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Twenty-Five Years of Deregulation: Lessons for Electric Power

John E. Kwoka, Jr.*

I. INTRODUCTION

Twenty-five years ago, fully 17% of U.S. economic output derived from heavily regulated industries.¹ At present no more than one-third of that remains.² In the interim, a deregulation movement of the scope and intensity that may even have surprised its advocates has swept through the airline, brokerage services, telecommunications, trucking, railroads, cable TV, banking, petroleum, and natural gas industries. Not all of these industries have been completely deregulated. Some aspects of telecom and railroads, for example, make that imprudent or simply infeasible. Moreover, not all of these deregulatory experiences were complete successes. Cable TV and banking are generally viewed as problematic cases, but deregulation of virtually all industries has drawn at least some criticism. Nonetheless, this movement—documented in the list of deregulatory initiatives in Table 1³—has resulted in a sweeping transformation of industry in the U.S.

Noticeably absent from this list until recently, however, is electric power. True, some incentive regulation has long been part of state oversight of electricity, and the wholesale power market began to open up after the passage of the Public Utility Regulatory Policies Act (PURPA) in 1978. But it has only been in the last few years that truly deregulated markets for electric power have appeared in the U.S. One might have expected this relatively late timing in one sense to be advantageous: With a vast amount of prior experience with deregulation in other industries, we should be well down the learning curve in terms of devising good techniques for deregulation—techniques that are more

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1. Clifford Winston, *Economic Deregulation: Days of Reckoning for Microeconomists*, 31 J. ECON. LITERATURE 1263, 1263 (1993).

2. *Id.*

3. See *infra* Appendix, Table 1: Major Economic Deregulatory Initiatives, 1971–1997.

certain to produce benefits, less subject to manipulation, and with fewer adverse effects. We might, in short, have expected a smooth transition to successful deregulation.

That, of course, is not precisely how deregulation of electric power has unfolded. There are at least three possible reasons for this experience. First, the electric power sector has characteristics that make it considerably more difficult to deregulate than other industries. These characteristics are as follows:

- Electricity demand fluctuates constantly and unpredictably, while the product cannot be inventoried.
- Aspects of the production process—notably, transmission and distribution—remain a natural monopoly, and these require a high degree of coordination with generation.
- The network is not a switched network but rather a fully integrated system that must remain in electrical balance at all times.
- Finally, there are significant external effects among agents simultaneously using the transmission grid, that is, loop flow and congestion issues.

No other industry with all of these characteristics has been deregulated, and indeed, some observers have long cautioned that the electric power sector is an uncertain case for deregulation.

The second reason that electricity deregulation has produced such mixed results is that the industry's prior performance was not nearly as problematic as in most other cases. Prices were not as far out of line with costs as, say, in airlines. Nor was regulation obviously impeding great technological change, as many suspected was the case in telecommunications. The major efficiency gains expected in electric power involve cost savings in investment and capacity planning at the generation stage, and to a lesser degree in generation operation—all expected to derive from enhanced competition among generators. Thus, the gains have generally been viewed as longer-term, more modest, and therefore more readily outweighed by any possible adverse consequences that might occur.

Both of these reasons play important roles in our experience with and expectations for electric power deregulation, but there is one additional concern: The method for deregulating electric power itself may be flawed, and in particular it may not fully reflect the lessons of past experience with deregulation of other industries. The consequence may therefore have been avoidable policy errors and unnecessary adverse effects.

Without minimizing the first two factors, here we focus on this third issue. We begin with a brief review of two industries that illustrate earlier phases of deregulation—airlines and telecommunications. These will form the basis for a discussion of several lessons from deregulation generally. Not all of these lessons are necessarily applicable to electric power, but we shall return to the specific question of electricity deregulation at the end.

II. DEREGULATION IN PRACTICE

No single industry or small number of industries can illustrate all facets of deregulation. Here we examine an example of each of the two major types of industries that have undergone deregulation, highlighting important relevant aspects of their experiences. The first category is that of fragmented, potentially competitive industries such as trucking, airlines, and brokerage services. Because regulated rates in these industries were generally above cost,⁴ deregulation was an easy policy choice, and it is not surprising that these industries underwent deregulation first. Of these, we shall examine airlines. The second category consists of industries with a significant structural monopoly component, such as cable TV, telecom, and railroads. These industries raise considerably more difficult issues, have undergone deregulation somewhat later, and in many cases have been reformed with a combination of deregulation where feasible and alternative regulation where necessary. We shall analyze the experience with telecommunications.

A. Airlines

For decades, the airline industry was tightly regulated by the Civil Aeronautics Board (CAB). CAB permitted no entry by new major (“trunk”) carriers for decades, and approved only a small fraction of applications for new service by existing carriers. The reason is that it sought to preserve a non-cost-based structure of fares that produced a patchwork of some very profitable routes and other unprofitable ones. This system was designed to promote air service while maintaining the financial viability of each carrier, but it was incompatible with free entry and exit in the industry.

Beginning in the mid-1970s, CAB was prodded into loosening these restrictions. It began to allow some entry by existing carriers onto

4. Natural gas was an exception. While this is a fragmented industry, regulation generally held prices below the cost of marginal production.

already served routes, followed by a grant of increasing discretion over fares. The Airline Deregulation Act of 1978⁵ formalized and accelerated this process. By 1979 carriers had complete freedom to enter any route they wished. In 1980 CAB permitted unlimited downward pricing flexibility and considerable upward flexibility. In 1983 the CAB lost all authority over fares, and in 1985 it ceased to exist altogether. Its remaining functions—notably, data compilation and merger review authority—were turned over to the Department of Transportation.

The airline industry's experience under deregulation is usefully broken down into the first ten years, and then the most recent fifteen or so years.⁶ A number of important effects emerged during the first decade:

(A1) Average fares fell by approximately 20-25%. The declines were greatest on long hauls and dense routes. The results of one comparison of fares are shown in Figure 1.⁷

(A2) The number of carriers rose enormously. There were 43 certificated carriers in operation in 1978, but as shown in Table 2,⁸ over the next ten years 135 new start-ups appeared. These new carriers accounted for more than 16% of revenue passengers' miles by 1985.

(A3) Overall industry concentration fell, as did concentration on particular routes. Route concentration measured by the numbers-equivalent version of the Herfindahl index is shown in Figure 2.⁹

(A4) Airlines vertically integrated into connecting routes and built hubs to efficiently transfer passengers.

By the mid-1980s the airline industry had been transformed into a far more competitive and efficient sector. The winners—in addition to passengers—were smaller and newer carriers, whose gains came at the expense of the traditional trunk airlines. A combination of factors, however, reversed some of these gains during the following ten to fifteen years. This second transformation was characterized by the following:

5. Airline Deregulation Act of 1978, Pub. L. No. 95-504, 92 Stat. 1705.

6. See Steven A. Morrison, *Airline Service: The Evolution of Competition Since Deregulation*, in *INDUSTRY STUDIES* 147 (Larry L. Duetsch ed., 2d ed. 1998) (providing a good review of the industry under deregulation).

7. See *infra* Appendix, Figure 1: Actual vs. "Regulated" Yield.

8. See *infra* Appendix, Table 2: Number of Large Certificated Air Carriers Providing Service.

9. See *infra* Appendix, Figure 2: Competition at the Route Level. The numbers equivalent is the inverse of the numerical value of the Herfindahl index. It measures the number of equal size firms that are implied by the calculated value of the Herfindahl, so that a larger value implies lower concentration.

(B1) Fare decreases ceased (see Figure 1¹⁰) and fare dispersion rose, as carriers increasingly employed yield management tools to better price discriminate among passengers. What fare competition existed came from lower-cost entrants.

(B2) The rate at which new entrants appeared declined substantially. The number, which averaged sixteen per year between 1980 and 1985, dropped to less than six per year in the second half of that decade. In addition, a series of unchallenged mergers resulted in the elimination of many independent carriers, so that industry and (to a lesser degree) route concentration rose. These trends are evident in Table 2¹¹ and Figure 2.¹²

(B3) Existing carriers countered the new entrants by creating “fortress hubs” that were less vulnerable to entry and commanded significant price premiums. They also employed computer reservation systems, frequent flier programs, control of airport facilities, and aggressive (allegedly anti-competitive) price responses to blunt competition.¹³

(B4) Congestion rose on several crucial parts of the system, notably airport facilities, take-off and landing opportunities, and air traffic control.

The result is that by the year 2000 the airline industry looks, behaves, and performs far better than under regulation, but somewhat more problematically than in the mid-1980s. Concerns are increasingly being raised about mergers, industry concentration, higher entry barriers (both natural and artificial), aggressive pricing, and congestion problems in the system. The concerns manifest themselves in a steady stream of proposals for intervention in the airline industry.

B. Telecommunications

The historical reason for regulation of telecommunications was the natural monopoly character of both local exchange and interexchange (long distance) services. Under Federal Communications Commission (FCC) supervision, AT&T became the monopoly provider of both types of service to most customers in the country. The overall level of rates

10. See *infra* Appendix, Figure 1: Actual vs. “Regulated” Yield.

11. See *infra* Appendix, Table 2: Number of Large Certificated Air Carriers Providing Service.

12. See *infra* Appendix, Figure 2: Competition at the Route Level.

13. A good early discussion of these problems can be found in Michael E. Levine, *Airline Competition in Deregulated Markets: Theory, Firm Strategy, and Public Policy*, 4 YALE J. ON REG. 393 (1987).

was set to ensure an adequate rate of return, and individual rates were set to be consistent with that level but were not otherwise necessarily closely related to costs. Attracted by high margins in long distance and utilizing new microwave technology, MCI and other companies sought in the 1960s to offer competitive long distance service. They were ultimately permitted to do so by the federal courts, only to encounter vigorous opposition by AT&T. That opposition took forms that prompted the federal government antitrust suit, of course, leading to the 1984 breakup of the company into a long distance business and several local exchange monopolies.

At divestiture, it was expected that long distance would become a competitive market in the near term, while bringing competition to the local exchange would be a longer-term project. These two services have had quite different subsequent experiences, both relevant to this discussion. With respect to long distance:

(C1) Long distance rates have fallen dramatically, as shown in Table 3.¹⁴ Most of the decline is due to the reduction in access charges mandated by the FCC, however, rather than to competitive pressures.

(C2) MCI and Sprint have grown to significant size while AT&T's share has declined from 90% at divestiture to 38% at present (see Table 4).¹⁵ The number of other long distance carriers has increased, first as pure resellers began operation, and more recently as vast amounts of new and cheap fiber capacity are being leased by upstart long distance providers.

(C3) Cost-of-service regulation for AT&T was replaced in 1989 by price caps. In the belief that competition was becoming sufficiently vigorous, most price cap controls were themselves removed in stages so that by 1993 virtually the entire industry was deregulated.

(C4) Price competition increasingly comes from so-called "dial-around" companies plus wireless carriers and some prospect of cable and Internet telephony. AT&T, MCI WorldCom, and Sprint no longer find the long distance business profitable and attractive, and have sought merger partners.¹⁶

Divestiture turned the local exchanges over to the seven regional Bell Operating Companies (BOCs). Because the local exchange has natural

14. See *infra* Appendix, Table 3: Long Distance Telecommunications Industry Statistics.

15. See *infra* Appendix, Table 4: Share of Total Toll Service Revenues—Long Distance Carriers Only.

16. Indeed, MCI WorldCom itself sought to merge with Sprint, though it abandoned that attempt in the face of threatened opposition by the Justice Department. AT&T has failed to find a suitable merger partner and is seeking a virtual exit strategy from the industry.

monopoly properties, regulatory reform rather than deregulation has been the policy. Experience to date is instructive:

(D1) The BOCs have maintained nearly complete control of their local exchange monopoly (see Table 5).¹⁷ This is due to a combination of high cost of entry and aggressive, allegedly anti-competitive, actions taken by the incumbent BOCs to impede entrants.

(D2) Price competition for local exchange customers, with the exception of some high volume businesses, scarcely exists.

(D3) The BOCs have long sought to enter the long distance market, raising the risk of possible misuse of their local exchange dominance (analogous to actions by the old AT&T). Nevertheless, the BOCs have now received approval to provide long distance service in a growing number of states.

(D4) The Telecommunications Act of 1996¹⁸ sought to stimulate entry into the local exchange in several ways, but none have really worked. Instead, the Act spawned a series of mergers, including among the BOCs themselves.

Deregulation of both long distance and local telecommunications presents a greater challenge than the fragmented-industry case analyzed previously. Nonetheless, many would probably view the results in the long distance market as reasonably successful, because a market with several significant sellers has replaced the constraint of regulation. With respect to the local exchange—always a tougher case—efforts to get the same process underway have failed, as little entry has occurred and incumbent domination is largely intact.

III. EIGHT LESSONS OF—AND FOR—DEREGULATION

The above case studies are intended to illustrate two major types of deregulated industries—one, a fragmented and potentially competitive industry where all that seems necessary is the removal of regulation, the other an industry with significant residual monopoly aspects representing a more challenging case for reform. By themselves, of course, these two industries do not capture all past experience with deregulation. In what follows, we draw on a wide range of experiences from these and other industries in order to extract some lessons from past reform that should be helpful for further deregulation.

17. See *infra* Appendix, Table 5: Share of Local Service Revenues.

18. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified as amended at 47 U.S.C. § 609 (Supp. II 1996)).

A. *LESSON 1: Entry Should Be Deregulated Before Prices*

Many regulated markets are characterized by above-cost prices together with restrictions on entry of additional sellers. In such cases, deregulation that begins by permitting pricing discretion to incumbents will result in higher prices as existing firms take full advantage of their market power. While this market power may only be temporary, conferring even temporary profit windfalls on incumbent firms is poor public policy. Deregulation should instead first permit entry to occur, after which pricing discretion may safely be granted since it will be constrained by the existence of more numerous and aggressive new sellers.

Good examples of industries where entry has been deregulated first include airlines (as discussed above) and trucking. The Motor Carrier Act of 1980 mandated the rapid removal of impediments to entry together with gradually increasing pricing flexibility as competition was judged by the Interstate Commerce Commission (ICC) to be strengthening.¹⁹ By contrast, in the case of air freight, price and entry were deregulated more or less simultaneously and without due attention to the development of competition. Air cargo rates escalated rapidly upon deregulation in 1975, and remained high until sufficient entry occurred.

B. *LESSON 2: Competition Comes from Entrants; Ensure that Entry Actually Occurs*

Post-deregulation competition can generally be traced to new entrants rather than to the sudden competitiveness of incumbent firms. This is clearly the case for telecommunications, cable TV, and other industries with small numbers of incumbents, but even in fragmented industries such as airlines, new entrants are by far the most powerful source of competition. As a result, it is important actually to have new companies enter the market. For many reasons, simply permitting entry is not the same as actually having entry. Prospective entrants may be reluctant to enter an industry where there is an entrenched incumbent. Lenders may not be eager to support start-ups. The know-how necessary to enter a well-established business may be in short supply. And even if entry does occur, entry takes some time and consumers may not respond immediately to alternatives. Such impediments handicapped early efforts of MCI and Sprint to compete with AT&T in long distance

19. Motor Carrier Act of 1980, Pub. L. No. 96-296, 94 Stat. 793 (codified as amended at 49 U.S.C. § 10101 (1994)).

telecom. Analogous difficulties are being encountered by competitive local exchange carriers as they confront the BOCs. Cable TV illustrates faulty reliance upon a belief in competition from satellite and other wireless cable alternatives. In each of these cases the absence of actual competition—regardless of enhanced opportunity to enter—has allowed incumbent sellers to more fully exploit their pricing power.

In some instances, non-incumbent firms as well as new entrants may exert significant competitive force.²⁰ Firms poised to enter the market or perceived as likely to enter may constrain the market power of incumbents. An extreme form of this argument is represented by the theory of contestability, which contends that the number of actual competitors is irrelevant so long as entry is perfectly free. Both of these arguments are subject to misuse. While as pure theory contestability is unobjectionable, there is no market where the facts comport with its assumptions. As for non-incumbent competition, advocates have advanced this argument where entry prospects are merely speculative, seeking premature deregulation.

C. LESSON 3: Be Wary of Markets Where Entrants Do Not Survive

Even where entry does occur, there remains the question of whether entrants actually survive. If they do not, there are two possible explanations that may cause some concern. First, it may be that the market has higher scale economies than envisioned and is not a candidate for structural fragmentation. In this case a major premise of deregulation may be false, requiring rethinking the strategy for reform and perhaps also its very rationale. The second reason that entrants may not survive is that incumbents may soon figure out how to counterattack and drive them out. If this is the case, greater vigilance from antitrust and other policies is logically required.

It should be noted that the demise of some entrants is quite normal. Not all entrants are expected to survive, only those who prove to be competitive in costs, products, marketing, management, etc. The surge of entry at the outset of deregulation in airlines and other industries, for example, is not inconsistent with economic models of the evolution of essentially new industries, which eventually settle down into some more stable configuration.²¹ But it is also clear, for example, that smaller

20. For full discussion, see John E. Kwoka, *Non-Incumbent Competition: Mergers Involving Constraining and Prospective Competitors*, 52 CASE W. RES. L.J. REV. 173 (2001) (paper presented at the American Antitrust Institute conference, Washington, D.C., June 2001).

21. See Boyan Jovanovic & Glenn M. MacDonald, *The Life Cycle of a Competitive Industry*, 102 J. POL. ECON. 322 (1994).

upstart carriers have often been driven from airline markets by aggressive, allegedly predatory pricing by incumbents. The result has been fewer carriers on many routes than otherwise would have arisen. Indeed, it is striking—even worrisome—that airline competition at present largely derives from a single carrier, Southwest, raising concern about the true strength of competition in these markets.

D. LESSON 4: Deregulate as Quickly as Possible

Gradualism has generally characterized transitions to deregulation, because it provides both consumers and policy-makers valuable time to adjust. In addition, it reflects normal, seemingly prudent caution in making fundamental changes to an industry. But an incremental approach has significant disadvantages as well. It requires formulating a whole series of steps correctly, not necessarily an easier task than determining the comparative statics of “flash-cut” deregulation. Moreover, while change inevitably favors certain parties at the expense of others, gradualism provides a better opportunity for all of them to organize and press for administrative and regulatory decisions that work to their advantage. The factors that determine optimum speed, therefore, are whether or not there are reliable analyses and predictions of the final outcome of the process, and whether or not consumers and companies are likely to be able to undertake adjustments with relative ease.

Experience with faster deregulation has generally been superior to that with slower phased-in reforms. For example, for twenty-five years the telecom industry has been undergoing reform in a seemingly endless series of small conditional steps. Throughout this time, parties to the process have engaged in nonstop lobbying for regulatory and administrative advantage. Airline deregulation was much faster, of course, but interestingly, Alfred Kahn, widely regarded as its driving force, came to advocate a yet speedier process. He concluded that even the few years over which airlines were freed up provided too much opportunity for self-serving efforts by the parties to distort the process, efforts that were difficult for the agencies to resolve but which they were obliged to address.²² In short, where the decision to deregulate has been made, “big bang” deregulation is the preferred approach.

22. Alfred E. Kahn, *Applications of Economics to an Imperfect World*, 69 AM. ECON. REV. 1, 7-10 (1979). For further discussion of this and some related points, see Darius W. Gaskins, Jr. & James M. Voytko, *Managing the Transition to Deregulation*, 44 LAW & CONTEMP. PROBS. 9 (1981).

E. LESSON 5: Minimize Uncertainty and Opportunities for Strategic Behavior

Ambiguities about important features of the deregulation plan, its timetable, or any interim stages create two types of problems. First, ambiguities wreak havoc on parties' strategies, undermine lenders' confidence, and may even create doubts about the final outcome. The efficiency of the process is enhanced to the degree that a "plan certain" is in place—even one that may be slightly imperfect. A second concern with ambiguity is that, as with gradualism, it is likely to induce efforts by the parties to strive to resolve such ambiguity in their own favor. Simply put, the more that can be specified *ex ante*, the less there is the corresponding opportunity for strategic interference in the process. Ambiguity and uncertainty create no social benefits and should be avoided.

Related to this are the risks of distortion and delay by incumbents where deregulation involves interactions between incumbents and entrants. After all, most reforms adversely affect dominant incumbent firms, and they cannot be expected to acquiesce in their demise or in any way to act against their own interests. In markets such as railroads and telecom where new entrants must interact with incumbents—securing interconnection, interline agreements, etc.—incumbents will predictably use those opportunities to distort and delay the process to their own advantage wherever possible. Good regulatory reform should therefore rely to the maximum degree possible on objective criteria and fixed deadlines, with little or no administrative discretion to alter them and stiff penalties for parties' failure to comply. This will force the parties to focus on preparing for the deregulated market, rather than seeking to thwart it.

F. LESSON 6: Anticipate Secondary Effects; Be Prepared for Further, Unexpected Consequences

Most regulated markets traditionally are characterized by modest and fairly predictable changes in demand and cost. By contrast, the very nature of an unregulated market brings with it less predictable shifts in overall demand and its composition as well as changes in cost and technology. Demand changes in particular are likely to put pressure on complementary goods and services, that is, those for which demand rises in tandem. Airlines illustrate the case where infrastructure constraints have been encountered as demand has grown. The result has been congested airports, overburdened air traffic control, and the loss of some of the anticipated benefits from deregulation. There is no good

reason for the failure to anticipate and provide adequately for these related goods and services.

That is not to say, however, that all of the effects of deregulation can be foreseen with clarity and certainty. It has been noted, for example, that economics has a very good record in predicting the price effects of deregulation, but a much poorer one in anticipating changes in non-price outcomes, induced production changes, and new technologies.²³ It is therefore essential that the deregulatory process be sufficiently flexible and attentive to accommodate these less predictable consequences.

G. LESSON 7: Careful Residual Regulation May Be Necessary

Too often deregulation is seen as simply the antithesis of regulation, so that what passes for deregulation is simply the elimination of regulatory constraints. While that may be an appropriate model for structurally fragmented industries, others with some natural monopoly or bottleneck properties will generally require residual regulation to control market power. Where necessary, such residual regulation should not be viewed with hostility. Indeed, avoidance of necessary regulation may jeopardize the benefits of deregulation elsewhere in the industry.

Moreover, the design of residual regulation often receives only secondary, grudging attention. It lacks the ideological and practical purity of full deregulation, and hence does not have the same appeal. It is, however, essential that residual regulation be crafted with the same care as full deregulation, and indeed with attention to many of the same principles. For example, residual regulation should take the loosest, most market-oriented form that is possible. It should be designed so as to minimize opportunities for strategic behavior by the parties. And it should have clear goals, a review process, and a time horizon that will maximize chances of success. The FCC's price cap plan for AT&T is an example of a particularly careful approach,²⁴ but most others have fallen short.

23. Winston, *supra* note 1, at 1276. Kahn has gone so far as to state that the ultimate argument for deregulation is the very fact that its results cannot be fully predicted—that is, we do not know what is being sacrificed under regulation until we turn firms loose. See Kahn, *supra* note 22, at 6.

24. For a description, see John E. Kwoka, Jr., *Implementing Price Caps in Telecommunications*, 12 J. POL'Y ANALYSIS & MGMT. 726-52 (1993). From personal involvement in the design of price caps at the FCC, I might note that we constantly put ourselves in the position of the price-capped company and asked how we might be able to game the system

*H. LESSON 8: Avoid Creating or Enhancing Market Power;
Strengthen Antitrust Oversight*

The essential purpose of deregulation is to replace the constraint of regulation with the constraint of market competition. There is scarcely a greater irony, then, than when deregulation instead unleashes, or even creates, market power. Such has occurred where deregulation has been premature or too sweeping or simply too optimistic about its effects. Cable TV and some aspects of telecom deregulation arguably fall into this category. In airlines and railroads, among other industries, pricing freedom and merger opportunities have enhanced market power under deregulation. In some instances the initial deregulation plan has been modified in response, while in other cases there has been no response—just a process of waiting out the adverse effects of market power. Far better, of course, would be initial deregulation that is more mindful of the potential for market power.

Where successful, deregulation is intended to permit an industry to operate as any other unregulated industry of the sort that dominates the economy. It is natural to expect, then, that such industries would be overseen by antitrust in exactly the same manner as any other unregulated industry. Unfortunately, that has not always been the case. When the CAB expired, merger oversight was transferred to the Department of Transportation (DOT) rather than to the Justice Department at the behest of airlines who anticipated a more favorable hearing from DOT. Their efforts were rewarded when DOT approved every one of the twenty-one airline mergers proposed between 1983 and 1987, resulting in the previously noted reconcentration of the industry. When the ICC ceased operation, rail merger authority went to the new Surface Transportation Board (STB). Railroads rightly expected a more lenient antitrust review, as was indeed the case for the major—and calamitous—rail mergers of the late 1990s.²⁵ Transferring merger and other antitrust authority to non-antitrust agencies—agencies that are predisposed to the industry itself and which lack relevant expertise—is tantamount to carving out an antitrust exemption and should not be approved.

A further consequence of progressive deregulation—documented by the growing fraction of the economy that falls in this category—is the

to our advantage. In this fashion we sought to devise definitions and operating rules that could not be strategically exploited so as to defeat the purpose of the plan.

25. The STB has now modified its merger guidelines, but its changes are neither timely nor adequate. See Letter from J. Kwoka & L. White, on behalf of the American Antitrust Institute, to Linda Morgan, Chairman, Surface Transportation Board (Nov. 2000) (on file with author).

increased need for antitrust scrutiny. Whereas regulation sharply limited mergers and pricing discretion, placing these companies in free markets predictably results in actions requiring normal oversight. Accordingly, one might expect resources for the Department of Justice and Federal Trade Commission to rise in tandem with deregulation. A statistical study of antitrust resources during the period 1970 to 1997 shows, however, that the total budgets of the antitrust agency vary in the same direction as the percent of the economy that is subject to regulation.²⁶ That is, as regulation has receded, DOJ and FTC budgets have declined rather than increased. Policy-makers apparently view antitrust as complementary to regulation, whereas the logic of these policies would make them substitutes.

Finally, the Department of Justice and Federal Trade Commission need to be better prepared to deal with newly deregulated industries. Those industries are often characterized by an initial burst of mergers and pricing and other strategies that raise significant antitrust questions. The agencies operate under the obvious handicap of having no prior analytical experience with the industry and no benchmark of competitive performance in it. The result is that agency caution leads to a permissive posture toward mergers and practices, especially in the initial years and cases. Because that is the formative period of an industry in transition, there may be long-lasting consequences of agency inaction.

For example, allegations of predatory conduct against People Express, Laker Airways, and other airlines during the 1980s went largely unheeded, and they went out of business.²⁷ Years of analysis of alleged abuses of computer reservations systems during the 1980s resulted in no action by the Justice Department, although some of these concerns were later (and only partially) addressed by the Transportation Department. More recently, the first merger of two BOCs—that between Bell Atlantic and Nynex—was approved by the Department of Justice. Although it was more aggressively reviewed by the FCC,²⁸ the

26. John E. Kwoka, *Commitment to Competition: An Assessment of Antitrust Agency Budgets Since 1970*, 14 REV. INDUS. ORG. 295 (1999).

27. The first Department of Justice suit alleging predatory pricing in airlines—*United States v. American Airlines*—was filed in 1999, more than twenty years after deregulation. *United States v. AMR Corp.*, 140 F. Supp. 2d 1141 (D. Kan. 2001). It was dismissed by the trial judge. *Id.* at 1219.

28. FCC reviews of the BOC mergers provide an example of innovative methodology that may usefully be devised for such matters. In order to characterize firms that were previously denied the opportunity to compete simply because of regulation, the FCC advanced the concept of a “precluded competitor.” This better reflected their economic status and avoided the baggage associated with “potential entrants” in non-regulated settings.

DOJ response was widely seen as an encouraging signal that other BOC mergers might be approved, as indeed they were. Because these episodes constitute important junctures in the evolution of these industries, it is all the more important that the agencies be prepared for novel issues and novel factual contexts, and that they be aggressive in preventing those mergers and practices that might have long-lasting harms.

Kahn once said that “nothing is going to discredit deregulation more quickly and thoroughly than a failure of the government to enforce the antitrust and consumer protection laws,” as well as to pursue other supportive policies.²⁹ The history of deregulation is laced with altogether too many proofs of his prediction.

IV. SOME CONCLUDING THOUGHTS ON ELECTRIC POWER DEREGULATION

While this is not the place for a full evaluation of deregulation of electric power, it is appropriate to draw some connections between the lessons set out above and the manner in which electricity deregulation has been implemented. As in our reviews of airlines and telecommunications, we begin with some observations about prices and entry.

Electricity deregulation in the U.S. has been accompanied virtually everywhere by retail price increases, not the promised reductions in costs and prices. While there are multiple causes, Table 6³⁰ shows that industrial retail prices in many regions increased by 25% or more between 1999 and 2001.³¹ The Pacific states faced a 59% price rise, led by an 84% price rise in California just between 2000 and 2001. In addition, over the past three years there have been well-documented wholesale price spikes in the Midwest, California, and to a lesser degree New York. Spot prices have briefly gone as high as \$10,000 per mwh, compared to their historic average of \$30-50 per mwh.

Generation markets have undergone major structural change. Many states, including California, have required divestiture of generation assets by their investor-owned utilities, but in many cases the bulk of those assets have been acquired by a handful of major power firms—AES, Dynegy, Duke, Entergy, Reliant, and Southern. Fully

29. Alfred E. Kahn, *I Would Do It Again*, REGULATION, 1988 No. 2, at 22, 28.

30. See *infra* Appendix, Table 6: Average Price of Electric Power.

31. Residential prices rose about one-third as much as industrial prices, due to various residential price freezes and a regulatory determination to minimize adverse effects on those customers.

80% of divested generation capacity has been acquired by subsidiaries of other utilities, with the ten largest now controlling half of national capacity.³² On the other hand, some entry by independent power producers and wider regional power trading areas have at least partially offset this rising concentration.

Experience with electric power deregulation suggests the following observations:

- Prices have shown considerable flexibility, whereas firm numbers have not changed much. This suggests an inadequate degree of entry prior to the grant of pricing discretion to dominant incumbents. The result has been enhancement of market power and anti-competitive price increases.³³
- Transmission constraints have fragmented wider, apparently competitive markets into pockets of transient monopoly. Although these constraints were well understood prior to deregulation,³⁴ their implications for deregulation itself seem to have been overlooked. The result has been the creation—or at least unleashing—of temporary, but substantial, market power.
- Market rules in California and elsewhere have permitted individual sellers with significant shares of the market to unilaterally raise prices by strategically withholding capacity.³⁵ This “hit-and-run market power” reflects poor design of key institutions required for deregulated markets and a failure to anticipate how a particular set of rules could be gamed.

32. DR. MARK N. COOPER, CONSUMER FEDERATION OF AMERICA, RECONSIDERING ELECTRICITY RESTRUCTURING: DO MARKET PROBLEMS INDICATE A SHORT CIRCUIT OR A TOTAL BLACKOUT? 13 (Nov. 2000), available at <http://www.consumersunion.org/telecom/deregcd1100.htm>.

33. Studies documenting such market power in California include S. Borenstein, J. Bushnell, & F. Wolak, Diagnosing Market Power in California's Deregulated Wholesale Electricity Market, POWER Working Paper PWP-064 (1999); and in the PJM market area, R. Tucker, Measuring Market Performance in Restructured Electricity Markets: An Empirical Analysis of the PJM Energy Market (2001) (Ph.D. dissertation, George Washington University). For analogous effects in the U.K., see Catherine D. Wolfram, *Measuring Duopoly Power in the British Electricity Spot Market*, 89 AM. ECON. REV. 805 (1999).

34. See, e.g., Richard Schmalensee & Bennett W. Golub, *Estimating Effective Concentration in Deregulated Wholesale Electricity Markets*, 15 RAND J. ECON. 12 (1984).

35. John E. Kwoka, Jr., Unilateral Withholding: Market Power and California's Electricity Crisis, George Washington University Center for Economic Research Discussion Paper 01-01 (May 2001) (providing an analysis). Recently, the Federal Energy Regulatory Commission (FERC) singled out AES, Entergy, and Southern for their “pivotal” role in pricing, defined as having at least some capacity that must be used to meet peak demand. Order on Triennial Market Power Updates and Announcing New, Interim Generation Market Power Screen and Mitigation Policy, 97 F.E.R.C. ¶ 61,219, 2001 FERC LEXIS 2788, at *16-*18 (2001).

- Numerous mergers between distribution companies, and between electric and gas utilities, are transforming the industry. The FERC has reviewed sixty major merger applications since 1995, after decades with little such activity. While combinations of distribution companies raise different issues than the consolidation of generation assets, it is by no means clear that the former will result in greater efficiency or competitiveness.

In summary, then, it would seem that some features of electric power deregulation do not reflect what has been learned during the quarter century of experience with deregulation of other industries in this country. While several factors have contributed to problems in the electricity sector, greater attention to entry issues, to the design of institutions, and to opportunities for market power would have significantly blunted the adverse effects visited upon residential consumers, businesses, and state governments. Perhaps it is the case that electricity deregulation holds less promise than anticipated, but failure is assured if the lessons of past experience are not heeded in going forward with deregulation of this critical sector.

Appendix

TABLE 1: MAJOR ECONOMIC DEREGULATORY INITIATIVES, 1971–1997*

Year	Initiative
1971	Specialized Common Carrier Decision (FCC)
1972	Domestic satellite open skies policy (FCC)
1975	Abolition of fixed brokerage fees (SEC)
1976	Railroad Revitalization and Reform Act
1977	Air Cargo Deregulation Act
1978	Airline Deregulation Act Natural Gas Policy Act
1979	Deregulation of satellite earth stations (FCC) Urgent-mail exemption (Postal Service)
1980	Motor Carrier Reform Act Household Goods Transportation Act Staggers Rail Act Depository Institutions Deregulation and Monetary Control Act International Air Transportation Competition Act Deregulation of cable television (FCC) Deregulation of customer premises equipment & enhanced services (FCC)
1981	Decontrol of crude oil and refined petroleum products (executive order) Deregulation of radio (FCC)
1982	Bus Regulatory Reform Act Garn-St. Germain Depository Institutions Act AT&T settlement
1984	Space commercialization Cable Television Deregulation Act Shipping Act
1986	Trading of airport landing rights
1987	Sale of Conrail Elimination of fairness doctrine (FCC)
1988	Proposed rules on natural gas and electricity (FERC) Proposed rules on price caps (FCC)
1989	Natural Gas Wellhead Decontrol Act of 1989
1991	Federal Deposit Insurance Corporation Improvement Act
1992	Cable Television Consumer Protection and Competition Act Energy Policy Act FERC Order 636
1993	Elimination of state regulation of cellular telephone rates Negotiated Rates Act
1994	Riegle-Neal Interstate Banking and Branching Efficiency Act Trucking Industry and Regulatory Reform Act
1995	ICC Termination Act
1996	Telecommunications Act FERC Order 888

* W. KIP VISCUSI, ET AL., *ECONOMICS OF REGULATION AND ANTITRUST* (3d ed. 2000).

Appendix

TABLE 2:
NUMBER OF LARGE CERTIFICATED AIR CARRIERS PROVIDING SERVICE*

Year	At End of Previous Year	New Carriers Added	Carriers Deleted	At End of Current Year
1979	43	22	5	60
1980	60	17	5	72
1981	72	16	8	80
1982	80	10	15	75
1983	75	18	9	84
1984	84	19	16	87
1985	87	18	19	86
1986	86	7	19	74
1987	74	5	11	68
1988	68	4	6	66
1989	66	5	11	60
1990	60	7	5	62
1991	62	5	7	60
1992	60	15	5	70
1993	70	12	6	76
1994	76	12	5	83

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Appendix

TABLE 3: LONG DISTANCE TELECOMMUNICATIONS
INDUSTRY STATISTICS*

Year	Industry Average Revenue Per Minute (\$)	Per Minute Access Charge (\$)
1984	0.32	0.173
1985	0.31	0.162
1986	0.28	0.14
1987	0.25	0.115
1988	0.23	0.106
1989	0.22	0.091
1990	0.20	0.075
1991	0.20	0.07
1992	0.19	0.068
1993	0.19	0.067
1994	0.18	0.069
1995	0.17	0.062
1996	0.16	0.06
1997	0.15	0.052
1998	0.14	0.038
1999	0.14	0.028

Note: National average estimated in July of each year

* Federal Communications Commission, *Statistics of the Long Distance Telecommunications Industry*, tbls. 12 & 15, Jan. 2001.

Appendix

TABLE 4: SHARE OF TOTAL TOLL SERVICE REVENUES—
LONG DISTANCE CARRIERS ONLY (%)*

Year	AT&T	MCI WorldCom	Sprint	All Other Long Distance Carriers
1984	90.1	4.5	2.7	2.6
1985	86.3	5.5	2.6	5.6
1986	81.9	7.6	4.3	6.3
1987	78.6	8.8	5.8	6.8
1988	74.6	10.3	7.2	8
1989	67.5	12.3	8.4	11.8
1990	65	14.5	9.7	10.8
1991	63.2	15.6	9.9	11.3
1992	60.8	18.1	9.7	11.5
1993	58.1	19.7	10	12.3
1994	55.2	20.7	10.1	14
1995	51.8	24.6	9.8	13.8
1996	47.9	25.4	9.7	17
1997	43.8	25.7	9.5	19.8
1998	43.1	23.5	8.5	24.9
1999	40.5	23.7	9.8	26
2000	38	22.5	9	30.5

* Federal Communications Commission, *Trends in Telephone Service*, tbl. 10.8, Aug. 2001.

Appendix

TABLE 5: SHARE OF LOCAL SERVICE REVENUES (%)*

	1993	1994	1995	1996	1997	1998	1999
Share of Local Service Revenues							
Incumbent LECs							
Bell Operating Companies	73.6	72.9	72.4	73.1	71.5	69.6	70.3
Other Incumbent LECs	26.1	26.7	26.8	25.9	26.2	26.9	23.9
Total	99.7	99.6	99.3	99	97.7	96.5	94.2
Local Service Competitors							
CAPs & CLECs	0.2	0.3	0.7	1	1.6	2.4	4.1
Local Resellers, Shared Tenant, Private Carriers, & Other Local	NA	NA	NA	NA	0.2	0.3	0.5
All Other Carriers	0.1	0	0.1	0.1	0.4	0.8	1.2
Total	0.3	0.4	0.7	1	2.3	3.5	5.8

* Federal Communications Commission, *Trends in Telephone Service*, tbl. 9.6, Aug. 2001.

Appendix

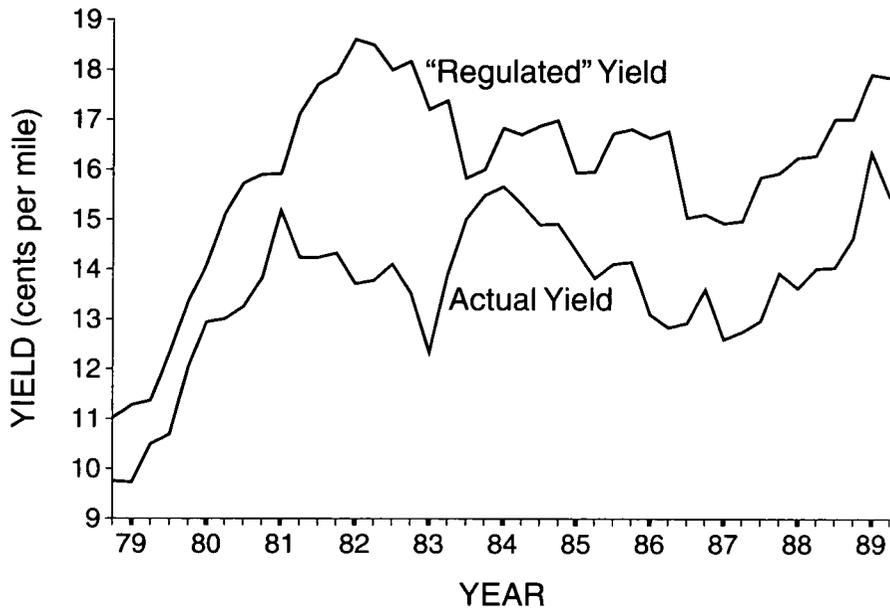
TABLE 6: AVERAGE PRICE OF ELECTRIC POWER*
(cents per kilowatt hour)

	Residential			Industrial		
	1999	2001	% Change	1999	2001	% Change
New England	11.2	12.4	10.7	7.4	9.6	29.7
Mid-Atlantic	11.8	12.3	4.2	5.2	6.4	23.1
E. North Central	8.5	8.6	1.2	4.8	4.8	—
W. North Central	8.0	8.1	1.3	5.0	5.0	—
South Atlantic	8.0	8.5	6.3	4.6	4.7	2.2
E. South Central	6.5	6.7	3.1	4.4	4.2	(4.5)
W. South Central	7.8	8.8	12.8	4.2	5.4	28.6
Mountain	7.6	8.1	6.6	4.6	5.1	10.9
Pacific	9.1	9.8	7.7	4.9	7.8	59.2
California	10.8	11.8	9.3	7.5	10.5	40.0
U.S.	8.5	8.9	4.7	4.8	5.4	17.5

* Department of Energy, Energy Information Administration, *Electric Power Monthly*, tbl. 53, Oct. 2000; and tbl. 53, Oct. 2001.

Appendix

FIGURE 1: ACTUAL VS. "REGULATED" YIELD*

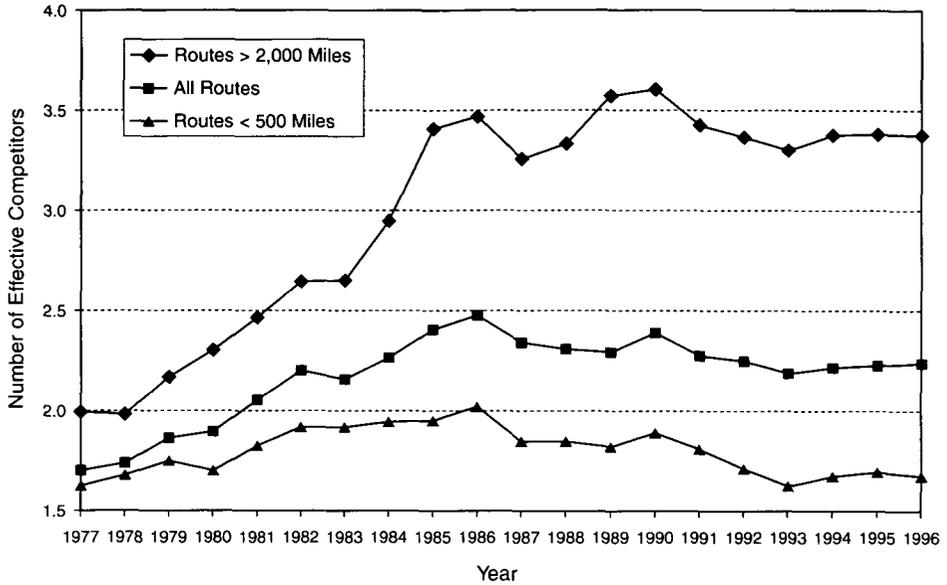


Note: Yield refers to revenue per passenger mile.

* Steven A. Morrison & Clifford Winston, *The Dynamics of Airline Pricing and Competition*, AM. ECO. REV., May 1990, at 389, 389.

Appendix

FIGURE 2: COMPETITION AT THE ROUTE LEVEL*



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