owners, managers, and workers are, we may assume, utility-maximizers to the same extent as the participants in unregulated firms. They want so far as possible to bend the controls to their private benefit, evade them, or influence the regulatory agency, which as a part of government is potentially subject to political pressure. Essentially, the goals of the regulated firm in relation to the agency are manipulative. The means include, as I have mentioned already, hiding profits in costs, for example by purchasing supplies from wholly owned but unregulated subsidiaries at inflated prices that can be covered in its allowed rates, as costs to the regulated firm. Another means of manipulating the regulatory structure to the regulated firm's advantage is by avoiding risk-taking, since the regulatory profit constraint will prevent the firm from reaping the full benefit, and, even more important, will minimize uncertainty and maximize stability. The regulatory constraints make it difficult for the firm to respond quickly to changed circumstances. Still other manipulative tactics are proposing to the regulatory agency a pricing structure that rewards or even creates political allies of the regulated firm (and notice that the more skewed the pricing structure, the stronger the firm's case will be for barring the entry of competing firms, which would unravel the structure); paying wages that make the firm's workers additional political allies of the firm; and, more broadly, adopting a mentality in which political sensitivity takes the place of marketing skill.
and entrepreneurial vigor. The regulated firm's real "customer" is the regulatory agency itself, meaning that the firm is operating in a political market rather than in an economic market in the sense of a market in which output is determined by bargaining between consumers and suppliers.

In the heyday of rate of return regulation, before the deregulation movement got going, the following economic consequences were observed: costs were high because of the weakness of cost-cutting incentives that a regime of cost-plus pricing creates, and therefore average prices were high (an essential qualification, given the price structure). They may have been as high as they would have been without regulation, even in industries such as electrical power distribution where there are substantial natural monopoly elements. In addition, prices were highly skewed in relation to costs. Entry, therefore, was infrequent; frequent entry would have tugged prices back in line with costs. Product and service variety, and responsiveness to changing and idiosyncratic consumer demands generally, were low, and technical quality and reliability high. These features of the comprehensively regulated industries reflected the importance, in a regime of rate of return regulation, of certainty and stability, because the regulatory structure prevents the firm from changing course rapidly in response to shifting patterns of competition and consumer demand. Emphasis on certainty and stability in turn invites domination of a firm by engineers, who seek to shape demand to their own notions of what customers should want (for they think they know better than their customers), rather than by sales people, for whom customer preference is sovereign. The effect of comprehensive regulation in delaying the introduction of new services requires emphasis because of the enormous losses in consumer welfare that such delays can cause. It has been responsibly estimated that regulation-imposed delays in voice-messaging and cellular-phone service alone cost consumers more than US$50 billion a year.


5. See MacAvoy, _supra_ note 4, at 33-34 (referring to telephone rates). Airline prices and railroad and trucking rates were also affected. _Id._ at 33-34, 36-37.

6. Jerry A. Hausmann, _Valuing the Effect of Regulation on New Services in Telecommuni-
Regulatory obstacles to entry tended, paradoxically, to preserve large numbers of firm in many of the comprehensively regulated industries. The most efficient firms in the economy were blocked from gobbling up less efficient firms operating in regulated markets; within those markets, competition, which would have forced the less efficient firms into bankruptcy or merger, was disparaged both by the regulated agencies and by the characteristic mindset of the managers of the regulated firms, because of the uncertainty that competition introduced, the pressure on costs that it exerted, and its destabilizing effect on regulated price structures. Regulated firms were also prohibited or discouraged from diversifying, lest diversification complicate or even defeat the regulatory task by enabling the firms to shift the costs of their nonregulated activities to the captive ratepayers in the regulated market. When allowed profits generously exceeded costs—as in the airline industry, where the regulatory agency conceived its function to be to promote and not merely regulate commercial aviation, yet price competition was limited—there was excessive service competition as regulated firms vied to get more business at supracompetitive prices.

Two qualifications need to be noted. The first is that rate of return regulation makes a certain, though not compelling, amount of sense in industries that are natural monopolies, that is industries in which economies of scale are so large in relation to demand that one firm can serve the entire market at lower average cost than two or more firms. In such an industry, if there were no rate regulation, prices might be set at levels that generated substantial monopoly profits and would thus exceed the price level under profit-constraining regulation. This result is only a possibility; regulation might induce higher costs, which might take the place of lower profits and leave the price level as high as it would be without regulation. In any event, modern technology has made natural monopoly rare except on the local


7. See MACAVOY, supra note 4, at 35.


9. A good example is the decline in economies of scale in electric-power generation, which has facilitated substantial deregulation in the electric-power industry. See Matthew W. White, Power Struggles: Explaining Deregulatory Reforms in Electricity Markets, in
level, where it is sometimes, though by no means always, uneconomical to duplicate a capital-intensive, large-capacity distribution network, such as that of a city's electrical or telephone ducts and cables. With the advent of cellular phones, cable television, satellite systems, and low-cost fiber-optic networks, even local telephone service is rapidly becoming naturally competitive, though the refusal of state regulatory agencies to abandon their control over the pricing structure of local telephone service means that most of the benefits of the new competition have gone to business users. In any event, no natural monopolies have been deregulated, and so they need not be considered in an analysis of the effects of deregulation.

The second qualification is that not all heavily regulated industries employ or employed rate of return regulation, the most important exception being banking and other regulated financial institutions. Regulators have not tried to limit the profits of banks or told them what prices to charge to particular customers. The overriding thrust of regulation has been to reduce the risk of insolvency. This has been done both by limiting competition through limitations on new entry, particularly interstate branching, through the prohibition against paying interest on demand deposits, and by limiting the riskiness of the lending and other activities of the banks, for example by keeping banks out of nonbanking businesses. Yet the result of this rather different form of regulation has been similar to that of rate of return regulation: a huge number of small, inefficient firms; high costs of operation; managerial focus on pleasing regulators rather than on catering to customers' varying needs; and market segmentation taken to absurd lengths. Banks are limited in the number of offices they can have and in their geographical scope, and are blocked from entering complementary activities such as securities underwriting and mortgage financing, while other fi-

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10. These developments are well discussed in Robert G. Harris & C. Jeffrey Kraft, Meddling Through: Regulating the Local Telephone Competition in the United States, J. Econ. Perp. 1997 93. The authors are particularly critical of the federal Telecommunications Act of 1996, which though touted as a deregulation measure (which in part it was), imposed a number of complex and onerous new regulatory requirements. See also Nicholas Economides, U.S. Telecommunications Today, 1998 Bus. Econ., at 7; Gregory Sidak & Daniel F. Spulber, Deregulation and Managed Competition in Network Industries, 15 Yale J. of Reg. 177 (1998).
nancial institutions are barred from accepting demand deposits. Many of these restrictions have now been eliminated or relaxed, to the point where the financial-services industry can be regarded as largely though not completely deregulated.

I have said enough about the effects of regulation to set the stage for a discussion of the effects of deregulation. I will sketch the effects in general but punctuate my description with some examples from particular industries. Before doing that, however, I should point out that although the form of regulation that I have described will strike many Europeans as strange to the point of weirdness, the effects of deregulation have relevance to the European situation. For deregulation in the U.S. context essentially involves the elimination of a type of government intervention that prevents competition from working effectively. The deregulated world is the competitive world, and so the experience of the deregulated industries in the United States offers a glimpse of what European economies are likely to look like if they subject the industries that we have deregulated to a competitive regime.

Another point to bear in mind is the difference between the economic and financial effects of deregulation. The former are the effects on how resources are allocated. The latter are the effects on the balance sheets of the regulated firms (and their suppliers, competitors, customers, and so on, but I shall ignore these secondary financial effects). The former are far more important in the long run; the latter largely represent a temporary redistribution of wealth, for example from the owners of and workers in regulated firms to consumers. An example of the latter type of effect is "stranded costs."11 Suppose an electrical utility has invested enormous amounts of capital in nuclear or other generation facilities in the expectation of being able to recoup its investment in the rates set by the public utility commission. Suppose now that competitive entry is permitted. The new entrant, unless he has sunk costs comparable to those of the incumbent, will have no inhibition against pricing below existing rates in order to capture a share of the business. By doing this he may even drive it into bankruptcy. Should this result be prevented by forbidding entry until the investment has been amortized? The economist is inclined to say "no," that the financial distress of

11. See White, supra note 9.
the regulated firm's shareholders is not an argument against the
more efficient utilization of society's scarce economic resources
that is enabled by competition.

The most important effects of deregulation are on industry
structure (number and scope of firms), costs, pricing patterns,
innovation, product or service variety, and managerial attitudes.
The removal of what I am calling comprehensive regulation ex-
poses the regulated firm to competition and new entry. The
consequence is irresistible pressure for what in the European
context is called "rationalization," that is, for organizing the in-
dustry in the most efficient pattern. This structure may mean
more firms, more vertical integration, less vertical integration,
or in short different firm sizes and scales—not to men-
tion different firms! The point is only that an industry
whose structure is optimal in the light of the comprehensive reg-
ulation to which the industry is subject is unlikely to be optimal
in a competitive environment. Rationalization has been esti-
mated to lower the costs of the railroad industry by US$3 billion
a year and those of the trucking industry by more than twenty
percent a year.14

The opening of a formerly comprehensively regulated in-
dustry to entry is bound to affect the structure of prices, often
dramatically, as in the airline and telecommunications indus-
tries.15 As I noted earlier, without control over entry, a structure
in which some prices are below cost and others far enough above
cost to finance the resulting losses is untenable. The new en-

12. Dramatically so in the trucking industry, where the number of interstate firms
tripled in the 15 years following deregulation. Jane N. Feitler, et al., Measuring Firm
Strategic Change in the Regulated and Deregulated Motor Carrier Industry: An 18 Year Eval-
uation, 33 LOg. AND TRANS. R. 159 (1997).
13. Between the beginning of banking deregulation in the late 1970s, and 1994,
the number of banks in the United States fell by more than a third. See Allan N. Berger
et al., The Transformation of the U.S. Banking Industry: What a Long, Strange Trip It's Been,
14. The authors do not partition this change between regulation and other factors.
See Curtis Grimm & Robert J. Windle, Regulation and Deregulation in Surface Freight, Air-
lines and Telecommunications, in REG. REFORM AND LAB. MARKETS 15, 24, 28 (James Peo-
bles, ed. 1998).
15. Price instability has been an additional consequence of airline deregulation,
but it is doubtful that it should be considered an economic (or any other kind of)
problem. See Steven A. Morrison & Clifford Winston, Causes and Consequences of Airline
Fare Wars, in BROOKINGS PAPERS ON ECONOMIC ACTIVITY: MICROECONOMICS 1996 85
trants will target the high-price markets, forcing the incumbent firm to lower its prices in those markets and, to avoid overall losses, raise its prices in those markets in which it had been charging prices below cost. In the United States, this has meant lower prices for long-distance telephone calls and business calls and higher prices for local residential service. In the airline industry, it has meant lower prices on long hauls and higher prices on short hauls. Since deregulation involves higher as well as lower prices, it is difficult to gauge the net effect on price levels, but the evidence, consistent with theory, is that those levels have fallen in real, that is, inflation and quality-adjusted, terms.

The effect of deregulation on price structure makes clear that deregulation affects the distribution of wealth as well as aggregate wealth. Even if consumers as a whole are better off because of deregulation, particular groups of consumers—those who enjoyed below-cost rates subsidized by monopoly rates to other consumers—may experience a decline in net welfare. Another distributive effect is the reduction in economic rents to workers employed in the formerly regulated industries,\textsuperscript{16} since, as suggested earlier, the regulated firms had "shared" some of their excess profits with their workers. The distributive effects of deregulation are a critical factor in its political feasibility.

The most important consequence of deregulation may have been on managerial mentalities\textsuperscript{17} and, as a result, on product and service variety and on innovation. A comprehensively regulated firm tends, as I have said, to be politically sensitive and plan-driven in the sense of subordinating responsiveness to consumers' shifting desires to the interest in steady, predictable firm development. A competitive firm cares little for politics and is driven by the competitive imperative of giving the consumer what he wants when he wants it. Nowhere has the change in orientation between a regulated and a competitive environment been more dramatic than in telecommunications. The Ameri-

\textsuperscript{16} See James Peoples, Concluding Observations, in REG. REFORM AND LAB. MARKETS, at 363, 367-68 (James Peoples, ed. 1998)

\textsuperscript{17} Grimm & Windle, supra note 14, at 25. Under deregulation of rail transportation, the average age of managers fell, their years of services with the particular railroad employing them fell, and their years of formal education rose—all this implying a shift toward a more flexible, less hidebound, and more educated managerial group. Young people are on average more comfortable with change than old, and general human capital equips a person to cope with change better than firm-specific human capital.
can Telephone and Telegraph Company ("AT&T") in its heyday, though technologically progressive, was famously unresponsive to businesses' and consumers' varied wants. It focused on making steady cost reductions for a highly standardized package of services, enabling it to reap profits by keeping one step ahead of the regulators, who set prices on the basis of past rather than current and future costs. Deregulation revealed an enormous heterogeneity of demands for telecommunications services, to which a newly competitive industry responded with imagination and alacrity. The direction of innovation changed dramatically, from reducing the cost of existing services to creating new services.

In superficially paradoxical contrast, the airline industry has witnessed the "commodification" of air travel. In the regulated era of restricted price competition, airlines vied with one another to provide a luxurious, glamorous service—symbolized by the piano bars that American Airlines installed in its Boeing 747 airliners—that would attract the customers of other airlines. The cost of this non-price competition eventually swallowed the supracompetitive profits enabled by regulation, and when this occurred the industry, ceasing to benefit from regulation, was ripe for deregulation. Competition quickly identified a huge untapped demand for no-frills service, which the airlines quickly moved to fill. The result has been an enormous increase in the volume of air traffic coupled with a substantial fall in real prices. It has been estimated that by 1993, average airline fares had fallen in real, that is, inflation-adjusted, terms by twenty percent because of deregulation.18

As mention of corporate "mentalities" suggests, the effects of deregulation are mediated by decisions made by the formerly regulated firm. Deregulation does not bring about automatic changes in firm behavior. It changes the incentives facing management, and managers differ in their ability to respond intelligently to changes in incentives. Empirical study suggests that older firms, firms that were profitable before deregulation, and family firms are apt to be more sluggish in responding to the challenges of deregulation than firms having the opposite attributes.19 Of particular interest because of America's troubled race

relations, deregulation has been found to reduce racial discrimination in the formerly regulated industries, presumably by increasing the return to meritocratic hiring practices.20

In summary, most economists agree that the net effect of the deregulation movement in the United States has been to increase efficiency, with resulting increases in consumer welfare.21

Because deregulation contemplates the substitution of competition for regulation as the "regulator" of the deregulated markets, deregulation increases the importance of antitrust law as a means of preventing unregulated firms from eliminating competition among themselves by mergers or price-fixing agreements.22 This is a particularly important point to remind Europeans, in view of the fact that historically antitrust has played a smaller role in European than U.S. law. It is important that "competition" be understood in its correct economic sense, lest antitrust become another form of regulation. Competition is not a matter of many sellers or low prices or frequent changes in prices or market shares. It is properly regarded as the state in which resources are deployed with maximum efficiency, and it is not so much the existence of actual rivalry, let alone any specific market structure or behavior, as the potential for rivalry, that assures competition. The proper role of antitrust law is to protect that potential by limiting mergers, preventing the formation and operation of cartels and other horizontal price-fixing or market-dividing agreements or modalities, and, to a limited extent, preventing abusive tactics by individually powerful firms. If that role is played effectively, then most and perhaps all programs of public utility and common carrier regulation can be dismantled without economic loss—indeed with considerable economic gains. That at least appears to be the lesson of the U.S. deregulation movement.

Earlier, I mentioned how the competing away of regulation-induced profits in the airline industry set the stage for deregula-


tion in that industry. This fact is a clue to the politics of deregulation, one that I have not emphasized in this Essay (though it is vital to the feasibility of deregulation), both because it is somewhat to one side of the issue of the effects of deregulation on competition and because the relevant politics differ greatly from country to country, making the U.S. experience of limited relevance to the European deregulation movement. But it is worth pointing out, in closing, that regulation, deregulation, and re-regulation are all favored by economic distress. The Great Depression of the 1930s led to an enormous expansion in the scope of public utility and common carrier regulation, and the "stagflation" (inflation accompanied by a slowdown in economic growth) of the 1970s set the stage for the deregulation movement. Should the nation encounter serious economic distress in the future, regulation may be reinstituted, confirming the existence of a regulatory cycle. This possibility makes it all the more important that we understand the economic consequences of regulation and deregulation.