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# Readings

## of particular interest

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### **Accounting for Decline in the Rate of Growth**

"Effects of Selected Changes in the Institutional and Human Environment upon Output per Unit of Input" by Edward F. Denison, in *Survey of Current Business*, January 1978, pp. 21-44.

Edward Denison, senior fellow of the Brookings Institution, here estimates the effects of three changes in the business environment on output per unit of input in nonresidential business. The changes are (1) new requirements for environmental protection, (2) legislation to promote employee safety and health, and (3) a rise in dishonesty and crime. The estimated effects result from the diversion of labor and capital from production of measured output. This article is part of a "comprehensive study of the sources of economic growth" that will revise and update Denison's *Accounting for United States Economic Growth, 1929-1969*.

Denison concludes that output per unit of input in the nonresidential business sector was 1.8 percent smaller by 1975 than it would have been if business had been operating under 1967 conditions—one percentage point of the drop ascribable to pollution abatement and four-tenths of a point each to employee safety and health programs and to increases in crime. The study does not try to calculate benefits.

Costs that reduce output per unit of input in nonresidential business are those incurred by business. They do not include costs incurred by governments or by households, including costs related to dwellings. The pertinent costs of business include current costs of pollution abatement, protection of employee safety and health, and crime prevention; depreciation on business capital devoted to these purposes; and the net opportunity cost of using such capital. Costs of crime also include the value of merchandise stolen from business firms.

The incremental cost of pollution abatement to nonresidential business, on which Denison bases his calculations of the effect on changes in output per unit of input, can be calculated by taking the total cost and subtracting from it the amounts that would have been incurred if there had been no increase in environmental requirements after 1967. Total incremental costs for pollution abatement in 1975 were \$9.55 billion (\$2.14 billion for business motor vehicle emissions, \$6.95 billion for other air and water pollution, \$0.24 billion for public sewer usage, and \$0.48 billion for solid waste disposal, with \$0.27 billion recovered).

The cost of protecting worker safety and health is figured as the sum of the annual cost of new safety features on business motor vehicles (\$0.89 billion in 1975), the incremental costs of protecting employee safety and health in mining, and the incremental costs in all other industries as the result of the Occupational Safety and Health Act.

During this period costs imposed by worker safety and health legislation were greatest in the mining industry. Incremental costs for this industry cannot be calculated on the same basis as for other industries because of lack of information. Therefore Denison bases his estimate on reductions in mine worker productivity and the "opinion of informed persons that the change in trends resulted from stronger controls for the protection of safety and health." He estimates that 160,000 additional mine workers were needed by 1975 because of stronger safety and health controls, representing 0.24 percent of all nonresidential business employment. In industries other than mining, data required for his previous method are available, and the incremental cost comes to \$0.97 billion (of which \$0.45 billion is current cost).

The costs of dishonesty and crime are divided into input costs (such as stationing of guards in grocery stores) and business losses

from thefts. If no factor influencing output per unit of input had changed except costs of protection (direct payments to protective services), output per unit of input would have been 0.09 percent lower in 1975 than in 1969.

Overall, Denison finds, pollution abatement, worker health and safety, and crime subtracted 0.26 percentage points from the growth rate of output per unit of input for nonresidential business from 1969 to 1975. The corresponding figure for just the period from 1973 to 1975 was higher—0.47 percentage points, half of this due to pollution abatement. While “estimates of this type are subject to substantial error,” it is nonetheless “not possible to appraise recent growth experience without them.” Denison concludes by noting the likelihood that other new governmental controls, including those designed to protect consumers and minimize fuel imports, have led to a yet unmeasured portion of the decline in growth rates in the U.S. economy.

## The Effect of Campaign Spending

“Does Campaign Spending Really Matter?” by Lawrence Shepard, in *Public Opinion Quarterly*, Summer 1977, pp. 196-205.

In this article Lawrence Shepard asks (1) whether “campaign spending sways public opinion” and (2) in what circumstances do citizens contribute to political campaigns. Shepard, an economist at the University of California, Davis, also attempts to estimate the “partisan impact of campaign reform regulations.” His analysis of the 1972 California congressional elections shows that the effects of changes in the amount of campaign spending were small and, therefore, that this spending was probably not decisive in determining the outcomes.

Using multiple linear regression analysis, Shepard attempts to identify those economic and social factors that may have influenced two kinds of political participation—campaign financing and voting. Among the factors tested are in-

cumbency, expenditures, party preference, the primary vote totals for each candidate, and the closeness of the primary contest. This was done first for all registered voters, then for those actually voting, in thirty-three of California’s forty-three electoral districts (the remaining ten were disqualified for Shepard’s purposes). The author found that the two factors which most influence voting behavior are “predilection” and incumbency. (Predilection is measured by the percentage of registered Democrats in a given electorate—those who, lacking any other relevant information, would vote for the Democratic candidate.) With both parties, an incumbent consistently receives an eleven or twelve percentage point increase in voter support.

Shepard’s findings illustrate some differences between Democrats and Republicans in their willingness to contribute to campaigns. A strong primary showing by a Democratic opponent inhibits Republican contributors, although in districts where registration favors Democrats, both Democratic and Republican contributions are greater. Republicans are more likely to contribute when they are outnumbered than Democrats. Incumbents, however, get fewer contributions from both parties (even though they get more voter support), but this effect is more pronounced with Democratic contributors. The author notes that this “obviously conflicts with the conventional wisdom that incumbency carries an advantage in financing campaigns.”



There are further contrasts in the spending pattern of the two parties. Democrats tend to spend heavily in closely contested races, often in excess of contributions ("deficit campaign spending"). On the other hand, Republicans typically spend less than they receive, regardless of the closeness of the contest. Shepard's computations show that while the size of the effect of campaign spending is small ("an unmatched ten percent increase in spending by either party would raise its electoral showing by no more than one-half percent"), the Republican dollar has a far greater impact than the Democratic. He concludes, therefore, that laws to cut campaign spending will be more harmful to Republicans than to Democrats.

### **Kahn on Regulating Public Utilities**

"An Economist at Work in Public Utility Regulation" by Alfred E. Kahn (Part I, "Can an Economist Find Happiness Setting Public Utility Rates?", Part II, "Applications of Economics to Utility Rate Structures," and Part III, "The Economics of Regulation: Externalities and Institutional Issues"), in *Public Utilities Fortnightly*, January 5, January 19, February 2, 1978, pp. 11-15, 13-17, 23-26.

Alfred E. Kahn, in this series of three articles (for which he suggests the overall title cited here), relates his attempts to apply simple economic principles—and especially the principle of marginal cost pricing—to the real, albeit regulated, world. Kahn, now chairman of the Civil Aeronautics Board, was chairman of the New York Public Service Commission from 1974 to 1977.

- The first article is devoted to the application of economic principles to rate levels. With the effects of inflation, regulators have been pressed to increase allowable rates of return, but there are reasons for their not succumbing entirely to these pressures. One is that regulatory lag is an incentive for utility efficiency. Another lies in the question "what is the economically efficient way for companies to recover their fixed costs over time?" It is not, Kahn says, through the recovery of fixed dollar amounts in each accounting period—which requires countercyclical pricing and, in declining industries (like railroads), will lead to that

self-defeating downward spiral in which decreasing revenues lead to increased prices.

Instead, Chairman Kahn argues that the only economically rational policy is to discriminate among companies on the basis of their need to raise capital. Traditional regulatory practice anticipated that rates, once set, would be unchanged for years—the general assumption being that growth in rate base would be balanced by growth in sales, with technology and economies of scale taking care of increases in input prices. But, as the author explains, it proved to be impossible to ignore the stagnation of sales accompanying the increased rate base, the need of utility companies for capital, and distrust by investors. The Public Service Commission (PSC) therefore resolved to set rates based not on historic but on projected costs—specifically, rates that would suffice to cover costs during the first year after a decision—in other words, a form of marginal pricing.

Kahn points out the need, in this process, to pay attention to the cash flow and interest coverage of the utilities—considerations whose importance has been increased by steep inflation in construction costs and capital costs, as well as by a flow-through of tax preferences to lower rates (thereby reducing coverage of fixed income obligations) and depressed earnings (further raising capital costs). In an attempt to combat sharp increases in the allowed return on investment, the PSC under Chairman Kahn concentrated on varying the cash flow associated with given returns by using two devices. Both in effect represent compulsory loans from ratepayers to the company: normalizing income taxes, and placing some portion of construction work in progress directly in the rate base.

- In the second article, the author considers how economics can help determine appropriate rate structures—the area generally spoken of as "rate design." His first case in point is the New York telephone companies, who went all out in the 1950s and 1960s to increase use (and therefore cost) while providing service at flat rates. In applying marginal cost pricing principles, the PSC (1) instituted charges for directory assistance, (2) ordered the New York Telephone Company to offer optional service with timing of local messages and a cost-based charge per minute, and (3) reduced the mini-

imum charging time for intrastate calls from three to two minutes, keeping the rate for two-minute calls unchanged and raising the rates for longer calls.

In principle, charges for usage should not exceed marginal costs, but for some New York Telephone services they do. Kahn writes that the "policy of throwing more of the burden of revenue requirements over to interstate usage than can be justified on incremental cost grounds is widely accepted as a means of subsidizing the availability of telephone service on as nearly a universal basis as possible." On the other hand, terminal equipment revenues are dramatically *lower* than costs. Under Kahn's leadership, the PSC announced a goal of pricing terminal equipment at current costs, thereby freeing the subsidy from charges to be used exclusively to subsidize universal service, while also in this way opening the equipment market to freer competition.

Metering (and perhaps progressively more complicated metering) is required for marginal cost pricing, and the author believes that most utility customers are undermetered. Accordingly, under his direction, the PSC prohibited rents that include utility costs in new buildings, ordered Consolidated Edison to install demand meters for its large steam customers, and required that time-of-day electric service be provided to all customers large enough to have the requisite meters. Finally, the commission approved rates that apply the principle of marginal cost pricing, basing them on the average short-run marginal costs of the plants brought into and out of service, during peak, off-peak, and shoulder-peak periods.

• In the third article, Chairman Kahn considers externalities and "institutional issues," noting that to have worked single-mindedly for three years to bring utility rates in line with marginal costs while not considering "the problem of second best" would have been highly unrespectable behavior for a professional economist. The problem, of course, is that other goods and services may not be priced at their respective marginal costs, and the first step in the solution is to find out whether they are and, if not, what that implies about the efficient pricing of electricity.

Kahn therefore considers the alternatives to electricity. Natural gas is underpriced but, because buyers of electricity cannot shift to

natural gas, this is unimportant. The extent to which prices of refined and delivered oil products diverge from marginal cost is small and diminishing—and, moreover, oil is itself an important input into electricity. The use of other substitutes for electricity—insulation, energy efficiency, and heat-recovery processes—will certainly be encouraged by full marginal-cost pricing policies for electricity.

In natural gas, the PSC under Kahn took modest steps toward instituting a system of entitlements, demonstrating "the most fundamental regulatory principle of all"—which is "that regulated monopoly is a very imperfect institution and that wherever the processes of the market can be substituted, they should be." Moreover, the PSC in general tried to remedy the "familiar defects" of regulated monopoly by incorporating productivity goals in rates, by pressuring companies to integrate planning, investments, and operations, and by encouraging energy research and development.

And though he "never had time for . . . attempting to measure the benefits of applying economic principles to utility regulation," Chairman Kahn concludes by testifying "enthusiastically" that the "private satisfactions were immense."

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## Canada's Railways under the 1967 Act

*Railway Pricing under Commercial Freedom: The Canadian Experience* by T. D. Heaver and James C. Nelson (Vancouver, British Columbia: The Centre for Transportation Studies, University of British Columbia, 1977), 344 pp.

Over the past decade Canada has substantially deregulated railroad rates. As a result, there has been more competitive rate-setting, more efficient traffic allocation, and a reorganization of the Canadian Transport Commission so that it could not interfere with the workings of "dynamic competition" in Canadian freight markets. The Canadian experience, say the authors, has implications for the United States and other countries as well.

T. D. Heaver and James C. Nelson, transportation economists at the University of British Columbia's Centre for Transportation

Studies, here provide a comprehensive study of the way the liberalization has worked since the enactment of the Transportation Act of 1967. Rates still cannot be set below variable costs, but captive shippers (who have no choice but to ship with one railroad) can appeal for a maximum fixed rate. There is also a mechanism for investigation in cases where the railroads may have acted against the public interest or ignored it.

Included in the book are analyses of the effectiveness of competition between different forms of transportation (intermodal) and between the same forms (intramodal) in limiting railway freight rates, in stimulating efficient transport operations, and in ensuring adequate investment for the future needs of commerce. There is also a discussion on whether railway rates have been equitable under the act, both regionally and nationwide—with the authors concluding that generally they have been.

The first half of the book (Chapters II through IV) analyzes the way competitive forces work in limiting Canadian railway rates and the way shippers and carriers have adapted to the increased competition under the act. This section includes statistical analyses of the freight rate structure and case studies to explain rate-making institutions and practices.

Chapters V through VII, based on interviews and other research sources, show how the overall effects of competition between railways, and among railways and other transportation modes, have limited freight rates. The authors note that competitive market forces effectively limit the railways' monopoly power in setting bulk commodity rates. "The evidence is clear that the railways are responsive and establish mutually acceptable rates with the shippers when the railways can see that they will lose profitable traffic or when they can see the potential for the development of traffic." Competition from trucking and waterways has led to price competitiveness among the modes, though (the authors note) it is impossible to measure quantitatively the impact of this competition on railway rates and services because of the inadequacy of statistics and the difficulty of determining why shippers choose one mode over another.

In the last three chapters, the authors discuss in more detail regulatory and governmental influences on railway freight rates, efficiency,

and equity. They find that three major economic effects of dynamic competition have occurred in the Canadian freight market since 1967: (1) shippers and carriers have made institutional changes to permit them to negotiate more effectively within a competitive framework; (2) shippers are enjoying better service and a wider range of choices; (3) and there is increased pricing flexibility and sophistication on the part of the railways, which should enable them to attract enough investment capital for the future.

The authors conclude, first, that "the dynamic competition in Canadian freight transport under the wide commercial freedom for the railways provided by the 1967 act has proved workable in promoting efficient transport, sophisticated and efficient pricing of railway services, adequate service for the most part, competitive levels of railway rates, and some lessened discrimination in railway pricing, as well as maintaining the commercial and financial viability of the Canadian railways." Furthermore, the success of the Canadian experiment "gives some real assurance that liberalization of railway rate regulation in the U.S.A. might be highly workable for that country as well."

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## A Question of Authority

"Restrictive State Laws and the Federal Trade Commission" by Robert G. Badal, in *Administrative Law Review*, vol. 29 (Spring 1977), pp. 239-264.

The Federal Trade Commission does have the authority to promulgate rules designed to "promote greater competition by removing or limiting the onus of state requirements," argues Robert G. Badal. The author, attorney-advisor to an FTC commissioner at the time this article was written, bases this conclusion on an analysis of judicial decisions, the supremacy clause of the Constitution, and a detailed examination of the relevant statutes.

Congress has broadened the scope of the FTC's powers on several occasions since the agency was created in 1914. As early as 1938 the Wheeler-Lee Amendments, passed in response to Supreme Court decisions that interpreted the FTC's mandate too narrowly, en-

larged the meaning of "unfair methods of competition" to include "unfair or deceptive acts or practices"—in order to protect both consumers who might be injured by such practices and competitors. In 1972, the Supreme Court, in the author's words, reaffirmed the commission's jurisdiction "over practices that were harmful to consumers, irrespective of their effect on competition" (*FTC v. Sperry and Hutchinson*). Most recently, in 1975, the Magnuson-Moss Warranty-Federal Trade Commission Improvement Act expanded the commission's authority to include acts or practices "affecting" commerce—meaning, in Badal's opinion, that those powers could extend to purely intrastate activity. Also in that act Congress expressly granted the FTC substantive rulemaking authority, apparently in order to settle any remaining controversy on that issue.

The question of the commission's authority to preempt state laws affecting competition arises from a 1976 proposed trade regulation rule to permit suppliers of eyeglasses and other corrective lenses to advertise—a proposal that directly conflicts with prohibitions on such advertising in the majority of states (optometrists, for example, cannot advertise in *any* state or the District of Columbia). The article describes the situation of the eyeglass industry as a result of these restrictions. According to an FTC staff report noted by Badal, the cost of eyeglasses is kept artificially high, the poor fail to get "this important consumer good," and there is inefficiency in the operation of the industry. In the author's opinion the proposed rule embodies the policy that there is no good reason "for immunizing eye care practitioners from traditional market forces." [Editor's note: This proposed trade regulation rule is still pending and should be announced by the FTC momentarily. Supreme Court decisions on advertising to date have dealt exclusively with its First Amendment aspects.]

In spite of the broadest existing description of the FTC's powers, the "question arises as to the grounds for the authority that would allow the commission to preempt state laws." Using the supremacy clause (state law that is in conflict with federal law must give way), and applying the settled doctrine that federal agency rules and regulations made under statutory authority have the force of law, Badal concludes that the FTC can preempt state laws

regardless of their importance to the state. One challenge to his interpretation might be the Supreme Court's decision in *Parker v. Brown* (1943). Although that decision applies directly to the Sherman Act, its principle—that a state's authority over its officers and agents is not to be nullified without the express intention of Congress—can arguably be applied to the FTC also. In order to show that this should not be the case, the author distinguishes carefully between the Sherman Act and the FTC Act, emphasizing the FTC's power to "establish prospective standards of conduct."

On the other hand, if *Parker v. Brown* does apply to the FTC, the Supreme Court's own announced principles require it carefully to examine the state policies in question. "The state must have a valid and compelling reason for interposing its authority in the private market," writes Badal. State regulation of eyeglass advertising appears to conflict with federal policies favoring greater disclosure of information to encourage the proper functioning of the market economy. The author argues that state prohibitions on advertising are not an essential part of the states' interest in regulating the effective delivery of eye care services. He concludes that Congress has given the FTC sufficiently broad authority to preempt state laws "unfairly" affecting commerce and that *Parker v. Brown* and subsequent decisions are not obstacles to the reasonable exercise of that authority.

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## Reviewing Canadian Transportation Regulation

*Transportation Policy: Regulation, Competition, and the Public Interest*, edited by Karl M. Ruppenthal and W. T. Stanbury (Vancouver, Canada: The Centre for Transportation Studies, University of British Columbia, 1976), 232 pp.

This book contains ten papers presented by transportation and regulatory experts in a symposium at the University of British Columbia's Centre for Transportation Studies (which is funded by the Canadian Ministry of Transport).

The discussion opens with a paper by W. G. Waters II of the University of British

Columbia, which discusses the rationales for government regulation of transportation—including economic efficiency, the promotion of national unity and prestige, and various other macroeconomic and socioeconomic objectives. Waters concludes that regulation is like a Greek tragedy in which “the final act may be the realization that man’s ability to incorporate the public interest in all manner of decisions is limited.” Because the public interest is an inherently vague concept, it too easily becomes identified with short-term considerations and vested interests. A similar view is expressed by Professor Gayton E. Germane of Stanford University, who argues in the second paper that shippers and politicians have too often advocated steps producing short-term savings that resulted in long-term and additional costs. As an example, he explains how shipper pressures for lower freight rates on the northeastern U.S. railroads brought about lower earnings and, in time, inadequate maintenance. Any short-run advantages once received by shippers are offset today by sharply escalated operating costs on deteriorated tracks and rights-of-way (now being restored at “spectacular costs”)—costs that shippers and taxpayers must pay. Germane advocates a gradual “onion-peeling” approach to deregulation, with the least important regulatory layers being eliminated one by one until only what is essential remains.

In the book’s third paper, Martin W. Westmacott of the University of Western Ontario analyzes the Canadian Transport Commission’s regulation of railway freight rates. He looks at consumer interest representation in specific freight rate cases and concludes that there has been virtually none—a matter, he says, that merits serious government consideration. Like Westmacott, Professor John Langford of York University proposes, in the fourth chapter, changes in the regulatory process to permit greater public participation. He decries the CTC’s lack of regulatory clout—which has produced ineffective competition and ineffective regulation—and suggests reorganization to make the CTC for the most part a quasi-judicial regulatory body and the Ministry of Transport fully responsible for policy formation, promotion, and investment objectives.

Professor W. T. Stanbury of the University of British Columbia follows with his diagnosis

of why the regulatory process fails to reflect the interests of consumers. He cites three hypotheses: the failure of regulatory agency staffs to articulate consumer interests, the agencies’ increasing tendency to assume a passive judicial role rather than one that is actively pro-consumer, and the lack of a broad-based consumer lobby. His remedy is to institutionalize the consumer interest in regulated industries by establishing a consumer advocate to intervene in regulatory cases.

In Chapter 6, Professor C. Lloyd Brown-John of the University of Windsor recounts his often frustrating experience as a citizen-intervenor protesting a Bell Canada request for higher telephone rates. Problems of costs, briefs, complex procedural rules, and so on led him to conclude that the CTC is not adequately organized to assess the broad public interest and that there is an important role to be played by a consumer advocate in the regulatory process.

Chapter 7 is an edited version of George Eads’s 1975 testimony before the Judiciary Subcommittee of the U.S. Senate, in which Eads (then of the Council on Wage and Price Stability) advocated substantial curtailment or elimination of the Civil Aeronautics Board’s control over rates, entry, and exit in the airline industry. Either move, he argued, would result in lower air fares, a more heterogeneous mix of travelers, increased carrier efficiency, and overall benefits to the economy.

In Chapter 8, Martin Christopher of the Cranfield Institute of Technology traces the major policy developments and philosophies that underlie regulation and competition in freight transportation within the United Kingdom. He describes the policies of deregulation (associated with the Tories) and of integration (associated with the Labour Party). His analysis is followed by Professor Waters’s second paper (chapter 9), which summarizes the major questions that should be considered in making public expenditure decisions for airports and other transport facilities.

In the last chapter, Professor John M. Munro of Simon Fraser University reviews the Ministry of Transportation’s June 1975 proposals for revising Canadian transportation policy. He concludes that the new policy framework and principles differ little from the existing state of things, except in the “means

by which weak competition will be discovered and its effects remedied and, . . . [in] the sectors of transportation which will be scrutinized." In short, the new policy is an improvement, but "much more was needed."

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## Regulation and the Dairy Industry

*Federal Milk Marketing Orders and Price Supports*, edited by Paul W. MacAvoy, Ford Administration Papers on Regulatory Reform (Washington, D.C.: American Enterprise Institute, 1977), 168 pp.

This volume, a condensed and edited version of a Department of Justice Antitrust Division staff report, examines the effects of more than forty years of regulation on the dairy industry. It begins with a discussion of the legislative history of the Capper-Volstead Act of 1922 (which provided limited antitrust immunity for farmer cooperatives) and the Agricultural Adjustment Act of 1933 (which authorized milk marketing orders). It presents a comprehensive analysis of the several layers of regulation in the current system, develops estimates of the costs of milk regulation, and examines remedies that could reduce the costs to society.

The main characteristics of the milk production and marketing system are described to analyze the various elements of regulation and to assess their effects. Grading standards, set by local health authorities, provide for production and sale of Grade A milk (fit for human consumption in fluid form) and Grade B milk (fit only for manufacturing purposes). Federal market orders, on the other hand, provide for classified pricing based on use, with processors' paying higher prices for fluid-use milk called Class I, than for manufacturing-use milk, called Class II (which can be Grade A or B). Producers, however, receive a single blend price, no matter how their particular milk is used. The pricing mechanism under federal orders leads to overproduction of Grade A milk, higher prices for raw milk for fluid use, overproduction of dairy products produced from excess milk, and subsidization of consumers of manufactured dairy products by consumers of fluid milk.

In addition to federal orders, under which 80 percent of all fluid grade milk was marketed in 1975, milk marketing is also affected by a price support system, import quotas, and regulation by state agencies. Milk production has traditionally been widely dispersed geographically, and federal regulations have operated to "freeze in" the local character of the market system of the 1930s despite technological advances and improved transportation for fluid milk. Producer cooperatives have, through mergers, federations, marketing agencies, full-supply contracts, and vertical integration, expanded their role in milk marketing and exercised market power over milk prices by controlling the movement of Grade A milk.

Empirical studies of the costs of this system of regulation are summarized and these costs are then compared with the benefits intended by the legislation authorizing federal milk orders. Two kinds of costs are distinguished: deadweight social losses (net losses to society of goods and services wasted or not produced) and transfer payments (redistribution of wealth). Estimates by Richard Ippolito and Robert T. Masson put the yearly deadweight loss in the range of \$125 to \$245 million and yearly transfers in the range of \$250 to \$500 million. Estimates based on somewhat different methods, assumptions, and data by John E. Kwoka indicate considerably larger costs, particularly for transfer payments. Differences in estimates of the costs of regulation for different years are in part attributable to differences in parity levels of support prices, according to analyses by Boyd M. Buxton and Jerome W. Hammond and by Thomas Lenard.

The benefits of the regulations are assessed in terms of their contribution to the goals expressed by Congress. Increased prices under the system seem to have resulted mainly in increased values for dairy farmland instead of higher net income to dairy farmers. Prices seem to be no more stable under the system than earlier. Price levels have led to oversupplies of milk, production has been artificially localized, and the order system has facilitated monopolistic pricing by dairy cooperatives.

The analysis and review of alternatives lead to the conclusion that, as Professor MacAvoy notes in the Preface, "a gradual phased deregulation program should be undertaken."

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around, one suspects that real reform will require both a change of heart and strong-willed leadership within the NRC. While, as Mr. Rowden suggests, pre-approval of sites and standardized designs is basic to reform, legislation will never be passed which curtails the commission's flexibility and authority to review and re-review safety issues in the design and operation of even standardized nuclear plants. As a result, the problem of constantly changing requirements, which has been the major cause of frustration in the licensing process, will not be overcome until the NRC itself adopts tough and sensible internal criteria that severely restrict change for change's sake. No legislation is required for this.

Similarly, the problem with conflicting and dual regulatory requirements and review is more one of will than of law. While it is true that numerous federal agencies have the right to comment on pending decisions, the NRC itself has the ultimate right and responsibility to decide. A strong dose of self-discipline, coupled with a firm requirement that commenting federal agencies support their contentions with hard fact, would have avoided many of the marginally significant, but costly, requirements now grafted onto the environmental review process. Seabrook is an excellent example of the fact that mere legislation will not end dual regulation. In 1972 Congress, through the Federal Water Pollution Control Act, directed that other federal agencies were not to review or set different requirements from those established by the Environmental Protection Agency pursuant to the Water Pollution Control Act. Unfortunately, although it had many opportunities to do so, it was not until the Seabrook decisions in 1977—five years later—that the NRC effectively acknowledged that Congress had stripped it of some of its jurisdiction. Prior to this the NRC had insisted on dual and independent review and control, and to some extent still does.

Mr. Rowden's third major suggestion is that legislative reform is needed to change the manner in which the public participates in nuclear licensing decision-making. Whether this can be accomplished by legislation alone is doubtful. The sort of legislative hearing Mr. Rowden suggests as an alternative has dubious potential for speeding up the process in the absence of clear

intent on the part of the NRC to discipline that process. . . . What is needed is not simply more and earlier public participation, but a decision on who is to represent the public interest. A bold decision that the public interest is in fact to be represented by the NRC and not by diverse special-interest citizen groups, coupled with the establishment of fair, but firm, rules to discipline the nature and quality of public input, will be required before any great change can occur, with or without legislation. . . .

*Shearon Harris,  
Carolina Power & Light Company*

#### TO THE EDITOR:

As chairman of the House subcommittee having primary jurisdiction over the regulation of commercial nuclear power, I share Mr. Rowden's frustration about the lengthy period required to bring nuclear power plants from conception to operation. I also share his concerns about uncertainties attendant to the regulatory process and I find merit in pre-site selection and standardized design. I am not, however, so certain that the benefits of his proposed reforms will be as great as he suggests. Nor do I view trial-type hearings and intervenor funding as undesirable attributes of the regulatory process. Mr. Rowden, himself, gives no indication of how much time might be saved if licensing legislation were to be enacted in the form he advocates.

Our own investigations indicate pervasive dissatisfaction with the regulatory process, but little agreement on the root of the problem or how the system should be modified. To give an idea of how tangled the situation appears, I think it useful to note the following.

Mr. Rowden, in testifying before our subcommittee on June 13, 1977, said that "NRC's critical path role . . . is essentially at the pre-construction approval stage." This statement implies that, following issuance of a construction permit, the NRC's regulatory process is no longer a major determinant of how long it takes to get the plant into operation. But industry spokesmen do not agree; they tell us that regulation changes during the construction period, and they feel compelled to make costly and time-consuming modifications to bring plant design into accordance with current NRC regulations.

Another focus of disagreement is the extent to which delays result from the involvement of many federal agencies in the licensing proc-

ess. Mr. Rowden implies that the uncoordinated involvement of these federal agencies is a significant contributor to delay. While this may be so in some instances, I am aware of no study showing that lack of coordination at the federal level is more than an isolated problem.

Another point made by Mr. Rowden that should be stressed is the fact that nuclear reactors are costly, complex, and potentially dangerous machines. It is not surprising, therefore, that projects are delayed by the need to find solutions to unexpected problems that arise during the lengthy planning and construction process. Nor is it surprising that operating experience and research programs reveal the need to impose stricter regulations. But it also seems to me that the regulatory situation will stabilize as the technology matures; therefore, uncertainty resulting from the prospect of regulatory change will eventually become an insignificant factor in the total picture.

During the next several months, the Congress will give full consideration to a variety of nuclear licensing reform proposals. Our hearings and deliberations will give us a good idea about which difficulties can be remedied by licensing reform and which are simply intrinsic to a new and complex technology. Our consideration of Mr. Rowden's ideas, as well as the proposals of those who view the matter differently, will take us toward the goal of making the process efficient, predictable, and capable of protecting the public health and safety.

*Morris K. Udall,  
U.S. House of Representatives*

#### TO THE EDITOR:

The realistic alternatives for expanding electric power supply and curtailing the growth of oil and gas imports are coal and nuclear power. We know relatively little about the environmental consequences of burning coal, even at present levels of use and much less at the doubled and tripled levels projected for the next couple of decades. Preservation of the nuclear option should therefore be one of our chief domestic goals. That option can only be preserved if it is used, but it is falling into disuse, in large part because of delays and other inefficiencies in the licensing process. Rowden's article makes a substantial contribution to the discussion of how the reform of that process should be accomplished.

Rowden defines the fundamental reforms which are needed as "a more predictable process for site and facility decision-making, with a purposeful balance between energy and environmental needs; a much earlier opportunity for public participation in a less adversary setting; and a leaner, effectively coordinated framework of federal and state requirements." His proposals would go far towards curing the licensing malaise. Especially valuable are his discussions on realigning federal and state responsibilities and on the various mechanisms to "balance the inevitable tradeoffs between energy and environmental needs."

Unlike Rowden's, most other proposals for licensing reform fail to address, and indeed might aggravate, a fundamental problem with the licensing of nuclear plants and, to a somewhat lesser extent, other industrial facilities. The problem is that frequently the objections raised in the licensing proceedings are intended not so much to draw decisions on their own merits as to delay construction, increase costs, discourage applicants, and, in general, build up public hostility.

The Carter administration's proposal for nuclear licensing reform is a respectable effort, despite the internal disputes which delayed it so long that enactment this year is most unlikely. It still remains to be seen whether the administration is prepared to give the bill the strong support essential to making the licensing process workable. . . .

What has bedeviled the licensing proceedings at both the federal and state levels is that they have become forums for addressing essentially political questions, including the question whether there should be nuclear plants at all. If reform legislation is to serve its purpose, the Congress must specifically affirm that there is to be a nuclear power program, spell out the conditions under which it is to operate, and forbid the raising in licensing proceedings of questions the Congress has decided.

It will prove impossible in practice to divorce licensing reform from the issue of waste disposal. . . . Past efforts to deal with this problem were poorly planned and administered. The Department of Energy now has the opportunity to lay out a practical program and timetable for handling the waste disposal problem, and to do so in a way which will not sacrifice the potential of this enormous storehouse of energy. If DOE can convince Con-

gress and the public that it is on top of this job, it will remove the greatest single barrier to getting a law that will straighten out the licensing problem.

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MARCUS ROWDEN responds:

Chairman Udall, Messrs. Harris and Swidler, and I agree on the importance of reforms to facilitate the use of preapproved sites and standard designs, but differ on the degree to which this would contribute to regulatory stability and a reduction in the length and cost of the nuclear plant cycle.

On the question of stability, I agree with Mr. Harris that the benefits of pre-approval will be illusory if the process does not impose effective restraints on tendencies to modify authorizations once they have been given. While agency "self-discipline" and "strong-willed leadership" are vital, as Mr. Harris suggests, I would not rely wholly on "internal criteria"—which already exist in abundance in the NRC's licensing regulations, standard review plans, and "ratchet control" procedures. The law itself should provide meaningful assurance of the continuing validity of prior approvals as an integral part of a workable pre-approval regime. There will, of course, be need for agency latitude to act on genuinely new problems; however, the criteria for permitting post-authorization change must be sufficiently demanding (for example, significant new information substantially impairing a prior safety judgment) to warrant the commitment of industry and public resources needed to make a pre-approval process work.

As for Chairman Udall's skepticism on time savings, whether this skepticism turns out to be justified will depend, of course, on the content of the reforms adopted. Legislation that provides for durable pre-approvals at *both* the federal and state levels could reduce the plant cycle by four or five years. (The present NRC construction permit review, alone, now runs to about three years.) However, legislation that takes *only* the NRC off the critical path and/or allows no practical reliance on approvals that have been given will indeed yield questionable time savings.

Unlike Mr. Harris, I believe that the problem of duplicative and sometimes conflicting regulatory requirements (and their potential for

further increase) has substantial roots in the present state of the law, not simply in administrative confusion. Among the more evident instances: the states have the authority to make, and do make, need-for-power and environmental determinations, matters which NRC must also address at some length under NEPA; the recent Clean Air Act amendments have given EPA and the states, in addition to NRC, radiological health and safety responsibilities; and the 1972 Water Pollution Control Act amendments require NRC to weigh residual water quality impacts in its NEPA review even though exclusive authority to establish proper discharge standards and to grant requisite water quality permits rests with EPA (or the states). On the question whether lack of coordination at the federal level is an "isolated problem," the NRC siting study noted in my article concluded from its survey of licensing proceedings that "the current level of coordination among Federal agencies is a serious deficiency of the present process."

I subscribe, nonetheless, to Mr. Harris's point that a "strong dose of self-discipline," coupled with firm administrative requirements on the agencies involved, could yield marked improvement in the operation and predictability of the process. My article notes some ways for doing this. It was not my intent to suggest that administrative improvements were unnecessary (which would have mocked experience) or infeasible under existing law (which would have defied logic), but rather to focus on the fundamental reforms for which legislation is required—early site approval, restructuring state and federal review roles, and reforming the time and manner of public participation. In my view, it would be a serious mistake not to press hard for enabling statutory changes.

Finally, I would underscore two well-taken points made by Mr. Swidler. No effective licensing reform measure is likely to be enacted without vigorous presidential support—of both the need for the measure and the importance to the national interest of having a strong nuclear-power generation program. Coupled with this must be "a practical program and timetable" for handling the matter of waste disposal. These will provide the political context for legislative consideration and will decide, equally with the quantifiable benefits to be expected, the congressional outcome. ■