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7 Health and Safety Regulation

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The Misspecified Agenda: The 1980s Reforms of Health, Safety, and Environmental Regulation

7.1 The Agenda for Regulatory Reform

The 1970s marked the advent of a new wave of regulation of health, safety, and the environment.[1] Congress created a series of new agencies with broad responsibilities, including the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA), the National Highway Traffic Safety Administration (NHTSA), the Consumer Product Safety Commission (CPSC), and the Nuclear Regulatory Commission (NRC). Although some of these agencies consolidated the functions previously dispersed among other smaller agencies, the sweeping legislative mandates given to these agencies marked a dramatic increase in the level of regulation of the American economy. Congress directed these agencies to promote health, safety, and environmental quality almost without compromise.

Expectations were high. One of the principal authors of OSHA's enabling

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1. For history of the development of these regulatory agencies, see the discussions in MacAvoy (1979) and Cornell, Noll, and Weingast (1976).

legislation predicted that the agency would cut workplace injuries in half.[2] Engineering studies of traffic safety claimed automobile safety belts would dramatically reduce the carnage on the highways.[3]

This initial optimism was coupled with substantial resistance on the part of firms. These government regulations represented an intrusion into previously unregulated decisions. Enterprises no longer had the freedom to select the most profitable technology. Instead they had to meet often quite explicit guidelines regarding the character and performance of these technologies. To make matters worse, there were also widespread suggestions that the regulations were ineffective in promoting their intended objectives.

It quickly became clear that these efforts were quite costly and that their economic impacts had to be monitored. These concerns provided the impetus for establishing White House regulatory oversight efforts.

The second general reaction to the new wave of regulation was that of dissatisfaction. Supporters of regulation demanded greater achievements that were commensurate with these agencies' responsibilities, and critics placed great emphasis on the low benefits relative to the dollars being expended. Regulatory reform for health, safety, and environmental regulation had become a prominent political issue less than one decade after the establishment of these agencies.

Although there was not unanimous agreement on the direction that these agencies should take, there were a number of central themes to these calls for reform.[4] Here I will review these guidelines for reform that emerged in the economic literature and policy debates of the 1970s. These guidelines will serve as the reference point for assessing the regulatory reforms of the 1980s.

First, economists recognized that there were often legitimate market failures that needed to be addressed. Environmental problems involve a classic case of externalities. Moreover, imperfect consumer and worker information may impede market provision of safety. Market forces involving risk are not, however, completely absent. A series of studies in the 1970s documented labor market compensation for risk on the order of several hundred thousand dollars per statistical death for workers who had selected themselves into very high-risk jobs to as much as several million dollars per death for the more typical blue-collar worker (see Thaler and Rosen 1976; Smith 1976; and Viscusi 1979). Because of these constructive market forces, it is essential to ascertain that there is a legitimate market failure before determining that a regulation is warranted.

The second general principle is that one should obtain an assessment of

2. More specifically, Representative William Steiger predicted that injuries would be reduced by "50 percent or something like that." See his statement in U.S. Congress (1972, 274–78). See also Nichols and Zeckhauser (1981).

3. For a description of the optimistic projections, see the discussion in Peltzman (1975).

4. Perhaps the most comprehensive statement of the general principles that should guide regulatory reform appears in the U.S. Office of Management and Budget (1988).

the costs and benefits of the regulatory policy. Initially, the concern was with regulatory costs. The steel and automobile industries, for example, were hit particularly hard. Since these basic industries were in decline and threatened by foreign competition, ensuring that excessive government regulation was not the causal factor in their demise became a prominent concern.

Regulatory impacts should, however, be measured correctly. In assessing these costs and benefits, what matters is the value of the expected payoffs that will accrue to society. One should use the mean of the probability distribution rather than focusing on worst-case scenarios or, as many agencies do, the upper end of the 95 percent confidence interval for the risk level.[5]

Although assessing the impacts of policies is an essential prerequisite to sound policy choice, one must then utilize this information to select among policy alternatives. The third regulatory principle is that policy choices should be cost effective. Available policy alternatives that can achieve the same benefits at less cost are preferable. Another example of an inefficient regulatory alternative was the imposition of a requirement for a technological solution to air pollution problems by mandating the installation of scrubbers, whereas a lower-cost method of achieving the same benefits by altering the type of coal used would have been sufficient.[6]

A class of regulatory options viewed as being superior to existing regulations on cost-effectiveness grounds is that of performance-oriented alternatives.[7] Performance standards for the guarding of machines, for example, would not only be less costly than OSHA specification standards but would also pertain to more types of machine designs, thus reducing machine guarding risks for a larger number of workers. Similarly, use of protective equipment to avert hearing loss resulting from excessive noise exposure would impose considerably lower compliance costs than changing the workplace environment. Although there are legitimate debates regarding the feasibility of such performance-oriented alternatives, owing to the difficulties of monitoring compliance, the economic critics of regulatory agencies have urged these agencies at least to assess the merits of performance-oriented alternatives.

A fourth regulatory reform principle is that there should be an appropriate balancing of the benefits and costs of policies. Strict adherence to efficiency guidelines suggests that a benefit-cost test would be applicable, but the oversight process did not formally adopt this criterion until the 1980s. Even where a precise calculation of benefits and costs is not feasible, agencies should con-

5. In some instances, as in the case of EPA policy, the conservatism bias may be less scientifically based since there is an effort to ensure a "margin of safety" beyond the no-risk level. From an economic standpoint, the aversion of society to incurring risks should be reflected in the valuation of the payoffs rather than a misrepresentation of the probabilities that influence these payoffs (see Zeckhauser and Viscusi 1990; and Nichols and Zeckhauser 1986).

6. Lobbyists from the coal-producing areas likely to be most affected by a regulation permitting the choice of coal and focusing on the overall pollution level rather than on the means of attaining pollution control exerted substantial influence in determining this policy (see Crandall 1983).

7. See, e.g., the discussions in MacAvoy (1977) and Viscusi (1983).

sider the overall merits of the policy and pursue only those policies that they judge to be in society's best interests.

Although the degree to which economists adhere to strict compliance with a benefit-cost test varies, the importance of addressing efficiency concerns is widely accepted as an important role for economists active in these policy debates.[8] As the Carter administration's chairman of the Council of Economic Advisers, Charles L. Schultze, (1982, 62), observed:

> For this reason, I strongly believe that economists in government have a particular role to play in the area of micro policy, not merely as disinterested purveyors of technical advice, but as advocates. I am not merely offering the pious statement that the economists ought to favor efficiency. What I am saying is that in matters of specific micro policy, and within reasonable bounds, his role is to be the partisan advocate for efficiency *even when the result is significant income losses for particular groups*—which it almost always is.

Emphasis on the role of balancing of benefits and costs also leads to support for market-oriented alternatives. For example, one can achieve the efficient outcome with respect to environmental risks by appropriate pricing of pollution. Although there has been no effort to establish large-scale markets for pollution rights, under the Carter administration EPA introduced a number of innovative market-oriented options,[9] such as the bubble policy introduced in December 1979 (*Federal Register* 44 [11 December 1979]: 71779). The bubble policy was introduced only on a very limited basis just before the turn of the decade, but its originators hoped that this policy could be extended to enable firms to meet their pollution control objectives at less cost.

Even if these regulations were well designed, effective enforcement would be needed to ensure compliance. OSHA promulgated thousands of standards for health and safety, but it coupled these detailed requirements with very weak enforcement. The prospect that a firm would see an OSHA inspector was remote, as these inspectors visited firms with roughly the same frequency as the passage of Halley's comet. If an inspector did arrive, the penalties assessed were very low. Greater financial penalties were needed if firms were to have the proper safety investment incentives.

The final and perhaps most important theme that emerged was that there was a need for broad-based reform. The legislative mandates established by

8. For example, some economists such as Lave (1981) indicate a variety of decision criteria that can be applied other than simply benefit-cost analysis in its traditional form. However, even these modifications of the traditional benefit-cost framework provide for a greater degree of balancing than is achieved by the decisions of regulatory agencies.

9. EPA also introduced related efforts called *netting* and *banking*. The netting policy begun in 1976 enabled firms to achieve compliance even though one part of the plant was being modernized, thus avoiding the entire plant being held to the new source requirements. The banking policy enables firms to store their pollution rights if they are in compliance. See Crandall (1983) and, for a recent discussion of such policies, Hahn and Noll (1990).

Congress were overly restrictive and did not adequately recognize the economic trade-offs. All the enabling legislation for the risk and environmental agencies required that the agency promote the health or environmental objective, but none required that there be an explicit balancing of the costs and benefits of these efforts. Moreover, many of these pieces of legislation explicitly prohibited such trade-offs. The U.S. Supreme Court's interpretation of the Occupational Safety and Health Act is that the agency could not base its regulations on a formal benefit-cost test. Moreover, the Clean Air Act even more explicitly prohibits the consideration of costs of any kind in setting ambient air quality standards, much less utilizing benefit-cost analysis.

By far the most important need was for fundamental legislative reform to incorporate the opportunity for such balancing of cost and benefit considerations in the design of regulatory policy. Such changes are fundamental to any reform effort since the legislative mandates will limit the degree to which regulatory oversight activities will be able to influence the policies of the regulatory agencies. Short-term efforts to alter regulatory policies by slowing the pace of regulation or altering the enforcement effort will not yield long-run changes in the regulatory approach. Ultimately, the agency's enabling legislation will determine the shape of these policies.

A major failure of the Reagan regulatory reform effort is not just that such reforms were never achieved but that they were never even attempted. The legislative energies of the Reagan administration were devoted to tax reform rather than rewriting the legislative mandates of regulatory agencies. Although regulatory reform was one of the four key pillars of the Reagan economic program, it was generally viewed as meriting the lowest priority of the four major areas of concern. As a result, the reform measures that were introduced would necessarily have a short-term impact. Indeed, the deregulation effort did not even last through the first Reagan term.

My analysis begins with a discussion of the changes in institutional structure, notably the budgetary and staffing allocations of the regulatory agencies and the strengthening of the regulatory oversight mechanism. I then turn to the performance of the regulatory reform effort in altering the structure of regulation, promoting the balancing of benefits and costs, revamping existing regulations, and modifying the structure of new regulatory initiatives. I then examine changes in regulatory enforcement policy and the overall impact of health, safety, and environmental regulation in the 1980s.

The principal theme of this assessment is that there were two quite distinctive regulatory agendas during the two Reagan administrations. The first period, which covered most of the first Reagan term, was one of deregulation. There were a number of constructive changes, including the strengthening of the regulatory oversight mechanism, an improvement in the balancing of costs and benefits of regulatory policies, and selected new regulatory initiatives. These reform efforts failed to achieve their full potential because of the ab-

sence of fundamental legislative reform and, more generally, the absence of meaningful regulatory reform as contrasted with regulatory relief.

After the enthusiasm for the initial deregulation agenda waned, the regulatory approach came to resemble that of the pre-Reagan era. The pace of regulation and the implementation of these regulations became more vigorous, and there was little evidence that the character of the regulatory policies had undergone much more than a temporary interruption during the short-lived period of deregulation. The opportunity for sound regulatory reform through an appropriately specified reform agenda had been missed.

7.2 Budgetary and Staffing Trends

7.2.1 The Rationale for Cutbacks

For the usual economic process in which there are diminishing marginal benefits and rising marginal costs, economists would recommend a decrease in such activities once the incremental burdens exceed the benefits. This maxim also applies to regulatory policy if scaling back the degree of regulation will eliminate regulations whose net effects are adverse.

Straightforward application of this principle assumes that the policy mix is efficient. If we are not on the efficient frontier, then the main reform that is needed is to alter the character of the regulation. Although some regulations were excessively stringent, there is little evidence that the number and scope of safety and environmental regulations promulgated was too great. In contrast, for rate and entry regulation, there was a widespread consensus that regulatory restrictions of all kinds were unnecessary, as they impeded the efficient operation of markets. In these contexts, sound regulatory reform was synonymous with deregulation. Unfortunately, deregulation is not an appropriate objective for all classes of regulatory activity.

The need for better risk regulation rather than deregulation was also stressed by leading economists in Reagan's regulatory reform effort. Shortly after Reagan's election, the future chairman of the Council of Economic Advisers, Murray Weidenbaum (1980, 15), observed: "In the case of the newer social regulation, which typically attempts to correct imperfections in the market (so-called externalities, meaning the costs imposed by one segment of the economy on another), the approach should be to seek out the most effective and the least burdensome methods of achieving the desired objectives."

The distinctions made by other administration spokesmen were less refined. Office of Management and Budget Director David Stockman called for a "substantial rescission of the regulatory burden," with a need for a major "regulatory ventilation" to assist American business.[10] President Reagan subsequently

10. Stockman's comments are based on his December 1980 memorandum "Avoiding a GOP Economic Dunkirk," which is reproduced in Greider (1982, 137–59).

established the Presidential Task Force on Regulatory Relief headed by Vice-President Bush, with a notable emphasis on relief rather than reform. In reflecting on the regulatory achievements of the Reagan administration, President Reagan observed,

> Over the last 7 1/2 years, we have substantially reduced that burden, cutting red tape and slowing the pace of new regulation.
>
> When I became President in 1981, I directed that Federal agencies, within the scope afforded by law, should reduce the excess burden of government regulation that is borne by every worker, consumer, business, and state and local government in this Nation. Under the guidance of the Presidential Task Force on Regulatory Relief, Federal agencies have eliminated unnecessary regulatory costs ranging in the tens of billions of dollars.[11]

Achieving a balance between regulatory costs and risk reductions had become a subsidiary concern. Deregulation had become the fundamental policy objective during the initial years of the Reagan administration.

7.2.2 Shifts in Budgets and Staffing

One mechanism for scaling back the role of government regulation is to cut back on an agency's budget and staff. In the extreme case, one could eliminate an agency altogether.

A prominent target for elimination was the Consumer Product Safety Commission. This small-scale product safety agency had a disappointing performance record from the standpoint of both supporters and opponents of the overall function of the agency. Short of abolition, another possibility was to move this independent commission into the executive branch by making it an agency under an existing cabinet member, thus increasing the potential for executive oversight. Although there were suggestions that such options were under consideration, no serious efforts were made to achieve a restructuring. The policy option chosen instead was to cut back on the agency's activities. From 1980 to 1989, the CPSC budget dropped by one-fourth (table 7.1), and its staffing declined by over 40 percent.

These extreme cutbacks are not the only instance of increasing budgetary stringency. In terms of staffing, the summary statistics at the bottom of table 7.2 indicate that there was an overall drop of personnel in all the risk agencies listed in this table. The fringe advisory groups—the Council on Environmental Quality and the Occupational Safety and Health Review Commission—experienced particularly dramatic declines in their staff.

For most agencies, the general pattern from 1980 to 1985 was one of fairly stable nominal budgets but declining personnel. From 1985 to 1989, there was a stabilization and in some cases an expansion of the regulatory agencies. The case of OSHA is particularly noteworthy. OSHA's staff in 1980 was almost one

11. See the statement by Ronald Reagan in the U.S. Office of Management and Budget (1988, viii).

Table 7.1 **Budgetary Trends for Principal Health, Safety, and Environmental Agencies**

	Obligations ($millions) by Fiscal Year			
	1975	1980	1985	1989
Environmental Protection Agency	794	1,360	1,928	3,309
Council on Environmental Quality	4	8	1	1
Occupational Safety and Health Adm. (DOL)	97	191	220	248
Mine Safety and Health Adm. (DOL)	67	144	150	162
Food and Drug Adm. (HHS)	207	334	437	530
Nat'l Highway Traffic Safety Adm. (DOT)	104	136	114	133
Federal Aviation Adm. (DOT)	196	281	294	424
Consumer Product Safety Commission	37	43	36	34
Nuclear Regulatory Commission	148	396	445	421
National Transportation Safety Board	10	17	22	25
Food Safety and Inspection Service (DOA)	. . .	381	405	457
Occupational Safety and Health Review Commission	5	7	6	6
Total	1,669	3,298	4,058	5,750

Source: Warren and Chilton (1990, table A-1). Agency selection and totals calculated by the author.
Note: DOL = Department of Labor; HHS = Department of Health and Human Services; DOT = Department of Transportation; DOA = Department of Agriculture.

Table 7.2 **Staffing Trends for Principal Health, Safety, and Environmental Agencies**

	Permanent Full-Time Positions by Fiscal Year			
	1975	1980	1985	1989
Environmental Protection Agency	11,004	11,615	13,978	15,321
Council on Environmental Quality	50	32	11	9
Occupational Safety and Health Adm. (DOL)	2,435	3,015	2,176	2,415
Mine Safety and Health Adm. (DOL)	2,940	3,857	2,829	2,671
Food and Drug Adm. (HHS)	6,441	7,419	7,104	7,226
Nat'l Highway Traffic Safety Adm. (DOT)	881	874	640	652
Federal Aviation Adm. (DOT)	6,947	6,692	6,358	4,556
Consumer Product Safety Commission	884	871	502	487
Nuclear Regulatory Commission	2,006	3,041	3,318	3,078
National Transportation Safety Board	310	388	357	324
Food Safety and Inspection Service (DOA)	. . .	13,213	9,839	8,962
Occupational Safety and Health Review Commission	172	165	94	74
Total	34,070	51,182	47,206	45,775

Source: Warren and Chilton (1990, table A-2). Agency selection and totals calculated by the author.
Note: See table 7.1.

and a half times greater than it was in 1985. These cutbacks primarily affected the OSHA inspection personnel, as there was a dramatic decrease in the OSHA enforcement staff. By decreasing the enforcement effort, the government could reduce the burden on business imposed by government regulation. Decreasing the enforcement stringency did not, however, address the long-term reform need, which was a restructuring of the standards that would be enforced. The extent of the decreased inspection effort may not have been of major consequence, however, since the probability of inspection was already quite low and did not change much in the early 1980s. By 1989, the OSHA staff and budget had increased substantially from its 1985 level, but in terms of personnel OSHA remained below its level in 1980.

The principal exception to these adverse trends was EPA. Although there were cutbacks at EPA during the Gorsuch era, these cuts were quickly reversed. Because of the increased responsibilities of EPA over an increasingly broad range of hazards including unconventional pollutants, such as hazardous wastes and toxic substances, both the budget and the number of personnel of this agency rose considerably in the 1980s. Indeed, the total EPA budget in 1989 was more than double its 1980 level.

Altering budgetary allotments and personnel in the manner indicated in tables 7.1 and 7.2 is much easier to achieve than a fundamental shift in the character of policy. Overhauling an agency's regulatory structure is a daunting task, as the performance record considered below will indicate. However, reducing an agency's expenditures and staffing within the context of broadly based cutbacks in taxes and government programs simultaneously achieves regulatory relief as well as economic savings.

In some cases, the loss in safety from these cutbacks was not great. The Occupational Safety and Health Review Commission, for example, plays only a minor advisory role. Moreover, the overall emphasis of the cutbacks was correct. EPA merited the greatest increases since it had the fastest-growing regulatory agenda. New classes of environmental risks emerged to augment the traditional concerns of the agency with air pollution, water pollution, and pesticides as well as the increased concern with long-term hazards such as acid rain and global warming. Although the overall cutback strategy appears to have been ill chosen, the realignment of the relative degrees of responsibility among these agencies appears to have been correct.

7.3 The Regulatory Oversight Process

Although appointments to regulatory agencies are an important mechanism for influencing policy, the incentives of the agencies' career staff and the pressures exerted by the traditional constituencies lead to the need for some form of executive branch oversight. Unlike legislative initiatives, regulations do not require congressional action. Judicial review will also not be sufficient since

the agency generally has broad leeway subject to its legislative mandate and the provisions of the Constitution.

7.3.1 Regulatory Oversight in Previous Administrations

To address the costs imposed by regulations, President Nixon introduced informal quality of life reviews. This framework took on more structure within the Ford administration, as President Ford established a formal oversight process whereby regulatory agencies were required to prepare an inflationary impact statement assessing the effect of major regulations on productivity and costs (Executive Order 11821, 24 November 1974). In addition, the Ford administration established the Council on Wage and Price Stability in 1974 to oversee this oversight effort. The Council's legislation enabled it to "intervene and otherwise participate on its own behalf in rulemaking, ratemaking, licensing, and other proceedings before any of the departments and agencies of the United States, in order to present its views as to the inflationary impact that might result from the possible outcomes of such proceedings." The agency's authority was advisory in nature, and it covered independent and executive branch regulatory agencies.

President Carter bolstered the structure of this review process by requiring that regulatory analyses show that "alternative approaches have been considered and the least burdensome of the acceptable alternatives have been chosen" (Executive Order 12044, 24 March 1978). This requirement was tantamount to a cost-effectiveness test. The Council on Wage and Price Stability remained the main oversight group responsible for overseeing this effort. Carter also established a Regulatory Council to track agencies' upcoming regulatory agenda in its regulatory calendar. These activities were supplemented by a new body within the executive office of the president—the Regulatory Analysis Review Group (RARG). RARG consisted of representatives from the Council of Economic Advisers, various branches of the White House (domestic policy staff, Council on Wage and Price Stability, and Office of Management and Budget), and various executive branch agencies that served on a rotating basis. This interagency group prepared assessments of selected major regulatory activities that were then filed in the rule-making proceedings by the Council on Wage and Price Stability. These advisory efforts laid the substantive groundwork for lobbying by leading White House officials—the chairman of the Council of Economic Advisers and the inflation advisor to the president, Alfred E. Kahn.

Although these advisory efforts sometimes influenced the structure of regulations and, perhaps more important, educated the regulatory agencies concerning the appropriate perspective they should take in assessing prospective regulations, there was general agreement that the process needed to be strengthened. So long as the oversight activities remained advisory in nature, their ultimate impact would be modest. Second, the economic tests applied to

new regulations did not require that agencies strike any balance between the benefits and the costs of regulations, only that they attempt to achieve a particular objective as cheaply as possible, however ill chosen that objective might be.

7.3.2 Reagan's Oversight Process

The Reagan administration quickly restructured the oversight process. First, it abolished the Council on Wage and Price Stability so as to eliminate the wage and price standards role of the council that had emerged during the Carter administration. The council's regulatory oversight staff then moved to the Office of Management and Budget. From an institutional standpoint, this change enhanced the leverage that the regulatory oversight process could exert since it was more closely involved with budgetary and staffing decisions. The only disadvantage is that the abolition of the council also eliminated the legislative authority to intervene in the rule-making proceedings of independent agencies, such as the FTC and CPSC.

The leading economic participants in the development of the initial oversight effort were CEA Chairman Murray Weidenbaum and James C. Miller III, the administrator of the Office of Information and Regulatory Affairs (OIRA) at the Office of Management and Budget (OMB). Miller was an experienced regulatory reformer, having served as an official at the Council on Wage and Price Stability during the Ford administration.[12] The day after his inauguration, President Reagan established the Presidential Task Force on Regulatory Relief chaired by Vice President Bush, with Miller serving as the executive director. Shortly thereafter, on 17 February 1981, President Reagan promulgated Executive Order 12291, which established the major ingredients of the new regulatory oversight structure.

This executive order instituted two major changes. First, agencies were required to show that the benefits of regulations exceeded their costs and that they had chosen the policy option that maximized the net benefits to society. Although agencies were exempted from this requirement when it violated their legislative mandate, even in these situations the agency was required to assess, but not necessarily compare, benefits and costs. Unfortunately, the exemption pertaining to conflicts with legislative mandates is the central provision, not a minor nuance. Since all health, safety, and environmental agencies are governed by restrictive legislative mandates that limit benefit-cost trade-offs, in practice OMB cannot require that these regulations satisfy a benefit-cost test.

The second component of Executive Order 12291 is that approval by the regulatory oversight group was no longer an advisory process. The agency was required to submit the proposal to OMB for approval before it could move forward. It could appeal any adverse decision to the President's Task Force on

12. For a selection of the regulatory analyses prepared by President Ford's oversight group, see Miller and Yandle (1979).

Regulatory Relief. This executive order continues to be regarded as "the backbone of executive regulatory oversight activities" (see U.S. Office of Management and Budget 1988, 13–14).

The oversight process also added an earlier review procedure through the institution of regulatory planning provisions in 1985.[13] President Reagan issued Executive Order 12498, which required regulatory agencies to submit to OMB a draft regulatory program, thus expanding the regulatory calendar concept of the Carter administration. Oversight activities address regulations in their final stages. By that point, the agencies have already established a major commitment to a regulatory policy, making their positions difficult to alter. Moreover, agencies have also generated substantial political support for regulations soon to be issued, limiting the ability of OMB to alter the regulatory structure. By influencing the regulatory program of an agency at an earlier stage, OMB could better alter the direction of regulatory policy.

A controversial component of the regulatory oversight agenda was the principle of federalism: "Federal regulation should not preempt state laws or regulations, except to guarantee rights of national citizenship or to avoid significant burdens on interstate commerce" (U.S. Office of Management and Budget 1988, 20). The economic rationale is that the costs and benefits of regulations may differ by area and that regulations should reflect this heterogeneity.

Rigid application of this approach, however, ignores some of the benefits of uniform national standards. If firms must invest in technologies to comply with a variety of different regulations, regulatory compliance costs may escalate.

One such situation is with respect to hazard warnings. Uniform national standards are desirable since they provide individuals with a common warnings vocabulary. Right-to-know movements with differing requirements have, however, proliferated at the local level. A chief example is California Proposition 65, passed in 1986, which requires firms selling products that pose risks of cancer or birth defects (e.g., wine manufacturers) or that expose their workers or customers to carcinogens (e.g., gas stations) to provide appropriate warnings. Beginning in 1986, the food industry sought federal preemption of these local warning efforts, urging the FDA to adopt a uniform national warning standard. The worst-case outcome for industry involves packaging foods with different warnings for different states. Application of the federalism principles suggested that there is no reason for the government to intervene, and the government did not. Although the national government should not attempt to establish uniform national regulations that adopt unattractive state regulations on a broader scale, national uniformity may benefit firms through reduced compliance costs.

13. This was undertaken under Executive Order 12498, 4 January 1985.

7.3.3 The Regulatory Budget Alternative

Although the Reagan oversight mechanism included many of the ingredients needed to make oversight more effective, it did not undertake the radical transformation of the oversight process that some individuals had advocated. There had been several proposals in the late 1970s and early 1980s that the government establish a regulatory budget, not unlike its budget for actual allocations.[14] In its simplest version, the regulatory budget concept involves OMB establishing a budgetary limit for each regulatory agency, where this budget pertains to the total cost that these regulations can impose on society. Imposing such limits clearly would provide regulatory discipline.

There are, however, several factors that limit the attractiveness and feasibility of this proposal. First, the regulatory budget proposal is responsive to the regulatory relief objective, but it does not directly alter the character of regulations. Second, whereas budgets for agencies have an automatic validating process in that an agency will know at the end of the year whether it has exceeded the budget, there is no such internal check for a regulatory budget. Agencies must rely on cost estimates that may not accurately reflect the actual impacts. In some cases, even calculating costs will be a substantial object of controversy. What, for example, is the cost of affirmative action requirements?

Finally, establishing a regulatory budget requires that an agency know in advance what the appropriate budgetary levels should be. Moreover, that calculation requires a detailed assessment of the benefits and costs of regulations. For prospective regulations, benefits and costs can be assessed most easily within the context of the type of oversight mechanism that OMB adopted. Since an agency would always wish to pursue an effort with a positive benefit-cost balance irrespective of previous budgetary decisions, there seems then to be no rationale for proceeding on other than a piecemeal basis for new regulations. If existing regulations were to count with respect to the budget, difficult problems arise with respect to establishing the cost of regulations promulgated many years earlier. Moreover, achieving changes in existing regulatory policies for which many firms have already invested billions of dollars in compliance expenditures will create substantial political opposition. One cannot simply replace a regulation from the 1970s with an unfavorable benefit-cost balance by a new regulation with a more favorable benefit-cost balance. The substantial vested interests in the earlier regulatory regime will resist such changes.

Overall, the regulatory budget does not appear to be compelling conceptually, and, more important, it would impose a degree of discipline on the regulatory agencies that would far exceed what could be achieved. In practice, OMB encountered substantial opposition in promoting a benefit-cost requirement for

14. For advocacy of this budget concept, see DeMuth (1980a, 1980b, 1984) and Litan and Nordhaus (1983). In Viscusi (1983), I provide a detailed critique of the regulatory budget approach.

new regulatory policies. Implementing an overall regulatory budget concept would have required much more political support than the oversight group had.

7.3.4 Performance of the Reagan Oversight Effort

An assessment of the overall performance of the regulatory oversight process cannot be divorced from an evaluation of substantive changes in regulatory policy, which is the subject of the subsequent sections. However, it is useful to highlight a few of the most distinctive aspects of this process.

First, the change in the oversight test to include a benefit-cost requirement was consistent with most reform agendas. The regulatory analysis filings during the Ford and Carter administrations often advocated such balancing even though the executive orders empowering these efforts did not require a benefit-cost test.

The benefit-cost analysis requirement often led to exemplary studies of this type. A prominent example of a well-executed benefit-cost assessment is the Department of Transportation's analysis of the merits of center-high-mounted stop-lamps, which analyzed the comparative efficacy of different types of stop-lamps in reducing collision damage and compared these reduced damage savings with the lamps' costs. EPA's assessment of the gasoline lead phase-down rule similarly was accompanied by an excellent regulatory analysis, as was the analysis of the construction fall protection standard carried out by OSHA.[15] These improvements in the quality of regulatory analyses represented a substantial advance from earlier years.

What is less clear is that the extent to which these improved analyses altered the policy choices or simply verified the good choices being made. Although many of the benefit-cost analyses carried out by the agencies were of high quality, it would be naive to assume that regulatory policies in the 1980s were dictated by strict adherence to a benefit-cost test.

The second major advance of the Reagan regulatory oversight process was the increased leverage given to the oversight effort. The requirement that the agency submit the regulatory proposal to OMB for prior approval gave the oversight group more binding authority than it had had in the past. Indeed, many supporters of the efforts of regulatory agencies feared that OMB would now dictate regulatory policy. The substantially increased authority of the regulatory oversight process was noted by James C. Miller III, whom the press designated the "regulatory czar": "If you are the toughest kid on the block, most kids won't pick a fight with you. The Executive Order establishes things quite clearly" ("Deregulation HQ" 1981, 19).

After the initial wave of regulatory reform efforts, the political support for deregulation began to wane. This shift was reflected in Vice President Bush's

15. For a review of these analyses, see the Office of Management and Budget (1988, esp. 16–17).

decision to abolish the Presidential Task Force on Regulatory Relief in August 1983. Agencies also began to challenge this authority.

The extent of the decreased impetus for regulatory reform is reflected in several events. During the debate over the 1986 reauthorization of the oversight group, Representative Dingell led an effort to eliminate the OIRA group. The compromise ultimately reached provided for more disclosures of OMB's review efforts.

A 1986 court decision (*Environmental Defense Fund v. Lee Thomas*) required that OMB not delay rule makings if the agency faced a statutory deadline. EPA subsequently used this ruling to curtail OMB's review ability by delaying proposals until near the legislative deadline. Whereas the deadline was reached only once before 1986, after the court decision EPA ran up against the constraint six to seven times per year. Labor unions have also adopted this strategy on behalf of OSHA, as they have obtained court orders to force regulation of formaldehyde, ethylene oxide, asbestos, and lead. The courts required that OSHA examine these issues, not that it necessarily issue regulations. The OSHA health standards staff, however, used these orders to push for stringent regulations.

Finally, Representative Dingell wrote a letter to Lee Thomas in 1987 expressing concern with respect to OMB review before EPA had made its regulatory decision. This congressional concern has also been utilized by EPA to curtail the role of OMB.

The result has been a substantial expansion of regulatory activity. Whereas EPA proposed an average of three to five major rules in the early 1980s, under Lee Thomas EPA's major rules proposals averaged twenty per year. The decrease in the regulatory initiatives in the early 1980s proved to be only temporary, as OMB had little ability to alter the structure of this expanded regulatory regime in a fundamental way. By the end of the 1980s, the OMB oversight group was no longer Miller's "biggest kid on the block." Instead, it was influential only on the margin.

The success of the components of the OMB effort had also differed. The basic Executive Order 12291 providing for benefit-cost analyses and establishing the character of regulatory reviews has proved to be most consequential. The subsequent Executive Order 12498 requiring OMB review of the regulatory agendas has proved less successful. The thumbnail sketches of regulatory options being considered provide OMB with some indication of future regulatory policies, but these projected agendas have been sufficiently fragmentary, and OMB's leverage has been sufficiently weak that there has been little influence on the future direction of regulatory policies.

Although the strengthening of the regulatory oversight process represents a prominent but limited achievement, the transformation in the character of the oversight mechanism also has deficiencies. Whereas regulatory oversight in earlier administrations entailed comprehensive analyses of regulations that would be filed in the public record for the rule-making proceeding, OMB's

review is an internal procedure. In situations in which oversight officials do not have to compile comprehensive analyses and make public the results of these analyses, the oversight mechanism may not serve as an advocate of the most attractive option from an economic standpoint. Moreover, until the benefit-cost assessment is undertaken, the optimal regulatory alternative may not be clear. The danger of mistaken decisions is particularly great when leading political actors in the White House believe that they know the answer in advance and do not feel the need to be guided by a precise analysis of the merits of the regulatory option.

The absence of a more public regulatory debate has other possible drawbacks as well. Although the secretive nature of the negotiation process with agencies has advantages in terms of enabling parties to modify their stance without incurring the costs of altering their positions in a public confrontation, disclosure of OMB's reasoning would foster public understanding and provide guidance to other agencies regarding proper criteria for policy design. In many situations, OMB was attacked, perhaps needlessly, for delaying regulations or blocking regulations.

OMB's record in reforming regulation suggests that, in most cases, the review process has little effect on the regulation (see table 7.3). Almost three-fourths of all regulations in 1987 were approved by OMB in their initial form, and almost one-quarter were approved after revision. Only 3 percent of the proposals were rejected. In the absence of a public record of the manner in which the proposals were altered either in anticipation of the review or as part of the review, a more precise assessment of the impact of oversight is not possible.

7.4 Establishing an Appropriate Price for Risk

7.4.1 Agency Practices in Establishing Risk-Dollar Trade-Offs

The essential ingredient of benefit-cost trade-offs in the context of risk and environmental regulations is to establish the risk-dollar trade-off. Before the Reagan administration, agencies erred in two competing directions. First, in monetizing the benefits of health risks, agencies typically assessed the lost earnings and medical costs associated with the risk. Some agencies, such as the CPSC, had more detailed injury cost models, but these were not based on individuals' willingness to pay for risk reduction. Nonpecuniary health impacts and, more generally, society's willingness to pay to avoid small risks were not recognized.

An opposite bias is that the legislative mandates of the risk regulation agencies were absolute in character. The Clean Air Act requires EPA to set ambient air quality standards independent of cost considerations. In other instances, trade-offs are possible, but these trade-offs must fall short of a full-blown benefit-cost test. Agencies such as OSHA and EPA consequently focused on

Table 7.3 Nature of Regulatory Oversight Actions, 1987

	USDA	EPA	DOT	DOL	All Agencies	% of Total
Total reviews	420	205	202	64	2,314	100
Consistent without change	345	123	127	31	1,631	71
Consistent with change	58	60	64	31	549	24
Withdrawn by agency	5	9	7	0	59	3
Returned for consideration	2	0	4	0	10	0
Returned sent improperly	0	1	0	0	5	0
Emergency	6	0	0	1	15	1
Statutory or judicial deadline	4	12	0	1	45	2

Source: U.S. Office of Management and Budget (1988, 552).
Note: See table 7.1.

affordability. Indeed, OSHA's legislative mandate requires that it follow this approach. The general consensus is that the net effect of these biases led most risk regulation agencies to err on the side of excessive stringency, judged from the standpoint of economic efficiency.

The obvious solution is to rewrite the legislative mandates of these agencies. Ultimately, no meaningful regulatory reform can be achieved without some explicit attempt to balance the competing effects of regulation. Because legislative reform was not undertaken to achieve this end, the regulatory reform efforts could have only a modest and short-term impact.

7.4.2 Valuing Life: The Hazard Communication Debate

Perhaps the most noteworthy change in the nature of the regulatory debate is that the appropriate government expenditure per statistical life saved became an explicit object of concern. In earlier administrations, the regulatory oversight staff raised issues dealing with the value of life, with the principal reaction of agency economists being that such calculations were politically infeasible. Since lives were too sacred to value, agencies calculated the "costs of death." These costs consisted of the present value of the lost earnings and medical expenses. Although this concept may be appropriate from a tort liability compensation perspective, it abstracts from the value that individuals place on their welfare above and beyond their financial well-being. Moreover, it neglects the fact that attitudes toward risk-dollar trade-offs involving small probabilities may entail quite different terms of trade than if one were faced with the prospect of certain death. In this as in other policy contexts, the appropriate benefits value is society's willingness to pay for the risk reduction.

Agencies ultimately adopted the value of life approach, but not because of its compelling intellectual foundation. In the 1980s, OSHA undertook a regulatory analysis for its hazard communication standard, which would have required labeling and other forms of risk communication for all risky chemicals used in manufacturing. OSHA's regulatory analysis indicated that the benefits

exceeded the costs. Armed with this favorable result, OSHA submitted the regulation to OMB for approval. OMB correctly observed that the risk effects had been misassessed by OSHA, leading to a substantial upward bias in the benefits. OMB concluded that a more accurate assessment implied that costs exceeded benefits. After OMB rejected the regulation in 1982, OSHA appealed its case to the Presidential Task Force on Regulatory Relief.

To see how value of life considerations entered this debate, consider the statistics in the summary table 7.4. All figures in this table have been discounted to reflect the appropriate time lags involved for diseases such as cancer that have long latency periods. Although the hazard communication regulation would affect lives, it would also affect other health impacts, chiefly nonfatal job injuries and disabilities. At the time of the analysis, statistics were available on the implicit dollar value that workers attached to nonfatal injuries and fatalities, but there were no comparable values for disabling injuries. The approach that I used was to assess the sensitivity of the results, taking as fixed the estimated trade-off between fatalities and lost workday injuries (estimated to be at a ratio of 20:1) and varying the rate of trade-off between lost workday injuries and disabling injuries from a situation in which both receive equal value to one in which disabling injuries have a value five times as great as a lost workday injury. The other major assumption needed pertains to the efficiency of the regulation in reducing risk. OMB indicated that the risk reduction that would be experienced would be on the order of 5 percent, whereas OSHA estimated the impact of the regulation as reducing injuries by 10 percent.

Table 7.4 includes each of these benefit-weighting assumptions and provides calculations for both the OMB and the OSHA risk assessments. The first row of statistics in table 7.4 consists of the net discounted costs minus all mone-

Table 7.4 **Summary of Benefit and Cost Effects of the OSHA Hazard Communication Regulation**

	Lost Workday Equivalents			
	Weights, 1,1,20:[a] Effectiveness		Weights, 1,5,20:[a] Effectiveness	
	5%	10%	5%	10%
Net discounted costs less monetized benefits ($)	2.632×10^9	2.616×10^9	2.632×10^9	2.616×10^9
Total lost workday case equivalents (discounted)	9.5×10^4	18.9×10^4	24.7×10^4	49.7×10^4
Net discounted cost/lost workday case equivalent ($)	27,900	14,000	10,700	5,300

Source: Viscusi (1982).

[a]These are the relative weights placed on lost workday cases (always 1), disabling illnesses (1 or 5), and cancers (always 20) in constructing a measure of lost workday case equivalents.

tized benefits, thus providing a net financial impact figure that can be used in calculating the new cost per unit of health impact. The second row provides the estimated discounted total lost workday case equivalents for the regulation using the weights given at the top of the table. The bottom row of table 7.4 presents the estimated discounted cost per lost workday case equivalent injury prevented.

Whether the regulation should be pursued depends on whether this cost-effectiveness measure is greater than the estimated value of nonfatal injuries. My past estimates indicated an implicit value of injuries on the order of $23,000–$35,000 (in 1982 dollars) so that, for three of the four sets of assumptions listed, the regulation clearly passes a benefit-cost test. In one instance, the benefits exceed the cost except for the lowest end of the range of estimates of the implicit values that workers attach to injuries.

Secretary of Labor Donovan indicated that he viewed this analysis as providing support for the regulation, but OMB regulation head Christopher DeMuth maintains that he was not fully persuaded (see Earley 1985). The ultimate decision to issue the regulation may reflect in part the increased strength of the regulatory agencies after the initial period of deregulation. Moreover, the regulation had the strong support of labor as well as of chemical industry groups, who sought to avoid the costs associated with a variety of different state warnings regulations by having a uniform national regulation.

The policy outcome was not as consequential as the process that took place. The terms of the debate had changed dramatically since the 1970s. Regulatory agencies and the White House oversight group focused their attention on whether the benefits of the regulation exceeded the costs, whereas in earlier administrations such concerns were subsidiary. Agencies had viewed their role as being governed by a higher-level agenda in which formal trade-offs of this type were not permitted.

The new enthusiasm of agencies for the value-of-life approach can be traced primarily to its effect on the attractiveness of policies. This methodology boosts the monetized value of health benefits by a factor of ten, which is approximately the ratio of the estimated implicit value of life to the present value of the earnings of workers for whom these values are estimated. Although agency decisions are seldom dictated solely by benefit-cost concerns, the preparation of proper benefit assessments represents a substantial dividend of the OMB oversight effort.

7.4.3 The Value of Life Regulatory Record

The net effect of the effort to strike a balance between benefits and costs is shown in the cost per life saved statistics in table 7.5. Since these figures pertain to average costs per life saved rather than marginal costs, the tests indicate whether the regulation is preferable to no regulation, not whether the level of stringency is optimal. An appropriate reference point for assessing how far we should move down this table in terms of policy acceptability is the value of life

Table 7.5 The Cost of Various Risk-Reducing Regulations per Life Saved

	Year and Status	Agency	Initial Annual Risk[a]	Annual Lives Saved	Cost per Life Saved (millions of 1984 $)
Pass benefit-cost test					
Unvented space heaters	1980 F	CPSC	2.7 in 10^5	63.000	.10
Oil and gas well service	1983 P	OSHA-S	1.1 in 10^3	50.000	.10
Cabin fire protection	1985 F	FAA	6.5 in 10^8	15.000	.20
Passive restraints/belts	1984 F	NHTSA	9.1 in 10^5	1,850.000	.30
Underground construction	1989 F	OSHA-S	1.6 in 10^3	8.100	.30
Alcohol and drug control	1985 F	FRA	1.8 in 10^6	4.200	.50
Servicing wheel rims	1984 F	OSHA-S	1.4 in 10^5	2.300	.50
Seat cushion flammability	1984 F	FAA	1.6 in 10^7	37.000	.60
Floor emergency lighting	1984 F	FAA	2.2 in 10^8	5.000	.70
Concrete and masonry construction	1988 F	OSHA-S	1.4 in 10^5	6.500	1.40
Hazard communication	1983 F	OSHA-S	4.0 in 10^5	200.000	1.80
Benzene/fugitive emissions	1984 F	EPA	2.1 in 10^5	.310	2.80
Fail benefit-cost test					
Grain dust	1987 F	OSHA-S	2.1 in 10^4	4.000	5.30
Radionuclides/uranium mines	1984 F	EPA	1.4 in 10^4	1.100	6.90
Benzene	1987 F	OSHA-H	8.8 in 10^4	3.800	17.10
Arsenic/glass plant	1986 F	EPA	8.0 in 10^4	.110	19.20
Ethylene oxide	1984 F	OSHA-H	4.4 in 10^5	2.800	25.60
Arsenic/copper smelter	1986 F	EPA	9.0 in 10^4	.060	26.50
Uranium mill tailings inactive	1983 F	EPA	4.3 in 10^4	2.100	27.60
Uranium mill tailings active	1983 F	EPA	4.3 in 10^4	2.100	53.00
Asbestos	1986 F	OSHA-H	6.7 in 10^5	74.700	89.30
Asbestos	1989 F	EPA	2.9 in 10^5	10.000	104.20
Arsenic/glass manufacturing	1986 R	EPA	3.8 in 10^5	.250	142.00
Benzene/storage	1984 R	EPA	6.0 in 10^7	.043	202.00
Radionuclides/DOE facilities	1984 R	EPA	4.3 in 10^6	.001	210.00
Radionuclides/elem. phosphorous	1984 R	EPA	1.4 in 10^5	.046	270.00
Benzene/ethylbenzenol styrene	1984 R	EPA	2.0 in 10^6	.006	483.00
Arsenic/low-arsenic copper	1986 R	EPA	2.6 in 10^4	.090	764.00
Benzene/maleic anhydride	1984 R	EPA	1.1 in 10^6	.029	820.00
Land disposal	1988 F	EPA	2.3 in 10^8	2.520	3,500.00
EDB	1989 R	OSHA-H	2.5 in 10^4	.002	15,600.00
Formaldehyde	1987 F	OSHA-H	6.8 in 10^7	.010	72,000.00

Source: Morrall (1986, 30). These statistics were updated by John F. Morrall III via unpublished communication with the author, 10 July 1990.

Note: P, F, or R: proposed, final rule, or rejected, respectively.
OSHA-S = OSHA safety regulations.
OSHA-H = OSHA health regulations.
FRA = Federal Railroad Administration.
EDB = Ethylene dibromide.

[a]Annual deaths per exposed population. An exposed population of 10^3 is 1,000, 10^4 is 10,000, etc.

estimates in the literature at that time (see Thaler and Rosen 1976; Smith 1976; Viscusi 1979, 1983). Workers in high-risk jobs value each expected death at under $1 million, the value of life of workers in typical blue-collar risk jobs was on the order of $3 million, and the value of life of individuals in very high-income positions may be $7 million or more, but these last estimates are the least reliable.

Judged by these standards, many of the regulations in the 1980s clearly pass a benefit-cost test. The policies of the FAA appear to be outstanding bargains. Their low costs per life saved figures should not, however, be viewed as a regulatory success. A main contributor to this low figure is that the FAA valued the lives saved in airplane crashes using the present value of the lost earnings of the accident victims. This approach underestimates the value of life of airplane passengers by more than an order of magnitude. In one case, the FAA dismissed repairs of the DC-10 as being not worthwhile because of the low level of the risk, whereas a proper benefit-cost calculation indicates that the risk reductions were clearly desirable.[16] Application of value of life principles and benefit-cost analysis would have led an agency to be more aggressive.

The cutoff in table 7.5 for policies with benefits in excess of their costs is probably just below the regulation of benzene/fugitive emissions, with a cost per life saved of $2.8 million. Policies below that regulation in the table would not pass a benefit-cost test unless they protect populations with comparatively high values per life. OMB rejected none of the policies with lower costs per life, whereas they rejected eight policies with higher costs per life. OMB blocked some of the particularly inefficient regulations, although several regulations with very low efficacy were enacted. Indeed, the minimum threshold for OMB to reject a regulation is quite high. None of the regulations in table 7.5 with costs per life saved below $142 million were rejected. OMB's efficacy is apparently limited to the most extreme instances of regulatory excess.

Given the uncertainties involved with benefit-cost analysis, the character of the agency's legislative mandates, and the continued ability of regulatory agencies to wield substantial influence, the most that could have been hoped for is an elimination of the most unattractive policies from a benefit-cost standpoint. By that criterion, substantial progress was made.

7.5 Sunset Actions and Regulatory Reforms

7.5.1 The Reform Record

The widespread dissatisfaction with the character of regulatory standards has long led regulatory reformers to urge modification of these regulations. President Ford's Task Force on Regulatory Reform proposed that OSHA's standards be replaced by more performance-oriented alternatives. More generally,

16. For a review of these calculations, see Viscusi (1983).

since the original regulations had seldom been based on benefit-cost grounds, there was always a potential gain from altering previous policies.

The major sunset action of the Carter administration was the decision by OSHA director Eula Bingham to eliminate or modify 928 OSHA regulations in October 1978. Although many of the changes that she instituted were only editorial and did not alter the substantive focus of the regulation, this regulatory pruning eliminated the "nitpicking" aspects of OSHA regulation, which were the source of widespread ridicule of OSHA's efforts.

A potentially ambitious effort at deregulation occurred in 1980, as Carter administration economists developed an automobile industry relief package. The auto industry bore the brunt of a substantial body of regulatory costs, including emissions requirements, safety standards, and fuel economy standards. Some regulatory critics believed these costs contributed to the economic decline of the automobile industry. However, the timing of the main cost increases—the late 1960s, the early 1970s, and 1980–81—does not coincide with the economic decline of the auto industry. A more influential factor was the rise in fuel prices in the 1970s and the shift to small cars. Substantive action to support a pivotal industry in an election year did, however, offer political benefits.

The Carter administration developed a reform package that provided only very limited relief. Its principal component was a proposal to reduce the stringency of high-altitude emissions requirements, which offered a payoff of $500 million over a three-year period. The rest of the package had little substance because policy changes were opposed by the EPA and NHTSA administrators.[17]

7.5.2 Reagan's Auto Industry Relief Package

The advent of the Reagan administration marked a change in the regulatory climate. Shortly after taking office, the Reagan administration suspended the "midnight regulations" issued by the Carter administration in its closing days and ordered a reexamination of their merits. This effort yielded some partial dividends. As Council of Economic Advisers member William Niskanen (1988, 118) observed, "Of the 172 proposed rules that were suspended, for example, 112 were approved without change, and only eighteen were withdrawn. OIRA's batting average would never again be as high."

The Reagan administration's most comprehensive deregulation effort was its automobile industry relief package. The agenda for this reform effort was not a product of the Reagan administration efforts alone. Many of the regulations included in this group had previously been opposed at the time of their promulgation by the White House economists, many of whom were now at OMB. In addition, some of the components of the relief package had previously been

17. For a detailed recounting of the Carter administration experience, see Eads and Fix (1984, esp. 125–32).

advocated by the Carter administration economists for inclusion in the 1980 relief package but were not included because of opposition from the affected agencies.

The impetus for reform stemmed in part from the rise in regulatory costs in 1980 and 1981. The estimates by White (1982) indicate that the total costs of emission regulations per automobile mushroomed from $559 in 1979 to $906 in 1980 and then to $1,551 in 1981. Safety regulation costs were in addition to this amount. Estimates by Crandall et al. (1986) suggest that the additional equipment cost per automobile rose from $431–$641 in 1979 to $512–$822 in 1981 and that the fuel penalty increased from $116 in 1979 to $159 in 1981. The Reagan package for relief of the automobile industry consequently had been developed in an environment of rapid cost escalation for automobiles that could be traced to the influence of government standards.

Table 7.6 summarizes the components of the package, their status as of mid-1983, and the cost savings that the administration claimed for them.[18] The measures with the greatest savings for industry included the delay of the paint shop standard, the elimination of the driver vision standard, the delay of the tougher hydrocarbon solution standards, the scrapping of the safety standards for explosive multipiece tire rims, and the delay of the passenger restraint requirements. Overall, this reform package provides a very comprehensive program of regulatory relief.

The success of this reform effort stemmed not only from the White House regulatory reformers' zeal but also from the nature of the Reagan appointments to regulatory agencies. The NHTSA head, Raymond Peck, has been justifiably termed "an expert deregulator" (see Graham 1989, 145), and EPA administrator Anne Gorsuch developed a well-established reputation for scaling back the efforts of her agency.

Although some of the items in table 7.6 represent attractive reforms, others may not pass the usual economic tests. The paint shop requirement, for example, may represent the most cost-effective way of meeting hydrocarbon emissions standards. Abolition of this regulation would lead to more costly controls being required for other establishments near automobile paint shops, such as gasoline stations (see Eads and Fix 1984, 132). The costs of the regulation were, however, quite high, particularly in the short run. By delaying the regulation, OMB gave firms additional opportunity to change over to the new technologies required, greatly reducing the ultimate costs of the regulation. The merits of passive restraints are also much debated, even by economists.

Some of these deregulation efforts ultimately were viewed as constituting

18. One of the most expensive components is the high-altitude emissions standard that was adopted earlier as part of the Carter administration reforms but for which the estimated savings were $500 million as opposed to $1.3 billion. It should also be noted that the legitimacy of the "public" cost calculation and the "industry" cost calculation is questionable because of the complicated way in which costs affect prices. These calculations often assume, e.g., that the safety measures are not valued by consumers but are simply a deadweight loss.

Table 7.6 The Reagan Administration's Auto Reform Package

Issue	Action (date of completion)	5-Year Savings ($millions) Industry	Public
Rules Acted on:			
Gas-tank vapors	Declined to order new controls on cars (Apr. 1981)	103	1,300
Emissions tests	Streamlined certification of industry tests on vehicles (Oct. 1981, Nov. 1982)	5	. . .
	Raised allowable "failure rate" for test of light trucks and heavy-duty engines from 10 to 40 percent (Jan. 1983)	19	129
	Reduced spot checks of emissions of vehicles on assembly lines by 42 percent; delayed assembly-line tests of heavy-duty trucks until 1986 (Jan. 1983)	1	1
High-altitude autos	Ended assembly-line tests at high altitude, relying instead on industry data (Apr. 1981)	.2	. . .
	Allowed industry to self-certify vehicles as meeting high-altitude emission standards (Apr. 1981)	1	1
Pollution waivers	Consolidated industry applications for temporary exemptions from tougher emissions standards for nitrogen oxide and carbon monoxide (Sep. 1981)	. . .	. . .
Paint shops	Delayed until 1983 tougher hydrocarbon pollution standards for auto paint shops (Oct. 1981)	300	. . .
Test vehicles	Cut paperwork required to exempt prototype vehicles from environmental standards (July 1982)	. . .	. . .
Driver vision	Scrapped existing 1981 rule and second proposed rule setting standards for driver's field of view (June 1982)	10	. . .
Fuel economy	Decided not to set stiffer fuel economy standards to replace those expiring in 1985 (Apr. 1981)	. . .	. . .
Speedometers	Revoked rule-setting standards for speedometers and tamper-resistant odometers (Feb. 1982)	. . .	20
Tire rims	Scrapped proposal to set safety standards for explosive multipiece tire rims (Feb. 1982)	300	75
Brake tests	Eased from 30 to 20 percent the steepness of grades on which post-1984 truck and bus brakes must hold (Dec. 1981)	. . .	1.8
Tire pressure	Scrapped proposal to equip vehicles with low-tire-pressure indicators (Aug. 1981)	. . .	130
Battery safety	Scrapped proposal to set standards to prevent auto battery explosions (Aug. 1981)	. . .	. . .
Tire safety	Revoked requirement that consumers be told of reserve load capacity of tires; eased tire makers' reporting requirements (June 1982)	. . .	. . .

Table 7.6 (continued)

Issue	Action (date of completion)	5-Year Savings ($millions) Industry	Public
Antitheft protection	Eased antitheft and locking steering wheel standards for open-body vehicles (June 1981)	. . .	. . .
Fuel economy	Streamlined semiannual reports of automakers on their progress in meeting fuel economy goals (Aug. 1982)	. . .	.1
Tire ratings	Suspended rule requiring industry to rate tires according to tread wear, traction, and heat resistance (Feb. 1983)	. . .	10
Vehicle IDs	Downgraded from standard to administrative rule the requirement that all vehicles have ID numbers as an aid to police (May 1983)	. . .	. . .
Seat belt comfort	Scrapped proposal to set standards for seat belt comfort and convenience (June 1983)	. . .	. . .
Rules with Uncertain Futures:			
High-altitude emissions	Failed to revise Clean Air Act order ending weaker high-altitude emissions standards in 1984; eased through regulatory changes	38	1,300
Emissions reductions	Failed to revise Clean Air Act order to cut large trucks' hydrocarbon and carbon monoxide emissions by 90 percent by 1984; standard was delayed until 1985	105	536
	Failed to ease Clean Air Act order reducing nitrogen oxide emissions from light trucks and heavy-duty engines by 75 percent by 1984; regulatory changes under study	150	563
Particulate pollution	Delayed a proposal to scrap specific particulate standards for some diesels in favor of an average standard for all diesels; stiffer standards delayed from 1985 to 1987	40	523
Methane standards	Shelved because of "serious" costs; questions a plan to drop methane as a regulated hydrocarbon	. . .	. . .
Passive restraints	Delayed and then revoked requirement that post-1982 autos be equipped with passive restraints; revocation overturned by Supreme Court in June 1983	428	981
Bumper damage	Cut from 5 to 2.5 MPH the speed at which bumpers must resist damage; change is on appeal	. . .	308

Source: Wines (1983, 1534–35).

regulatory relief rather than regulatory reform. The Supreme Court eventually overturned NHTSA's rescission of the air bag rule.

There are likely to be some disagreements regarding the particular components of the program as well as the permanence of the regulatory reforms. On balance, however, these auto industry relief measures primarily delayed regulatory costs. They did not alter the long-term structure of auto regulations in any fundamental manner.

Perhaps the main reason that there was a failure to restructure the regulations rather than simply reducing their cost is that the overriding objective was not regulatory reform but auto industry relief. OMB Director Stockman (1986) viewed these policies with some disapproval, as he considered them to be a thinly veiled policy of protectionism.[19] The overriding objective of cost reduction rather than meaningful reform limited the degree to which this political success was also a beneficial reform measure.

7.5.3 Other Reforms and Sunset Actions

Other reform efforts met with less success. OSHA, for example, reexamined its cotton dust regulation that had been bitterly opposed by both the textile industry and Carter administration economists in a dispute that ultimately led to a battle in the U.S. Supreme Court. OSHA's reassessment of the regulation indicated that the original regulatory analysis was wildly inaccurate and that the standard could be profitably altered in several ways. For example, a policy of low-cost environmental controls (e.g., taping leaks in duct work) coupled with testing and rotating workers would achieve most of the health gains of the original standard. One could also question whether a cost of several hundred thousand dollars for each case of partial or total disability prevented was reasonable. The Supreme Court's decision to explicitly rule out a benefit-cost test in the cotton dust case and to require that the agencies set the lowest "feasible" standard did not preclude performance-oriented alternatives or some balancing of competing interests. However, by the time of the Reagan administration review, the largest textile manufacturers were already in compliance with the cotton dust regulation, leading them to join with labor in advocating retention of the status quo.

The lack of enthusiasm for altering a regulatory regime that was once bitterly opposed is likely to be a more general phenomenon whenever firms incur fixed costs of compliance. The regulatory reforms that OSHA did undertake were largely of a piecemeal variety. For example, OSHA revised its electrical

19. As Stockman (1986, 155) observed, "Lewis and the others had cooked up a theory that the auto industry had been so overregulated and crippled by air bags, pollution control devices, safety standards, and other government-imposed Ralph Naderite schemes that it was now up to the government to undo the damage. . . . This cover-up for protectionism really frosted me."

standards for the construction industry to be in conformance with new industry standards (29 CFR sec. 1926.800 [1] [1985]).[20]

The overall performance of the Reagan administration's deregulation and sunset actions is mixed. Of 119 regulations reviewed by the President's Task Force on Regulatory Relief, seventy-six regulations were revised, in twenty-seven cases revisions were proposed, and in sixteen cases revisions by the task force were still under way when this group issued its final regulatory report (Presidential Task Force 1983, 68).

The extent of the various revisions cited in the report card that the Presidential Task Force issued on its performance is not indicated, but particularly in the early years it is evident that some progress was made. The fact that the task force was disbanded in 1983 is a reflection of the decreasing prospects over time for altering the structure of regulation. The climate for regulatory reform had clearly changed, and there would soon be a return to the previous regulatory environment.

Sunset actions and other changes in the structure of existing regulation are difficult to achieve. With regulations already in place, industry's interest in altering these regulations is divided. Moreover, shifting the character of regulations over time may impose additional adjustment costs. The initial wave of deregulation efforts under the Reagan administration isolated some promising candidates for change. The greatest subsequent gains could be achieved by focusing on new regulation proposals.

7.6 New Regulatory Initiatives

7.6.1 Environmental Policy

The major regulatory innovation sought by economists in the environmental area has been the greater utilization of market-based policies. Notwithstanding the widespread enthusiasm of economists and reformers for various forms of emissions trading options, such measures remain the exception rather than the rule.

Table 7.7 summarizes the performance of these policies through 1984. The most popular market-oriented trading system is that of netting, whereby a firm can modify its existing plant and equipment in a manner that increases the level of pollution from one source, provided that it also decreases pollution emissions from other sources in such a manner that the *net* increase does equal that of a major source. The netting policy is restricted to internal trading for a particular firm. By its very design, this effort should have little effect on

20. Through this standards reform, OSHA attempted to bring its regulation into conformance with the National Electrical Code, which had undergone its last major revision in 1981—four years before the final OSHA standard was promulgated.

Table 7.7 **Summary of Emissions Trading Activity**

Activity	Estimated No. of Internal Transactions	Estimated No. of External Transactions	Estimated Cost Savings ($millions)	Environmental Quality Impact
Netting	5,000–12,000	None	25–300 in permitting costs; 500–12,000 in emission control costs	Insignificant in individual cases; probably insignificant in aggregate
Offsets	1,800	200	Probably large, but not easily measured	Probably insignificant
Bubbles:				
Federally approved	40	2	300	Insignificant
State approved	89	0	135	Insignificant
Banking	< 100	< 20	Small	Insignificant

Source: Hahn and Hester (1989, 138).

environmental quality. Table 7.7 indicates that the emission control cost savings from netting are substantial.

The second most frequent emissions trading option is that of offsets. This option introduced in 1976 permits construction of new facilities that will create pollution in areas of the country that exceed maximum allowable concentration for pollutants. Companies must, however, purchase offsets from existing facilities that provide for more than equivalent reduction of the same pollutant from pollution sources that are already in compliance. By 1984, most of the offset transactions were internal rather than involving external trades, and the cost savings are not believed to be substantial.

The third trading concept in table 7.7 is the bubble policy. The Carter administration introduced the bubble policy in December 1979. By envisioning an artificial bubble around a firm for which a firm must be in compliance in terms of its total level of pollution, rather than having to meet a particular requirement for each pollution source, a firm can establish the most cost-effective mechanism for achieving the pollution reduction within its "bubble." By 1984, bubbles had been adopted in fewer than 200 instances, with cost savings believed to be under $500 million.

The final trading option—banking—enables firms to store rights to pollution over time if they are in compliance with their standards and then use these compliance rights as offsets against pollution. This policy enables firms to avoid sacrificing pollution rights should they choose to replace their current high-polluting plant and equipment with a more efficient lower-pollution technology. The use of banking policies has, however, been infrequent.

These market-oriented systems have generated nontrivial financial benefits, without any substantially detrimental environmental consequences. The small scale of these efforts reflects the extent to which the EPA has viewed these market systems as experimental options rather than as an integral part of agency policy.

Firms must obtain EPA approval to utilize these trading options, and the costs of this approval are often substantial. Approval of the applications is not always forthcoming, as there has been long-term suspicion by most EPA officials and environmentalists more generally of market options. Pollution rights trading policies involve costs in locating a seller of emissions credits and in establishing the terms of trade. Firms also face substantial uncertainties when they embark on the emissions trading path since there is no guarantee that these experimental EPA policies will continue for the duration of the investment that they must make.

Although Carter administration and Reagan administration economists had long advocated such market approaches, it was not until the Bush administration that such efforts became a prominent part of the nation's declared economic agenda (CEA 1990, 193–97). The degree to which these efforts will become a central component of EPA policy is not yet apparent.

Although EPA expanded the role of market-oriented systems very little in

the 1980s, it did undertake other initiatives. Its air pollution efforts were particularly active, especially with respect to the continuing phase down of the use of lead in gasoline. In 1985, the permissible lead content in gasoline was reduced from 1.0 grams per gallon to 0.5 grams per gallon, and, in 1986, the permissible level dropped to 0.1 grams per gallon. What was particularly noteworthy about this increasing stringency of the lead standard is that it was also supported by sound regulatory analysis demonstrating the excess of benefits over costs (U.S. Office of Management and Budget 1988, 16). EPA also expanded its efforts against airborne toxins in the 1980s, and it undertook substantial efforts to reduce indoor air pollution stemming from asbestos and radon.

As will be discussed below within the context of enforcement, implementation of the Superfund legislation (CERCLA, 1980) was also a new concern of the agency in the 1980s. The 1984 Resource Conservation and Recovery Act (RCRA) amendments were also a major legislative initiative through which Congress imposed a series of deadlines for EPA actions, thus limiting the agency's discretion.

Two other major additions to EPA's agenda were the long-range problems of acid rain and the greenhouse effect. In each case, EPA identified major problems meriting national attention, but it failed to justify the economic merits of these efforts. The result has been a delay for greater study of these problems and symbolic efforts as part of the international dialogue on these issues.[21] With respect to the global environmental problems, the United States participated in the 1985 Vienna Convention and the 1987 Montreal Protocol, which led to the freezing of chlorofluorocarbon production levels, and in 1989 the United States participated in the Paris Summit focusing on global environmental concerns. To the extent that the United States has been an activist member of these groups, it has been through fostering recognition of the economic costs involved.

The desirability of particular global warming and acid rain policies remains in doubt. Portney (1990) estimates that the acid rain provisions of the 1990 Clean Air Act amendments will provide $5 billion in benefits with costs in the $2–$9 billion range. These acid rain provisions are desirable only if the costs are not much above the midpoint of the cost range. The exploratory analysis of global warming policies by Nordhaus (1990) likewise indicated mixed results regarding the attractiveness of the policy measures that have been proposed. Actions such as control of chlorofluorocarbons are economically desirable, but very ambitious policies may not be worthwhile. The main shortcoming of EPA policies with respect to these long-run environmental issues is the continuing need to identify the specific policies that merit adoption in terms of the net benefits that they offer society.

21. Niskanen (1988) reports that David Stockman blocked the acid rain initiative developed by William Ruckelshaus.

Table 7.8 **Trends in EPA Regulation Costs**

Year	Present Value of Costs ($billions) of EPA Regulations	
	Proposed Rules	Final Rules
1987	70	14
1988	21	84
1989	17	6
1990	250	95

Source: Estimates prepared by U.S. Office of Management and Budget, August 1990. Figures for 1989 and 1990 are preliminary.

Although EPA was not successful in winning approval for these policies, overall the late 1980s marked a dramatic resurgence in EPA regulatory activity. Table 7.8 summarizes the present value of costs for major EPA rules proposed or finalized from 1987 to 1990. These cost levels are quite impressive, including proposed regulations with costs of $70 billion in 1987 and $250 billion in 1990 and final regulations with costs of $84 billion in 1988 and $95 billion in 1990. To put these levels in perspective, note that, during the expansionary period of EPA regulation before Reagan, the costs associated with proposed EPA regulations were $26–$29 billion in 1979 and for the entire period 1975–80 were only $218–$296 billion.[22]

EPA had not simply returned to its earlier degree of regulatory activity; by the late 1980s and the early 1990s, EPA was undertaking more costly regulatory initiatives than at any time in its history.

7.6.2 Pharmaceutical Regulation

One of the most highly publicized areas of successful new regulatory initiatives was for pharmaceuticals. Critics of the FDA had long charged that the agency erred on the side of preventing adverse effects of newly approved drugs as opposed to taking into consideration the benefits that new drugs may offer.[23] One FDA official remarked that no one was going to blame him for slow approval of a beneficial drug, but he would be blamed for approving the next Thalidomide.[24]

Throughout the 1980s, the OMB regulatory oversight group sought to expedite the FDA drug approval process. The political leverage for achieving an accelerated approval time for new drugs was increased by the AIDS constituency. Since the prospects of patients suffering from life-threatening diseases

22. These estimates are provided in Viscusi (1983, p. 143, table 8.2).

23. For an extensive assessment of the FDA's drug approval policies, see Grabowski and Vernon (1983).

24. This comment was made to me by an FDA official in a training session on the use of economic analysis presented at the FDA in 1982.

such as AIDS were very poor, a policy of giving expedited approval to these drugs offered potential benefits with little apparent mortality risk.

FDA adopted a general regulatory commitment to trying to accelerate the drug approval process without compromising its quality, and it established a special commitment to expediting the approval of drugs for diseases such as AIDS.

The statistics in table 7.9 present the total number of new chemical entities approved and their approval time. Drugs that are ranked 1A are believed to be of substantial importance, and the 1AA drugs are generally drugs for diseases such as AIDS. If we contrast the patterns before and after the FDA policy change in 1987, there is no striking departure from earlier trends. The number of new drug approvals increased somewhat from the earlier years, particularly given the low drug approval rates in 1980 and 1983. The number of approvals given to the 1A and 1AA drugs increased in 1988 and 1989 from the level in the mid-1980s, but the total number of such approvals was almost identical to the rate of approval in 1982–83. The speed of the drug approvals also did not change markedly. The average drug approval time in the late 1980s is not substantially different from that in earlier years. The rate of approval for the 1A and 1AA drugs was particularly rapid in 1987 and 1989 but comparatively slow in 1988.

The most that can be concluded from this evidence is that there has been some modest effort to target more drugs as being 1A or 1AA and to avoid the long lag time of over three and a half years that was present in 1984. Since many of the drugs involved in this approval process have been in the FDA pipeline for several years, the ultimate effects of a shift in FDA drug approval policy will not be fully apparent until the 1990s. The changes that have been

Table 7.9 **New Drug Approvals and Time to Approval**

	No. of NCEs Approvals		Avg. Lag Time (months) from Submission to Approval	
Year	All Drugs	1AA/1A Drugs	All Drugs	1AA/1A Drugs
1980	11	2	35.18	26.38
1981	23	2	31.03	14.25
1982	22	4	26.02	9.81
1983	12	4	28.67	21.44
1984	21	2	43.44	27.75
1985	26	3	32.08	32.67
1986	18	1	34.19	17.50
1987	18	2	32.76	12.00
1988	16	4	36.39	41.00
1989	21	5	35.61	22.05

Source: All figures are based on calculations by the author using chronology of new chemical entities (NCEs) developed by the University of Rochester Center for Study of Drug Development, 10 July 1990 (computer printout).

made are consistent with the principles being advocated by most economists, and the extent of the changes evinced in FDA activities has been modest.

7.6.3 Occupational Safety Regulation

The literature on OSHA has long stressed the need to go beyond the technology-forcing nature of the initial era of OSHA regulation. One such performance-oriented mechanism is the 1980 OSHA proposed hazard communication regulation included as part of Carter's "midnight regulations" package. This regulation established chemical labeling in the manufacturing industry.

The ultimate regulation issued by the Reagan administration expanded on the original Carter proposal by adding material safety data sheets. Chemical suppliers were required to provide downstream firms with information regarding the chemical ingredients. Although potentially attractive in theory, the material safety data component of the regulation has been of little benefit because of the overly technical nature of the information provided. In addition to being the most costly new regulatory initiative in the risk area during the first Reagan term, this regulation was also innovative in many respects. This informational regulation represented a shift in the domain of regulatory activity that occurred throughout the 1980s. Right-to-know measures at the federal and local level proliferated in an effort to inform individuals of the risks from exposures on the job, exposures from the environment, and exposures from products.

The other major innovation in OSHA's regulatory structure was the adoption of the permissible exposure limits of the American Conference of Governmental Industrial Hygienists (ACGIH). OSHA's original standards for health risk exposures were based on approximately 400 exposure limits that had been recommended by the ACGIH, which is an industry advisory group. Each year a committee of fifteen individuals, chiefly hygienists and toxicologists from industry, meets to set threshold limit values for chemical exposures, where the objective is to achieve levels for which "no injurious effect will result no matter how often the exposure is repeated" (see Stokinger 1984). Although a zero-risk exposure is not necessarily optimal, this industry group informally incorporates concerns of feasibility.[25] The ACGIH had developed 200 standards for new health hazard exposures as well as 100 revisions of the exposure limits for existing OSHA standards that had been based on the earlier ACGIH exposure limits. Adopting all these revisions through a generic regulation rather than through a substance-by-substance rule-making approach enabled OSHA to expand its efforts in the health area, which had been given insufficient attention compared to safety concerns.

Although this regulation appears to be attractive on balance, its main short-

25. For the permissible exposure limits advocated by the ACGIH for which there is evidence on the benefit-cost trade-offs, the cost per case of cancer prevented appears to be generally in the reasonable range (see Broder and Morrall 1983; and Mendeloff 1988).

coming is that the process for generating such broadly based standards did not originate within the agency but was instead devised by an industry group. This process raises the long-term possibility that the function of such industry-designed standards will be to restrain competition and to promote the vested interests of the particular firms represented in the industry organization rather than to advance the interests of society at large. This type of capture theory has been offered by Stigler (1971) in the case of economic regulation. If OSHA were to continue to base its regulations on guidelines recommended by industry, then this procedure would all but ensure the long-run capture of OSHA. These dangers are also apparent in other areas of OSHA regulation, as the lobbying of the large textile firms in support of the retention of the cotton dust standard illustrated.

The other innovations in OSHA's regulatory agenda were more incremental. A collaborative effort of OSHA and the OMB regulatory oversight group led to an innovative OSHA grain-handling standard.[26] Grain dust levels in grain-handling facilities often lead to explosions involving the deaths of dozens of workers. In 1984, OSHA proposed to reduce the risks posed by such exposures by decreasing the permissible grain dust level. The outcome that resulted from the collaboration by OSHA and OMB offered firms a series of several performance-oriented alternatives that they could choose in order to achieve compliance: (i) clean up the dust whenever it exceeds one-eighth of an inch; (ii) clean up the dust at least once per shift; or (iii) use pneumatic dust control equipment.[27]

The flexibility offered by these various alternatives enables firms to choose the most cost-effective mechanism for achieving the desired safety objective. Although the introduction of flexibility of this type did not become a prevalent characteristic of new OSHA standards, it did mark the introduction of a greater degree of diversity in the regulatory approach than had been reflected in previous OSHA efforts.

Perhaps most important is the trend in the level of OSHA regulation. As in the case of EPA, there was a resurgence of regulation in the late 1980s. As indicated by the present value of the costs of proposed and final rules summarized in table 7.10, new OSHA regulations were generating substantial costs. Major regulations proposed in 1988 and 1989 would impose costs of $12 billion and $10.5 billion, respectively. If we exclude the OSHA carcinogen policy that was proposed in 1978 but never adopted, proposed OSHA standards imposed costs of only $35–$44 billion for the entire period 1975–80.[28] The level

26. A description of the activities and views of the oversight group is provided by the Office of Management and Budget's 1984 unpublished memorandum "OSHA's Proposed Standards for Grain Handling Facilities." See also the letter from Christopher DeMuth, administrator for information and regulatory affairs, OMB, to the solicitor of the U.S. Department of Labor, Francis X. Lilly.

27. Office of Management and Budget, "OSHA's Proposed Standards," 5–6.

28. For supporting data, see Viscusi (1983, 143–44).

Table 7.10 **Trends in OSHA Regulation Costs**

Year	Present Value of Costs ($billions) of OSHA Regulations	
	Proposed Rules	Final Rules
1987	2.8	2.7
1988	12	.2
1989	10.5	12.7

Source: Estimates prepared by U.S. Office of Management and Budget, August 1990.

of OSHA policy initiatives at the end of the second Reagan term had surpassed that of the pre-Reagan era.

7.6.4 Traffic Safety Regulation

One of NHTSA's early success stories in the 1980s that promoted safety in an effective manner was the promulgation of the regulation for rear-window brake lights (*Federal Register* 49, no. 97 [17 May 1984] 20818ff.). The installation of such brake lights reduces the reaction time of drivers of following vehicles because of the greater visibility of the single center high-mounted stop-lamp.

The Department of Transportation regulations with the broadest potential impact on fatalities were its safety belt standards. The Department of Transportation issued regulations requiring the enactment of mandatory safety belt laws. If this condition was not met, the federal government would require phased installation of passive restraint systems.

This compromise measure was a response to the U.S. Supreme Court decision to overturn the automobile industry relief package's rescission of the passive restraint requirements. Since many of the benefits of passive restraints could be achieved through use of seat belts, this measure represents an effort to utilize the ability of the individual to reduce his or her own risk rather than always relying on a technological solution. The decision to leave the ultimate decision of whether mandatory safety belt laws would be enacted to the states is consistent with the Reagan administration's principle of federalism.

In this case, there is no apparent heterogeneity in the benefits or the costs of a mandatory seat belt requirement to warrant leaving this matter up to the states. Since most economic studies indicate that the benefits of seat belt use far exceed the costs, the case for making the standard nationwide seems quite strong, if a mandatory requirement overruling individual choice is sensible.[29]

29. For a review of the benefits and costs of seat belt use, see Arnould and Grabowski (1981).

7.6.5 Smoking and Individual Responsibility for Risk

Perhaps the most aggressive new area of risk regulation in the 1980s was with respect to smoking behavior. Surgeon General C. Everett Koop issued increasingly strident attacks against cigarette smoking, designating smoking as more addictive than heroin and calling for a smoke-free society by the year 2000. Even the Council of Economic Advisers joined in the chorus of attacks against smoking, calling it the "greatest avoidable risk" (CEA 1987, 184).

The governmental policy efforts against smoking took two forms. The first consisted of public attacks against cigarettes that usually accompanied the issuance of the annual report of the surgeon general on smoking. Such reports ideally inform individuals regarding the risks of smoking, thus promoting a greater balancing of risks and benefits in individuals' decision making. The surgeon general's reports, however, went beyond information provision. They became advocacy documents against smoking behavior.

The second form of policy action consisted of a change in the warnings accompanying cigarettes. In 1984, Congress mandated a series of rotating cigarette warnings alerting consumers to a diverse set of risks pertaining to cigarettes. These warnings replaced the single warning in place since 1969 that indicated that "cigarette smoking is dangerous to your health."

Changes in hazard warning programs and public information campaigns can be easily undertaken by a policymaker wishing to pursue antismoking policies. These measures are more feasible than changes in the cigarette tax or national regulations pertaining to smoking behavior. However, as the percentage of smokers in society declined in the 1980s, the pressures against smoking increased.

Table 7.11 summarizes several key smoking trends. The total cigarette consumption per capita dropped considerably in the 1980s. As cigarette companies began to market their product to an increasingly smaller group, the price of cigarettes rose, which in turn also influences the number of people who will purchase the product. Cigarette taxes as a percentage of the retail price have dropped over the past twenty years, but the absolute level of this tax is much higher than before because of the rapid increase in the price of cigarettes. As the final columns in table 7.11 indicate, since the 1970s the percentage of the population smoking has been on the decline, and the percentage of former smokers has been on the rise.

Efforts by the surgeon general to publicize the potential risks of secondhand smoke contributed to widespread restrictions on cigarette smoking throughout the country. These have included regulations limiting smoking on airline flights as well as a diverse set of local smoking standards, particularly for restaurants. Although the main effect of the antismoking efforts has been to accentuate an already declining smoking trend and to increase the prevalence of restrictions on smoking, the shift in the acceptability of this particular product risk has been dramatic.

Table 7.11 Principal Aspects of Smoking Behavior

	Cigarettes per Capita	Cigarette Price per Pkg. ($avg.)	Cigarette Taxes as a % of Retail Price (median)	Present Smoker (%)	Former Smoker (%)
1970	2,534	.39	46.8	36.7	17.9
1980	2,821	.63	33.1	32.6	20.6
1985	2,501	1.05	30.8	29.8	24.4
1989	2,156	1.44	26.4	N.A.	N.A.

Source: Tobacco Institute, *The Tax Burden on Tobacco:* for cigarettes per capita, see *1989,* vol. 24 (1990), p. 6; for price per package and tax percentage, see *1970,* vol. 5 (1971), p. 83, and *1980,* vol. 15 (1981), p. 93. U.S. Dept. of Commerce (1989, 119 [smoking percentages]).

Note: N.A. = not available.

Particularly surprising is the nature of the discussion of smoking by government economists (CEA 1987, 184–86). In its extensive discussion of smoking, the 1987 *Economic Report of the President* did little to address any of the economics issues at stake. To what extent is there a market failure? Do individuals have knowledge of the risks that smoking may pose? How substantial are the costs of changing smoking, and what is the welfare loss from this "addiction" phenomenon? For all these risks to individuals from their own decisions, do the discouraging effects of taxes eliminate any market failure? If current taxes do not eliminate the market failure, what level of taxes is needed? Finally, in the case of secondhand smoke, for which smoking restrictions do the benefits of regulation exceed the costs? Are we going to treat passive smoking risks as a trump card that dominates other concerns that might be present regardless of their magnitude? What is most striking is not the fact that society has undertaken such initiatives, largely through the personal energy of the surgeon general, but rather the fact that the oversight economists have offered virtually unqualified support of these efforts in the absence of any regulatory analysis.

Perhaps the main point that economists are making by highlighting these antismoking efforts is that risks are not always the responsibility of a corporation. Responsibility for risk taking must be shared by the individual as well. This theme pervades much of the Reagan administration's efforts, and it provides a counterpoint to the view that controlling risk is simply a responsibility of government and industry. However, the government has not yet distinguished situations where it is appropriate to rely on personal responsibility for making decisions and contexts in which we should interfere with this responsibility by establishing regulations to overrule these choices.

7.6.6 The Overall Record on New Regulations

The early 1980s was not a period of major activity in terms of new regulations, but this hiatus was short lived. By the mid-1980s, the earlier pace of regulation had returned.

The chief new additions to the regulatory agenda marked a shift in the emphasis on taking advantage of individual safety-enhancing actions to promote safety. The OSHA hazard communication regulation and the increased emphasis on mandatory seat belt usage were examples of this policy direction. The antismoking crusade also marked an emphasis on the role of individual risk behavior, as did the risk communication component of EPA's radon policy. The increases in states' penalties against drunken driving were in a similar vein. The 1970s era of risk regulation was characterized by an emphasis on engineering controls and technological solutions to safety, whereas the 1980s attempted to incorporate more recognition of individual actions.

The extent of new regulatory activity was now, however, great. The most prominent administrators of major risk regulation agencies with a strong commitment to their agency's agenda were William Ruckelshaus and Lee Thomas. However, since these individuals succeeded Anne Gorsuch, their successful performance could do little more than reverse the damage that had already been done. Moreover, none of the appointees demonstrated a commitment to their agencies' objectives coupled with a sound economic agenda for regulatory reform.

7.7 Strategies for Regulatory Enforcement

In some contexts, regulatory enforcement is not a major concern. NHTSA can readily monitor whether firms are in compliance with automobile design standards since cars are a mass-produced product. Even an agency with a very small staff such as the CPSC has little difficulty in ascertaining whether firms are in compliance with its narrowly prescribed standards, such as safety cap requirements.

In some cases, however, effective enforcement design and targeting is an integral part of ensuring an effective regulatory program. The early OSHA enforcement efforts were characterized by infrequent inspections and low levels of penalties for violations, thus providing little incentive for firms to invest in safety. In contrast, EPA targets major sources of air and water pollution with at least one inspection annually. Nevertheless, a General Accounting Office (GAO) study in the early 1980s suggested that noncompliance rates for air and water pollution regulations might be as high as 80 percent.[30] Internal EPA studies indicate that enforcement for conventional pollutants is more effective than for unconventional pollutants. Enforcement problems for asbestos, toxic pollutants, and hazardous waste sites are much more difficult.

One widely espoused recommendation by economists is to replace the reliance on a fleet of inspectors by an injury tax or a pollution tax, such as a marketable pollution permit scheme. Environmentalists have never supported

30. See the discussion in Stanfield (1984, 1034).

such market-oriented policies because they have the appearance of enabling firms to buy their way out of safety and environmental improvements. Industry has provided little support for such a penalty system since creating effective incentives involves the imposition of nontrivial costs, thus increasing the stakes above the current regime.

Concern with effective enforcement presupposes, of course, that the agency's regulations are well designed. Unfortunately, standards for agencies such as OSHA and EPA are often excessively stringent. Lax enforcement is not necessarily the solution since exempting firms from any safety or environmental requirements is also not the ideal. In many cases, however, there is an effort to strike an appropriate balance by establishing phased compliance schedules to accommodate the substantial economic costs that a firm may face. Because of the difficulties of adjusting for ill-designed regulations through diminished enforcement, I will use the effective enforcement reference point as the policy objective.

7.7.1 OSHA's Enforcement Efforts

Under the Carter administration, OSHA's emphasis was on increasing the degree to which inspections focused on consequential hazards. The number of inspections undertaken declined, but the emphasis on serious violations and the level of penalties increased. This strategy complemented the standards reform effort to eliminate the less consequential regulations.

Thorne Auchter, Reagan's first head of OSHA, sought to decrease the confrontational role of OSHA by making inspections more of a consultative activity. This low-key inspection effort was coupled with a decrease in the inspection staff. To maintain any impact from inspections with a diminished number of full-scale inspections, one must increase their output.

The innovation that Auchter made was to introduce what OSHA termed "records check inspections" (see U.S. Department of Labor 1984, ii–iii). Auchter introduced a new, more cursory type of inspection so that the total number of inspections rose while the number of comprehensive inspections declined. Beginning in October 1981, OSHA inspectors at a firm examined the firm's lost workday accident rate for the past two years (or three years in the case of very small employers). Firms with injury rates below the national manufacturing average were exempted from inspections, and firms with injury rates in excess of the national average received a detailed inspection. This procedure established a mechanism for targeting inspections to enhance their productivity and contributed to Auchter's reputation as a "well-informed and effective manager" (see Niskanen 1988, 130). By fiscal 1983, records check inspections exceeded 10,000 per year, more than one of every six OSHA inspections.

One can view the records checks as being a mechanism for obtaining current information on firms' safety performance in a relatively low-cost manner, en-

abling OSHA to target its efforts better. One might, of course, modify the records checks approach by making the inspection exemption threshold industry specific.

The adoption of records check inspections came under substantial fire by outside critics since the procedure completely exempted from inspection firms that might violate OSHA standards (see Simon 1983). Falsification of accident records to obtain the exemption was also a potential problem, but no studies have documented any change in injury-reporting practices.

Had such inspections been introduced as an additional component of the enforcement effort rather than as part of a general policy of reduced enforcement, they might have been better received. Since the total change in OSHA policies reflected a drop in the number of inspections coupled with a replacement of full-scale inspections by more cursory records check inspections, the overall appearance was that of diminishing the enforcement effort.

The other component of OSHA's enforcement effort—penalties—had increased gradually under the Carter administration, but penalties were still at very low levels. To decrease OSHA's confrontational character, Auchter imposed a dramatic reduction in penalties and, in particular, required that any penalty in excess of $10,000 must be formally approved by the OSHA director. The chilling effect of this policy is reflected in an 80 percent reduction in the frequency of penalties above the $10,000 threshold (see Simon 1983). Company appeals of inspection decisions also became viewed as a negative index of an inspector's job performance, as the emphasis was on negotiated solutions rather than confrontations.

The statistics in table 7.12 indicate the character of these changes. The early years of the Reagan administration marked a decline in the number of inspections. The actual decline is ever greater since a substantial portion of these inspections are records check inspections. The average safety inspection time dropped from sixteen hours per inspection in 1980 to ten hours per inspection in 1983, and the average case hours per health inspection declined from forty-four hours per inspection in 1980 to thirty-three hours per inspection in 1983. The citations issued per hour of safety and health inspections increased so that the productivity of these inspections per unit time rose over that period.

The dramatic shift in the financial incentives created by OSHA is indicated by the data in the final column of table 7.12. The drop in penalties began in fiscal year 1981, for which the Carter and Reagan administrations overlapped. By fiscal year 1982, total OSHA penalties had dropped to $5.6 million, a figure that is far less than the $80 billion in wage compensation that workers received in that time period for job risks (see Viscusi 1983).

This period of deregulation subsequently gave way to a reversal in OSHA's emphasis. There was a resurgence in the penalty levels by 1987 and 1988, with considerably more penalties being levied in 1988 than in any year in OSHA's history. The extent of the change in enforcement stringency is borne out in the data presented in table 7.13 on the number of OSHA penalties in excess of $1

Table 7.12 Summary of Federal OSHA Inspection Activity

Fiscal year	Inspections (thousands)	Violations (thousands)	Proposed Penalties ($millions)
1972	28.9	89.6	2.1
1973	47.6	153.2	4.2
1974	78.1	292.0	7.0
1975	80.9	318.8	8.2
1976	90.3	380.3	12.4
1977	59.9	181.9	11.6
1978	57.2	134.5	19.9
1979	57.9	128.5	23.0
1980	63.4	132.4	25.5
1981	57.0	111.4	10.8
1982	61.2	97.1	5.6
1983	68.9	111.7	6.4
1984	72.0	111.6	8.1
1985	71.3	119.7	9.2
1986	64.1	129.0	12.5
1987	61.5	137.0	24.5
1988	58.4	154.9	45.0

Source: OSHA computer printouts and data published in U.S. Department of Labor, *Report of the President to Congress on Occupational Safety and Health* (various years).

Table 7.13 Trends in Large OSHA Penalty Levels

Year	No. of Penalties above $1 Million	Year	No. of Penalties above $1 Million
1972–85	0	1988	6
1986	1	1989	9
1987	4		

Source: Based on data provided in U.S. Department of Labor (1990).

million. Until 1986, OSHA had never penalized a firm by that great an amount on the basis of a single set of citations. However, in the late 1980s, Secretary of Labor Brock introduced a severe penalty structure for egregious violations. A substantial and increasing number of such penalties were levied, ranging as high as the 1989 penalty of $7.3 million against USX. This single firm's penalty exceeded the total penalties levied for the entire country for 1982 or 1983. Moreover, the fines imposed by OSHA attracted widespread attention to the enforcement effort, altering the public's perception of its stringency.

Consequently, the decade of the 1980s was one of enforcement extremes. By most criteria, the enforcement effort in the early 1980s was the most lax in OSHA history, whereas by the end of the decade OSHA had become more vigorous in its enforcement than ever before. The strategy of deregulation through regulatory neglect had been abandoned.

7.7.2 The EPA Enforcement Effort

The enforcement strategy at EPA bore some similarities to that at OSHA, with the principal exception being that the initial EPA head Anne Gorsuch was generally regarded as a poor manager (see Niskanen 1988, 128). Environmental critics charged that Gorsuch had abandoned EPA's mission: "There is a massive regulatory resistance going on in this administration. . . . This administration is massively disobeying these laws because they don't like them. In this context, the only mechanism we have for enforcement is the courts."[31]

Anne Gorsuch had shifted substantial enforcement authority to the states, decreasing federal technical support for the enforcement effort as well as federal financing of it. Organizations such as the National Governor's Association expressed dismay at the shift in EPA policy: "The perception within the regulating community was that there would be no enforcement. . . . That made the states' job so much harder."[32]

For the politically prominent Superfund program, Gorsuch also erred by appointing personnel who had no apparent regulatory commitment or expertise. Rita Lavelle's management of the Superfund program attracted criticism for managerial incompetence and alleged sweetheart deals with industry.

Gorsuch was succeeded in March 1983 by William Ruckelshaus after Gorsuch's highly contentious and weak performance. Ruckelshaus was the initial head of EPA in 1970, and his selection reflected the need to restore the credibility of the agency. The successor to Ruckelshaus, Lee Thomas, was a career administrator who continued the policies of Ruckelshaus.

Table 7.14 provides a quantitative perspective on the enforcement effort by summarizing EPA's civil referrals to the U.S. Department of Justice—EPA's principal enforcement sanction. During the Gorsuch era, referrals to the Justice Department for violations of air and water regulation declined substantially, as did total referrals. Perhaps most striking was the drop in referrals for hazardous waste violations. Since these violations pertain to regulations that had been established only recently and should have been the major growth area for new EPA initiatives, the reversal in these referrals to less than half their level in 1980 is a substantial departure. The hazards posed by toxins and pesticides, which would eventually compose an increasingly important part of the EPA's agenda in the 1980s, received almost no attention whatsoever.

The data in table 7.15 on administrative actions undertaken by EPA provide a similar perspective. The lowest number of administrative actions was in 1982, but by the late 1980s administrative enforcement actions had returned to the higher levels of the Carter administration.

The restoration of the enforcement effort in fiscal 1984 and 1985 marks the

31. This statement was made by Jonathan Lash, senior staff attorney at the Natural Resources Defense Council (see Mosher 1981, 2233).

32. Statement by Edward A. Helme, director of the National Governors' Association Natural Resources Group, quoted in Stanfield (1984, 1035).

Table 7.14 EPA Civil Referrals to the Department of Justice

Fiscal Year	Air	Water	Hazardous Waste	Toxics, Pesticides	Total
1972	0	1	0	0	1
1973	4	0	0	0	4
1974	3	0	0	0	3
1975	5	20	0	0	25
1976	15	67	0	0	82
1977	50	93	0	0	143
1978	123	137	2	0	262
1979	149	81	9	3	242
1980	100	56	53	1	210
1981	66	37	14	1	118
1982	36	45	29	2	112
1983	69	56	33	7	165
1984	82	95	60	14	251
1985	116	93	48	19	276
1986	115	119	84	24	342
1987	122	92	77	13	304
1988	86	123	143	20	372

Source: Based on Russell (1990, table 7-6), using data from *Mealey's Litigation Reports: Superfund* 1, no. 18 (28 December 1988): C-1.

Table 7.15 EPA Administrative Actions Initiated (by act), Fiscal Years 1972–88

	Clean Air Act (1970)	Clean Water and Safe Drinking Water Acts (1972/1974)	Resource Conservation and Recovery (1976)	Superfund (CERCLA) (1980)	FIFRA[a] (1947)	Toxic Substances Control Act (1976)	Totals
1972	0	0	0	0	860	0	860
1973	0	0	0	0	1,274	0	1,274
1974	0	0	0	0	1,387	0	1,387
1975	0	738	0	0	1,641	0	2,352
1976	210	915	0	0	2,488	0	3,613
1977	297	1,128	0	0	1,219	0	2,644
1978	129	730	0	0	762	1	1,622
1979	404	506	0	0	253	22	1,185
1980	86	569	0	0	176	101	864
1981	112	562	159	0	154	70	901
1982	21	329	237	0	176	101	864
1983	41	781	436	0	296	294	1,848
1984	141	1,644	554	137	272	376	3,124
1985	122	1,031	327	160	236	733	2,609
1986	143	990	235	139	338	781	2,626
1987	191	1,214	243	135	360	1,051	3,194
1988	224	1,345	309	224	376	607	3,085

Source: Based on Russell (1990, table 7-7), using data from *Mealey's Litigation Reports: Superfund* 1, no. 18 (28 December 1988): C-5.

[a]FIFRA = Federal Insecticide, Fungicide, and Rodenticide Act.

impact of the Ruckelshaus reforms on EPA's enforcement credibility. In a January speech at EPA, Ruckelshaus observed, "Unless [the states] have a gorilla in the closet, they can't do the job. And the gorilla is EPA (Stanfield 1984, 1034).

The reality of the gorilla in the closet became reflected in the actions that EPA undertook. Enforcement patterns for particular EPA programs often changed dramatically. Under the Superfund program established in 1980, EPA undertook no administrative actions whatsoever before the Ruckelshaus era. In fiscal year 1984, the number of administrative actions that EPA initiated jumped to 137 per year, climbing eventually to 224 per year (*Mealey's Litigation Report: Superfund* 1, no. 18 [28 December 1988]: C-5).

The main contribution of the Gorsuch era at the EPA was to scale back the enforcement effort and slow down the implementation of the newly emerging programs for hazardous wastes and toxic substances. The contribution of the Ruckelshaus and Thomas era was twofold. First, the enforcement capabilities of EPA were restored to their levels at the start of the decade. Second, Ruckelshaus and Thomas fostered the development of enforcement efforts in the newly emerging areas of EPA's agenda.

7.8 The Impact of Regulation on Health, Safety, and Environmental Quality

The ultimate objective of social regulation policies is to influence health, safety, and environmental outcomes. Assessing the impact of the regulatory activities of the 1980s is not straightforward. Some of the ultimate costs of these regulations have not been fully transmitted throughout the economy. This is particularly true for situations involving noncompliance, phased schedules for compliance to accommodate industries in economic hardship, and regulations promulgated in the 1980s but with increasingly stringent requirements being imposed over time. A second complicating factor is that regulation is not the only influence on safety and environmental outcomes. Safety risk levels of all kinds have been declining throughout the century.[33] As society has become wealthier, our preferences for safety are enhanced. Ideally, we would like to distinguish the effects of government regulation from the trends that would otherwise have taken place in the absence of regulation.

Table 7.16 provides a summary of several death risk trends. One can view 1970 as marking the beginning of the decade of safety and environmental regulation. All three sets of death rates in table 7.16 have been in decline since the 1930s. The rate of decline for work accidents was somewhat greater in the 1980s than in previous decades, while the rate of decline in motor vehicle accidents is a bit higher than in the 1970s. The 1980s rate of decline in home accidents, which reflects the activities of the CPSC and the FDA, was almost

33. The only exception to this pattern is that of automobile fatalities, which are also in decline if one recognizes the changing age distribution and the change in the miles driven.

Table 7.16 Principal Death Risk Rates

	Annual Rate of Increase in Death Rates		
	Work	Home	Motor Vehicle
1930–40	−1.8	−.2	−3.3
1940–50	−2.3	−2.2	−4.0
1950–60	−2.8	−2.1	−3.5
1960–70	−1.2	−1.7	−.8
1970–80	−1.6	−2.7	−3.3
1980–90	−3.2	−2.4	−4.3

Source: Calculations by the author using death rate data from National Safety Council (1988, 14–15, 70–71).

Note: All figures are given per 100,000 population.

identical to that in the 1970s. Overall, death rates continued to drop in the 1980s at roughly the same pace as in previous decades.

7.8.1 Job Risk Trends

Other job risk measures suggest somewhat different risk trends. Table 7.17 reports four different measures of workplace risk levels that capture injuries other than death risks. The bottom panel of table 7.17 presents the percentage annual growth rates for these four different risk measures: the rates of decline for total injuries, lost workday injuries, nonfatal injuries without lost workdays, and the total rate of lost workdays. The patterns for these four measures indicate a slowing in the rate of decline or, in the case of total lost workdays, a lower rate of increase.

Since cyclical factors and other influences are at work, one needs a more detailed econometric analysis to isolate the independent influence of regulatory policy. The findings in Viscusi (1986) for 1973–83 indicate that the effect of the previous year's OSHA inspections on injury rates in the current year ranges from a low value of 2.6 percent for total injury rates, to an intermediate value of 3.6 percent for lost workday case rates, to a high value of 6.1 percent for the rate of total lost workdays. Moreover, there is no evidence of a dropoff in the impact of these inspections on injuries with the advent of the records check inspections. A more detailed examination of the performance of OSHA records check inspections by Ruser and Smith (1988) indicates that, for plants potentially subject to the records check procedure, the reported injury rates declined by 5–14 percent. There was, however, underreporting of job injuries during that period.[34] What we do not know is whether there was any change in the extent of underreporting. On balance, however, there is no evidence that the institution of records check inspections decreased the overall efficacy of the typical OSHA inspection.

34. For a discussion of the underreporting problem, see Ruser and Smith (1988).

Table 7.17 **Occupational Injury and Illness Incidence Rates per 100 Full-Time Workers**

	Injuries and Illnesses			
Year	Total Cases	Lost Workday Cases	Without Lost Workdays	Lost Workdays
1973	11.0	3.4	7.5	53.3
1974	10.4	3.5	6.9	54.6
1975	9.1	3.3	5.8	56.1
1976	9.2	3.5	5.7	60.5
1977	9.3	3.8	5.5	61.6
1978	9.4	4.1	5.3	63.5
1979	9.5	4.3	5.2	67.7
1980	8.7	4.0	4.7	65.2
1981	8.3	3.8	4.5	61.7
1982	7.7	3.5	4.2	58.7
1983	7.6	3.4	4.2	58.5
1984	8.0	3.7	4.3	63.4
1985	7.9	3.6	4.3	64.9
1986	7.9	3.6	4.3	65.8
1987	8.3	3.8	4.4	69.9
1988	8.6	4.0	4.6	76.1
% annual rate of increase				
1973–80	−2.9	+2.3	−6.3	+2.9
1980–90	−.1	0	−.3	+2.0

Source: Calculations by the author and data from U.S. Bureau of Labor Statistics (1989, table 6) and U.S. Bureau of Labor Statistics, *Occupational Injuries and Illness by Industry* (various years).
Note: Data for 1976–88 exclude farms with fewer than eleven employees.

7.8.2 Auto Safety Effects

Analysis of the impact of automobile safety regulation is also complicated by the role of competing influences that affect the safety trend, such as the character of highway construction and the age composition of the population. There is substantial controversy in the literature over the effect of automobile safety regulations on highway accident rates because of the possibly counterproductive effect of safety belt regulations on driver behavior.[35] Drivers wearing safety belts faced lower expected accident costs and as a result will have a reduced incentive to exercise care.[36] The general consensus in the literature is

35. The initial paper in this area is that of Peltzman (1975). For further discussion of these issues and the controversy over this line of research, see Blomquist (1988), Crandall et al. (1986), and Graham (1989).

36. To obtain a status report on this debate, see Crandall et al. (1986), which advocates the safety-enhancing viewpoint. For the most recent perspective from the school of thought that places substantial weight on the counterproductive impacts of safety policies, see Blomquist (1988).

that automobiles have become much safer for passengers, but there has been an apparent increase in the risk posed to pedestrians and bicyclists. The competing magnitudes of these effects has long been debated.

The performance of the other aspects of automobile regulation is mixed. Automobile emissions standards have lowered the pollution levels for new cars, but the penalty levels on the cars that fail to comply with the standards have led motorists to keep old, high emission vehicles on the road (see Crandall et al. 1986). Fuel economy standards are also a binding constraint, but most economists would prefer market-based incentives, such as a gasoline tax, so that motorists can respond to the changing terms of trade rather than be constrained by specific fuel economy standards on corporate fleets.

7.8.3 Pollution Trends

The net effect of automobile and other pollution regulations on environmental outcomes is summarized by the pollution trends in table 7.18. The data in this table provide information on emissions, which are correlated with air quality but are not an exact measure of it. Moreover, the monitoring data involve substantial error, where the direction and magnitude of the error are unknown. Perhaps the most striking aspect of the table is that the wave of deregulation efforts and lax environmental enforcement that characterized the period 1981–

Table 7.18 **National Pollution Emissions Trends**

		Pollutant (teragrams/year)			
Year	Particulates	Sulfur Oxides	Nitrogen Oxides	Carbon Monoxide	Lead (gigagrams)
1960	21.6	19.7	13.0	89.7	N.A.
1970	18.5	28.3	18.5	101.4	203.8
1975	10.6	25.8	19.5	84.1	147.0
1980	8.5	23.4	20.9	79.6	70.6
1981	8.0	22.6	20.9	77.4	56.4
1982	7.1	21.4	20.0	72.4	54.4
1983	7.1	20.7	19.3	74.5	46.4
1984	7.4	21.5	19.8	71.8	40.1
1985	7.1	21.1	19.8	67.0	21.1
1986	6.8	20.9	19.0	63.1	8.6
1987	7.0	20.6	19.3	64.1	8.0
1988	6.9	20.7	19.8	61.2	7.6
% annual growth rate					
1960–70	−1.5	+3.7	+3.6	+1.2	...
1970–80	−7.5	−1.9	+1.2	−2.4	−10.1
1980–88	−2.6	−1.5	−.5	−3.2	−20.0

Source: U.S. Environmental Protection Agency (1990, 2).
Note: N.A. = not available.

82 did not lead to a rapid deterioration of environmental quality. The improvements in environmental quality took place at a slower pace than in earlier years, but there is no evidence of worsening air quality for the five different measures of pollution listed.

The first type of air pollution emission listed in table 7.18 is that of particulates, which arise primarily from fuel combustion (e.g., coal combustion by railroads), forest fires, industrial processes, and highway motor vehicles. The rate of decline in particulate emissions in the 1980s was 2.6 percent annually. This rate is much less than during the 1970s, when tremendous progress was made against this class of emission.

The second type of emission, sulphur dioxide, arises from stationary fuel combustion and industrial processes. The principal contributor to this type of pollution is fuel combustion involving sulphur-bearing coal. After an increase in sulphur oxides in the 1960s, there was a decline in these emissions through both the 1970s and the 1980s at roughly comparable rates, primarily because of increased controls of emissions by nonferrous smelters and sulfuric acid plants.

The third class of emission in table 7.18, nitrogen oxides, arises from both highway motor vehicles and stationary sources, such as coal-fired electric utility boilers. After an increase in these emissions during the 1960s and 1970s, there was a slight decline in such emissions during the 1980s. Automobile emissions controls are among the policies that have contributed to this trend.

The fourth class of emission included in table 7.18 is that of carbon monoxide, for which highway motor vehicle emissions are the largest contributors. The rate of decline in carbon monoxide emissions increased in the 1980s.

Of the sets of statistics in table 7.18, the lead statistics in the final column provide the strongest evidence of improvements in environmental quality. These gains can also be traced to specific regulatory policies. The primary sources of these lead emissions are motor vehicles and industrial processes. The impact of EPA's successive reductions in the allowable lead content of gasoline in 1985 and 1986 was dramatic. Lead emissions were cut almost in half between 1984 and 1985, and between 1985 and 1986 they were reduced by more than half again. Within a two-year period, 80 percent of all lead emissions were eliminated. Moreover, on the basis of the OMB review of the regulatory impact analysis, this environmental improvement also represents a situation in which the benefits to society of the improved environmental quality exceed the costs. This decrease in lead emissions is perhaps the major environmental success story of the 1980s.

For other EPA efforts that were central to the environmental policy in the 1980s, there are no comparable measures of environmental pollution levels, but there are some indices of policy achievements.

For the Superfund program established by legislation in 1980,[37] the 1980s

37. The statistics presented below are based on the discussion in Acton (1989), particularly the material in app. A.

marked a significant environmental cleanup effort. By 1989, EPA had identified over 30,000 Superfund sites and had inspected almost 10,000 of them. In over 12,000 cases, EPA concluded that no further action was warranted. In terms of actual cleanup activities, EPA had initiated removal actions in 1,347 cases, although it has completed only a small fraction of these removal efforts. These removal actions pertained to 274 of the 1,063 sites that EPA put on its national priority list. If one views this listing as comprehensive, EPA had begun to address roughly one-fourth of its high-priority waste sites in the 1980s. The extent of the risk that was reduced and the extent that it should have been reduced given the costs and benefits of cleanup are not known. Moreover, without any comparable efforts in the 1970s, there is no good reference point for assessing the pace of the cleanup.

7.9 The Regulatory Record of the 1980s

The 1980s record in terms of influencing the structure of safety and environmental policies is very mixed. The initial efforts of the Reagan administration emphasized deregulation and budgetary cutbacks rather than changes in the structure of regulation. This approach reflected an antiregulation approach rather than meaningful regulatory reform. This misplaced emphasis dissipated much of the political momentum for regulatory reform at the start of the Reagan administration. Because of the disappointing performance of prominent officials such as Reagan's first head of EPA, much of the 1980s was spent restoring the credibility of the agencies rather than making substantive advances. There were also some regulatory achievements—the phase down of lead in gasoline, the introduction of the OSHA hazard communication policy proposed by Carter and enacted by Reagan, and expediting the approval of drugs for life-threatening diseases.

By the mid-1980s, the regulatory reform effort had ended. Vice President Bush terminated his Task Force on Regulatory Relief. Regulatory agencies proposed regulations with greater costs than ever before. OMB became less influential in altering the structure of regulation, and regulatory enforcement became more vigorous than before the onset of deregulation.

The window of opportunity for regulatory reform was not great, and this opportunity had been squandered on a misguided deregulation agenda. There was no attempt whatsoever to address the fundamental long-term problems arising from agencies' restrictive legislative mandates. At a more modest level, there was not even a broad-based effort to adopt market-based approaches to controlling risk or to emphasize more performance-oriented regulations. By the mid-1980s, regulatory policy returned to the same patterns as in earlier administrations, except that OMB appears to have had some limited influence in eliminating some of the most inefficient regulations.

In effect, there were two Reagan regulation agendas—the deregulation agenda that pertained from 1981 to 1983 and the return to the traditional regulatory agenda from 1984 to 1989. The Bush administration has continued the

policies of the second Reagan agenda. In retrospect, the deregulation efforts will be viewed as a temporary policy aberration rather than as an effort with any lasting impact.

The extent to which this record should be viewed negatively depends in large part on the reference point used for the assessment. Advocates of meaningful regulatory reform will be disappointed in this performance because of the forgone opportunity for fundamental change. The widespread consensus on the direction for reform reflected in the economics literature contrasts with the very mixed nature of the reform efforts. The impetus for meaningful regulatory reform and effective oversight appears to have been lost, as the task of undertaking the unfulfilled risk and environmental agenda of the 1980s had taken precedence.

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2. *Christopher DeMuth*

As Kip Viscusi stated in his fine paper, the primary goal of the Reagan administration in the area of regulation was to improve the efficiency of regulatory programs by hewing to economic thinking as much as possible. Thus, this area

of economic policy provides a good occasion to address the questions with which Martin Feldstein opened this conference, namely, Where was economic thinking influential in policy-making, Where was it not, and, Why?

Let me begin by mentioning three reasons why regulatory policy represented a fruitful area in which to increase the role of economic reasoning in policy-making. First, the regulatory agencies have an enormous amount of discretion in interpreting the laws, despite a common belief that statutory standards are very strict (and often so uneconomic as to make almost any economist shrink in horror). In truth, the agencies are usually told in general terms to promote occupational safety, or pollution reduction, or whatever, and are then given great discretion in how they do so through particular regulations.

Second, as a sort of constitutional price for this discretion, regulatory agencies are required to be highly, and I think almost uniquely, rationalistic about what they do. They must give public notice about their intended policies and draw a coherent connection between those policies and their legislated objectives. Further, both the agencies' decisions and the rationales that they offer for those decisions are subject to some degree of review by the courts. Clearly, rule making can be a contentious and politicized process, and the rationales that the agencies give may disguise narrower or unworthy goals, but, nevertheless, there is an obligation to justify what is being done in regulatory policy that is greater than that for monetary or fiscal policy.

Third, a series of executive orders beginning in the Nixon administration has created a progressively more aggressive and formal review of regulatory policy by the Office of Management and Budget (OMB) and other White House offices. Although these orders began with rather vague and ad hoc standards—"quality of life" in the Nixon administration and "inflation impact" in the Ford administration—they have been expressed increasingly in economic or at least cost-benefit terms. That progression culminated in an executive order signed by President Reagan shortly after he came into office that set forth a series of net social benefit standards that are reported below in section A of the appendix.

Many of the people supporting regulatory reform, including many colleagues and allies around this table, had academic backgrounds and were very sympathetic to the notion of using economics in regulatory policy. During the time that I administered President Reagan's regulatory review program at OMB, roughly sixty regulations came in for review every week, and I think that everyone there tried to push the economic standard as thoroughly as possible in that review process. Indeed, I tried to some extent to codify our approach to regulation through a kind of common law of review of individual rules. By applying economics to a variety of types of regulatory action, I tried to give the agencies and the outside world a sense of how we interpreted and were applying the executive order. Eventually, a set of regulatory policy guidelines was established in another executive order; they are reported below in section B of the appendix. Someone recently described these guidelines as

the most relentless application of microeconomic theory to regulatory policy ever attempted.

In the rest of these remarks, I want to discuss the extent to which we succeeded or failed in our attempt to push economic thinking. I think that the best framework for this discussion is to consider three types or classes of regulatory policy where the executive branch has broad legal discretion. In the first case, corresponding to guideline 2 in section B of the appendix, economics provides a clear prior indication of what the right policy is. The second situation is at the other extreme, where determining the correct policy is not a matter of theory but requires a lot of empirical work as well; this situation corresponds to guideline 4 in section B. The third situation is an intermediate one, corresponding to guideline 3 in Section B. My conclusion will be that the attempt to apply economic thinking in the regulatory review process was most successful where the policy implications of economic analysis were most widely understood and accepted by policy officials who were not themselves economists—in other words, where economic thinking had already suffused the thinking of regulators who were not professional economists.

The first class of regulation that I want to consider is agricultural marketing orders, which might involve removing 25 percent of the almonds from the market for the coming year or denying certain people the permission to plant hops on their underutilized cropland. Many people at the White House had thought that the executive order on regulation would affect primarily the regulation of transportation, occupational health and safety, and the environment and were surprised to discover a spate of these egregious agricultural marketing orders coming in for review. In some ways, I wished that I could ignore these orders because, although they were offensive, I suspected that their economic impact was not nearly as great as the impact of the health, safety, and environmental regulations. At the same time, many people outside the administration believed that the executive order on regulation was simply a way to provide relief for industry rather than sound economic policy. So, in that situation, we simply could not ignore these marketing orders.

The analysts at the Agriculture Department were shocked when I told them that I did not even want to see their cost-benefit analyses demonstrating the marketing orders to be beneficial. I knew without looking at the facts that the rules could not be beneficial, that price controls and entry controls in thoroughly competitive markets were empirically uninteresting. I started rejecting these rules left and right, including one Michigan cherry order the rejection of which put an end to any prospects that Dave Stockman had for a future political career, for which he has been, I hope, deeply grateful to me.

Dealing with these marketing orders absorbed a lot of time and attention, and, as Bill Niskanen pointed out, eventually there was an appropriations rider that prevented OMB from reviewing the orders in the future. As I look back on this issue, however, I am surprised at how much change we were able to make, given the political opposition based on the highly concentrated nature

of the benefits of these orders. We abolished the two marketing orders that contained outright entry controls; we greatly reduced the use of "set asides" in a variety of other orders; and for the two largest and most harmful marketing orders, affecting California citrus crops, we greatly truncated the growing season to which the orders applied and allowed free marketing at the beginning and the end. Further, the people in the Agricultural Marketing Service gradually assimilated an economic way of thinking about the effects of entry and price controls. Thus, although we had no allies in the beginning, by the end it did not even matter very much when Congress passed the appropriations rider. My understanding is that these agricultural marketing orders are continuing to come unraveled, and I think that eventually they will fade away.

The second class of regulation deals with environmental protection. This regulation applies to situations where there are no markets, where there are large externalities, and where regulation is clearly justified. But, in contrast with the agricultural marketing orders, there is nothing in economic theory to decide what the appropriate extent of that regulation should be. Let me focus on the example of effluent guidelines under the Clean Water Act, where the Environmental Protection Agency (EPA) sets industry-by-industry standards for the amounts of various sorts of pollutants that can be discharged. This is an area of regulation where the *use* of cost-benefit analysis itself was not particularly controversial—we were not arguing that economics says you cannot control water pollution, and almost everybody at EPA acknowledged that cost-benefit analysis was an appropriate way to gauge pollution control measure. Significant controversies arose in the *application* of cost-benefit analysis, however.

To start, it was difficult to measure the benefits of reducing water pollution. We usually had a pretty good estimate of the costs of reducing pollution, but many of the benefits were recreational or aesthetic, which are very hard to measure or assess in any quantitative way. We noticed, however, that the effluent guidelines produced enormous discrepancies across industries in the per-unit cost of reducing pollution. EPA had developed a fairly helpful metric for comparing the pollution effects of different kinds of discharge, so we could calculate the cost per pound of reduction of this average pollution equivalent. What we found were differences across industries that were often of several orders of magnitude! Clearly, although we might have disagreed about exactly what the benefits of pollution reduction were, all those rules could not be correct. Some rules must be too costly, or some must not be costly enough.

It turned out that the explanation for these massive discrepancies was that many people at EPA believed that cost-benefit analysis meant financial analysis. That is, they would impose a much tougher standard on a particular industry if it were much more profitable than other industries. Their idea of cost-benefit analysis was to turn the screws on the pulp and paper industry, the pharmaceutical industry, and other highly profitable industries and to ease way back in steel and other industries that were experiencing commercial difficult-

ies. This astounded us because it fit so neatly into many political economy theories of rent seeking and regulation. In fact, I believe that it has provided fodder for some subsequent academic articles.

As I look back on this class of regulations, I believe that we made very substantial headway in increasing the role of economics in policy-making. First, the range of pollution reduction costs in the effluent guidelines was much narrower at the end of the Reagan administration than at the beginning. Second, the people who were working on these matters at EPA came to take a very different approach toward effluent guidelines. Finally, the administration made similar progress in other areas of regulation involving health risks. When one rule imposed a cost of $900,000 at the margin per life saved and the next rule imposed a cost of $245 million at the margin per life saved, there was a problem. At $245 million we were clearly well above what anybody in the United States would ever spend for risk avoidance in their private lives. So we were able to eliminate a lot of harmful regulations at the top while maintaining a good deal of disagreement on what the appropriate level of spending should be lower down. In particular, I think we did a good job at putting an end to a large number of extraordinarily harmful and silly regulations in the area of hazardous air pollutants.

I want to mention also the lead phase-down regulation, which was a substantial victory for economic analysis and a case where OMB and the White House were reversed rather than EPA. One of our early targets for elimination was the lead phase-down regulation, which required that lead be removed from gasoline refining at a faster rate than would be dictated by the phasing in of new cars that required no-lead gasoline. A very fine piece of analysis persuaded everyone that the health harms of leaded gasoline were far greater than we had thought, and we ended up adopting a much tighter program than the one we had inherited. At the same time, the introduction of marketable lead permits saved many hundreds of millions of dollars from the cost of that regulation.

The third class of regulation that I want to address represents an intermediate case between price and entry controls, on the one hand, and externality regulation, on the other. The case that I have in mind is product standardization, which may be a component of health and safety regulation but often concerns a normal economic good. In particular, it often pertains to a new good or an innovation in an older good that somebody wants to have adopted uniformly.

This is the area of regulation where cost-benefit analysis is the most problematic in my view. Consider an innovation that increases people's safety. It is easy to assume a certain level of effectiveness for this innovation and show that it would be cost beneficial to make every product conform to this new standard. But such an analysis ignores the fact that the optimal rate of diffusion of a new technology is not instantaneous but involves a learning process. Some individuals will gain more from this innovation than other people, and they will purchase the innovation at the price at which it will initially come on the market. As the innovation diffuses through the market, it will be improved

much more, in terms of both quality and price, than if a government rule had universalized the initial innovation.

Consider the issue of passive restraints, which is bureaucratic argot for airbags in cars. When I was in the administration, economist Bill Nordhaus presented a very persuasive cost-benefit analysis showing that the airbag rule supported by the insurance companies would have substantial positive net benefits. This did not surprise me, but it did not show that it was desirable for the government to impose this technology on all consumers at once. I argued at the time that the most effective national airbag rule, in terms of promoting automobile passenger safety, would be a constitutional amendment forbidding the federal government from making any rule having to do with airbags. My rationale was simply that airbags were a normal economic good with which we had very little practical experience. If the government made no rule about airbags, it seemed clear to me that they would be introduced and would diffuse through the market in about the way that car radios or sunroofs did. I never doubted that an affluent couple living in downtown Boston with three teenage sons would be foolish not to purchase a car with an airbag at the initial design and price or that a thirty-five-year-old single woman who always fastened her three-point seatbelt, had a modest income, and lived in a rural part of Kansas would be foolish to purchase an airbag at the price at which it would first appear on the market. In fact, if one looks at the history of automobile manufacturers' experiments with airbags, there is a good deal of evidence that they were seriously interested in the technology at an early stage. They turned away from airbags only when it became clear that, if this were a promising technology, they would be forced to install it instantly on every new car they sold.

Yet these arguments, which seemed highly persuasive to me and to the economists I was working with at OMB, seemed strange and irrelevant not only to program officials at the Transportation Department but also to political officials at the White House. They never became part of the administration's public argument in the airbag controversy, and we eventually issued a complex rule that phased in airbags according to the pace of state legislation requiring the use of seat belts. And, as a general matter, I discovered that the executive order had much less practical effect in the intermediate case of product standardization than in the polar cases of price and entry controls and pollution controls.

Although it would be academically fashionable to attribute this difference to the large rents to be obtained by producer groups from product standardization, my casual impression is that the extent of political pressure brought to bear in this class of regulations was not much different than in the agricultural marketing orders and the EPA pollution controls. Instead, I attribute the difference to differences in the diffusion of economic thinking. The harms of government price and entry controls are widely understood and accepted and are bolstered by popular tales of farmers denied permission to farm their own land and of oranges left to rot in the fields. The notions of cost effectiveness and of the wastefulness of treating two identical pollution problems differently are

also easy for noneconomists to grasp and apply. But the idea that the government should refrain from standardizing a product or a production process in a way that is abstractly "good" is more complicated—accepting it requires not only particular facts (as in the case of pollution controls) but also assumptions about the operation of private markets that laymen are often less willing to make than economists. It is an interesting puzzle that economists have been much more successful in persuading others of the evils of price fixing than of the evils of quality fixing.

Appendix

A. Regulatory Principles

Executive Order 12291 provides in section 2 that, "to the extent permitted by law,

(a) Administrative decisions shall be based on adequate information concerning the need for and consequences of proposed government action;
(b) Regulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society;
(c) Regulatory objectives shall be chosen to maximize the net benefits to society;
(d) Among alternative approaches to any given regulatory objective, the alternative involving the least net cost to society shall be chosen; and
(e) Agencies shall set regulatory priorities with the aim of maximizing the aggregate net benefits to society, taking into account the condition of the particular industries affected by regulations, the condition of the national economy, and other regulatory actions contemplated for the future."

B. Regulatory Policy Guidelines

Section 1 of Executive Order 12498 reaffirmed the following guidelines for rulemaking agencies originally set forth in 1983:

1. Regulations should be issued only on evidence that their potential benefits exceed their potential costs. Regulatory objectives, and the methods for achieving these objectives, should be chosen to maximize the net benefits to society.

2. Regulation of prices and production in competitive markets should be avoided. Entry into private markets should be regulated only where necessary to protect health or safety or to manage public resources efficiently.

3. Federal regulations should not prescribe uniform quality standards for private goods or services, except where these products are needlessly unsafe or product variations are wasteful, and voluntary private standards have failed to correct the problem.

4. Regulations that seek to reduce health or safety risks should be based upon scientific risk-assessment procedures, and should address risks that are real and significant rather than hypothetical or remote.

5. Health, safety, and environmental regulations should address ends rather than means.

6. Licensing and permitting decisions and reviews of new products should be made swiftly and should be based on standards that are clearly defined in advance.

7. Qualifications for receiving government licenses should be the minimum necessary. Where there are more qualified applicants than available licenses, the licenses should be allocated by auction or random lottery rather than by administrative procedures.

8. Where regulations create private rights or obligations, unrestricted exchange of these rights or obligations should be encouraged.

9. Federal regulations should not preempt State laws or regulations, except to guarantee rights of national citizenship or to avoid significant burdens on interstate commerce.

10. Regulations establishing terms or conditions of Federal grants, contracts, or financial assistance should be limited to the minimum necessary to achieving the purposes for which the funds were authorized and appropriated."

C. Sources

The text of Executive Order 12291 is taken from *Regulatory Program of the United States Government* (Washington, D.C.: Executive Office of the President, Office of Management and Budget, March 1986), xiii. The "Regulatory Policy Guidelines" were first set forth and elaborated in *Reagan Administration Regulatory Achievements* (Washington, D.C.: The White House, Presidential Task Force on Regulatory Relief, 11 August 1983). Executive Order 12291 was issued on 17 February 1981 and Executive Order 12498 on 4 January 1985.

3. *James Burnley*

When I arrived at the U.S. Department of Transportation from elsewhere in the Reagan administration in early 1983, first to be general counsel and then, after a few months, deputy secretary, I did not come in with a well-formulated notion of how the regulatory processes of the department should be administered. I certainly shared the basic impulse of the administration that we needed both regulatory reform and regulatory relief, but I had not been required by my previous government responsibilities to consider regulatory issues beyond this elementary level. I found that the department faced quite a few regulatory is-

sues that had to be addressed forthwith, in both macro and micro terms. Thus, some major catching up had to occur immediately in my own analytic processes.

What we were in fact doing in the 1980s in the transportation area was consolidating economic deregulation since we came into office following a liberal Democratic administration that had nonetheless been successful in economic deregulation of most modes of transportation. All that we had left to attempt to deregulate were the interstate bus industry and the maritime industry. Deregulation of the trucking industry needed—and still needs—to be completed. But it quickly became apparent that, whether you are in a consolidation process or whether you wish, for example, to extend deregulation by sunsetting the Interstate Commerce Commission (ICC), which is a wonderful idea, the best way to undercut efforts to move toward a completely free market system is to be insensitive to the clear differences that exist between economic regulatory activities and safety regulatory activities.

Let me hasten to observe that there is a massive gray area in the middle. However, when it comes to purely economic regulatory activity, such as what the fare shall be when you fly between Washington and New York, there really is no safety dimension to that decision-making process. If you believe in free markets, you can quickly conclude that the government should not be in that business.

If, on the other hand, you are insensitive to this distinction or, worse still, consciously believe that the government should not regulate the maintenance of commercial aircraft and that you can leave that to the marketplace, then you will very quickly find that your agenda on economic regulatory issues is caught in a tremendous backwash. Again I emphasize that there is a massive gray area. I am describing two ends of a spectrum, and there are numerous decisions that do not lend themselves to a neat dichotomy.

Thus, when we talk about whether the Reagan administration should have gone further in a particular instance to deregulate a particular facet of transportation, I would suggest that the discussion must occur within the proper context. It should begin by considering the impact of a given regulatory decision on safety and the extent to which safety can be preserved or enhanced while deregulating economic activity. In many instances, aggressive safety regulation is a prerequisite to progress on economic deregulation. Understanding that there is a relation is critical if you wish to have the spiral that Elizabeth Bailey alluded to instead of having a pendulum that swings first one way and then the other on economic regulatory matters.

Second, we learned that, in addition to the need to be vigorous in safety-related rule-making activities, economic deregulation can be undermined by the perception of lax enforcement. Let me be very specific about that. The Reagan administration's first Federal Aviation Administration (FAA) administrator, a very able man with many years of experience in aviation, sincerely believed that we could carry out aviation safety regulatory enforcement with

25 percent fewer safety inspectors than were employed the day President Reagan was sworn in. Now, you may argue endlessly about whether he was right or wrong in that judgment. However, soon after joining the Treasury Department, I did conclude and, more important, Secretary Elizabeth Dole also concluded and persuaded OMB Director David Stockman that, on the whole, we were going to have a tougher time defending and perhaps even someday extending aviation economic deregulation if we continued down a path of ever fewer safety inspectors.

There are many issues that lend themselves very neatly to a cost-benefit analysis. However, I would suggest that another lesson to be learned from the 1980s, at least at the Department of Transportation (DOT), is that, if you let cost-benefit analyses drive all regulatory decision making, you will sometimes get outcomes that trample other equally important values. For example, it cannot be the case for the true Reaganite that federalism is an empty concept. In fact, President Reagan signed an executive order on federalism late in his second term that required agencies explicitly to take into account the impact on federal/state relations of each new regulatory proposal.

Yet, if you wish significantly to expand the capacity of the aviation system in this country virtually overnight, there is a neat, simple way to do it. You could preempt all local decision making on airport noise issues—an idea that has great appeal in many aviation circles. And, if you did a cost-benefit analysis of absolute preemption of all local decision making, I have a high level of confidence that the economic benefits would be calculated to greatly outweigh the costs. However. if cost-benefit analysis is conducted in a vacuum, there are other equally important values, in this case the right to recognize at least some local decision-making role, that will get lost. Therefore, even while assuring that benefits outweigh costs for each rule making, other values must be weighed as well.

We also learned that, if you are to be successful in deregulating administratively, it is terribly important that you work hard at it and that you do it well. Perhaps the premier example is found in the regulatory war over passive restraints in automobiles. Now, I do not mean to criticize those who went before me at DOT, but it was my judgment—and I think that it was a judgment that Chris DeMuth shared, and it certainly was a judgment that all nine members of the U.S. Supreme Court shared—that the decision made at the beginning of the Reagan administration to rescind the regulations requiring passive restraints (automatic seat belts or air bags in cars) was not as well justified as it could have been. And, while there was a five to four decision of the Supreme Court as to some aspects of that rescission, all nine justices did agree that there were certain very important issues that simply had not been properly or fully analyzed.

The result of that Supreme Court decision in 1983 was that we had to revisit the issue, and we were extremely constrained by the Court's specific guidance on how much weight we were to give various competing factors. While it left

us some discretion, it went so far as to cite in a footnote its own understanding of the cost-benefit ratio on 1980 Chevettes. This was based on National Highway Traffic Safety Administration (NHTSA) figures, but the Court chose to send us a clear signal. It noted that NHTSA had found that, with these automatic detachable seat belts, there was 70 percent usage in 1980 Chevettes compared to 31 percent usage for manual seat belts in such cars. It was clear that we would have to carry a very heavy burden of proof if we decided not to require passive restraint systems.

There were clearly missed opportunities for further economic deregulation, in the sense that there is always more that could have been done. However, I believe that, at least in transportation, the Reagan administration does not need to apologize. As I noted at the outset, we were in a period of consolidation. For example, in 1978, Congress passed legislation to sunset the Civil Aeronautics Board (CAB). A successor act was passed in 1984 that included much more specific instructions about how the CAB was to go out of business. One of the issues that, believe it or not, senior DOT officials had to spend a lot of time on was whether the residual functions of the CAB being transferred to the department would be spread out among existing offices of DOT or be handled by a little CAB within the department, staffed by that agency's remaining employees. The latter approach would have simply changed the CAB's address on the bureaucratic plan of organization of the U.S. government. It would have been an arm of the department, like the FAA or the U.S. Coast Guard.

Now, this may appear to be a fairly easy decision. However, the Reagan appointee who was chairman of the CAB believed very, very strongly that it should move intact to DOT and that it should open up for business the next day just like the day before. He lobbied Congress aggressively, despite signals from the White House to the contrary. Thus, we had to put a lot of time and energy into defending the idea that the sunset of an agency ought to mean that it ceases to exist.

I would suggest to you that, while, on the one hand, it may seem the sort of issue that does not drive this country in one fundamental direction or another, it had perhaps more significance than even we realized at the time. In the summer of 1987, we had one of the periodic waves of hysteria concerning aviation safety that seems to sweep over this country every few years. This occurs regardless of whether the economics of aviation are regulated or deregulated and regardless of the actual safety record of commercial aviation. When that wave hit in 1987, had the CAB been intact and performing its residual functions as an identifiable entity within the Department, it would have been far easier for those in Congress who wished to reregulate the economics of the industry to have done so. All that would have been required was legislation to put the same people back in charge of economic regulation who were in charge of it before. In fact, 300 of them were transferred to DOT when the CAB closed. Because

both the people and the residual functions were dispersed and fragmented among our various existing offices, there was no agency "in waiting" for restoration to its former "glory."

So I would suggest to you that, in looking both at what we did and at how best to reduce economic regulatory activities in the future, there are a number of contexts that are relevant. Economic regulatory issues cannot be intelligently discussed in isolation. You cannot, for example, discuss the extraordinarily good idea of privatizing the air traffic control system (an idea, by the way, that the airline industry has now embraced in large measure) without extensive consideration of actual and perceived safety effects. You cannot escape the interrelation between what people who fly on aircraft, or who drive the interstates beside big trucks, feel in their guts about the safety of those activities and how this country ultimately will come out on economic deregulation of those industries. It is terribly important to keep in mind at all times that they are inextricably intertwined.

Summary of Discussion

Murray Weidenbaum began the discussion by expressing his agreement with much of what the panelists had said. He believed that Secretary James Watt and Ann Gorsuch at the Interior Department had initiated the regulatory backlash because Gorsuch thought that she could undo regulations without going through the legal system. In the end, regulatory reform was a considerable disappointment, although cost-benefit analysis did become institutionalized at the Office of Management and Budget (OMB), as the reformers had wanted.

Kip Viscusi commented that there is a strong consensus in the academic literature regarding health and safety regulation and that this consensus was reflected in the appointments to the Council of Economic Advisers and the OMB. But some actions, like the appointment of Ann Gorsuch, reflected a confusion between regulatory reform and deregulation; these actions were motivated by a nonacademic agenda and were not consistent with any branch of the economics literature. Viscusi also noted that, because economists possess a very clear vision of what ought to be done in this area of policy, they tend to give any results that are achieved lower marks than they deserve.

Robert Litan argued that the Reagan administration had made a big mistake in choosing the airbag rule to rescind first. There had been tension at the beginning of the administration between the people who wanted regulatory relief and the people who wanted cost reform and the institutionalization of cost-benefit analysis. The repeal of the airbag rule fueled the fears of those who thought that cost-benefit analysis would be applied everywhere merely for the purpose of cutting costs. It would have been more effective to begin with other

policy issues, such as tradable emission rights, for which one can clearly demonstrate the preservation of a certain level of benefits at reduced cost. Opening with the passive restraint rule aroused unnecessary opposition and poisoned the waters.

William Poole raised the question of how economists can more effectively make their case for policy changes in a regulatory arena heavily influenced by public pressure groups who are aggressively unreceptive to cost-based analysis.

Phillip Areeda echoed Poole's curiosity about why what economists know so clearly is ignored by Congress and special interest pressure groups. When Congress legislates that cost cannot play a role in certain regulatory decisions, something very strange is going on. The explanation must be one of two things. Possibly the authors of such legislation are absolutists and believe that life, clean water, or whatever must be protected with no regard for the costs. This is unlikely. Their theory, instead, appears to be that they need to push their case in an exaggerated fashion in order to get even slight movement in the direction they want. The result is bad legislation and regulation.

Christopher DeMuth pointed out that no one individual had made the decision criticized by Litan, the decision to pursue the issue of airbags prior to that of marketable pollution permits. An administration is a group of disagreeing, contentious people with their own agendas, and this sequence of actions just happened that way. Further, the administration had taken several actions prior to the airbag decision that were part of an economically consistent program. These actions involved removing bad regulations regardless of the size of the business constituency involved.

Returning to Areeda's and Poole's questions, DeMuth argued that the politics of environmentalism is radically different from that of consumerism and product safety. Areeda's explanation gets at part of the problem, but another part is that an important goal of many environmental and consumer groups is to promote membership. When these groups are impervious to economic logic that demonstrates that the policy they favor is not going to promote consumer welfare or occupational safety or environmental quality, it is because they do not particularly care about these goals. Their extreme positions promote their own institutional maintenance and enhancement needs. Twenty years ago they might have felt the need to take extreme positions as a bargaining tactic with more powerful business interests, but, given their relative strength compared to regulated businesses today, this no longer seems necessary.

David Stockman claimed responsibility for making the airbag regulation a high priority in February 1981. He repeated his earlier observation that the Reagan administration believed that economic regulation was wrong as a matter of first principles, and this rule was selected because it was highly illustrative of that point. Consequently, on its first day in office, the administration rescinded oil price controls and announced that it would rescind the airbag rule. The reasoning was simply that this rule did not involve any damage to

third parties—it merely dictated that it would be good for the American public if they were to spend $800 per car for a feature that saved lives at a cost of $300,000 per life. The regulatory agenda was to get such "fundamentally wrong" items off the table first so that the focus could be turned to legitimate externalities that were in need of better decision-making mechanisms.

William Niskanen agreed with Stockman's reason for making the airbag regulation a high-priority issue. He felt, however, that the administration did not follow through on making the distinction between measures that affect only one's own safety and measures that affect the safety of others. The government has *not* accepted this distinction, as applied to smoking, internal car measures, or anything else. Since that principle was not applied, the airbag decision was made, ultimately, on a cost-benefit basis and not on a matter of principles. The first principle that Stockman cited has not, in fact, stuck.

As for the future, Niskanen did not expect much reregulation of areas that have been successfully deregulated. The only area in which there has been significant reregulation is in the asset portfolios of banks; this was a mistake, but an understandable mistake given the collapse of the insurance funds. There is some threat of reregulation in railroads and airlines, but he did not expect this to matter very much. On the other hand, Niskanen did expect a regulatory explosion in the 1990s in two new areas. First is the environment, where the Clean Air Act alone may cost $40 billion per year, and many other things, like Big Green, will play important roles as well. The second area is mandated benefits, where mandated medical insurance may cost another $40 billion a year. One major benefit was passed in 1990, and several others are in the works. Niskanen believed that these areas will see new and extended forms of regulation that will be quite costly in the 1990s.

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