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The Deregulatory Tar Baby: The Precarious Balance Between Regulation and Deregulation, 1970–2000 and Henceforward*

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Abstract
The recent history of the airline, telecommunications and electric utility industries years amply demonstrates the benefits of deregulation. It also demonstrates both the necessity of continued government involvement and its pitfalls. Prominent among the former are the efficient provision and pricing of infrastructure services, enforcement of antitrust-like policies and regulation of bottleneck facilities. The latter come down to an inherent tendency of regulators to engage in continued micromanagement—to continue to assume responsibility not merely for opening the door to competition but for ensuring that competitors go through it, and to prescribe the results they think an efficient competitive process would produce.

1. Introduction

When I became chairman of the New York Public Service Commission, in the summer of 1974, I had not the slightest notion that I was assuming the leadership of an enterprise that either was or should have been in process of going out of business. True, I soon discovered that my distinguished predecessor, Joe Swidler, had agreed with Rochester Telephone to undertake an experiment of opening the provision of terminal equipment—phone instruments, answering machines, PBXs—to competition, subject only to certification of compatibility of competitive equipment with its own network: prevailing policies still permitted the franchised local monopolies to require (and charge prices far above cost for) ''protective connection devices'' between ''alien attachments'' and the interface with the telephone network.[1] The purpose of the experiment was to see whether, as some exuberant Bell representatives claimed, removal of that protection might end up electrocuting

* I thank Dennis Weisman and Tim Tardiff for their extremely careful reading of this manuscript and suggestions for its improvement.

1 See the discussion and criticism of the Hushaphone and Carterphone decisions in Faulhaber (1987, 27–30) and in Kahn (1971, vol. 2, 140–145).

telephone linemen. The notion, however, that other parts of the business could be opened to competition or deregulated still seemed remote. This was true even of long distance service, despite the FCC's decision in 1959 to permit use of the spectrum above 890 Mc for private microwave systems, its interminable proceedings thereafter concerned with defining the acceptable response by AT's to that competition, and its 4–3 decision in 1969 to approve MCI's provision of private carriage alone.[2] The only major active deregulatory issues at the national level related to the field price of natural gas, stock exchange brokerage commissions and whether cable systems should be relieved of the prohibition of their importing over-the-air distant signals, imposed in the interest of protecting local broadcasters (Kahn 1971, vol. 2, 193–209 and Noll et al. 1973, chapter 6).

My preponderant interest, instead, was in applying to electric, gas, telephone and water system charges the elementary economic principles I had previously enunciated in my first volume.[3] Meanwhile, the Kennedy hearings on the airline industry, directed by a Harvard law professor, Steven Breyer, were only just getting underway. Although I testified at them, I was of course totally unaware of how, within fewer than three years, they would change the course of my life.[4]

2. The Continuing Tension Over the Proper Role of Government in the Deregulated Airline Industry

It seems fitting to use the airline industry as my first illustration of ''the precarious balance between regulation and deregulation.'' I have elsewhere described how what we intended to be a gradual process of deregulating the airlines soon took on a life of its own, like the proverbial snowball rolling down a hill—the mirror image of the tendency of regulation, once undertaken, to become increasingly pervasive and thoroughgoing.[5] Unsurprisingly,

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2 See Kahn (1971, vol. 2, 129–136). Also Faulhaber, chapters 2 and 3. MCI's defiance of the Commission's prohibition of its offering public switched service was not sustained in the courts until 1977 (MCI v. FCC, CCA, DC Circuit, July 28, 1977).

3 See the ''Introduction: A Postscript, Seventeen Years After,'' to the 1988 reprinting, especially its survey and interim assessment of ''The Deregulation Revolution,'' and ''The Anomalies and Distortions of Partial Deregulation.''

4 This is an apt occasion to acknowledge my debt to Walter Adams for calling my—and the world's—attention 20 years earlier to the similar cartelization of the trucking industry, largely in his work for the Senate Small Business Committee. See the discussion and references *ibid*., vol. 2, esp. 14–18 and 186–193.

5 See the reference to Kahn 1971 in note 3, above, a discussion that documents the ''inherent tendency to what might be termed service inflation, in which an equilibrium of cost and price is achieved not by reducing price to marginal cost but raising marginal cost to price'' (207).

> The typical answer of foreign governments to asserted excessively low load factors, namely the imposition of direct limitations on the amount of capacity offered, market by market, provides yet another illustration of the inexorable tendency for regulation of a competitive industry to spread. Control price, and the result will be an artificial stimulus to entry. Control entry as well, and the result will be an artificial stimulus to compete by offering larger commissions to travel agents, advertising, scheduling, free meals, and bigger seats. The response of the complete regulator, then, is to limit

therefore, when and as deregulated airline markets began to demonstrate the consequences of severe imperfections—

1. $13 billion or so of losses industry-wide during the 1990–1993 period—greater, the industry proclaimed, than the totality of its profits since the Wright Brothers' historic achievement in Kitty Hawk, North Carolina—demonstrating all of the symptoms of destructive competition, consequent on the splurge of capital expenditures in the late 1980s and the subsequent deceleration in the growth of demand;
2. the general deterioration in the quality of the air travel experience and especially extreme congestion at particular times and airports in very recent years; and, finally,
3. the extreme profusion and differentiation of fares, reflecting in important measure differences in marginal costs but also genuine price discrimination, reflecting some degree of monopoly power, particularly at increasingly prevalent hubs dominated by single carriers—it predictably and understandably generated increasingly intense pressures for governmental intervention. I confine my attention to the last two; the first has for obvious reasons come to seem much less urgent than it was a decade ago.

In principle, those proposals have fallen into two very different categories—some (coming particularly from parties who were never enthusiastic about deregulation) clearly constitute proposed reversals of the historic decision in 1978—putatively partial but, all experience tells us, certain to be driven in the direction of totality—others, at least in intent, involving no more than an application of antitrust principles to preserve the competition that is the essential substitute for regulation.

But of course, as every student of antitrust knows, that important distinction, simple and unexceptionable in principle, nevertheless in large measure merely shifts the nominal terms rather than the substance of the debate: to what extent do proposed interventions, under the rubric of preserving competition—the very rationalization of comprehensive regulation in the first place—actually involve repressing it in the interest of protecting competitors?.

I propose to offer two examples, knowing that for this audience little elaboration will be necessary.

2.1. Quality of Service Generally and Congestion in Particular

About the deterioration in the quality of airline service generally—the longer lines, more crowded planes—thanks largely to the 20% point increase in average load factors and narrower seating—I can be very brief. Under tight price regulation, travelers were confronted with only one choice—generally good (indeed, inefficiently good[6]) service but

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advertising, control scheduling and travel agents' commissions, specify the size of the sandwiches and seats and the charge for inflight movies. Each time the dyke springs a leak, plug it with one of your fingers; just as a dynamic industry will perpetually find ways of opening new holes in the dyke, so an ingenious regulator will never run out of regulatory fingers (1978b).

6 See footnote 5, above.

at cartel prices; the purpose of deregulation was, by unleashing price competition, to offer economy-minded travelers an alternative low price and necessarily correspondingly lower quality service; and in that it has dazzlingly succeeded.

In contrast, the intolerable congestion at major airports, either at particular times or chronically, is probably the greatest single black mark on the industry's performance. The temptation is to characterize it, correspondingly, as the single greatest failure of deregulation.

Obviously, it is not the latter: on the contrary, it is the strongest possible vindication of the expectations of the deregulators—expectations of an accentuation of price competition and an elastic response of the traveling public to the sharp consequent reductions in average fares. The failure—the only failure—was that of governmental agencies to respond to the predictably increased demand for infrastructure—specifically, air traffic control and airports—and to price it correctly—a blame that I can definitively deflect from myself (and from deregulation itself), since I explicitly emphasized to the FAA the importance of their fulfilling that function at the very time we were undertaking to deregulate (Kahn 1978a).

I do not have to make the case here that the efficient remedies are and always have been reform of our organizations for providing those infrastructure services—removing them from the regular agencies of government and the federal budget, whether by corporatization or privatization—and the introduction of marginal cost pricing by a combination of congestion charges and auctioning of slots.[7] The only amplifications worth making in the context of this talk are to rebut the naïve assumption—of which surely none of you will be guilty—that congestion charges will produce an additional burden on airline customers; to document the danger that this abominable performance may lead instead to ''solution'' by reregulation, rather than by efficient pricing; and to consider the ways in which antitrust protections may be required.

Consumer organizations rarely put efficient pricing high on their list of proposed remedies, evidently partly for fear that the result will be higher prices for scarce services. But average fares are, unsurprisingly, already higher on flights to and from slot-constrained airports and on peak than off-peak, reflecting the comparative availability of discount tickets. Efficient congestion-based charges—or large proceeds from slot auctions—at times of excessive congestion will extract those rents from the carriers, rather than raise fares. Small wonder the favored carriers oppose them, preferring instead to assume responsibility for tailoring operations to capacity cooperatively, under grant of antitrust immunity![8] The other side of the coin would have to be arrangements assuring that those rents would, in turn, be used for some combination of increasing capacity and subsidizing—in the form of negative charges, if necessary for revenue neutrality—usage at off-peak times or uncongested auxiliary airports. Efficient charges of this kind would further realize the success of deregulation itself (and, incidentally, also of the bumping rules enacted by the CAB) in offering travelers a low-fare/low-quality (or lower-convenience) option denied them under regulation.

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7 See, for example, Levine (1969).

8 For a thorough criticism of this proposed ''solution,'' see Robyn (2001).

As to the second, it is difficult to do justice, summarily, to the flood of proposals for legislative enactment of ''travelers' bills of rights'' engendered by the clearly unsatisfactory air service to which they have been exposed in recent years, particularly when, at peak travel times, adverse weather conditions bear principal responsibility for the most dramatic deteriorations. As the one who, inspired by the late Julian Simon, persuaded the CAB to adopt its present bumping rules under our authority to prohibit unfair or deceptive methods of competition, I would be among the last to oppose legislation banning ''deceptive scheduling of flights,'' requiring the publication of on-time performance or requiring (or, as I would prefer, requiring some administrative agency to require) compensation of aggrieved passengers in the event of specific failures. Yet the tendency of consumerists to prescribe such rules; to assign the principal blame to the scheduling practices of the carriers—as though they have any choice individually but to schedule their flights, to the maximum extent possible, when and where customers want to travel—rather than to inefficient pricing of infrastructure services; to prescribe preferential allocations of scarce facilities to favored carriers—low-fare or regional; indeed the hostility some of their proposals betray to efficient pricing ''as a way for the FAA to raise additional revenues rather than reducing congestion delays,'' to quote one of them—all reflect a bias in favor of regulatory rather than efficient competitive solutions.

There remains to be considered the possibility that the use of congestion pricing or slot auctioning may be distorted by market power. This is clearest in the case of auctioning: the value of a slot is likely to be systematically higher for the bidding carrier for whom it preserves a dominant position and the accompanying monopoly power than for the carrier to whom it offers only an opportunity to compete with an entrenched rival. The response, in principle, would be that it is precisely the purpose of the antitrust laws, and of section 7 of the Clayton Act in particular, to prevent such agglomerations of assets. Enforcement of that protection through the regular antitrust channels—involving ultimately adjudication by the courts—is both highly uncertain (for good economic reasons, no doubt) and cumbersome. For that reason, the antitrust agencies themselves use essentially administrative means not only, necessarily, to decide what mergers they will attack but, with increasing frequency, to attach structural conditions—typically stipulated divestitures—to an agreement not to prosecute. So the most efficient way of counteracting any such distortion of the bidding process would be to set some limits—say, 20 or 25%—to the share of the total slots for which any carrier could successfully bid.

Without some such protection, congestion pricing would seem to be subject to the same distortion as slot auctioning: as the price at times and places of excess demand rises to whatever level necessary to reduce congestion to optimal levels, presumably those carriers for whom use of the facilities protects a monopoly or dominant position would be the ones who would not drop out. The only answer I can think of would be to impose a similar limitation on the permissible share of any single carrier. To the foreseeable reaction that such a preventive would be inherently regulatory, the answer can only be that it is no more so than section 7 of the Clayton Act and the spirit of the antitrust laws generally, the importance of which is of course enormously increased by the abandonment of direct regulation itself.

These suggestions raise the familiar dilemmas of all such limitist solutions to antitrust issues—in the present instance, the fact that hubs have characteristics of natural—as well

as unnatural—monopoly[9] and that, as Dan Kasper has urgently called to my attention, such limits could well weaken the important competition on long routes among network carriers over their respective hubs.[10] The dominant carrier may well be able to outbid its rivals for the scarce slots or better pay the congestion-based fees because of the superior economies of scope that usage of airports at those times permitted it to exploit.

2.2. Extreme Price Differentiation

> It costs $352.50 for a round-trip coach ticket between Boston and Washington, a distance of 406 air miles. But if you want to go to London, 3,267 miles away, it costs as little as $298—provided you meet the restrictions.[11]

In my response to this complaint, I compared the $352.50 full Boston/Washington fare with the weighted average round trip fare for that route of $226.22, and the $298 Boston/London fare with the range of $401, $506 and $1,587 Boston/London, respectively, for the excursion fares, low and high seasons, and the regular tourist fare.[12]

These differentials are, of course, in important measure not discriminatory at all, but reflect differences in marginal costs; they are in large measure also definitely discriminatory but welfare-enhancing, in an industry characterized by extreme economies of scale and, even more, scope—benefiting the ''victims'' as well as the beneficiaries; but they create a need for the best possible guarantees that the demand-inelastic customers are in fact not being exploited—that is, are not being forced to pay more than the costs of serving them on a stand-alone basis (Baumol et al. 1988, 508).

There are only two generic ways of attempting—and of course the word ''attempting'' requires multiple emphasis—to provide such protection, regulatory and competitive. The first could involve ceilings of estimated stand-alone costs or fully allocated costs or setting some arbitrary maximum to the spread between average and full fares—all of which have been advocated at one time or another. The other would require doing everything possible to strengthen the discipline of competition: perfect contestability is the perfect preventive of rates to any group of customers exceeding stand-alone costs (Baumol et al. 1988, 352–354; 508–509).

My rejection of the regulatory solution is not merely aesthetic or an attempt to exorcise the hobgoblin of inconsistency; it is informed rather by experience and a recognition of the logical and practical impossibility of partial re-regulation. As for the former, the contestant parties in proceedings attempting to set ceiling rail rates for captive shippers under the

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9 Kahn (1993, 381–387). See also Levine (1987).

10 For example, if such restriction applied at ORD [O'Hare], both AA and UA would be severely handicapped in competing against carriers such as NW and DL whose competing hubs are relatively unconstrained. In addition, it is clear that hubbing carriers at efficient hubs typically use well over 25% of the operations, even at unconstrained hub airports. Thus, the proposed limits would effectively eliminate hubbing if applied to hub airports. Another reason to push hard for airport capacity expansion. (Personal communication.)

11 Kuttner (1988). Undoubtedly more extreme examples could be cited today.

12 Kahn (1988).

provisions of the 1980 Staggers Act have accepted the proposition that stand-alone cost ceilings are theoretically correct but almost hopelessly difficult to administer, with the result that the captive shippers clause itself has provided little protection and is only rarely invoked these days.[13] This experience has suggested to me and, I believe, to others, that something like 180% of actual long-run incremental costs—measured in an approximate way by the railroads' so-called Form A costs—would make much more sense, pragmatically. An additional reason for rejecting any genuine attempt to measure those stand-alone costs has been the bitter experience with the FCC's prescribed standard for pricing unbundled network elements provided by incumbent to competitive local exchange companies—the total long-run incremental costs of a hypothetical competitor writing on an almost completely blank slate and employing the most efficient available technology—rather than the actual LRICs of the incumbent companies—to which I turn in part B, below.

My second reason for rejecting the regulatory protection is the tendency to which I have already referred and that I have already documented in other contexts, for ''regulation, once undertaken, to become increasingly pervasive and thoroughgoing.'' (See note 5, above.) Despite the unfortunate tendency of the discomforts and inconveniences of the low-fare/low-quality service the emergence of which, as I have argued, is one of the proudest achievements of deregulation, to spill over and sully the service of the travelers who pay full fares, the airlines have over the last several years been attempting to differentiate the quality of the two—with automatic upgrades to first class, separate lines at the check-in counter and extra frequent flyer awards for the full-fare passengers. Predictably, any attempt by regulators to put ceilings on those higher fares will have to be accompanied by corresponding, increasingly detailed floors under quality—the percentage of times in which the payment of full tourist fares is indeed accompanied by upgrades, the respective lengths of lines at the check-in counters, the quality of their food service: there is no halfway house.

This leads, as the only logical complement of deregulation, to greatly increased emphasis by both the antitrust agencies and the Department of Transportation—which has the same kind of authority to prosecute unfair or exclusionary methods of competition as the Federal Trade Commission has for industry generally—to protect and improve the conditions of competitive entry.

This means to me, in turn, that the great majority of economists who are of the opinion that airline deregulation has been a success and is worth preserving rethink the highly skeptical view of many if not most of them about the reality of predation.[14] All it takes, in

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13 The major exception, I am informed, is for shipments of coal moving on essentially stand-alone railroads. See my citation of this experience in my recognition of the theoretical correctness of the stand-alone cost ceiling and my rejection of the FCC's similar prescribed blank-slate pricing of unbundled network elements in my *Whom the Gods Would Destroy* (2001, 61–62), and in part 2, below.

14 See my fuller and latest discussion of this issue (*ibid*., 36–39) and especially lengthy accompanying footnotes (66–70). The day before I first dictated this discussion, there appeared the following in the *New York* Times (2001):

> Early last month, Canada's Competition Bureau, a government antitrust watchdog, asked a federal court to order Air Canada to stop pricing fares below cost in Eastern Canada. In February, for

my opinion, is that DOT and antitrust agencies recognize the soundness of marginal opportunity (rather than only marginal production) costs as the theoretically correct floor of non-predatory prices[15] and solve the administrative (and essentially regulatory) pitfalls of a government agency attempting to apply such a standard[16] by leaving that responsibility to the responding carriers themselves, by requiring them, if their response is indeed followed by withdrawal of the challenger, to maintain their responsive levels of capacity and fares for some period of time—say two years. That would tend to ensure that an incumbent carrier would not lightly undertake a response that was in its own opinion profit-sacrificing (and therefore putatively predatory) in the expectation of being able to withdraw it if it succeeds in driving out the challenger; and, at the same time, give travelers the continuing benefit of the newly introduced competition for some substantial period of time, rather than permit its quick withdrawal.[17]

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example, Air Canada, which had been charging about $400 for one-way fares between Halifax and Montreal or Ottawa, suddenly dropped fares to around $65, matching those of the six-month-old CanJet.

15 See references to the unanimous agreement with this proposition in the Report of the Transportation Research Board/National Research Council (1999), in my *Whom the Gods Would Destroy*, note 79 (69–70).

16 All the members of the afore-mentioned TRB/NRC committee explicitly recognized these difficulties, despite their roughly 50/50 division on the merits of the Department of Transportation's initiative to proceed against ''unfairly exclusionary'' pricing.

The recent decision of the U.S. District Court granting American Airlines summary judgment in the predation suit brought against it by the U.S. Department of Justice, finding that the plaintiff had failed to demonstrate that the airline's entry-responsive fares fell below average variable *production costs*, rejected the Department's proposed alternative standard—namely whether the carrier had by its particular response sacrificed profits that it might have earned by an alternative response—on the understandable ground that any attempt to determine whether ''the response at issue involved the carrier's forgo[ing] more revenue than it otherwise would have made . . . would be a litigation nightmare . . . and would invite excessive speculation about reasonable alternative strategies and the like . . .'' U.S. District Court for the District of Kansas, *Memorandum and Order*, 2000, *U.S.A. v. AMR Corporation et al.*, Internet version (2001, 49–51).

17 The District Court in the American Airlines case also committed the logical error—emphasized by its own use of italics—of defining successful predation as the restoration of pre-competitive entry levels only if and to the extent that those levels were themselves super-competitive:

> In sum, the government's evidence establishes only that, after decreasing during a period of low fare carrier competition, fares of four of the core routes. . .returned to approximately the same levels as before. *But there is no evidence that the prior fares were in fact supra-competitive*. (*ibid*., 57).

See also the conclusion on p. 62, for the same standard. If, however, one conceives of the function of competitive entry as one of subjecting those previous fares to a test of competition, clearly a highly discriminatory, pinpointed response that succeeds, by driving out the challengers, in restoring those previous levels will have frustrated that competitive test. The District Court's standard would force on the government the highly regulatory responsibility of determining whether those previously prevailing levels were indeed excessive. On this and other related tests, see Kahn (2001, note 79).

3. The Apotheosis of the Tar Baby: Telecommunications ''Deregulation''

Despite the difficult antitrust issues that they continue to raise, deregulation of the transportation industries—as well as crude oil, natural gas, stock exchange brokerage fees, cable television and wireless telephony—has been comparatively simple. It was comparatively easy for us to achieve the measure of success that I proclaimed some time after assuming chairmanship of the CAB-namely, ''the extent to which there would be no such agency when I was through'' or ''getting those eggs so scrambled that no one would ever be able to unscramble them.'' The most complete exemplification of the tar baby effect has been and continues to be telecommunications—25 years after the courts sustained MCI's defiance of the FCC's prohibition of it offering universal switched long-distance service and five years after Congress proclaimed the goal of deregulation. The reason, of course—both here and in electric power—has been the persistence of elements of natural monopoly that provided the justification—and/or rationalization (Gray 1942, 280–303)—for their treatment as public utilities in the first place.

Since I have—in some instances in collaboration with Timothy J. Tardiff and Dennis L. Weisman,[18] including substantial testimony on behalf of the local Bell telephone companies—sharply criticized at length the FCC's execution of its authority under the 1996 Act, it would come close to malpractice for me to use this occasion to repeat those arguments at any length. I will content myself therefore only with the following summary observations, first about its pricing prescription and second about its identification of network elements meeting the statutory standards for mandatory sharing.

As for the first, I find simply incomprehensible the Commission's adoption of the ridiculous blank slate version of TELRIC for the mandatory pricing of network elements—all the more so in view of the fact that I (sometimes in collaboration with Timothy J. Tardiff) and Jerry Hausman, separately, had emphasized directly to them the conceptual fallacy that it embodied. The literature had—to my satisfaction!—established the sufficiency of a requirement that they make network elements available at the actual long run incremental costs of the incumbents, with or without a markup approved by their state regulators sufficient to recover their historically determined revenue entitlement, subject to what I have termed the requirement of competitive parity and Baumol and Willig efficient component pricing (Baumol and Sidak 1994, 171–202, Kahn and Taylor 1994, 225–40).

Taken together with the Commission's totally expansive criteria for identification of the network elements subject to mandatory unbundling—reversed by a seven-to-one vote of the United States' Supreme Court—it is difficult to conceive of a standard more inherently contradictory of the Act's manifest and understandable desire to encourage competitive challenges by entrants constructing their own facilities than their ability to obtain such facilities instead from the incumbent at prices at the lowest level that they could conceivably achieve themselves.[19]

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18 Kahn (2001, chapter 2); Kahn (1998); Kahn et al. (1999, 319–365).

19 Unsurprisingly, therefore, the only major facilities-based competition has taken place where prices were held by regulators outrageously above the incremental costs of incumbents and challengers alike in order

With Henry Higgins, I can only wonder or marvel ''what can have possessed'' the Commission's Eliza to have presumed in this way to stipulate what the *results* of the hypothetical competitive process would be: ''I cannot understand the wretch at all!'' The only answer I have been able to divine I have put in the title of my little book, *Whom the Gods Would Destroy* (2001).

My only other observation I claim entitlement to make as one of the few surviving students of Schumpeter. Whatever the case for the FCC's identification of ILEC network elements subject to mandatory sharing and its prescribed method of determining the price, it clearly becomes progressively attenuated the more such advantages as the ILECs enjoy from providing them are not simply the heritage of their previous franchised monopolies but flow from the undertaking of new, costly and risky investments, in an environment of technological and commercial uncertainty. Such a policy confronts investors with the asymmetrical prospect of being required to share the results of investments that turn out successfully, at regulated (let alone absurdly regulated) rates, while perforce absorbing the entire costs of the unsuccessful ones. The case turns unequivocally negative when, as the FCC has itself found with respect to the offer of broadband services generally and high speed Internet access specifically, the ''preconditions for monopoly appear absent''; the market is likely ''to accommodate different technologies such as DSL, cable modems, utility fiber to the home, satellite and terrestrial radio''[20]; and the market share of the phone companies is roughly half that of the cable companies, who are subject to no such sharing obligations.

In these circumstances, the FCC's insisting additionally on attaching to its authorization of the ILECs to do anything it is a position to deny—to merge, to offer interLATA services in region, to offer advanced, broadband services—no doubt to go to the bathroom if it could—its favorite condition, ''only if you accept the handicap of offering broadband services through a fully separated subsidiary''—seems, quite simply, anticompetitive.

Although as little as a year or so ago, I could not

> bring myself to deny the regulatory agencies a central role in the transition of public utilities to competition, in view of the special circumstances of those industries: the necessity for settling out and tracking the collection of strandable costs; the more pervasive possibilities in those industries of tying competitive to monopoly services, directly or subtly, and of cross-subsidization, strictly defined; the consequent need for

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to cross-subsidize other services. The major historical instances of regulatory-mandated egregious overcharging were in (1) the retail charges for long-distance calling and then to independent long-distance companies for access to the local networks—leading to the emergence of independent long-distance access providers in every major metropolitan area in the United States—and (2) the retail charges for high-volume services to business users in those areas.

20 Report, *Inquiry Concerning the Deployment of Advanced Telecommunications Capability*, 14 FCC Rcd 2398, 2423–24, par. 48 (1999); *see also* Memorandum Opinion and Order, *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from MedioOne Group, Inc. to AT&T Corp.*, 15 FCC Rcd 9816, 9866, par. 116 (2000); *see also* Seventh Annual Report, *In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, CS Docket No. 00–132, FCC 01–1, par. 52 (rel. Jan. 8, 2001).

> accounting separations and the monitoring of transactions between still-regulated utilities and unregulated affiliates; and, finally, the pervasiveness of essential facilities controlled by incumbents—not to mention competitive advantages deriving solely from their historical franchised monopolies, requiring an administrative agency to define them and to prescribe the terms and conditions of sharing (Kahn 2001),

I'm tempted to suggest a moral from the FCC's behavior: that the task of presiding over and establishing the necessary conditions for deregulating an industry should not be entrusted to the agency that regulated them.

4. The California Electric Deregulation Fiasco[21]

I had been promising myself during the last few months to determine a reasonable apportionment of responsibility for what has gone wrong in California better than the explanations one can read in any newspaper any day—to decide what conclusions can reasonably be drawn from it about the wisdom of that venture, both as a general proposition and in its major details, and to use this paper as the occasion for offering my insights to an eagerly expectant world. I have long since abandoned that ambition: there are too many others who understand far better than I the peculiar constraints imposed by the technology of electric power generation and transmission, and have articulated a far clearer vision of the *regulatory* policies and organizational arrangements essential to satisfy those constraints if competition is to be feasible.[22] Sheer cowardice, along with a recognition of my limitations, forces me to confine myself here to a series of questions and suggestions.

4.1. Should We Have Deregulated?

Although the question may be pointless at this stage—too many eggs have become scrambled; a generation sector that it still appears could be effectively competitive (even

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21 My first and only exposure to the California experience resulted from my appointment by the California Power Exchange to the chairmanship of a ''Blue Ribbon Panel''—whose other members were Peter C. Cramton, Robert H. Porter and Richard D. Tabors—to assess proposals that the Exchange switch from uniform pricing to pay-as-bid. Our report, on January 23, 2001, has since been published in slightly altered form in the *Electricity Journal* (Kahn et al. 2001).

22 See Hogan 2001, in this issue, citing also the prescient discussion of Joskow and Schmalensee 1983; also Joskow 2000.

> The only involvements I have had with the radical restructuring of the electric utility industry have been testimony I have given on (1) the entitlement of the utility companies to recover the costs that, it appeared—indeed, it was fondly expected and hoped by some parties—would be left stranded by the introduction of competition and (2) the formulation of codes of fair conduct governing the anticipated competition at retail between the still-regulated local utility distribution companies or their affiliates and independent marketers. Even if the first of these appeared to involve many billions of dollars and the second was the subject of intense controversy, neither seemed to me of great importance compared with whether or how an electric industry, part deregulated and part, necessarily, still regulated, could work.

though it may not be in the present situation of extreme shortage) has now been separated out; any suggested reforms aimed at restoring regulation may well do more harm than good—it is still one that all of us must attempt to answer for ourselves. An answer would have to take into account, above all, the extraordinary and in some respects literally unique characteristics of this industry—the high degree of interdependence between investments and operations at the transmission and generating levels, hitherto presumably taken fully into account internally by the several vertically integrated franchised monopolists that dominated the industry[23] and by pools or bilateral arrangements that they found in their several interests to enter; and the especial need for integration created by the essential non-storability of power and the corresponding need for an instantaneous matching of generation and consumption, in which failure at any single point can threaten the stability of the entire interconnected grid. California has made especially clear how extraordinarily the effects of failures to satisfy these constraints are compounded by the highly inelastic demand on the part of most consumers, particularly because of the absence of any means of confronting them with the wide fluctuations in marginal supply costs on a real-time basis,[24] and the long-run inelasticity of supply—using long-run in both its popular, temporal, and technical economic sense.[25]

As a result, the industry is extraordinarily susceptible to severe consequences of forecasting errors. For at least the last 10 years, I have been pointing out that the deregulation movement in electric power has been essentially opportunistic: practically no one was calling for it during the 1950s and 1960s, when retail prices declined some 30% in real terms, or in the 1970s and early 1980s, when it appeared—and to this day in states where it still appears—unregulated prices would be higher than regulated; but deregulation became almost irresistible politically by the middle 1990s in those parts of the country where, it seemed certain, competitive prices would be far below regulated ones.[26]

While I, along with many others, recognized that the apparent opportunity for huge short-term benefits from deregulation was created by enormous forecasting errors in the 1970s—in assuming an indefinite continuation of demand growth at accustomed 6 or 7% annual rates; in estimating the costs of nuclear plants and in foreseeing what would in the 1980s and 1990s turn out to be the lowest-cost technology; in regulators' estimates of avoidable costs on the basis of which they were instructed by PURPA to set the prices the utility distribution companies were required to pay for independently generated power, as a result of all of which the industry, particularly on the East and West Coasts, found itself with what appeared to be a heavy load of high-cost excess capacity and a consequent wide spread between book costs and the estimated costs of new combined cycle plants powered

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23 See, e.g., Kaserman and Mayo (1991, 483–502).

24 There is a story now to be told about the apparently unexpectedly large response of demand and its role in fending off the worst expected shortages in California in the summer of 2001.

25 See, among others, Rosen et al. (2000); and the brief, challenging ''Heresy? The Case Against Deregulation of Electricity Generation,'' by the pseudonymous ''Price C. Watts'' (2001, 19–24). See, in contrast, the confident exposition by Hogan (2001) of the policies of a still-regulated, naturally monopolistic transmission system sufficient to ensure efficient, socially beneficial competition in generation and distribution. Also Rowe et al. (2001).

26 See also Joskow (2000, 133–138, 142–143).

by unexpectedly cheap natural gas—the irony is that we failed to recognize that the generally accepted expectation of huge benefits for consumers from deregulation might similarly prove to have been based on the opposite forecasting errors. This time, it has been the growth in demand that has been underestimated; the persistence of excess capacity overestimated—especially when generators were vowing not to make their previous mistakes again!; the cost of natural gas and NO_X emissions underestimated; and the long-run inelasticity of supply either ignored—because of its seeming irrelevance—or its importance underestimated; and the importance of real-time marginal cost pricing and the short-run demand elasticity of which it is a prerequisite inadequately appreciated, despite our belief that we had learned that lesson in the inflationary 1970s.

In these respects, I have the clear impression, California was not unique: its experience was simply more extreme than elsewhere. In these circumstances, however, it is not surprising that observers in California seem to have been first to identify apparent exercises of market power because of the newly-discovered susceptibility of its spot markets to unilateral withholding by multi-plant producers of some comparatively small proportion of their capacity and the consequent apparent insufficiency of competitive disciplines at times of peak demand.[27]

4.2. Specific Errors or Uncertainties, in Hindsight

4.2.1. The Retail Price Freeze

Postmortems on California, many of them justifying Harold Demsetz's acute observation many years ago that ''believing is seeing'' (Demsetz 1974)—brought to my

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27 Borenstein and Bushnell (1999); Borenstein et al. (2000); Joskow and Kahn (2001). Our Committee (see note 21, above, recognized the possibility that the Power Exchange's uniform pricing system—in which all bidders on the supply side received the marginal, market-clearing price—might have borne some responsibility for this phenomenon and the plausible consequent case for paying each supplier only what it bid on its offerings:

> This kind of perceived behavior has lent plausibility to the proposal to substitute pay-as-bid for uniform market-clearing prices. It is only the prospect, under the present system, of receiving on all their sales the benefit of the increase in market price caused by withholding some portion of their capacity that large generators can expect to profit from that practice—so goes the reasoning: under pay-as-bid, in contrast, such generators would have to bid the estimated monopolistically elevated price on all their proffered sales in order to reap those gains, at the immensely increased risk that some or all of those higher bids will prove to have been excessive and therefore be rejected, with a consequent loss of the entire difference between their actual marginal costs and the ultimate market price. The proposed change in the pricing method would, by this reasoning, therefore dramatically alter the balance of risks and potential gains.
>
> Just as the naïve expectation that a shift to pay-as-bid will produce a dramatic reduction in the average prices consumers pay ignores the certainty that generators will radically alter their bidding practices to frustrate achievement of that result, however, so here, the expectation that it would discourage monopolistic withholding fails to take into account the ways in which bidders will respond by changing their bidding behavior correspondingly. If and to the extent that monopolistic withholding has occurred in the past, bidders would henceforward, under pay-as-bid, attempt to predict the consequent behavior of the market prices in their several bids and, to the extent they succeed, the anticipated benefits of the change for consumers will prove to have been illusory.

attention by John Kwoka (Kwoka 2001)—have readily identified California's particular mistake as deregulating only partially. Clearly, the mandated reduction and freeze of retail prices, accompanied by deregulation of wholesale prices, has proved catastrophic, initially to the distribution companies but then, inevitably, to consumers and taxpayers called upon to bail them out. Yet the freeze must have seemed at the time a logical part of a pragmatic resolution of the essentially political problem of providing the companies reasonable assurance of recovery of their stranded costs (to which I, as a former practitioner of prudent investment regulation, felt constrained to acknowledge their entitlement), which was apparently their almost exclusive concern, in exchange for giving ratepayers comparable transitional protection. Indeed for the first couple of years it worked unexpectedly well: wholesale markets were weak and the companies were able to use the expanded margins between acquisition cost and their frozen rates to recover their strandable costs ahead of schedule. How, nevertheless, their managements could have blithely, in effect, bet their companies on the expectation of continued soft wholesale markets, without hedging, is itself difficult to comprehend—at least in hindsight. Moreover, as several have observed, the unexpectedly high prices at which they succeeded in selling off their generating plants might or should have suggested that those expectations were probably wrong.

It may well be that setting aside this particular aspect of the deregulatory design in California—and the deplorable populism and misguided consumerism of promising the public the benefits of unleashed competition while shielding them from its risks[28]—is tantamount to asking, ''Other than that, how did you enjoy the play, Mrs. Lincoln?'' It seems to me necessary, however, to ask whether other aspects of the design may also have been at fault.

4.2.2. Vertical Divestiture

The apparent success of the mandatory divestiture of AT's putatively naturally monopolistic local service from its potentially competitive long distance service[29] has clearly encouraged legislators and regulators to prescribe similar protections in other industries in process of deregulation: observe my criticism, above, of the FCC's infatuation with fully separated subsidiaries and the reluctance of the Department of Justice to give up the interLATA prohibition as the RBOCs seek its lifting (Kahn 1998, 66–69).

In the circumstances, it has seemed natural for several of the state commissions

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28 Severin Borenstein informed me that the statutorily-mandated 10% reduction in residential rates, which went into effect on January 1, 1998, was not reversed until three years later, and while increases averaging 18% went into effect in May, about one half of all households were to see no increase.

29 But see Crandall (2001). See also the citation of evidence from Canada and Japan that competition in long-distance service had progressed more rapidly in those two countries than in the United States, even though neither of them had required vertical separation of long-distance and local service, in Grieve and Levin (1997); and, similarly, by Spiller and Cardilli that facilities-based *local* competition had progressed at a healthy pace in the smaller countries they examined (Australia, Chile, Guatemala and New Zealand), even though none of these countries has the extensive unbundling requirements for an indefinite duration that prevail in the United States or has prevented incumbents from vertically integrating (1997, 127–138).

similarly to require severing of the ties between electric generating companies and both their transmission and local distribution networks—in order to ensure equal, non-discriminatory access of competitive generators[30] and marketers to those essential facilities. Both California and New York have taken the divestiture route, whether mandatorily or by the offer of sufficient inducements—in part, additionally, in order to secure a market estimate of stranded costs.

I have wondered whether this effectively mandatory divestiture may have contributed to California's problems by denying it one of the main benefits of vertical integration itself—the incentives it provides for undertaking investments at one horizontal level necessary for the success of operations at another. Continued ownership of generation capable of satisfying a larger proportion of their needs would of course have protected the major distribution companies that had accepted the obligation to freeze their retail rates. But whether it would have produced more generation capacity sooner is questionable: there seems to be more than sufficient interest of independent generators in building new plants, as evidenced by the huge number of pending applications for licenses: the assumption that competitive entry into generation is or should be a sufficient protector of consumers—in the long run!—seems to have been borne out.

Whether the same complacency is justified at the transmission level is a question crying out for an answer: when I read in the *Wall Street Journal*—in the news section, mind you, not its editorial pages—that there is inadequate incentive in California to construct new transmission facilities (perhaps the reality would be better conveyed by substituting for ''construct'' ''run the gauntlet of obtaining the necessary permissions to construct''), I cannot but raise the question of whether the almost automatic recourse of some regulators to MFJ-like remedies—apparently Pennsylvania and Illinois have been outstanding, successful exceptions[31]—was wise, especially in an industry in which the vertical interdependencies are so extraordinarily close. At the very least, the California deregulators—in contrast with those in New York, Illinois and Pennsylvania—cannot escape blame for the compulsive tidiness and high propensity to micro-meddle that led them to require utility distribution companies to purchase all their power in the spot market—surely an excessively regulatory accompaniment to what purported to be a process of deregulation. As is widely recognized, distribution companies that adopted the commitment to freeze their rates should, in any sensibly devised system, have had available to them the alternative quasi-integration option of entering into long-term supply contracts, which would similarly have insulated them from what proved after the fact to have been a gigantic risk.

And of course the enforced artificial concentration of purchases and sales on the spot or quasi-spot markets was directly responsible for the immediate explosive effect of the suddenly emerging shortages at times of peak demand on not just the profits of the companies whose retail prices were still frozen—profits almost instantaneously more than wiped out—but also on the rates of the customers unprotected by such freezes, and

30 See Joskow (2000), 128–130.

31 See the references to the healthy progress of Illinois and Pennsylvania—neither of which has required divestiture—in developing new generation capacity in Rowe et al. (2001, 12, 15–16).

inevitably, within a very short time, on the ''protected'' customers as well. It also created the opportunity to which I have already referred for generators with individual generating units large enough to make the difference between adequate and inadequate supplies—in markets characterized by highly inelastic supply and short-term demand—dramatically to lever the market price upward by withholding that output.

4.2.3. Misguided Populism

One widely cited explanation for the prohibition of utility distribution companies acquiring significant proportions of their supplies with long-term contracts was the fear I have seen expressed that they would ''muck it up'' [sic]. That would seem to be a reasonable concern so long as it was contemplated that those companies would continue to operate under the old cost-plus regulatory system. But surely the price freeze to which they were subjected during the transition and the effective competition to which it was anticipated they would be subject thereafter were the proper preventives, remedies or punishment for irrational contracting on their part. Moreover, this concern surely came with ill grace from regulators and strong advocates of independent, non-utility generation who had themselves ''mucked it up'' by forcing on the utility companies purchase prices in their contracts with qualifying facilities under PURPA wildly above avoided costs—from the perspective of the last two decades of the century but no longer!

It appears also the utility distribution companies may have had some legitimate basis in opportunistic behavior of their regulators in the past for a reluctance to avail themselves of the opportunity to hedge their obligation to serve with long-term purchase contracts. As our Committee described that experience:

> The IOUs were able to purchase via forward contracts through the CalPX—but only through the PX—after it first made block forward contracts available in July of 1999. Although there are regulatory limits on the amount of forward positions that each IOU may take, they have not reached those limits, in availing themselves of this opportunity. They may have been discouraged from doing so by their past experience with forward purchases in California, in both gas and electric, under which regulators forced them to absorb any losses stemming from the contract prices exceeding wholesale market prices while not being permitted to reap the benefits, when the contractual prices were lower.[32]

Another explanation of the prohibition of long-term contracts proffered to our Committee was the fear expressed by consumer organizations that such contracts would enable large, business customers to ''skim the cream'' of the benefits available from competition, at the expense of small users. Of course, even if this concern were legitimate, it would justify prohibiting the distribution companies entering into long-term sales, not purchase contracts. The apparent purpose of the latter prohibition was, instead, to preserve equal competitive opportunities for independent generators by preventing the utility companies that continued to own generating plants from favoring those affiliates in obtaining their supplies. Since, however, the independent generators—including purchasers of divested

32 Kahn et al. (2001, original report, footnote 15).

utility plants—were subject to no such requirement to sell exclusively through the organized exchanges, the effort in this meddlesome way to prevent ''cream skimming'' was probably futile, as well as—by denying distribution companies the ability to hedge their risks—injurious.

One final manifestation of misguided, albeit understandable, populism to which I have already referred—the insistence on conferring on consumers the anticipated benefits of deregulation while also protecting them from possible injury from exposure to the vicissitudes of competitive markets—was by retaining the obligation of the utility distribution companies to serve as the suppliers of last resort at regulated prices. The aforementioned Mr. Watts points out that distribution companies cannot enter into long-term purchase contracts so long as they remain subject to the supplier of last resort obligation, because it involves playing a game of heads-we-lose, tails-somebody else-wins: if the terms of the contract prove to be unfavorable—that is, if open market prices fall below the contractual level—they lose all their retail customers and are stuck with the difference between the contractual price and open market value of the power; if and when instead the contract proves favorable, retail customers either remain with them or return to them, in which event they merely break even, at best. If the facts are as he states them, one protective provision eliminated the possibility of another.

4.3. Rate Caps?

The reported increase in California's total electricity bill from $7.4 billion in 1999 to more than $27 billion in 2000 and, according to recent projections (subject to all my preceding admonitions about forecasts in this industry!), $50 billion or more this year, have understandably generated demands for the imposition of ceilings on wholesale rates—specifically, since the traffic is clearly interstate, for the Federal Energy Regulatory Commission to exercise its authority to establish ''just and reasonable'' rates.[33] This appeal—my advocacy of which some commentators have characterized as apostasy—elicited the immediate response, from the President on downward, demonstrating a firm command of the first week of Economics 101:[34] that it would not only do nothing to solve the fundamental imbalance of supply and demand but, particularly by discouraging the expansion of capacity, would exacerbate the problem. I can respond most efficiently in the form of a few pertinent facts and related propositions from the second week.

Both the supply and the demand for electricity, at times when the latter presses hard on capacity, are extraordinarily inelastic. Within the limits of installed capacity, supply is highly responsive to the wide fluctuations of demand from one moment, day or season to the next, as generating stations are automatically brought on line in rank order of their operating costs. When that limit is reached, however, it takes years to add to capacity. True, the elasticity response of demand in California has been prevented by the

33 See the letter initiated by Frank Wolak and signed by nine other economists, including me, calling upon FERC to exercise that authority (May 25, 2001).

34 See the scarcely less simplistic letter to the President of May 29, 2001 by Annelise Anderson, Martin Anderson, Michael J. Boskin, Steve Entin, Milton Friedman and James Gwartney and the much more sensible ''Dim Bulbs'' (Hazlett 2001).

ridiculously extended freeze in charges to residential customers, followed by grudgingly inadequate increases. Since, however, the extreme shortages, producing 10- and 20-fold increases in wholesale prices, have taken the form of extreme spikes at particular times and places,[35] and the overwhelming majority of customers do not have meters permitting them to be charged correspondingly fluctuating prices, the result has been very costly blackouts. It is a truism that blackouts have occurred because most retail rates have not been free to increase to whatever extent necessary to prevent them: what is frightening to contemplate is the extent of that ''extent,'' in the absence of real-time metering.

As against the minimal contribution of such exploding prices to an improved balance of supply and demand at such times[36] must surely be weighed not merely the income distributional consequences but the adverse macroeconomic consequences of generators extracting tens, indeed scores, of additional billions of dollars a year from consumers, businesses and government—much like the contribution to stagflation of the three-fold increases in the prices of crude oil nationally in 1973 and again in 1979–1980.

The spectacular historical instances of price controls doing more harm than good by interfering with the expansion of supply cited routinely by opponents of the proposed FERC initiative—notably on crude oil and natural gas in the 1960s and 1970s—have been ones in which regulation held prices below short- and long-term marginal supply costs (in the case of crude oil, the price of imports). The current electricity price cap proposals with which I am familiar are all intended to incorporate flexibility sufficient to accommodate incremental supplies at high short-run marginal costs, which are readily ascertainable and easily adduced by any generator in support of an exemption; and to ensure the presence of optimal levels of reserve capacity as well.[37]

There seems good reason to believe that the explosion of wholesale prices was not a phenomenon of pure competition alone, but reflected the not-necessarily-collusive or antitrust-law-violative withholdings of capacity at peak times, in order to lever up the market-clearing prices, in a process I have already described. In such circumstances, the rote repeaters of the litany that price controls always reduce supply might be interested in discovering, ceilings may actually result in expansions of offerings: with price caps there is no benefit in withholding supply, only sacrificed profits.

Interference with the fundamentally required correctives—of expanded capacity, on the

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35 In response to a remonstrance by an independent generator, I am attempting to assess the possibility that in a deregulated system, such price spikes become the necessary mechanism for recovering the capital costs of their peaking units.

36 See note 35, immediately preceding.

37 In a preceding draft, I attempted to rebut the widespread assertions that ceilings inevitably conflict with long-run expansions of supply by citing the experience of the electric industry itself during the entire three-quarter-century, 1920–1995, when, if anything, cost-based regulation, as traditionally practiced, encouraged the very excess capacity that seemed during the past decade to promise such enormous benefits to consumers if rates were deregulated. Upon further reflection I see that this experience could be regarded as irrelevant in a world that had abandoned rate base/rate of return regulation of franchised monopolies, with its implicit guaranteed recovery of costs not imprudently incurred. My colleagues at NERA are helping me evaluate the efficiency of alternative arrangements for ensuring the recovery of the capital costs of capacity required to achieve optimal loss of load probability under the new restructuring arrangements. See also Hobbs et al. (2001).

one side, and intensified conservation, on the other—would of course be severely counterproductive. But where those supply-and-demand responses inevitably take time—to cite the most relevant example, at least a couple of years before additional generating capacity is likely to come on the market—any discouragements can readily be prevented by making the price caps (a) designedly temporary, automatically sunsetting within, say, two to three years, and/or (b) inapplicable to new capacity coming on line. Clearly, however, it is essential that they incorporate some such assurance.

5. Conclusion

The experience of the airlines, telecommunications and electric utility industries over the last 30 years amply documents the superiority of competition over comprehensive regulation. It also demonstrates that successful deregulation rarely consists in total laissez-faire. On the other hand, it amply documents the Tar-Baby effect: as I characterized it some 23 years ago,

> Each time the [regulatory] dike springs a leak, plug it with one of your fingers; just as a dynamic industry will perpetually find ways of opening new holes in the dike, so an ingenious regulator will never run out of regulatory fingers.[38]

In the case of the airlines, the greatest failures and sources of consumer complaint have been the increasing congestion and delays at particular times and places and the extreme differentiation of fares—in particular, the very sharp increase in full fares. The proper remedy for the former is neither governmental nor collaborative airline rationing of scarce air and airport space or promulgation of ''consumers' bills of rights'' but restructuring of the agencies responsible for providing the requisite infrastructure and pricing it correctly; and for the latter, not prescription of maximum fare differentials but intensification of efforts to provide fair competitive opportunities for challengers.

Something approximating total deregulation is clearly infeasible in telecommunications and electric power, essentially for the reasons that led them to be identified as regulated natural monopolies in the first place. At the same time, telecommunications provides the most extreme exemplification of the Tar-Baby effect, because of the demonstrated tendency of regulators to assume responsibility not merely for establishing the necessary conditions for efficient competition but for guaranteeing the desired results. The expansiveness of the FCC's definition of the elements of incumbent telephone company networks that it requires them to make available to entrants and its presumption in prescribing charges equivalent to the results that in its (mistaken) judgment would flow from efficient competition not only flatly discourage facilities-based competition but, as applied to new and extraordinarily expensive facilities, requiring costly and risky investments in latest technologies, conflict directly with the Schumpeterian requirements for dynamic competition.

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38 Kahn (1978b, pp. 17–18).

Even more than in telecommunications, it is no accident that the proper characterization of the required regulatory reform in the electric power industry is characterized as ''restructuring'' rather than mere deregulation. Fully as much as the FCC's practices, however, the California experience illustrates the evils of deregulatory and regulatory opportunism, of excessively detailed design and prescription and misguided populism—promising consumers the anticipated benefits of competition while sheltering them from its risks. The central task is to design the inescapable residual regulation—centrally, of transmission—in such a way as, by the use of price, to ensure the same kind of efficient synchronization of investments and operations in generation, on the one side, and transmission, on the other, as were previously achieved within vertically integrated regulated suppliers; and, whether by explicit orders or organization of associated markets for capacity, ensuring reserve generating and transmission capacity sufficient for optimal system-wide reliability.

The only other prescription is that regulators be required, in keeping with current fashionable trends in national education policy, regularly to pass tests of their comprehension of Uncle Remus' ''The Wonderful Tar Baby.''[39]

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39 McKie (1970, p. 9) first used the term ''tar baby effect'' from the original story (Harris 1881).

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