2 The Making of a Regulation

A stylized account of the evolution of regulation and antitrust policies is this: A single national regulatory agency establishes the government policy in an effort to maximize the national interest, where the legislative mandate of the agency defines its specific responsibilities in fostering these interests. The reality of regulatory policymaking differs quite starkly from this stylized view. The process is imperfect in that some observers claim that "government failure" may be of the same order of importance as market failure.[1]

One important difference is that not all regulation is national in scope. Much regulation occurs at the state and local levels. Recent political concern with the importance of reflecting the preferences and economic conditions at the local level has spurred an increased interest in regulatory activity other than at the federal level. It is noteworthy that from a historical standpoint most regulation, such as the rate regulations for railroads, began at the state level. These regulations were subsequently extended to the national level.

Even in situations in which it is a national regulatory body that is acting, this group may not be fostering the national interest. Special interest groups and their diverse array of lobbyists also have an influence on regulatory policy. Moreover, the legislative mandates of the regulatory agencies are typically specified much more narrowly than simply urging the agency to promote the national interest.

Another difference from the stylized model is that typically the regulatory agency is not the only governmental player. Congress and the judiciary provide one check, and more importantly the regulatory oversight process within the White House has substantial input as well. Each of these groups has its own agenda. Few observers would claim that any of these agendas coincides exactly with the national interest.

The final possible misconception is that it is a simple matter for the government to issue a regulatory policy or to make a decision regarding antitrust policy. There are explicit steps that government agencies must take before instituting regulations. At each of these stages, several governmental and private players have an input into the process and can influence the outcome. The nature of this process and the way it affects the regulatory outcomes is the subject of this chapter.

The underlying principles governing antitrust and regulation policies must be consistent with the legislative mandates written by Congress. Actions taken with these legislative stipulations in turn are subject to review by the courts. These two sets of influences are pertinent to all policy actions discussed in this book.

Other aspects of the character of these policies differ considerably. The U.S. Department of Justice's vigilance in pursuing antitrust actions varies with political administrations, in part because of differences in interpretation of the law. Although the U.S. Department of Justice occasionally issues formal regulations to guide industry behavior, such as procedures

1. Charles Wolf, "A Theory of Non-Market Failure," *Journal of Law and Economics,* April 1978.

for implementing civil penalties, for the most part the main policy mechanism of influence is litigation against firms believed to be violating the antitrust statutes. This threat of litigation also produces many out-of-court settlements of antitrust cases.

Many of the economic-regulation agencies are independent regulatory commissions, such as the Interstate Commerce Commission, the Federal Trade Commission, and the Federal Communications Commission. In addition to initiating legal action, these agencies place extensive reliance on issuance of regulations to guide business behavior. The steps that must be taken in issuing these regulations follow the procedures discussed later in this chapter, except that there is no review by executive authority over regulatory commissions.

The final group of agencies consists of regulatory agencies within the executive branch. These agencies rely primarily on issuing formal regulations pursuant to their legislative mandates. For example, the EPA has issued lead-emission standards in implementing the Clean Air Act. This regulatory activity is subject to review by the Office of Management and Budget and the full rulemaking process detailed later in this chapter.

Because the regulatory procedures for executive branch agencies are most complex, this chapter will focus on them as the most general case. The issues are of greatest pertinence to the policies to be considered in Part III of the book. However, the economic lessons involved are quite general. Government policies should not be regarded as a fixed object to be treated reverentially within courses on business and government. Rather, they are generated by a complex set of political and economic forces, not all of which produce desirable outcomes. Part of the task of the subsequent chapters is to ascertain which policies are beneficial and which are not.

State versus Federal Regulation: The Federalism Debate

Although regulation is frequently viewed as being synonymous with federal regulation, not all regulation is at the federal level. Restrictions on cigarette smoking in restaurants are determined at the local level, as are drinking ages. State regulatory commissions set utility rates and often are involved in complex legal battles over appropriate jurisdiction. Almost all insurance regulation occurs at the state level as well. Some states regulate insurance rates quite stringently, whereas in other states these insurance rates have been deregulated. The terms under which there are payouts under insurance schemes also vary with locale, as some states have adopted no-fault rules in accident contexts. States also differ in terms of the factors that they will permit insurance companies to take into account when setting rates. In some instances, the states prohibit the insurance company from factoring in the driver's age, sex, or race when setting automobile insurance rates. Finally, states differ in terms of whether they make automobile insurance mandatory and, if it is mandatory, the extent of the subsidy that is provided to high-risk drivers by the lower-risk drivers.

Advantages of Federalism

The existence of state regulations of various kinds is not simply the result of an oversight on the part of federal regulators. There are often sound economic reasons why we want regulation to take place at the state level. Indeed, particularly in the Reagan and Bush administrations there was an emphasis on transferring some of the control over the regulatory structure and regulatory enforcement to the states—an emphasis that comes under the general heading of "federalism." The extent of the impact of federalism principles has, however, been less than advocates of this approach intended. In recognition of this emphasis, the Office of Management and Budget issued the following regulatory policy guideline:

> Federal regulations should not preempt State laws or regulations, except to guarantee rights of national citizenship or to avoid significant burdens on interstate commerce.[2]

A number of sound economic rationales underlie this principle of federalism. First, local conditions may affect both the costs and benefits associated with the regulation. Preferences vary locally, as do regional economic conditions. Areas where mass transit is well established can impose greater restrictions on automobiles than can states where there are not such transportation alternatives.

The second potential advantage to decentralized regulation is that citizens wishing a different mix of public goods can choose to relocate. Those who like to gamble can, for example, reside in states where gambling is permitted, such as Nevada or New Jersey. The entire theory of local public goods is built around similar notions whereby individuals relocate in an effort to establish the best match between the local public policies and their preferences. The diversity of options made possible through the use of state regulation permits such choices to be made, whereas if all regulatory policies and public decisions were nationally uniform, there would be no such discretion.

A third advantage of local regulation is that it can reflect the heterogeneity of costs and benefits in a particular locale. Ideally, we would like to set national standards that fully reflect benefit and cost differences across areas. We want to recognize, for example, the need to regulate pollution sources more stringently when there are large exposed populations at risk. Federal regulations seldom reflect this diversity. In contrast, state regulations are seldom structured in a way to meet the needs in other states rather than their own.

A related advantage stemming from the potential for heterogeneity with state regulation is also the potential for innovation. Many states have embarked on innovative regulatory

---

2. U.S. Office of Management and Budget, *Regulatory Program of the United States Government. April 1, 1988–March 31, 1989* (Washington, D.C.: U.S. Government Printing Office, 1988), p. 20. More generally, see W. Kip Viscusi, "Regulating the Regulators," *University of Chicago Law Review* 63 (1996): 1423–61.

policies. California has been a leader in this regard, as it has instituted labeling requirements for hazardous chemicals as well as efforts to drastically roll back automobile insurance rates. Being innovative does not necessarily imply that these innovations are beneficial, but there is a benefit that other states derive from these experiments, since they can see which regulatory experiments work and which ones do not. Experimentation at the local level will generally be less costly than at the national level, should the regulatory experiments prove to be a mistake. Moreover, if the experiment proves to be successful, then other states can and typically will follow suit.

Advantages of National Regulations

Although the benefits of local regulation are considerable, one should also take into account the potential advantages of national regulatory approaches as well. First, the national regulatory agencies often have an informational advantage over the local agencies. The U.S. Food and Drug Administration, for example, administers a regulatory structure for pharmaceuticals that entails substantial product testing. Duplicating this effort at the local level would be extremely costly and inefficient. Moreover, most local regulatory agencies have not developed the same degree of expertise as is present at the national level in this or in many other scientific areas.

A second rationale for national regulations is that uniform national regulations are generally more efficient for nationally marketed consumer products. If firms had to comply with fifty different sets of safety and environmental pollution standards for automobiles, production costs would soar. Labeling efforts as well as other policies that affect products involved in interstate commerce likewise will impose less cost on firms if they are undertaken on a uniform national basis.

The efficiency rationale for federal regulation is often more general, as in the case of antitrust policies. If the product market is national in scope, then one would want to recognize impediments to competition in the market through federal antitrust policies rather than relying on each of the fifty states to pursue individual antitrust actions.

A third rationale for federal regulation is that many problems occur locally but have national ramifications. Air pollution from power plants in the Midwest is largely responsible for the problems with acid rain in the eastern United States and Canada. Indeed, many of the environmental problems we are now confronting are global in scope, particularly those associated with climate change. Policies to address global warming will affect all energy sources. There is a need not only for national regulation but also for recognition of the international dimensions of the regulatory policy problem.

A final rationale for national regulations is that we view certain policy outcomes as being sufficiently important that all citizens should be guaranteed them. A prominent example is civil-rights regulations. We do not, for example, permit some states to discriminate based

on race and sex even if they would want to if not constrained by federal affirmative-action requirements.

The Overlap of State and Federal Regulations

Because national regulations tend to have a preemptive effect, even if there is no specific legal provision providing for preemption, the prevention of substantial encroachment on the legitimate role of the states requires some restraint on the part of federal regulators. In recent years there have been several attempts to recognize the legitimate state differences that may exist.

Many of the examples of policies providing for an increased role of the states pertain to the administration of federal regulation. Beginning in 1987, the Department of Health and Human Services gave the states more leeway in their purchases of computers and computer-related equipment for the Aid to Families with Dependent Children program. Previously, the states had to undertake substantial paperwork to get approval for their computer needs. Similarly, the Department of Transportation has eased the paperwork and reporting procedures associated with subcontract work undertaken by the states, as in their highway construction projects.

On a more substantive level, the U.S. Environmental Protection Agency (EPA) has delegated substantial authority to the states for the National Pollutant Discharge Elimination System. This program establishes the water-pollution permits that will serve as the regulatory standard for a firm's water-pollution discharges. Many states have assumed authority for the enforcement of these environmental regulations, and EPA has begun granting the states greater freedom in setting the permitted pollution amount for the firms. The Occupational Safety and Health Administration (OSHA) has undertaken similar efforts, and many states are responsible for the enforcement of job-safety regulations that are set at the national level but are monitored and enforced using personnel under a state enforcement program.

Although the states continue to play a subsidiary role in the development and administration of antitrust and regulatory policies, there has been increased recognition of the important role that the states have to play. This increased emphasis on the role of the states stems from several factors. Part of the enthusiasm for state regulation arises from the natural evolution of the development of federal regulation. If we assume that the federal government will first adopt the most promising regulatory alternatives and then will proceed to expand regulation by adopting the less beneficial alternatives, eventually we will reach a point where there will be some policies that will not be desirable nationally but will be beneficial in some local areas. The states will play some role in terms of filling in the gaps left by federal regulation.

Another force that has driven the expanding role of state regulation has been the recognition that there are legitimate differences among states. In many instances, the states have taken the initiative to recognize these differences by taking bold regulatory action, particularly with respect to insurance rate regulation.

Finally, much of the impetus for state regulation stems from a disappointment with the performance of federal regulation. Indeed, it is not entirely coincidental that the resurgence of interest in federalism principles occurred during the Reagan administration, which was committed to deregulation. There has consequently been an increased emphasis on the economic rationales for giving the states a larger role in the regulatory process and in ascertaining that federal intervention is truly needed. The main institutional player in promoting this recognition of federalism principles has been the U.S. Office of Management and Budget (OMB) within the context of the regulatory oversight process, which we will consider in later sections.

The Character of the Rulemaking Process

Although federal regulatory agencies do have substantial discretion, they do not have complete leeway to set the regulations that they want to enforce. One constraint is provided by legislation. Regulations promulgated by these agencies must be consistent with their legislative mandate, or they run the risk of being overturned by the courts. In addition, regulatory agencies must go through a specified set of administrative procedures as part of issuing a regulation. These procedures do not provide for the same degree of accountability as occurs in situations where Congress votes on particular pieces of legislation. However, there are substantial checks in this process that have evolved substantially over time to provide increased control of the actions of regulatory agencies.

The Chronology of New Regulations

Figure 2.1 illustrates the current structure of the rulemaking process. The two major players in this process are the regulatory agency and the OMB. The first stage of the development of a regulation occurs at the time when the agency decides to regulate a particular area of economic activity. Once a regulatory topic is on the agency's regulatory agenda, it must be listed as part of its regulatory program if it is a significant regulatory action that is likely to have a substantial cost impact. OMB has the authority to review this regulatory program, where the intent of this review is to identify potential overlaps among agencies, to become aware of particularly controversial regulatory policies that are being developed, and to screen out regulations that appear to be particularly undesirable. For the most part, these reviews have very little effect on the regulations that the agency pursues, but they do serve an informational role in terms of alerting OMB to potential interagency conflicts.

The next stage in the development of a regulation is to prepare a Regulatory Impact Analysis (RIA). The requirements for such RIAs have become more detailed over time, and at present they require the agency to calculate benefits and costs and to determine whether the benefits of the regulation are in excess of the costs. The agency is also required to consider potentially more desirable policy alternatives.

After completing the RIA, which is generally a very extensive study of the benefits and costs of regulatory policies, the agency must send the analysis to OMB for its review, which must take place sixty days before the agency issues a Notice of Proposed Rulemaking (NPRM) in the *Federal Register.* During this period of up to sixty days, OMB reviews the proposed regulation and the analysis supporting it. In the great majority of the cases, OMB simply approves the regulation in its current form. In many instances, OMB negotiates with the agency to obtain improvements in the regulation, and in a few rare instances OMB rejects the regulation as being undesirable. At that point, the agency has the choice either to revise the regulation or to withdraw it.

This OMB review is generally a secret process. Later in this chapter we will present overall statistics regarding the character of the regulatory decisions in terms of the numbers of regulations approved and disapproved. However, what is lacking is a detailed public description of the character of the debate between OMB and the regulatory agency. The secretive nature of this process is intended to enable the regulatory agency to alter its position without having to admit publicly that it has made an error in terms of the regulation it has proposed. It can consequently back down in a face-saving manner. Keeping the debate out of the public forum prevents the parties from becoming locked into positions for the purpose of maintaining a public image. The disadvantage of the secrecy is that it has bred some suspicion and distrust of the objectives of OMB's oversight process, and it excludes Congress and the public from the regulatory-policy debate. Moreover, because of this secrecy, some critics of OMB may have overstated the actual impact the review process has had in altering or blocking proposed regulations. Under the Clinton administration, OMB made a major effort to open up more aspects of this review to public scrutiny.

If the regulation is withdrawn, there is also one additional step that the agency can pursue. In particular, it can attempt to circumvent the OMB review by making an appeal to the president or to the vice president if he has been delegated authority for this class of regulatory issues.

After receiving OMB approval, the agency can publish the NPRM in the *Federal Register.* This publication is the official outlet for providing the text of all proposed and actual regulatory policies, as well as other official government actions. As a consequence, it serves as a mechanism for disseminating to the public the nature of the regulatory proposal and the rationale for it. Included in the material presented in the *Federal Register* is typically a detailed justification for the regulation, which often includes an assessment of the benefits and costs of the regulatory policy.

Once the regulatory proposal has been published in the *Federal Register,* it is now open to public debate. There is then a thirty- to ninety-day period for public notice and comment. Although occasionally the agency receives comments from disinterested parties, for the most part these comments are provided by professional lobbying groups for business, consumer, environmental, and other affected interests.

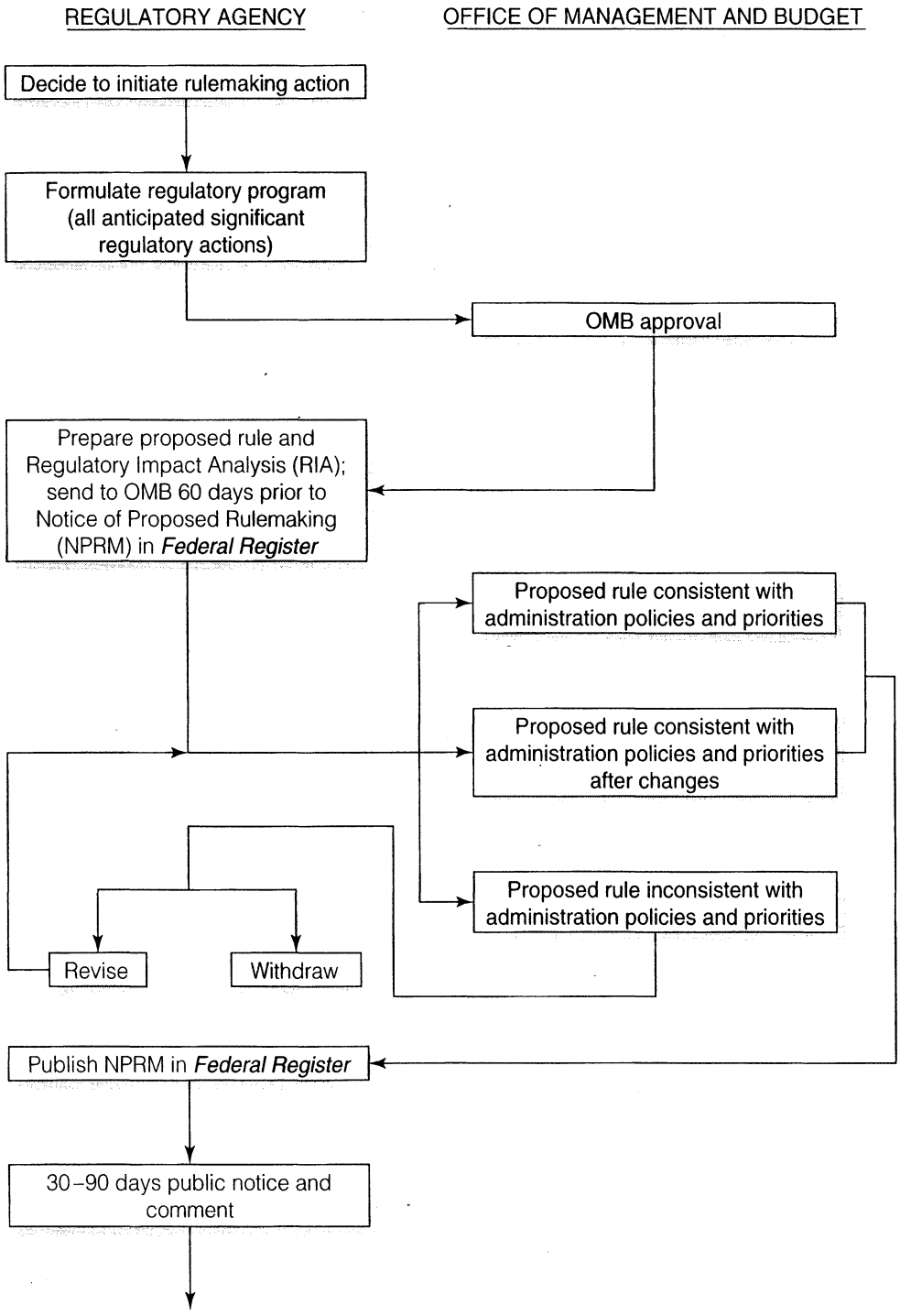

Figure 2.1
The Regulatory Management Process

Source: National Academy of Public Administration, *Presidential Management of Rulemaking in Regulatory Agencies* (Washington, D.C.: National Academy of Public Administration, 1987), p. 12. Reprinted by permission of the National Academy of Public Administration.

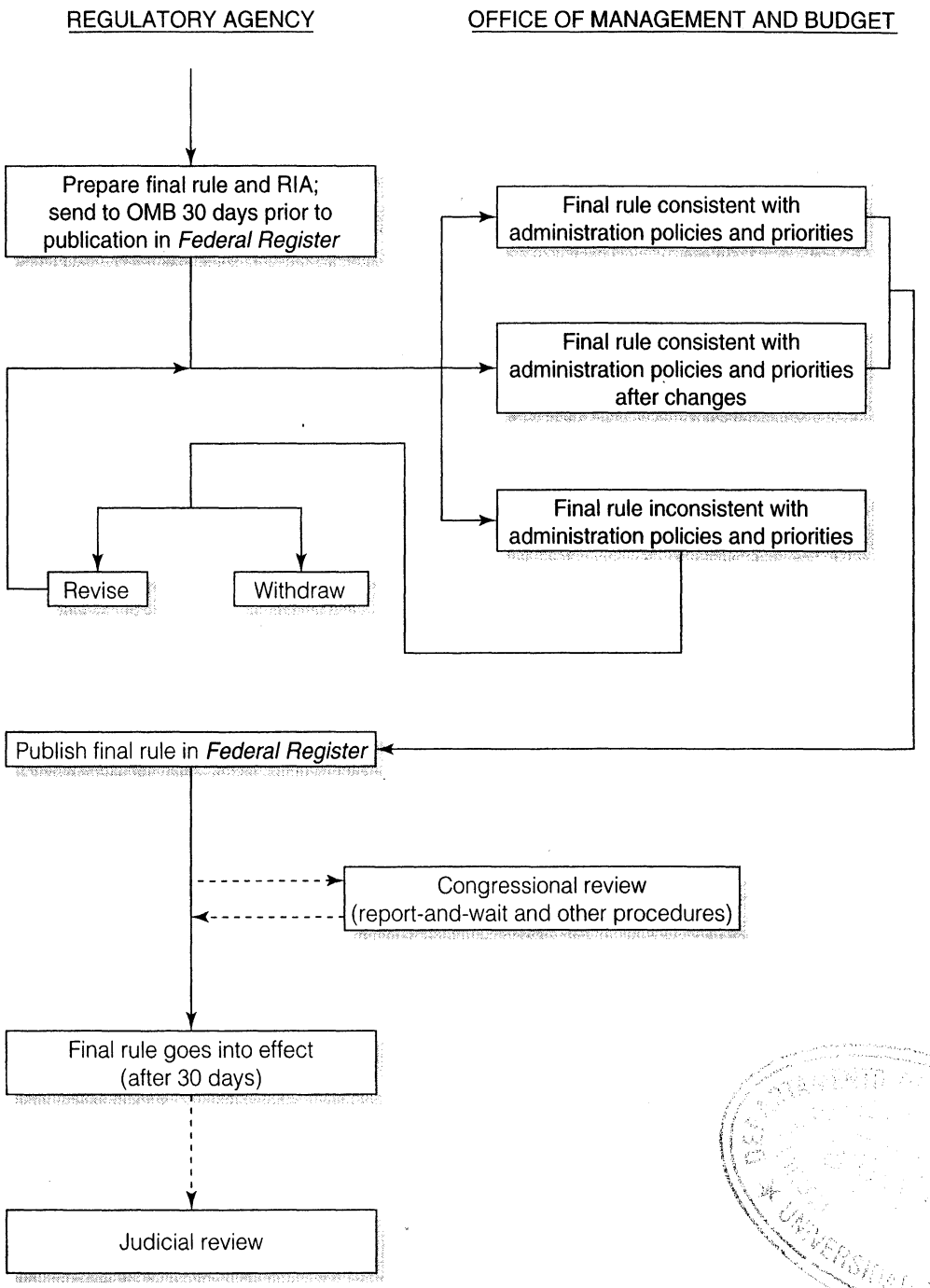

Figure 2.1 (continued)

After receiving and processing these public comments, the regulatory agency must then put the regulation in its final form. In doing so, it finalizes its regulatory impact analysis, and it submits both the regulation and the accompanying analysis to OMB thirty days before publishing the final regulation in the *Federal Register.*

OMB then has roughly one month to review the regulation and decide whether to approve it. In many cases, this process is constrained even further by judicial deadlines or deadlines specified in legislation, which require the agency to issue a regulation by a particular date. In recent years regulatory agencies have begun to use these deadlines strategically, submitting the regulatory proposal and the accompanying analysis shortly before the deadline so that OMB will have little time to review the regulation before some action must be taken. Rejected regulations are returned to the agency for revision, and some of the most unattractive regulations may be eliminated altogether.

The overwhelming majority of regulations are, however, approved and published as final rules in the *Federal Register.* Congressional review is a very infrequent process, and the typical regulation goes into effect after thirty days. The regulation is still, of course, subject to judicial review in subsequent years.

Despite the multiplicity of boxes and arrows in Figure 2.1, there are very few binding external controls on the development of regulations. OMB has an initial chance at examining whether regulation should be on an agency's regulatory agenda, but at that stage so little is known that this approval is almost always automatic. Moreover, the OMB review process became less stringent in the Clinton administration than in the Reagan and Bush administrations. The only two reviews of consequence are those of proposed rules and final rules. OMB's approval is required for these stages, but this approval process is primarily influential at the margin. OMB review activities alter regulations in minor ways, such as introducing alternative methods of compliance that agencies might have that will be less costly but equally effective. Moreover, as we will see in Chapter 20, OMB is also successful in screening out some of the most inefficient regulations, such as those with costs per life well in excess of $100 million.

Although many of the other steps, particularly those involving public participation, are not binding in any way, the agency still must maintain its legitimacy. In the absence of public support, the agency runs the risk of losing its congressional funding and the support of the president, who appoints regulatory officials and, even in the case of commissioners to organizations such as the Interstate Commerce Commission, is responsible for periodic reappointments. Thus the public-comment process often has a substantive impact as well.

Nature of the Regulatory Oversight Process

The steps involved in issuing a regulation did not take the form outlined in Figure 2.1 until the 1980s. In the early 1970s, for example, there was no executive branch oversight. After

the emergence of the health, safety, and environmental regulatory agencies in the 1970s, it became apparent that some oversight mechanism was needed to ensure that these regulations were in society's best interests. For the most part, these agencies have been on automatic pilot, constrained by little other than their legislative mandate and potential judicial review as to whether they were adhering to the mandate. Congress can, of course, intervene and pass legislation requiring that the agency take a particular kind of action, as it did with respect to the lawn-mower standard for the Consumer Product Safety Commission. However, the routine regulatory actions seldom receive congressional scrutiny. Most important, there is no need for congressional approval for a regulatory agency to take action provided that it can survive judicial review. Proponents of the various types of "capture theories" of regulation would clearly see the need for such a balancing review.[3] If a regulatory agency has, in effect, been captured by some special interest group, then it will serve the interests of that group as opposed to the national interest. There are those who have speculated, for example, that labor unions exert a pivotal influence on the operation of OSHA and that the transportation industry wields considerable influence over the Interstate Commerce Commission.

The Nixon and Ford Administrations

The first of the White House review efforts was an informal "quality of life" review process instituted by President Nixon. The focus of this effort was to obtain some sense of the costs and overall economic implications of major new regulations.

This review process was formalized under the Ford administration through Executive Order No. 11821. Under this order, regulatory agencies were required to prepare inflationary impact statements for all major rules. These statements required that agencies assess the cost and price effects that their new regulations would have. Moreover, President Ford established a new agency within the White House, the Council on Wage and Price Stability, to administer this effort.

Although no formal economic tests were imposed, the requirement that agencies calculate the overall costs of their new regulations was a first step toward requiring that they achieve some balancing in terms of the competing effects that their regulations had. Before the institution of this inflationary-impact-statement requirement, regulatory agencies routinely undertook actions for which there was no quantitative assessment of the costs that would be imposed on society at large. Clearly, the costs imposed by regulation are a critical factor in determining its overall desirability. Knowledge of these cost effects ideally should promote sounder regulatory decisions.

The review process itself was not binding in any way. The Council on Wage and Price Stability examined the inflationary-impact analyses prepared by the regulatory agencies to

3. Most of the economic models along the lines of a capture theory are based at least in part on the work of George J. Stigler, *The Citizen and the Stage* (Chicago: University of Chicago Press, 1975).

ensure that the requirements of the executive order had been met. However, even in the case of an ill-conceived regulation, no binding requirements could be imposed provided that the agency had fulfilled its obligations to assess the costs of the regulation, however large they may have been.

The mechanism for influence on the regulatory process was twofold. First, the Council on Wage and Price Stability filed its comments on the regulatory proposal in the public record as part of the rulemaking process. Second, these comments in turn provided the basis for lobbying with the regulatory agency by various members of the Executive Office of the President. Chief among these participants were members of the President's Council of Economic Advisors and the president's domestic policy staff.

The Carter Administration

Under President Carter this process continued with two major additions. First, President Carter issued his Executive Order No. 12044, which added a cost-effectiveness test to the inflationary-impact requirement. The regulatory-impact analyses that were prepared by regulatory agencies now had also to demonstrate that the "least burdensome of the acceptable alternatives have been chosen." In practical terms, such a test rules out clearly dominated policy alternatives. If the government can achieve the same objective at less cost, it should do so. Reliance on this principle has often led economists, for example, to advocate performance-oriented alternatives to the kinds of command and control regulations that regulators have long favored.

In practice, however, the cost-effectiveness test only affects the most ill-conceived regulatory policies. For the most part, this test does not succeed in enabling one to rank policies in terms of their relative desirability. Suppose, for example, that we had one policy option that could save ten lives at a cost of $1 million per life, and we had a second policy option that could save twenty lives at a cost of $2 million per life. Also assume that these policy options are mutually exclusive: if we adopt one policy, we therefore cannot pursue the other. The first policy has a higher cost-effectiveness in that there is a lower cost per life saved. However, this policy may not necessarily be superior. It may well be in society's best interest to save an additional ten lives even though the cost per life saved is higher because overall the total net benefits to society of the latter option may be greater. Comparison of total benefits and costs of regulatory impacts was a common focus of Carter's regulatory oversight program, but no formal requirements had to be met.

The other major change under President Carter was the establishment of the Regulatory Analysis Review Group. The primary staff support for this effort came from the Council on Wage and Price Stability and the President's Council of Economic Advisors. However, the impact that reviews by this group had was enhanced by the fact that it also included representatives from the President's Domestic Policy Staff, the Office of Management and

Budget, and various cabinet agencies. The establishment of this group was a recognition that the executive oversight process had to be strengthened in some way, and the mechanism that was used for this strengthening was to bring to bear the political pressure of a consensus body on the particular regulatory agency. Moreover, the collegial nature of this group served an educational function as well in that there was a constant effort to educate regulatory officials regarding the proper economic approach to be taken within the context of regulatory analyses. For example, EPA officials present during a discussion of a proposed regulation by the National Highway Traffic Safety Administration could participate in a debate over the merits of the regulation and the appropriate means for assessing these merits, where the same kinds of generic issues were pertinent to their own agency as well. The reports by this group were not binding, but because they reflected the consensus view of the major branches of the Executive Office of the President as well as the affected regulatory agencies, they had an enhanced political import.

Even with these additional steps there was no binding test other than a cost-effectiveness requirement that had to be met. Moreover, the effectiveness of the informal political leverage in promoting sound regulatory policies was somewhat mixed. One famous case involved the OSHA cotton dust standard. OSHA proposed a standard for the regulation of cotton dust exposures for textile mill workers. The difficulty with this regulation in view of the regulatory oversight officials was that the cost of the health benefits achieved would be inordinately high—on the order of several hundred thousand dollars per temporary disability prevented. The head of the Council of Economic Advisors, Charles Schultze, went to President Carter with an assessment of the undue burdens caused by the regulation. These concerns had been voiced by the textile industry as well. President Carter first sided with the Council of Economic Advisors in this debate. However, after an appeal by Secretary of Labor Raymond Donovan, which was augmented by an expression of the affected labor unions' strong interests, Carter reversed his decision and issued the regulation. What this incident made clear is that even when the leading economic officials present a relatively cogent case concerning the lack of merit of a particular regulation, there are political factors and economic consequences other than simply calculations of benefits and costs that will drive a policy decision.

As a postscript, it is noteworthy that the Reagan administration undertook a review of this cotton dust standard shortly after taking office. Although Reagan administration economists were willing to pursue the possibility of overturning the regulation, at this juncture the same industry leaders who had originally opposed the regulation now embraced it, having already complied with the regulation, and they hoped to force the other, less technologically advanced firms in the industry to incur these compliance costs as well. The shifting stance by the textile industry reflects the fact that the overall economic costs imposed by the regulation, not the net benefit to society, are often the driving force behind the lobbying efforts involved in the rulemaking process.

The Reagan Administration

Under the Reagan administration there were several pivotal changes in the regulatory oversight mechanism. First, President Reagan moved the oversight function from the Council on Wage and Price Stability to OMB. Because OMB is responsible for setting the budgets of all regulatory agencies and has substantial authority over them, this change increases the institutional clout of the oversight mechanism. The second major shift was to increase the stringency of the tests being imposed. Instead of simply imposing a cost-effectiveness requirement, Reagan moved to a full-blown benefit-cost test in his Executive Order No. 12291:

> Sec. 2. General Requirements. In promulgating new regulations, reviewing existing regulations, and developing legislative proposals concerning regulation, all agencies, to the extent permitted by law, shall adhere to the following requirements:
>
> 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 benefits to society;
>
> d. Among alternative approaches to any given regulatory objective, the alternative involving the least net costs 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.

If, however, the benefit-cost test conflicts with the agency's legislative mandate—as it does for all risk and environmental regulations—the test is not binding.

The third major change in the executive branch oversight process was the development of a formal regulatory planning process whereby the regulatory agencies would have to clear a regulatory agenda with the Office of Management and Budget. This procedure, which was accomplished through Executive Order No. 12498, was an extension of a concept begun under the Carter administration known as the Regulatory Calendar, which required the agency to list its forthcoming regulatory initiatives. This exercise has served to alert administration officials and the public at large as to the future of regulatory policy, but on a practical basis it has not had as much impact on policy outcomes as has the formal review process, coupled with a benefit-cost test.

The Bush Administration

Under President Bush, the regulatory oversight process remained virtually unchanged. The thrust of the effort was almost identical in character to the oversight procedures that were in

place during the second term of the Reagan administration. For example, the same two key executive orders issued by Reagan remained in place under President Bush.

The Clinton Administration

President Clinton continued the regulatory oversight process in a manner that was not starkly changed from the two previous administrations. In his Executive Order No. 12866, President Clinton established principles for regulatory oversight similar to the emphasis on benefits, costs, and benefit-cost analysis of previous administrations. However, the tone of the Clinton executive order was quite different in that it was less adversarial with respect to the relationship with regulatory agencies. Moreover, this executive order correctly emphasized that many consequences of policies are difficult to quantify and that these qualitative concerns should be taken into account as well. The Clinton administration also raised the threshold for reviewing proposed regulations, restricting the focus to the truly major government regulations.

Regulatory Reform Legislation

Notwithstanding the existence of executive branch oversight, Congress has also sought to bring the cost of regulation under control. There has been increasing recognition that a greater effort must be made to restrict regulatory initiatives to those that are truly worthwhile. Coupled with this belief is an acknowledgement that executive branch oversight alone cannot ensure sound regulatory outcomes.

The source of the difficulty can be traced to the restrictive legislative mandates of regulatory agencies. In the case of health, safety, and environmental regulations, the legislation drafted by Congress did not require that agencies achieve any balance between benefits and costs. Indeed, in some cases the legislation even precluded that agencies undertake such balancing or consider cost considerations at all. Such an uncompromising approach can be traced in part to ignorance on the part of legislators, who did not understand the potential scope of these regulatory efforts or the fact that absolute safety is unattainable. Society could easily exhaust its entire resources with potential safety-enhancing efforts before achieving a zero risk level.

Typical of such uncompromising mandates is the requirement in the Occupational Safety and Health Act that the agency "assure so far as possible every man and woman in the nation safe and healthful working conditions." In the 1980 U.S. Supreme Court decision with respect to the proposed OSHA cotton dust standard, the court interpreted this obligation narrowly.[4]

The court interpreted feasibility as "capable of being done" rather than in terms of benefit-cost balancing. Regulators have used this decision in conjunction with their own restrictive

4. See *American Textile Manufacturers Institute v. Donovan,* 452 U.S. 490 (1981).

legislative mandates to claim that they are constrained by their legislation to ignore benefit-cost concerns. Agencies consequently seek to bolster their position by claiming that they are constrained by legislation, but these constraints are not necessarily always binding. In a subsequent U.S. Supreme Court decision, the Court ruled that agencies did have the flexibility to interpret their legislative mandate in a reasonable manner.[5] In this particular case, the court gave the EPA the flexibility to adopt the "bubble" policy whereby it let firms select the most cost-effective means of reaching an air pollution target rather than requiring that firms meet a specific pollution objective for each emissions source.

To date, regulatory agencies have not attempted to avail themselves of this flexibility, and OMB has been unsuccessful in urging them to do so. Since 1995 there has been a continuing effort to pass regulatory reform legislation that, in effect, would make the regulatory guidelines issued by the president override the influence of the legislative mandates. The closest such efforts have come to success was in 1995, when both the House and Senate passed regulatory reform legislation. No consensus legislation emerged, and regulatory reform bills continue to be pending before Congress.

These efforts have failed thus far perhaps because the proposed bills have been overly ambitious. In addition to benefit-cost requirements, proposed legislation would have also revamped the risk-analysis process requiring that agencies use mean risk assessments rather than upper-bound values. Many proposed bills also included requirements that went beyond revamping the criteria for regulations, including peer review, judicial review of regulatory analyses, and retrospective assessments of regulatory performance.

The principal components of any such legislation are requirements that agencies assess the benefits and costs of their regulations and demonstrate that the benefits exceed the costs. Other less ambitious possibilities also emerged, such as permitting agencies to balance benefits and costs, but not requiring them to do so. Under this approach, it would be the responsibility of the OMB regulatory oversight group to exert the leverage without the presence of existing legislative constraints. These issues are likely to continue to be on the congressional legislative agenda until some kind of regulatory reform bill resolves the conflict between the national interest in balanced regulatory policies and the agencies' adherence to restrictive legislative mandates.

Benefit-Cost Analysis

From an economic efficiency standpoint, the rationale for a benefit-cost approach seems quite compelling. At a very minimum, it seems reasonable that society should not pursue policies that do not advance our interests. If the benefits of a policy are not in excess of the costs, then clearly it should not be pursued, because such efforts do more harm than good. Ideally we want to maximize the net gain that policies produce. This net gain is the discrepancy of

5. See *Chevron USA, Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984).

between benefits and costs, so our objective should be to maximize the benefit-minus-cost difference.

The underlying economic impetus for the benefit-cost approach is the Hicksian potential compensation principle. The gainers from such policies can potentially compensate the losers, making all parties better off. However, unless potential compensation is actually paid, there is no assurance that everyone's welfare will be improved. As a practical matter, it is generally impossible to make everyone better off from each individual regulatory policy, but making sound decisions across the entire spectrum of regulatory policies will make almost all of us better off.

The requirement that benefits exceed costs for sound regulatory policies has also given rise to a simple shorthand. The ratio of benefits to costs, or the benefit-cost ratio, must exceed 1.0 for a policy to be potentially attractive. This requirement serves as the minimal tests for policy efficacy, as our overall objective should be to maximize the spread between benefits and costs.

To see how one would design a regulatory policy to reap the greatest net benefits, let us consider as a concrete example environment policy choice. The underlying principles are identical in other policy arenas as well. As is indicated in Figure 2.2, the cost of providing environmental quality rises as the level of environmental quality improves. Moreover, the cost increases at an increasing rate because improvements in environmental quality become increasingly costly to achieve. As the most promising policy alternatives are exploited, one must dip into less effective means of enhancing environmental quality, and resorting to these contributes to the rise in costs.

The other curve in the diagram is the total benefits arising from improved environmental quality. The initial gains are the greatest, as they may affect our life and well-being in a fundamental manner. The additional health and welfare effects of environmental quality improvements eventually diminish. Our task of finding the best level of environmental quality to promote through regulation reduces to achieving the largest spread between the total benefit and total cost curves. This maximum is achieved at the environmental quality level q^*. At that point, the gap between the cost and benefit curves is the greatest, with the gap giving the maximum value of the net benefits less costs that are achievable through environmental regulation.

The slope of the total cost and total benefit curves is equal at environmental quality q^*. The slope of the total cost curve is known as the marginal cost, as it represents the incremental increase in costs that arise from a unit increase in environmental quality. Similarly, the slope of the total benefit curve is known as the marginal benefit curve, as it represents the increment in benefits that would be produced by a one-unit increase in environmental quality. An alternative way to assess the optimal policy is to examine the marginal cost and marginal benefit curves, which are illustrated in Figure 2.3. Marginal costs are rising because of the decreasing productivity of additional environment-enhancing efforts as we pursue additional improvements in environmental quality. Similarly, the marginal benefits shown in this curve

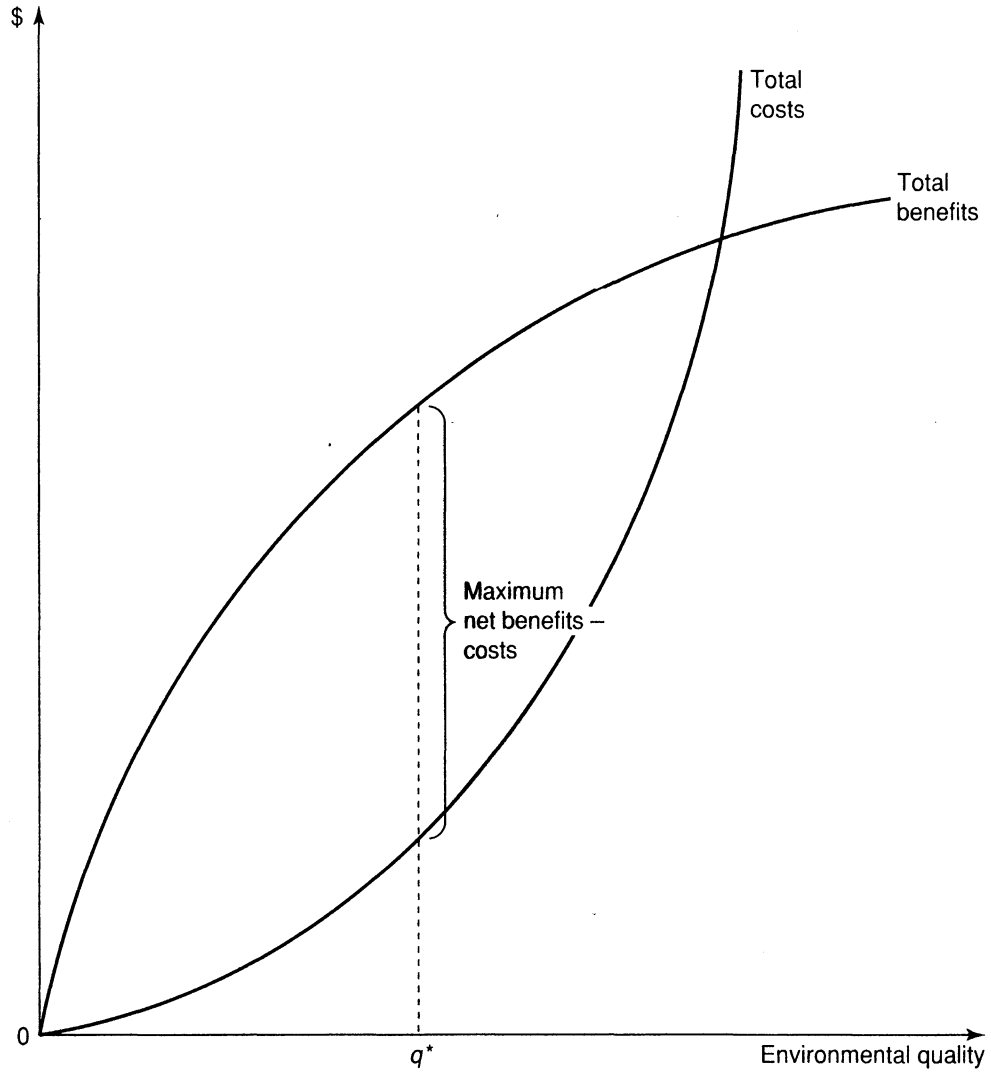

Figure 2.2
Benefit-Cost Analysis of Environmental Quality Control

are declining because they experience the greatest incremental benefits from such improvements when the environmental quality is very bad. The optimal policy level is at environmental quality level q^*, at which we equate marginal benefits and marginal costs. Thus the requirement for optimal quality choice can be characterized by the following familiar equation:

$$\text{Marginal benefits} = \text{Marginal costs}. \tag{2.1}$$

Discounting Deferred Effects

If all the effects of regulatory policies were immediate, one could simply sum up these influences, treating effects today the same as one would treat an impact many years from now.

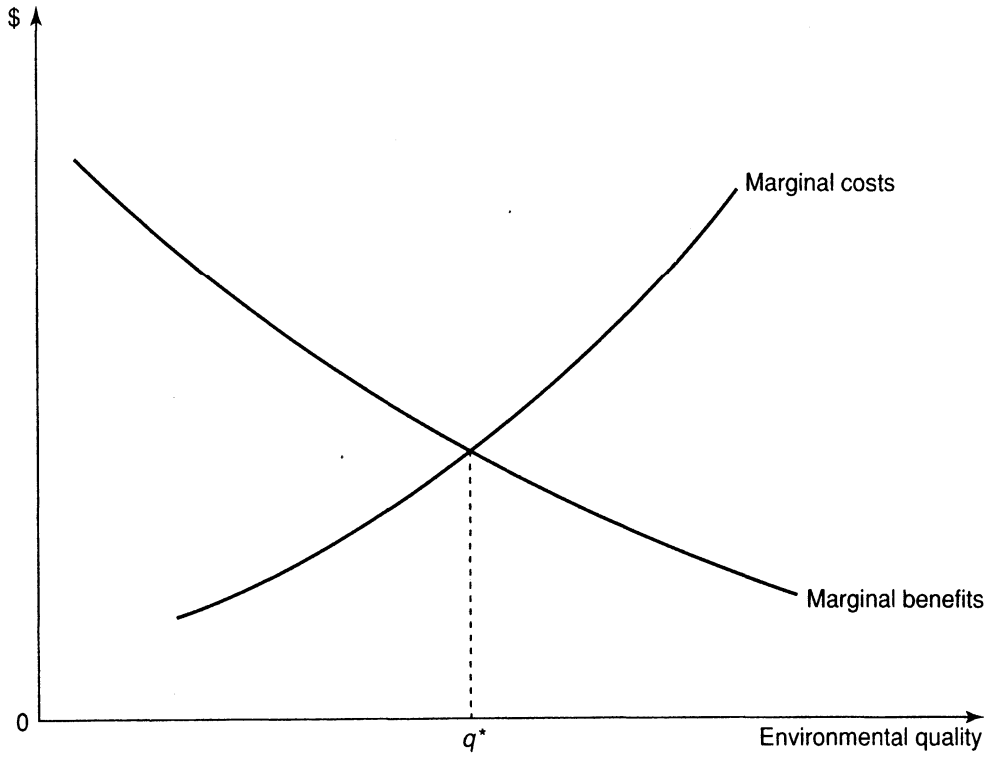

Figure 2.3
Marginal Analysis of Environmental Policies

Even if one ignores the role of inflation, it is important to take the temporal distribution of benefits and costs into account. If one could earn a riskless real rate of interest r on one's own money, then the value of a dollar today is $(1 + r)^{10}$ ten years from now. Thus, resources have an opportunity cost, and one must take this opportunity cost into account when assessing the value of benefit and cost streams over time. This issue is not unique to the social regulation area, but it plays a particularly important role with respect to these regulations because of the long time lags that tend to be involved, particularly when evaluating regulations focusing on cancer and the future of the planet.

Although a substantial literature exists on how one should approach the discount rate issue and estimate the appropriate rate of discount, these approaches can be simplified into two schools of thought.[6] One approach relies on the opportunity cost of capital. In this instance, market-based measures provide the guide as to the appropriate discount rate. A simple but not too unreasonable approximation to this measure is simply the real rate of return on federal bonds. The alternative is the social rate of time preference approach under which society's preference for allocating social resources across time may be quite different from the time

6. See Edith Stokey and Richard Zeckhauser, *A Primer for Policy Analysis* (New York: W.W. Norton, 1978).

rate expressed in private markets. How the social rate differs from the private rate and the extent of the difference from private rates of return has remained a subject of considerable debate.

From a practical standpoint, such controversies are not of major consequence in actual regulatory decisions. The U.S. Office of Management and Budget (under OMB circular A-94) now requires that all policy benefits and costs be assessed using a rate of interest of 7 percent and at the agency's preferred discount rate. Before 1993 OMB had required a 10 percent rate, which is an extremely high real (that is, inflation-adjusted) rate of return.

Present Value

The procedure by which one converts a stream of benefits and costs into a present value is simply to divide any deferred impacts in year i by $(1 + r)^i$. Viewed somewhat differently, if one could earn a rate of interest r on \$1 invested today, the value of this dollar i years from now would be $(1 + r)^i$. Thus the present value calculation simply puts the future payoff into terms that are comparable to payoffs today. More specifically, if one has project benefits B and C in year i, then the formula is given by

$$\text{Present value} = \sum_{i=0}^{n} \frac{B_i - C_i}{(1 + r)^i}. \tag{2.2}$$

To see the implications of the present-value calculation, consider a simplified discounting example in Table 2.1. Three different sets of results are provided. First, the benefits and costs in which there is no discounting comprise the first part of the table. As can be seen, the benefits exceed the costs by 0.15, and the policy is worth pursuing. If one adopts a discount rate of 5 percent, then the deferred benefits one year from now have a lower present value. Nevertheless, the policy still remains justified on benefit-cost grounds, although the strength of the justification has been weakened. The final example shows the discount rate raised to 10 percent. This higher rate lowers the value of next year's benefits even further. In this instance costs exceed benefits, and the policy is no longer justified. As a rough rule of thumb, since costs are generally imposed early in the life of a regulation and benefits often accrue later, raising the discount rate tends to reduce the overall attractiveness of policies. The exact relationship hinges on the number of sign reversals in the net-benefit-less-cost stream over time. For one sign reversal—net costs in the early periods followed by net benefits—raising the discount rates reduces the attractiveness of a policy. The role of discounting is particularly instrumental in affecting the attractiveness of policies with long-term impacts, such as environmental regulations that address long-run ecological consequences or cancer regulations for which the benefits will not be yielded for two or three decades. Not surprisingly, a major battleground over discounting was asbestos regulation, inasmuch as the deferred nature of the risk made discounting a

Table 2.1
Discounting Example

	Year 0	Year 1	Total
No Discounting			
Benefits	1.00	2.15	3.15
Costs	−3.00	−0.00	−3.00
Benefits–Costs	−2.00	2.15	+0.15
Discounting at 5%			
Benefits	1.00	2.05	3.05
Costs	−3.00	−0.00	−3.00
Benefits–Costs	−2.00	+2.05	0.05
Discounting at 10%			
Benefits	1.00	1.95	2.95
Costs	3.00	0.00	3.00
Benefits–Costs	−2.00	1.95	−0.05

major policy issue in a debate involving EPA, OMB, and members of Congress. EPA advocated a discount rate of zero so that the benefits of the regulation would appear to be large.

Although the practice of reducing the value of deferred benefits may seem to be unduly harsh, it will be muted at least to some extent by increases in the unit benefit value over time. As society continues to become richer, the value we place upon environmental quality and risk reduction will also rise. As a result, there will be some increase in the value benefits over time because of society's increased affluence, which generally raises the value that people attach to their health or environmental quality.

In general, one will still discount in a manner that reduces the present value of future impacts. If one were in a situation in which one did not discount at all, which is a position that has been frequently advocated by the U.S. Environmental Protection Agency and by some congressmen, then any action with permanent adverse effects could never be undertaken. A $1 annual loss that was permanent would swamp in value any finite benefit amount that was for one time only. No policies that would affect a unique natural resource or that would lead to the extinction of a species could ever be pursued. The cost of such efforts would be infinite. Trivial losses that extended forever could never be imposed, irrespective of how great the current benefits are. When confronted with the full implications of not discounting at all, it is likely that there would be few advocates of this practice. We certainly do not follow this practice in our daily lives. Otherwise, we would save all of our resources, earn interest, and spend the money in our last years of life.

In many instances it is necessary to calculate the present value of an infinite stream of payoffs. What, for example, is the value of a taxicab license that generates $V every year? Suppose that the payment is received at the end of each period. It is straightforward to show

that the present value of this infinite stream is given by $\$V/r$.[7] For example, with an interest rate of 10 percent, the present value of \$5,000 per year would be $\$5,000/(0.10) = \$50,000$.

The Criteria Applied in the Oversight Process

Certainly the most dominant criteria that have been used in the oversight process over the last decade have been those pertaining to ensuring the cost-effectiveness of the regulation and, more specifically, ascertaining that the benefits of the regulation exceed the costs. Although OMB has frequently been unable to enforce the benefit-cost requirements because of conflicts with the agency's legislative mandate, there have been several notable success stories that illustrate how effective regulation can be if approached in a sound economic manner.

Regulatory Success Stories

One of these success stories is visible every time we ride in an automobile. A prominent regulatory innovation has been the requirement that all cars have center-high mounted stop lamps. When the driver puts on the brakes, the brake lights go on as always, but so does a red light in the bottom center of the rear window. This 1983 regulation was the subject of an extensive analysis whereby the Department of Transportation demonstrated that the benefits of the regulation exceeded the costs. Equally important is that the Department of Transportation also conducted a series of tests with various fleets of automobiles to determine which of several stop-lamp designs would be the most effective in reducing rear-end collisions. Thus there was an explicit attempt to evaluate regulatory policy alternatives and to select the most attractive from among these alternatives.

---

7. Letting S be the present value of this infinite stream,

$$S = \frac{V}{(1+r)} + \frac{V}{(1+r)^2} + \frac{V}{(1+r)^3} + \cdots$$

Multiply S by $[1/(1+r)]$:

$$\frac{S}{(1+r)} = \frac{V}{(1+r)^2} + \frac{V}{(1+r)^3} + \frac{V}{(1+r)^4} + \cdots$$

Subtracting the right-hand side expression and the left-hand side expression in the second equation from the right-hand side expression and the left-hand side expression of the first equation, one gets

$$\frac{rS}{(1+r)} = \frac{V}{(1+r)}.$$

Solving this equation for S, one finds that

$$S = V/r.$$

Perhaps the greatest regulatory success story of the 1980s involving OMB is the phase-down of lead in gasoline. (Telephone deregulation did not involve OMB but was probably of greater consequence.) Through a series of regulations, EPA requirements have all but eliminated the use of lead in gasoline. This regulation was accompanied by a comprehensive regulatory analysis that clearly established that the benefits of the regulation exceeded the costs.[8] It is noteworthy that this regulation, one of the few where EPA clearly established the economic attractiveness of the policy in terms of benefit-cost ratio, is also one that had the greatest demonstrable impact of any pollution regulation instituted in the 1980s. Lead emissions declined dramatically in the 1980s, and the reduction in lead pollution represents the greatest environmental success story of that decade.

Promotion of Cost-Effective Regulation

One general way in which the government promotes the most cost-effective regulation is through the encouragement of performance-oriented regulation. Our objective is to promote outcomes that are in the interests of the individuals affected by regulations rather than simply to mandate technological improvements irrespective of their impact. This concern with ends rather than means leads to the promotion of the use of performance-oriented regulations whenever possible.

Rather than mandate nationally uniform standards, it is frequently desirable to give firms some discretion in terms of their means of compliance. The FDA's tamper-resistant packaging requirements impose effectiveness requirements on the packaging, but do not dictate particular types of packaging that must be used. Similarly, the child-resistant-cap requirements of the Consumer Product Safety Commission specify safety thresholds that the caps must meet in terms of preventing children from opening the bottles, but they do not prevent firms from adopting particular cap designs that they might believe are most appropriate for the product.

The adoption of performance-oriented alternatives has generally lagged behind economists' enthusiasm for these policies. Two principal reasons account for this discrepancy. First, the enforcement of some performance-oriented alternatives can be more expensive. If firms were simply given general guidelines to make their workplace safer but were not given any explicit instructions for doing so, then government inspectors would have a more difficult task in determining whether the firm had met the minimal safety requirements.[9]

Another major barrier to performance-oriented regulation has been political. In the case of air-pollution requirements, congressmen from soft-coal-producing states lobbied for legislation that required firms to develop technological solutions to air pollution (that is, use of

8. U.S. Office of Management and Budget, *Regulatory Program,* pp. 16–17.

9. The government could utilize an outcomes-based performance measure, such as total worker deaths and injuries. However, such a measure would be more effective for large firms than for smaller firms, which have a sufficiently small sample of workers that precise inferences cannot be drawn regarding the firms' safety performance.

scrubbers) as opposed to changing the type of fuel they used to a less polluting form of coal. This emphasis was dictated by regional economic self-interests, not by national efficiency concerns.

Distortion of Benefit and Cost Estimates

Another principle that has been promoted through the oversight process is the utilization of unbiased estimates of the benefits and costs. The need for lack of bias may appear to be both obvious and uncontroversial, but in fact it represents an ongoing problem with respect to risk regulations.

The scientific analyses underlying risk regulations typically include a variety of assumptions for the purpose of "conservatism," but which in effect distort the assessment of the merits of the regulation. For example, projections of the cancer-causing implications of some chemical may be made by relying upon the most sensitive animal species, as opposed to the animal species most relevant to extrapolation to humans. In addition, scientific analysts frequently focus on the upper end of the 95-percent-confidence interval, thus placing great emphasis on how high the risk potentially could be as opposed to their best estimate of how high the risk actually is.

Focusing on the upper limit of the potential risk distorts the policy mix in a number of ways. Most important is that it shifts our attention to those hazards about which the least is known, as opposed to those hazards that pose the greatest threat and will endanger the greatest number of lives. Because we often know the least about the very-low-probability events because we have little experience to guide us, the effect has often been to tilt policies in the direction of the inconsequential low-probability events that we dimly understand, whereas the major sources of accidents and illness that are precisely understood receive less attention.

In some cases, there are additional conservatism factors incorporated arbitrarily within the risk analysis process. For example, risk analysts assessing the reproductive toxicity of different chemicals may simply multiply these risk levels by a factor of 1,000 for the purposes of "conservatism," but there is no justification for multiplying by any factor.

The problem that these conservatism adjustments pose from the standpoint of government policy is that when we address different regulations and are comparing their efficacy, we do not know the extent to which the benefits have been distorted. Various conservatism factors are used by different agencies in different contexts. These adjustments are seldom detailed in the regulatory analysis and are often compounded in the successive stages of analysis. Conservatism multipliers are often added in each round of the calculations. Such distortions prevent the regulatory policymakers from having the accurate information they need to choose among policies. The overall judgment as to how conservative society wishes to be in bearing risk or in incurring other outcomes is a social policy decision that should be made at the policymaking level of the regulatory agencies and the executive branch. Arbitrary

conservatism factors incorporated in the risk analysis in effect involve little more than stealth policymaking that is masquerading as a scientific exercise.

The Regulatory Role of Price and Quality

A general principle that has guided the development of regulation and in particular the deregulation effort is that "regulation of prices and production in competitive markets should be avoided."[10] The price system has a legitimate role to play, as is evidenced in the discussion of markets in all elementary economics textbooks. Recognition of the role of the price mechanism has provided the impetus for the deregulation of the rate entry regulations that were formerly present in industries like airlines, trucking, and communications. Some regulations, such as minimum-wage requirements, explicitly interfere with these prices. The purported benefits of these regulations is that they will raise workers' income level to a fairer wage amount needed for subsistence, although most labor economists believe that the long-run effect of minimum wage regulations is to displace workers from jobs. It appears in this regard that teenagers, particularly minority teenagers, have been most hard-hit by the adverse employment effects of higher minimum wage levels.

Just as we do not want to standardize product prices, we also do not wish to standardize quality except when there are legitimate reasons for doing so, as in the case of provision of minimal safety levels for cars. Antilock brakes and passenger side airbags are beneficial safety features, but they are also quite expensive. We would like to give consumers the option to purchase such equipment; the more expensive cars typically offer these features. However, we do not require that all cars have them, for those features would comprise a substantial part of the product price for the low end of the market. Instead of mandating all available safety devices for all cars, we have required that certain minimal safety features be universal, and we permit other safety features to be optional. Consumers who place substantial value on safety can purchase the cars offering these additional features, and we can continually revise the nationally mandated safety standards to reflect the safety floor that is most sensible from the standpoint of being imposed on a universal basis.

The Impact of the Oversight Process

The objective of regulatory oversight is to foster better regulations, not necessarily less regulation. However, one consequence of improving regulation is that we will eliminate those regulations that are unattractive from the standpoint of advancing the national interest. Moreover, much of the impetus for regulatory oversight has been a concern with the excessive costs

10. U.S. Office of Management and Budget, *Regulatory Program,* p. 18.

imposed by unattractive regulations, so that there has been considerable attention devoted to these costs.

The Cost of Regulation

The stakes involved are enormous. President Bush noted the staggering levels of costs involved:

> Federal regulations impose estimated direct costs on the economy as high as $175 billion—more than $1,700 for every taxpayer in the United States. These costs are in effect indirect "taxes" on the American public—taxes that should only be levied when the benefits clearly exceed the costs.[11]

Roughly half of these costs are attributable to EPA regulations, as earlier estimates of the costs imposed by EPA policies indicated that these regulatory costs alone were in the range of $70–$80 billion per year.[12]

In the absence of regulatory reform efforts, these costs would be substantially higher. The Council of Economic Advisors estimates that airline deregulation led to $15 billion worth of gains to airline travelers and airline companies.[13] Similarly, estimates suggest that savings resulting from trucking deregulation have been in excess of $30 billion annually.[14] The annual benefits from railroad deregulation have also been substantial—on the order of $15 billion annually.[15] The total savings from these deregulation efforts in the transportation field are on the order of $60 billion per year—a substantial payoff indeed for a return to greater reliance on market forces.

Other Measures of the Size of Regulation

The most pertinent estimate of regulatory activity is the level of the costs that are generated by the regulation. Professor Thomas Hopkins, once a prominent regulatory-oversight official, has compiled a comprehensive assessment of the costs of different federal regulatory programs. This tally appears in Table 2.2, where the primary inputs to these calculations are the regulatory analyses prepared by government regulations on a prospective basis for new regulations.[16] Actual costs of regulations may of course differ from those that are estimated at

---

11. Statement by George Bush in U.S. Office of Management and Budget, *Regulatory Program of the United States Government, April 1, 1990–March 31, 1991* (Washington, D.C.: U.S. Government Printing Office, 1990), p. vii.

12. U.S. Office of Management and Budget, *Regulatory Program of the United States Government, April 1, 1988–March 31, 1989* (Washington, D.C.: U.S. Government Printing Office, 1988).

13. Council of Economic Advisors, *Economic Report of the President* (Washington, D.C.: U.S. Government Printing Office, 1988), p. 206.

14. Diane S. Owen, *Deregulation in the Trucking Industry* (Washington, D.C.: Federal Trade Commission, 1988).

15. Christopher C. Barnekov and Andrew N. Kleit, "The Efficiency Effects of Railroad Deregulation in the United States," *International Journal of Transport Economics* 17 (1990).

16. See Thomas D. Hopkins, "Profiles of Regulatory Costs," report prepared for U.S. Small Business Administration, November 1995.

Table 2.2
Annual Costs of Federal Regulation (Billions of 1995 Dollars)

	1980	1990	1995	2000
Environmental and risk reduction	99	151	223	267
Price and entry controls	364	236	227	218
Paperwork	143	206	218	236
Total regulatory costs	606	594	668	721

Source: Thomas Hopkins, "Regulatory Costs in Profile." Center for the Study of American Business, Policy Study #132, August 1996.

the time of the regulation's promulgation. However, these cost measures are likely to be much more indicative of the scale of regulatory activity than are *Federal Register* counts.

As the information in Table 2.2 indicates, the cost of these regulations is substantial. The total cost level in 1995 was $668 billion, which includes regulations that were simply transfers, such as the minimum wage. Transfers accounted for $147 billion of the costs. The minimum wage leads to higher wage payments for low-income workers. From an economic standpoint this is not an efficiency loss, but simply an effort that passes money around in society. The gains to workers offset the losses to firms. However, from the standpoint of the potential costs to the rest of society, the appropriate amount to be recognized is the total regulatory cost, since it is this regulatory cost amount that firms (or consumers and workers) must pay. In practice, however, the shifting of this and other costs among consumers, shareholders, workers, and other parties is a very complex matter.

In 1995 the total gross domestic product was $7.3 trillion, so the regulatory cost share of the gross domestic product was 9.2 percent. Another useful measure of regulatory costs is the regulatory cost per household. In 1995 these costs are estimated to be $6,809 per household.[17] Regulatory costs consequently are not a trivial component of the gross domestic product, but it should also be taken into account that benefits are derived from these efforts as well. It is quite striking that for the 1995 federal regulatory costs, the largest component was for process regulation, or $218 billion in annual expenditures related to government paperwork requirements. Environmental regulation, such as that administered by the U.S. Environmental Protection Agency, was next greatest in importance at $168 billion, followed by economic regulation at $80 billion. The role of deregulation in the economic regulation context is apparent as economic regulations decreased substantially in cost from 1977 to 1995. Moreover, there has been a remarkable change in the mix of regulations, as environmental regulation has assumed increasing importance during the same period in which economic regulation has diminished in terms of the efficiency costs. Estimates for the year 2000 indicate additional regulatory cost growth due largely to environmental regulation and process regulations.

17. Ibid.

One of the most striking aspects of the regulatory cost mix is the substantial process regulation component of $218 billion in 1995 federal paperwork costs. A concern with paperwork required by federal activities has long been widespread. Moreover, unlike the regulatory efforts themselves, paperwork often lacks the clear-cut link to perceived societal benefits, such as improved environmental quality. Although politicians frequently voice commitments to reduce paperwork, this burden continues to grow. One difficulty is that gathering information generally appears to be attractive, inasmuch as more knowledge is better than less, but the benefits derived from the information are not always valued to determine whether the associated paperwork burden is justified. One frequently proposed policy that might address this issue is to establish a federal paperwork budget to limit the annual dollar value of paperwork costs.

A less precise tally of trends in regulatory burdens is provided by the index of the number of pages published in the *Federal Register.* One would expect there to be a correlation between the number of pages devoted to government rules and regulations and the cost these regulations impose. This need not be the case if, for example, agencies become adept at editing their regulatory documents to make them shorter but no less burdensome. Moreover, some *Federal Register* entries modify regulations and decrease costs rather than increase them. However, it is generally believed that there is a positive, albeit highly imperfect, correlation between the amount of federal regulation published in the *Federal Register* and the regulatory costs imposed.

Figure 2.4 indicates the trends in these costs for the past half-century. In 1936 the number of pages in the *Federal Register* was relatively modest—2,599. The pace of regulation increased steadily but slowly until 1970. It is apparent from Figure 2.4 that there was a rapid escalation in regulation beginning in that decade. The 1970s marked the establishment of the new wave of health, safety, and environmental regulation, which greatly expanded the role of the government and its regulatory activities. By 1980 the number of pages in the *Federal Register* reached 87,012. The first half of the 1980s marked a decrease in the dissemination of new regulation, which was consistent with the Reagan administration's efforts to deregulate and roll back regulations. However, by the second term of the Reagan administration there was renewed regulatory activity, which is also reflected in the subsequent increase in the number of pages of regulations published in the *Federal Register.*

The more recent upward trend in the total number of pages published in the *Federal Register* is more reflective of the increased volume of regulatory initiatives under the Clinton administration. Whereas there were about 50,000 pages published during many of the years in the 1980s, since 1993 the total *Federal Register* page count has ranged from 67,518 to 69,688. How much meaning one should attach to such statistics is unclear. For example, the number of final rules documents appearing in 1997 was 4,615, as compared to a slightly lower figure of 4,581 a decade earlier. Moreover, some years of peak regulatory activity, such as 1980, include statistics that are quite misleading as a measure of

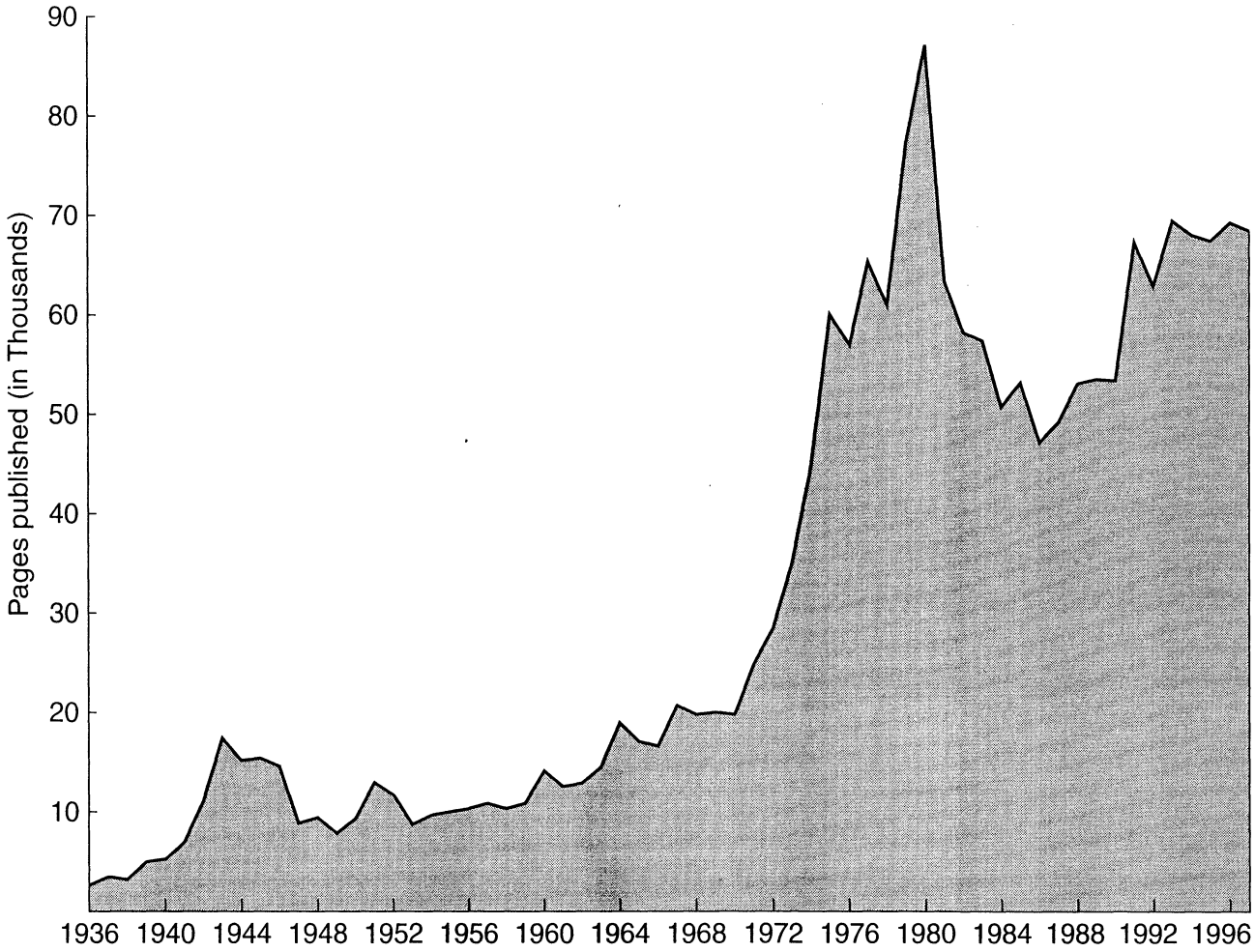

Figure 2.4
Trends in *Federal Register* Analysis Pages, 1936–1997
Source: Office of the Federal Register

regulatory burden. That year featured a flurry of regulatory initiatives at the end of the Carter administration in January 1980, which was subsequently followed by a rescinding of regulations and a major deregulation effort on the part of the Reagan administration later that year. With this principal exception, however, the overall implication of Figure 2.4 that regulation has become an increasingly important part of our lives is certainly valid.

Other measures of regulatory activity have similar implications. The *Code of Federal Regulations* summarizes the stock of existing regulations, whereas the *Federal Register* page count provides a measure of the flow of annual regulations. The total number of pages of regulation in the *Code of Federal Regulations* was under 10,000 in 1950, but had grown to an excess of 100,000 by 1980. By the end of that decade, the number of pages in the

Table 2.3
Types of Action Taken by the OMB Regulatory Oversight Process on Agency Rules, 1981–1997 (Percent)

Action taken	1981	1985	1990	1991	1992	1993*	1994*	1995*	1996*	1997*
Consistent without change	87.2	70.8	71.8	63.1	64.5	69.3	57.5	53.5	41.3	38.1
Consistent with change	4.9	23.1	19.3	27.2	25.9	22.5	32.4	37.4	50.7	55.4
Withdrawn by agency	1.8	3.1	2.5	2.8	4.6	5.3	5.7	5.3	6.4	4.5
Returned for reconsideration	1.6	1.5	1.0	1.1	0.4	0.4	0.2	0.3	0.2	0.8
Suspended	NA	NA	2.7	2.7	2.2	0.6	0.0	0.0	NA	NA
Sent improperly or exempt	3.1	0.3	0.2	0.1	0.6	0.1	1.7	0.2	0.0	0.2
Emergency, statutory, or judicial deadline	1.4	1.2	2.5	3.0	1.8	1.8	2.5	3.3	1.4	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U.S. Department of Management and Budget, *Executive Order 12866 Annual Report, October 1, 1996–September 30, 1997* (Washington, D.C.: U.S. Office of Management and Budget, 1998).

*Data for these years are not on a calendar basis: 1993 (1/1/93–9/30/93), 1994 (10/1/93–9/30/94), 1995 (10/1/94–9/30/95), 1996 (10/1/95–9/30/96), and 1997 (10/1/96–9/30/97).

Code of Federal Regulations was just over 50,000, which has been consistent with the effort to scale back the role of regulation, particularly in the transportation area. Regulatory budget and staffing trends, which appear in the appendix to Chapter 2, tell a similar story.

The Character of Regulatory Oversight Actions

It is also instructive to consider the mix of actions undertaken through the regulatory oversight to obtain an assessment of the nature of the oversight activity that has led to many of these changes. Table 2.3 summarizes the oversight actions undertaken since 1984. When the oversight process began, OMB approved almost 90 percent of regulations without change. At the present time, the overall approval rate is just 38 percent.

One should be cautious in attributing any change in character of the regulatory oversight process to the trends exhibited by the statistics in Table 2.3. A higher percentage of regulations are changed as a result of the current review process in large part because of the increased selectivity of the regulations that are earmarked for review. The number of executive order reviews plummeted from 2,800 in 1981 to 509 in 1997. OMB's review efforts are consequently much more targeted than before, so that one would expect a higher percentage of the regulations to be revised in response to the review efforts. These expectations are in fact borne out by the data in Table 2.3, which indicate that more than half of all regulations are now altered before being issued by the agency.

Some of these changes have been quite consequential. For example, at OMB's insistence the Occupational Safety and Health Administration offered firms a variety of alternative means of compliance to reduce the explosion hazards arising from the dust levels in grain mills. This

expanded flexibility did not impede the safety effects of the regulation, but it did lower the regulatory costs. Over 90 percent of the regulations are consistent with OMB principles after such changes are made or without change. This high percentage indicates that the dominant emphasis of the OMB process is to promote negotiated solutions to enhance regulatory policy as opposed to simply serving in an obstructionist role. The OMB oversight process has limited political resources, so that it cannot afford to do battle in every regulatory arena, even though few would claim that 90 percent of the regulations proposed will in fact maximize the net benefits to society.

The percentage of instances in which OMB blocks regulations is quite small. In 1997, for example, 4.5 percent of the regulations reviewed were withdrawn by the regulatory agency and 0.8 percent were returned for consideration. Many of these regulations are among the most burdensome.

Perhaps the most interesting trend exhibited in Table 2.3 pertains to the first two rows of the table. The percentage of regulations that are consistent with OMB guidelines without any change dropped by 49 percent from 1981 to 1997, and the percentage of regulations that are consistent with change rose by a comparable amount over that period. The dominant emphasis of OMB actions has been either to approve regulations or to promote moderate modifications of them, and over time there has been an increased attempt to alter regulations in an incremental fashion rather than simply to approve them without any change whatsoever.

Such incremental modifications in regulation are where we would expect the regulatory oversight process to have its greatest influence because major conflicts, such as those over the entire thrust of a regulatory policy, would be escalated to higher political levels. If all regulatory policy decisions were escalated in this manner, the president would have little opportunity to devote time to other national problems. In any year, there are hundreds of major regulations and an even greater number of minor regulations that agencies will issue. In 1997, for example, OMB reviewed 92 major regulations from the U.S. Department of Health and Human Services and 52 major regulations from the U.S. Environmental Protection Agency. Given the substantial volume of regulatory activity, the only feasible way to address these issues is to remain within the interagency negotiations between the regulatory agency and OMB, saving appeals to a higher level for the small percentage of regulatory issues that involve controversial issues of national policy. In the Reagan administration, one such policy meriting presidential involvement was the decision with respect to acid rain policies, and in the Bush administration global-warming policies received the greatest presidential scrutiny. In the Clinton administration there has been substantial high-level involvement in the rewriting of the Superfund law, which governs the treatment of hazardous wastes. More routine regulations, such as standards for the combustion of municipal waste, are handled without a national debate.

What Do Regulators Maximize?

In theory, regulatory agencies serve to maximize the national interest subject to their legislative mandates. Similarly, OMB is presumably motivated to maximize the net benefits minus costs to society. Such a characterization of regulatory objectives is, unfortunately, excessively naive. There are a number of diverse factors that influence policy decisions, many of which have very little to do with these formal statements of purpose.

What is clear at this stage is that there are certainly influences at work other than those that are formally specified. However, economists have yet to reach a consensus regarding the specific formulation that best captures the political mechanisms at work. A brief review of some of these theories can, however, highlight the range and the types of approaches that have been taken.

The Capture Theory

Under the capture theory of regulation, such as that espoused by George Stigler, the regulatory agency is captured by the economic interests that it serves.[18] Stigler has been most successful in testing this model with respect to the economic regulation agencies, such as the Interstate Commerce Commission. Examples of how government regulation can foster industry interests abound. Regulation of airline fares can, for example, provide a floor on airline rates that enables firms to make greater profits than if there were price competition. Similarly, minimum quality standards for products can promote the interests of the more established and advanced firms in the industry, which will use these mandated quality standards to squeeze the producers with less advanced technological capabilities.

Most models based on the capture theory recognize the competing demands on regulatory agencies. Private interests as well as public interests may affect the political survival of the regulatory officials as well as the agency's budget. Although the most direct descendant of Stigler's work is that of Peltzman,[19] a number of authors have developed similar models reflecting the diversity of political influences at work. Roger Noll has developed an external signaling theory of regulation whereby regulatory agencies attempt to minimize the conflicting criticism that appears through signals from the economic and social environment in which the regulatory agency operates.[20] Noll proposes that agencies construct an administrative apparatus for the development and enforcement of their regulations to promote the ability

18. George J. Stigler, "The Theory of Economic Regulation," *Bell Journal of Economics* 2 (1971): 3–21.

19. Sam Peltzman, "Toward a More General Theory of Regulation," *Journal of Law and Economics* 19 (1976): 211–40.

20. Roger Noll, *Reforming Regulation: Studies in the Regulation of Economic Activity* (Washington, D.C.: Brookings Institution, 1971), and Roger Noll, "Government Administrative Behavior and Private Sector Response: A Multi-Disciplinary Survey," Social Science Working Paper Number 62 (Pasadena: California Institute of Technology, 1976).

of groups that approve their actions and to limit the ability of political forces that disapprove their actions.

Other Theories of Influence Patterns

Other researchers have also formulated models reflecting diverse patterns of influence, but have concluded that there are particular sets of influences that are most influential. For example, Wilson and Stewart suggest that regulatory agencies have substantial discretion with respect to the regulatory actions they take, so that it is the regulatory agency that plays the dominant role.[21] Other authors have advocated a quite different view in which Congress has the dominant role, not the regulatory agency.[22] The leverage of Congress stems from the fact that the congressional committees are responsible for setting the budgets of the regulatory agencies and for confirming the leading administrators in these agencies.

Comprehensive Models of Regulatory Objectives

In all likelihood, the actual outcomes are influenced by a multiplicity of factors that cannot be characterized by any simple, single model. The regulatory agency does not have sole control, nor does OMB. Moreover, Congress and the judiciary play a restraining role, and lobbyists for and against the regulation can affect the political payoffs to the regulatory agency as well. The actual strength of the influences undoubtedly varies depending on the particular context.

An interesting case study of the extent to which there are multiple influences at work is provided through detailed analysis of the rulemaking process for the EPA regulations that implemented the industrial effluent standards that are used to control water pollution. The study by Magat, Krupnick, and Harrington highlights the types of outcomes that will ultimately be explained through an analysis of the competing interests affecting regulatory outcomes:

> The factors determining the outcomes of EPA's effluent standard-setting process are by no means self-evident. For instance, on December 7, 1973, EPA proposed effluent discharge standards for water pollution from the leather tanning industry. These standards required that by 1977 discharges of biological oxygen demand (BOD) not exceed 40 milligrams per liter (mg/l) of waste water. Four months and two days later, EPA promulgated the final BOD standard for the industry of 102 mg/l. Why was the stringency of the standard weakened by 155 percent between its initial proposal and final promulgation? Why did EPA issue a tighter final standard for the meat packing industry, which produces wastes with similar

21. See James Q. Wilson, "The Politics of Regulation," in James W. McKie (ed.), *Social Responsibility and the Business Predicament* (Washington, D.C.: The Brookings Institution, 1974); and Richard B. Stewart, "The Reformation of American Administrative Law," *Harvard Law Review* 88 (1975): 1669–1813.

22. See Barry R. Weingast and Mark J. Moran, "Bureaucratic Discretion or Congressional Control: Regulatory Policymaking by the Federal Trade Commission," *Journal of Political Economy* 91 (1983): 765–800.

characteristics to leather tanning, of only 24 mg/l BOD? And why did smaller firms receive weaker regulations?[23]

The heterogeneity of the regulation in different industries and for firms of different sizes clearly suggests that there is no simple or naive regulatory objective guiding behavior. Through detailed statistical analysis of a series of decisions made by EPA as part of this rulemaking process, Magat et al. have identified a variety of factors that were influential in the setting of these water pollution standards.

One such influence was efficiency concerns. EPA did adjust the stringency of regulations in different industries to reflect the differences in compliance costs across firms. This is the kind of heterogeneity one would want to promote, in that standards should not be as stringent for industries that must bear greater burdens to reduce pollution. In those contexts, the costs of compliance will be greater, so that to maximize the net benefits of the standard one would want to reflect these cost differences in the standard level.

Second, the quality of the economic analysis supporting the standard also was influential. Standards supported by high-quality economic analyses were more likely to lead to more stringent effluent guidelines than those lacking substantive support. This result as well suggests that there is a sense of economic rationality to the process whereby the strength of the analysis does affect the policy outcome. It should be noted, however, that the particular price and cost effects of the regulation did not appear to be as influential as the overall quality of the economic analysis.

Other players have an impact as well. The economic resources of the trade association for the particular industry affect the stringency of the standards in the expected manner. In particular, industries with large budgets for their trade association are able to obtain weaker standards, after taking into account other factors that should determine the stringency of the regulation. The total financial resources appear to be much more influential than the volume of industry comments provided, in that these resources presumably reflect the political clout of the agency to a greater degree than does the number of pages of comments submitted.

Conclusion

In later chapters we will develop a series of models of the regulatory process. All such models should be viewed as a simplification of the actual objectives guiding the regulatory agencies. Economists have made substantial progress in recent decades in developing approaches to indicate how regulators make decisions, which is often quite different than one would predict

23. Wesley A. Magat, Alan J. Krupnick, and Winston Harrington, *Rules in the Making: A Statistical Analysis of Regulatory Agency Behavior* (Washington, D.C.: Resources for the Future, 1986), pp. xi–xii.

based on their legislative mandates or their stated agency objectives. A variety of political factors also are at work and will affect the policy outcomes that result.

Despite the multiplicity of these influences, one should not understate the pivotal role that legislative mandates have. These mandates, which are written by Congress, in many circumstances define the terms of the regulatory debate and impose stringent limits on the scope of discretion of the regulatory officials. It is through these mandates that Congress has a long-run influence on regulatory policy, even though most short-run regulatory decisions appear to be governed by actions of the regulatory agency, the influence of the regulatory oversight process, and recognition of the political factors at stake in the regulatory policy decision.

Questions and Problems

1. A frequent proposal has been to replace the oversight process through a system known as a "regulatory budget." Each agency would be assigned a total cost that it could impose on the American economy, and its task would be to select the regulations that best foster the national interest subject to this cost. Can you identify any problems with the regulatory budget approach? How feasible do you believe it would be to calculate the costs of all the regulations of a particular agency? What, for example, are the costs associated with affirmative action? Are they positive or negative?
2. Inadequacies in government action are frequently called "government failure." In some cases, government failures reinforce market failures. In particular, the government may promote inefficient outcomes in a way that exacerbates the shortcomings of the market rather than alleviates these shortcomings. Can you think of any examples where such mutually reinforcing failures might occur and the reasons why they might occur?
3. One justification often given for the utilization of a variety of conservatism factors in risk analyses is that society is risk-averse, so that we should be conservative. Can you identify any flaws in this reasoning?
4. Regulatory agencies are not permitted to publicly release the details of their regulatory proposals until after the appropriate review by OMB, as outlined in Figure 2.2. How do you believe the process would change if the agency first issued the proposal publicly and then began its discussions with OMB? Do you believe this change would improve the regulatory decision-making process? What new factors would be brought to bear?
5. What are the problems in using measures such as *Federal Register* page counts to assess the costs imposed by regulation? In the chapter as well as in the appendix, the measures of regulatory trends include *Federal Register* page counts, page counts from the *Code of Federal Regulations,* agency budget trends, and agency staffing trends. Which of these sets of information do you believe is most informative with respect to the regulatory costs imposed on society? What other measures do you believe would be useful in assessing the changing regulatory burden?
6. In your view, what is the appropriate rate of discount for regulatory policies? Suppose that the measure is the real rate of return to capital. How would you measure this? If a group of economists

were given the task, do you believe they would all arrive at the same answer? Why might there be differences in the discount rate estimate?

Appendix: Trends in Regulatory Agency Budgets and Staff

An instructive measure of the changing role of government regulation is provided by the magnitude of government expenditures in this area. Although the principal costs of regulations are those borne by business and the public at large, the levels of the budgets of the regulatory agencies do provide some index of the degree of regulatory activity.

The Center for the Study of American Business at Washington University, which is directed by Murray Weidenbaum (Chairman of President Reagan's Council of Economic Advisors), regularly compiles a series of tables summarizing these budgetary and staffing trends. Tables A.1 and A.2 summarize the key data. These patterns are generally consistent with those displayed by the *Federal Register* page counts. Regulation accelerated dramatically in the 1970s, as there was a substantial growth in the health, safety, and environmental regulation agencies. The deregulation in the transportation fields in the 1980s, coupled with the moderation in the health, safety, and environmental regulation area, led to some reduction in the regulatory effort in the early 1980s. However, there is some evidence of a resurgence in regulation in the latter 1980s and early 1990s.

Table A.1
Costs of Federal Regulatory Agencies (Fiscal Years, Millions of Dollars in "Obligations")

Agency	1970	1980	1990	1995	1996	1997	(Estimated) 1998	(Estimated) 1999	Change (percent) 1997–98	Change (percent) 1998–99
Social Regulation										
Consumer Safety and Health										
Consumer Product Safety Commission	n/o	43	35	44	41	43	46	47	7.0	2.2
Department of Agriculture:										
Agricultural Marketing Service	190	67	160	204	190	175	199	218	13.7	9.5
Animal and Plant Health Inspection Service	101	259	423	523	523	563	580	545	3.0	−6.0
Food Safety and Inspection Service		381	475	614	629	660	676	710	2.4	5.0
Grain Inspection, Packers and Stockyards	3	63	52	59	57	56	67	72	19.6	7.5
Subtotal (Department of Agriculture)	294	770	1,110	1,400	1,399	1,454	1,522	1,545	4.7	1.5
Department of Health and Human Services:										
Food and Drug Administration	80	334	603	965	1,003	996	1,097	1,136	10.1	3.6
Department of Housing and Urban Development:										
Consumer Protection Programs	n/o	4	6	10	12	14	16	17	14.3	6.3
Department of Justice:										
Drug Enforcement Administration	2	13	28	53	62	62	73	73	17.7	0.0
Department of Transportation:										
Coast Guard	94	498	909	1,364	1,434	1,492	1,565	1,615	4.9	3.2
Federal Aviation Administration	126	281	495	543	642	644	788	846	22.4	7.4
Federal Highway Administration	6	20	98	95	115	113	128	144	13.3	12.5
Federal Railroad Administration	21	85	56	76	79	72	85	84	18.1	−1.2
Surface Transportation Board	n/o	n/o	n/o	n/o	17	15	16	16	6.7	0.0
National Highway Traffic Safety Administration	32	136	142	195	196	222	279	214	25.7	−23.3
Subtotal (Department of Transportation)	279	1,020	1,700	2,273	2,483	2,558	2,861	2,919	11.8	2.0

Table A.1 (continued)

Agency	1970	1980	1990	1995	1996	1997	(Estimated) 1998	1999	Change (percent) 1997–98	1998–99
Department of Treasury:										
Bureau of Alcohol, Tobacco and Firearms	50	144	282	405	430	521	559	571	7.3	2.1
Chemical Safety and Hazard Investigation Board	n/o	n/o	n/o	1	n/o	n/o	4	7	n/o	75.0
Federal Mine Safety and Health Review Commission	n/o	4	4	6	6	5	6	6	20.0	0.0
National Transportation Safety Board	5	17	27	37	39	73	53	53	–27.4	0.0
TOTAL—Consumer Safety and Health	710	2,349	3,795	5,193	5,475	5,726	6,233	6,367	8.9	2.1
Job Safety and Other Working Conditions										
Department of Labor:										
Employment Standards Administration	37	124	155	168	188	216	221	238	2.3	7.7
Office of the American Workplace	12	55	79	31	2	n/o	n/o	n/o	n/o	n/o
Pension and Welfare Benefits Administration	n/o	n/o	n/o	69	67	71	89	92	25.4	3.4
Mine Safety and Health Administration	27	144	167	200	195	197	203	212	3.0	4.4
Occupational Safety and Health Administration	n/o	191	267	314	306	327	337	356	3.1	5.6
Subtotal (Department of Labor)	76	514	668	782	758	811	850	898	4.8	5.6
Architectural and Transportation Barriers Compliance Board	n/o	n/o	2	3	3	4	4	4	0.0	0.0
Equal Employment Opportunity Commission	13	124	185	233	233	240	242	279	0.8	15.3
National Labor Relations Board	39	108	141	175	170	175	175	184	0.0	5.1
Occupational Safety and Health Review Commission	n/o	7	6	8	8	8	8	8	0.0	0.0
TOTAL—Job Safety and Other Working Conditions	128	753	1,002	1,201	1,172	1,238	1,279	1,373	3.3	7.3

Table A.1 (continued)

Agency	1970	1980	1990	1995	1996	1997	(Estimated) 1998	(Estimated) 1999	Change (percent) 1997–98	Change (percent) 1998–99
Environment										
Council on Environment Quality	n/o	8	1	2	2	2	3	3	50.0	0.0
Department of Defense:										
Army Corps of Engineers	2	41	64	100	100	102	106	117	3.9	10.4
Department of Interior:										
Fish and Wildlife Service	7	68	159	197	167	201	204	253	1.5	24.0
Office of Surface Mining Reclamation and Enforcement	n/o	174	346	325	360	357	361	395	1.1	9.4
U.S. Geological Survey	n/o	n/o	n/o	177	115	114	123	130	7.9	5.7
Subtotal (Department of Interior)	7	242	505	699	642	672	688	778	2.4	13.1
Environmental Protection Agency	205	1,360	3,594	4,374	3,802	4,278	5,413	5,214	26.5	−3.7
TOTAL—Environment	214	1,651	4,164	5,175	4,546	5,054	6,210	6,112	22.9	−1.6
Energy										
Department of Energy:										
Economic Regulatory Administration	n/o	146	17	13	7	4	3	2	−25.0	−33.3
Petroleum Regulation	n/o	n/o	11	16	16	19	20	21	5.3	5.0
Federal Inspector for the Alaska Natural Gas Pipeline	n/o	8	n/o	n/o	n/o	n/o	n/o	n/o	n/o	n/o
Subtotal (Department of Energy)	0	154	28	29	23	23	23	23	0.0	0.0
Nuclear Regulatory Commission	64	396	434	553	516	498	486	492	−2.4	1.2
TOTAL—Energy	64	550	462	582	539	521	509	515	−2.3	1.2
TOTAL SOCIAL REGULATION	1,116	5,303	9,423	12,151	11,732	12,539	14,231	14,367	13.5	1.0

Table A.1 (continued)

Agency	1970	1980	1990	1995	1996	1997	(Estimated) 1998	1999	Change (percent) 1997–98	1998–99
					Economic Regulation					
Finance and Banking										
Department of the Treasury:										
Comptroller of the Currency	32	113	261	377	370	350	362	362	3.4	0.0
Farm Credit Administration	4	12	36	42	38	33	41	36	24.2	−12.2
Federal Deposit Insurance Corporation	38	113	495	442	473	563	570	509	1.2	−10.7
Federal Reserve System:										
Federal Reserve Banks	n/o	86	212	392	424	440	455	455	3.4	0.0
Federal Reserve System Board of Governors	5	20	30	68	70	71	75	75	5.6	0.0
Subtotal (Federal Reserve System)	5	106	242	460	494	511	530	530	3.7	0.0
National Credit Union Administration	7	18	46	63	64	76	74	76	−2.6	2.7
TOTAL—Finance and Banking	86	362	1,080	1,384	1,439	1,533	1,577	1,513	2.9	−4.1
Industry-Specific Regulation										
Civil Aeronautics Board	11	29	n/o	n/o	n/o	n/o	n/o	n/o	n/o	n/o
Commodity Futures Trading Commission	2	17	39	49	54	55	56	63	1.8	12.5
Federal Communications Commission	25	76	108	210	202	223	248	246	11.2	−0.8
Federal Energy Regulatory Commission	18	68	114	164	155	154	166	169	7.8	1.8
Federal Maritime Commission	4	11	15	19	15	14	14	14	0.0	0.0
Interstate Commerce Commission	27	78	44	41	9	n/o	n/o	n/o	n/o	n/o
Renegotiation Board	4	0	n/o	n/o	n/o	n/o	n/o	n/o	n/o	n/o
TOTAL—Industry-Specific Regulation	91	279	320	483	435	446	484	492	8.5	1.7

Table A.1 (continued)

Agency	1970	1980	1990	1995	1996	1997	(Estimated) 1998	1999	Change (percent) 1997–98	1998–99
General Business										
Cost Accounting Standards Board	n/o	1	n/o	n/o	n/o	n/o	n/o	n/o	n/o	n/o
Council on Wage and Price Stability	n/o	9	n/o	n/o	n/o	n/o	n/o	n/o	n/o	n/o
Department of Commerce:										
International Trade Administration	6	16	20	29	29	31	29	31	−6.5	6.9
Export Administration	n/o	n/o	43	41	44	45	50	53	11.1	6.0
Patent and Trademark Office	49	105	327	589	685	716	712	786	−0.6	10.4
Subtotal (Department of Commerce)	55	121	390	659	758	792	791	870	−0.1	10.0
Department of Justice:										
Antitrust Division	10	49	48	90	90	93	93	98	0.0	5.4
Federal Election Commission	n/o	9	15	26	26	28	31	37	10.7	19.4
Federal Trade Commission	21	66	70	102	101	103	107	113	3.9	5.6
International Trade Commission	4	14	38	44	40	41	41	46	0.0	12.2
Library of Congress:										
Copyright Office	3	14	20	26	28	29	34	35	17.2	2.9
Securities and Exchange Commission	22	72	162	288	301	316	322	352	1.9	9.3
TOTAL—General Business	115	355	743	1,235	1,344	1,402	1,419	1,551	1.2	9.3
TOTAL ECONOMIC REGULATION	292	996	2,143	3,102	3,218	3,381	3,480	3,556	2.9	2.2
GRAND TOTAL	1,408	6,299	11,566	15,253	14,950	15,920	17,711	17,923	11.3	1.2

Source: Melinda Warren and William F. Lauber, "Regulatory Changes and Trends: An Analysis of the 1999 Federal Budget," Center for the Study of American Business, 1999 Regulatory Report, Regulatory Budget Report 21, November 1998, pp. 10–12.

Notes: Numbers may not add to totals due to rounding; percentages are based on unrounded numbers and may not match the percentages of change between numbers on the chart, which have been rounded to the nearest million; n/o = agency not operational.

Table A.2
Costs of Federal Regulatory Agencies (Fiscal Years, Millions of Constant 1992 Dollars)

Agency	1970	1980	1990	1995	1996	1997	(Estimated) 1998	1999	Change (percent) 1997–98	1998–99
Social Regulation										
Consumer Safety and Health										
Consumer Product Safety Commission	n/o	71	37	41	37	38	40	40	4.2	1.1
Department of Agriculture:										
Agricultural Marketing Service	621	111	171	190	173	155	172	186	10.8	8.4
Animal and Plant Health Inspection Service	330	429	452	486	476	500	501	466	0.3	−7.0
Food Safety and Inspection Service	n/o	631	507	571	572	586	584	607	−0.2	4.0
Grain Inspection, Packers and Stockyards	10	104	56	55	52	50	58	62	16.5	6.4
Subtotal (Department of Agriculture)	961	1,275	1,186	1,301	1,273	1,290	1,315	1,322	2.0	0.5
Department of Health and Human Services:										
Food and Drug Administration	261	533	644	897	913	884	948	972	7.3	2.5
Department of Housing and Urban Development:										
Consumer Protection Programs	n/o	7	6	9	11	12	14	15	11.3	5.2
Department of Justice:										
Drug Enforcement Administration	7	22	30	49	56	55	63	62	14.7	−1.0
Department of Transportation:										
Coast Guard	307	825	971	1,268	1,305	1,324	1,353	1,382	2.2	2.1
Federal Aviation Administration	412	465	529	505	584	571	681	724	19.2	6.3
Federal Highway Administration	20	33	105	88	105	100	111	123	10.3	11.3
Federal Railroad Administration	n/o	n/o	n/o	71	72	64	73	72	15.0	−2.2
Surface Transportation Board	n/o	n/o	n/o	n/o	15	13	14	14	3.9	−1.0
National Highway Traffic Safety Administration	105	225	152	181	178	197	241	183	22.4	−24.1
Subtotal (Department of Transportation)	912	1,689	1,816	2,112	2,259	2,270	2,473	2,497	8.9	1.0

Table A.2 (continued)

Agency	1970	1980	1990	1995	1996	1997	(Estimated) 1998	1999	Change (percent) 1997–98	1998–99
Department of Treasury:										
Bureau of Alcohol, Tobacco and Firearms	163	238	301	376	391	462	483	488	4.5	1.1
Chemical Safety and Hazard Investigation Board	n/o	n/o	n/o	1	n/o	n/o	3	6	n/o	73.2
Federal Mine Safety and Health Review Commission	n/o	7	4	6	5	4	5	5	16.9	−1.0
National Transportation Safety Board	16	28	29	34	35	65	46	45	−29.3	−1.0
TOTAL—Consumer Safety and Health	2,320	3,889	4,054	4,826	4,982	5,081	5,387	5,447	6.0	1.1
Job Safety and Other Working Conditions										
Department of Labor:										
Employment Standards Administration	121	205	166	156	171	192	191	204	−0.3	6.6
Office of the American Workplace	39	91	84	29	2	n/o	n/o	n/o	n/o	n/o
Pension and Welfare Benefits Administration	n/o	n/o	n/o	64	61	63	77	79	22.1	2.3
Mine Safety and Health Administration	88	238	178	186	177	175	175	181	0.4	3.4
Occupational Safety and Health Administration	n/o	316	285	292	278	290	291	305	0.4	4.6
Subtotal (Department of Labor)	248	851	714	727	690	720	735	768	2.1	4.6
Architectural and Transportation Barriers Compliance Board	n/o	n/o	2	3	3	4	3	3	−2.6	−1.0
Equal Employment Opportunity Commission	42	205	198	217	212	213	209	239	−1.8	14.1
National Labor Relations Board	127	179	151	163	155	155	151	157	−2.6	4.1
Occupational Safety and Health Review Commission	n/o	12	6	7	7	7	7	7	−2.6	−1.0
TOTAL—Job Safety and Other Working Conditions	418	1,247	1,071	1,116	1,066	1,098	1,105	1,175	0.6	6.2

Table A.2 (continued)

Agency	1970	1980	1990	1995	1996	1997	(Estimated) 1998	1999	Change (percent) 1997–98	1998–99
Environment										
Council on Environment Quality	n/o	13	1	2	2	2	3	3	46.1	−1.0
Department of Defense:										
Army Corps of Engineers	7	68	68	93	91	91	92	100	1.2	9.2
Department of Interior:										
Fish and Wildlife Service	23	113	170	183	152	178	176	216	−1.1	22.7
Office of Surface Mining Reclamation and Enforcement	n/o	288	370	302	328	317	312	338	−1.5	8.3
U.S. Geological Survey	n/o	n/o	n/o	164	105	101	106	111	5.1	4.6
Subtotal (Department of Interior)	23	401	540	650	584	596	595	666	−0.3	11.9
Environmental Protection Agency	670	2,252	3,840	4,065	3,460	3,796	4,678	4,460	23.3	−4.7
TOTAL—Environment	699	2,733	4,449	4,809	4,136	4,484	5,367	5,228	19.7	−2.6
Energy										
Department of Energy:										
Economic Regulatory Administration	n/o	242	18	12	6	4	3	2	−26.9	−34.0
Petroleum Regulation	n/o	n/o	12	15	15	17	17	18	2.5	3.9
Federal Inspector for the Alaska Natural Gas Pipeline	n/o	13	n/o	n/o	n/o	n/o	n/o	n/o	n/o	n/o
Subtotal (Department of Energy)	n/o	255	30	27	21	20	20	20	−2.6	−1.0
Nuclear Regulatory Commission	209	656	464	514	470	442	420	421	−4.9	0.2
TOTAL—Energy	209	911	494	541	490	462	440	441	−4.8	0.1
TOTAL SOCIAL REGULATION	3,647	8,780	10,067	11,293	10,675	11,126	12,300	12,290	10.6	−0.1

Table A.2 (continued)

Agency	1970	1980	1990	1995	1996	1997	(Estimated) 1998	1999	Change (percent) 1997–98	1998–99
					Economic Regulation					
Finance and Banking										
Department of the Treasury:										
Comptroller of the Currency	105	187	279	350	337	311	313	310	0.7	−1.0
Farm Credit Administration	13	20	38	39	35	29	35	31	21.0	−13.1
Federal Deposit Insurance Corporation	124	187	529	411	430	500	493	435	−1.4	−11.6
Federal Reserve System:										
Federal Reserve Banks	n/o	142	226	364	386	390	393	389	0.7	−1.0
Federal Reserve System Board of Governors	16	33	32	63	64	63	65	64	2.9	−1.0
Subtotal (Federal Reserve System)	16	175	259	428	449	453	458	453	1.0	−1.0
National Credit Union Administration	23	30	49	59	58	67	64	65	−5.2	1.6
TOTAL—Finance and Banking	281	599	1,154	1,286	1,309	1,360	1,363	1,294	0.2	−5.0
Industry-Specific Regulation										
Civil Aeronautics Board	36	48	n/o	n/o	n/o	n/o	n/o	n/o	n/o	n/o
Commodity Futures Trading Commission	7	28	42	46	49	49	48	54	−0.8	11.3
Federal Communications Commission	82	126	115	195	184	198	214	210	8.3	−1.8
Federal Energy Regulatory Commission	59	113	122	152	141	137	143	145	5.0	0.8
Federal Maritime Commission	13	18	16	18	14	12	12	12	−2.6	−1.0
Interstate Commerce Commission	88	129	47	38	8	n/o	n/o	n/o	n/o	n/o
Renegotiation Board	13	0	n/o	n/o	n/o	n/o	n/o	n/o	n/o	n/o
TOTAL—Industry-Specific Regulation	297	462	342	449	396	396	418	421	5.7	0.6

Table A.2 (continued)

Agency	1970	1980	1990	1995	1996	1997	(Estimated) 1998	1999	Change (percent) 1997–98	1998–99
General Business										
Cost Accounting Standards Board	n/o	2	n/o	n/o	n/o	n/o	n/o	n/o	n/o	n/o
Council on Wage and Price Stability	n/o	15	n/o	n/o	n/o	n/o	n/o	n/o	n/o	n/o
Department of Commerce:										
International Trade Administration	20	26	21	27	26	28	25	27	−8.9	5.8
Export Administration	n/o	n/o	46	38	40	40	43	45	8.2	4.9
Patent and Trademark Office	160	174	349	547	623	635	615	672	−3.1	9.3
Subtotal (Department of Commerce)	180	200	417	612	690	703	684	744	−2.7	8.9
Department of Justice:										
Antitrust Division	33	81	51	84	82	83	80	84	−2.6	4.3
Federal Election Commission	n/o	15	16	24	24	25	27	32	7.8	18.1
Federal Trade Commission	69	109	75	95	92	91	92	97	1.2	4.5
International Trade Commission	13	23	41	41	36	36	35	39	−2.6	11.0
Library of Congress:										
Copyright Office	10	23	21	24	25	26	29	30	14.2	1.9
Securities and Exchange Commission	72	119	173	268	274	280	278	301	−0.7	8.2
TOTAL—General Business	376	588	794	1,148	1,223	1,244	1,226	1,327	−1.4	8.2
TOTAL ECONOMIC REGULATION	954	1,649	2,290	2,883	2,928	3,000	3,008	3,042	0.3	1.1
GRAND TOTAL	4,601	10,429	12,357	14,176	13,603	14,126	15,308	15,332	8.4	0.2

Source: Melinda Warren and William F. Lauber, "Regulatory Changes and Trends: An Analysis of the 1999 Federal Budget," Center for the Study of American Business, 1999 Regulatory Report, Regulatory Budget Report 21, November 1998, pp. 13–15.

Notes: Numbers may not add to totals due to rounding; percentages are based on unrounded numbers and may not match the percentages of change between numbers on the chart, which have been rounded to the nearest million; n/o = agency not operational.