

GAO

Briefing Report to the Ranking Minority  
Member, Committee on Governmental  
Affairs, U.S. Senate

March 1995

# REGULATORY REFORM

## Information on Costs, Cost-Effectiveness, and Mandated Deadlines for Regulations



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United States  
General Accounting Office  
Washington, D.C. 20548

Program Evaluation and  
Methodology Division

B-260553

March 8, 1995

The Honorable John Glenn  
Ranking Minority Member  
Committee on Governmental Affairs  
United States Senate

Dear Senator Glenn:

On February 21, 1995, you asked us to provide you with information relevant to the Committee's consideration of regulatory reform legislation. On March 3, we briefed the staff of the Governmental Affairs Committee and other invited Senate staff members on the cumulative costs of federal regulations, the cost-effectiveness of regulations, and trends in mandated deadlines for significant regulations. In each area, we presented additional information relevant to environmental regulations. This report summarizes the information we presented in that briefing.

## Background

Over time, the federal government has constructed a set of intricate controls over the economy. From agricultural price supports and export subsidies to automobile safety and occupational health, the Congress has passed laws to achieve public policy goals. Through these laws, federal agencies are often directed to issue regulations to achieve the stated goals. In recent years, the Congress has removed some regulatory controls, such as those dealing with restrictions on the ability of airlines to enter markets. However, other regulations, such as those designed to assist individuals with disabilities and more stringent protections against air pollution have been added.

Currently, the Congress is actively debating the way in which regulations are developed, and it is now considering legislation that would direct changes in procedures for agencies to issue regulations. Questions of the cost and cost-effectiveness of regulations and the degree to which agencies' regulatory agendas are controlled by the legislative and judicial branches have been considerations in this debate. You requested that we briefly review available sources of research on these topics to provide you with background information prior to consideration of legislation that would modify federal regulatory policy.

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## Results

Our review indicates that there is a large degree of uncertainty about basic questions such as the costs and benefits of regulations. In addition, agencies operate under distinct statutory mandates, some requiring and others prohibiting costs to be considered.

Estimates of total regulatory costs can vary depending on assumptions about what constitutes regulatory cost. For example, economists argue whether or not transfers, such as the added cost a consumer pays for goods in the marketplace because of agricultural price supports, should be included in such estimates. Others are concerned about including process costs, such as those for completing tax returns. These two cost categories account for over half of some estimates. The cost-per-life-saved, or cost-effectiveness, varies dramatically across agencies, indicating that other factors influence regulatory decision-making. Regarding trends in mandated deadlines for regulatory actions, they have increased over recent years, particularly for the Environmental Protection Agency (EPA). Details of our review are summarized below and presented in detail in the body of the report.

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## Cumulative Costs of Regulations

A number of approaches have been used to assess the costs imposed on the economy by federal regulations. Depending upon the measures used and the assumptions made, the estimates can vary widely. In addition to the current debate about the extent of the dollar costs to the economy, there is also a debate about the nature of the impact of regulations on the economy. Although a regulation imposes costs on society and can slow economic growth, it has a net positive effect when the value of its benefits exceeds its cost. In addition, a recent view is that some regulations (certain environmental and occupational safety and health regulations in particular) have been a net positive force driving private firms and the economy as a whole to become more competitive in international markets.<sup>1</sup>

However, for this effort, we were specifically asked to review the work of Thomas Hopkins, which is a compilation of other efforts in this area, drawing on many studies to produce estimates of the cumulative cost of

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<sup>1</sup>Adam B. Jaffe et al., "Environmental Regulation and the Competitiveness of U.S. Manufacturing: What Does the Evidence Tell Us?" *Journal of Economic Literature* (forthcoming).

federal regulations.<sup>2</sup> We report his principal findings and discuss them in the context of their size vis-a-vis the overall economy.

One indicator that Hopkins uses to assess the cost of federal regulations is federal spending on regulatory programs. Reporting work conducted by the Center for the Study of American Business, he measures this by summing the budgets of the major federal regulatory agencies.<sup>3</sup> He notes that federal spending on regulatory programs increased from approximately \$10 billion in 1977 to about \$14 billion in 1992, in constant 1995 dollars.<sup>4</sup> However, when we analyze this finding as a percentage of gross domestic product (GDP), we see that federal spending remained relatively constant over this period.

Hopkins' estimate of total regulatory costs is his primary indicator of the cumulative costs that federal regulations place on the economy. According to his calculation, cumulative regulatory costs to the economy increased about 9 percent from 1977 to 1994. At the same time, because GDP grew steadily, the percent of national product devoted to the cost of federal regulations decreased over the period.

Hopkins includes five categories of costs in his estimate of the "cost of regulation" on the economy. These are the efficiency costs (direct costs) of (1) environmental regulations, (2) other social regulations, and (3) economic regulations. He also includes (4) the costs to the economy stemming from "process" requirements (such as providing information to the government—notably tax information). Lastly, he includes (5) transfers stemming from regulations. As direct costs, these first four categories represent resources lost to the economy through regulation. For example, a \$1 million cost stemming from an environmental regulation represents the amount of economic resources that are not available to be spent on other economic activities. Through regulation, society has diverted some of its resources to achieve an environmental goal. However, as noted above, transfers are not costs to society as a whole because they do not directly reduce the resources available to society. Transfers do redistribute resources within society and thus place a burden on some groups while benefiting others.

<sup>2</sup>Thomas D. Hopkins, *Cost of Regulation*, A report to the Regulatory Information Service Center, Aug. 1991; "Federal Regulatory Burdens," RIT Public Policy Working Paper, Rochester, N.Y.: Rochester Institute of Technology, 1993; and unpublished data.

<sup>3</sup>Melinda Warren, *Regulation on the Rise: Analysis of the Federal Budget for 1992*, Occasional Paper No. 89. St. Louis: Center for Study of American Business, Washington University, July 1991.

<sup>4</sup>Costs cited throughout this report have been standardized to constant 1995 dollars.

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For example, Hopkins estimates that in 1990, the "costs" associated with these five categories were: environmental regulations, \$110 billion; other social regulations, \$37 billion; economic regulations, \$80 billion; process costs, \$191 billion; and transfers, \$143 billion. His total estimate for 1990 was, thus, \$562 billion.<sup>5</sup>

Many economists argue that transfers should not be included in this type of analysis of the burden placed on the economy by regulations because transfers are not considered to be "costs." A different kind of concern can be raised about process costs. Taking these estimates at face value may be problematic because of measurement concerns. Also, any change associated with this category may be difficult to achieve, since the majority of the estimate derives from completing tax forms. Excluding these, Hopkins' 1990 estimate would drop from \$562 billion to \$228 billion, or 3.6 percent of GDP.

What is clear from these analyses is that the measures and assumptions used have large impacts on the estimates, imposing a great deal of uncertainty on them.

We prepared an additional analysis to examine in further detail the question of the costs of environmental regulations. One measure of the costs imposed on the economy by environmental regulations is expenditures related to pollution abatement. Such expenditures have increased 90 percent, from \$60 billion to \$113 billion, in constant dollars, from 1972 to 1992. This period includes the enactment of almost all the environmental statutes. However, since the mid-1970s, when compared to the economic growth of the nation, these expenditures have remained relatively constant as a percentage of GDP.

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## Cost-Effectiveness of Regulations

Several federal agencies issue regulations directing that actions be taken to reduce risks, thereby having the potential to save lives. These agencies operate under distinct statutory mandates requiring that decisions be made using different analyses and decision rules. Some statutes require both the costs and benefits of a regulation to be taken into account before issuing a rule, while other statutes specifically prohibit cost considerations from being used in decision-making. The studies we reviewed examined the cost-effectiveness of agency actions without regard to the type of decision rules called for by the various statutes.

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<sup>5</sup>Numbers may not sum perfectly due to rounding.

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Analyses of cost-effectiveness are typically performed by computing a ratio of the projected lives saved to the projected costs associated with the action. A low cost-per-life-saved should not be taken to indicate a low value placed on life by an agency, however, as it may simply indicate that there are inexpensive alternatives available that will save many lives.

We reviewed several studies that have examined cost-effectiveness. These studies largely focus on lives saved by the regulations and do not include other benefits that may accrue, such as reduced morbidity or aesthetic improvements. Estimates of the implicit cost-per-life-saved range from thousands of dollars per life for several regulations to millions of dollars per life for others.<sup>6</sup>

Overall, the studies indicate that

- cost-effectiveness across agencies and statutes varies enormously, and
- agencies might have included cost considerations in some decisions.

A number of factors can explain divergence in estimated cost-effectiveness. As noted above, statutory mandates for making these decisions often differ. In addition, some of these regulations could have benefits other than mortality reduction that could explain some of the divergence. Also, the costs of reducing risks inevitably differ. Given these factors, we would not expect to find a convergence of cost-effectiveness across agencies, statutes, and technologies.

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## Trends in Mandated Deadlines for Regulations

The number of significant regulatory actions (SRAs) in seven departments and agencies whose regulatory documents we examined has been increasing over recent years.<sup>7</sup> Over the period 1985 to 1992, the percentage of regulations issued under a mandated deadline has increased, with the level in the 1990s being higher than in the 1980s, but the proportion of regulations issued under a deadline remained below 50 percent for the seven major regulatory agencies we examined. However, the proportion was highest at EPA, where the majority of significant regulatory actions in recent years were issued under a mandated deadline.

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<sup>6</sup>In fact, studies cite several regulations that were estimated to have “negative costs”—that is, they would save the economy money (exclusive of the intended environmental or social benefit).

<sup>7</sup>Significant regulatory actions are defined as the priority regulatory activities of the agencies. SRAs may or may not have an associated deadline mandated by the courts or by statute.

## Objectives, Scope, and Methodology

Our objective was to provide background information relevant to three issues: (1) the cumulative costs that federal regulations place on the economy, and more specifically, costs associated with environmental regulations; (2) the cost-effectiveness of regulations and variations between regulatory alternatives considered and those finally adopted; and (3) trends in statutorily or judicially mandated deadlines for significant regulations, along with significant environmental regulations issued for each of the years since 1985. We were asked to acquire and report on data in specific studies, and we did no significant methodological review of the data presented in those studies, due to time constraints. We prepared original analyses, where appropriate, to address the objectives.

To review the cumulative costs placed on the economy by federal regulations, we analyzed prior studies that have provided such estimates. We were specifically asked to examine the work of Thomas Hopkins, and we prepared additional analyses using data from his work. We also analyzed data on the costs associated with environmental regulations, drawing on information published by the Bureau of the Census and the EPA. All cost figures throughout this report have been converted to constant 1995 dollars.

To review the cost-effectiveness of regulations, we examined studies that have analyzed the cost-per-life-saved projected for various regulatory actions. We prepared some additional analyses from these data comparing the projected cost-effectiveness of regulatory actions that were considered, but never promulgated as rules, with those actions that were issued within the same agencies. The actions contained in these studies are typically the subset of actions for which complete data were available to the authors on the projected costs and lives saved. These should not be taken to be representative of all agency actions, for which such cost-effectiveness computations cannot be performed.

To review trends in statutorily or judicially mandated deadlines for significant regulations, we analyzed information contained in the Regulatory Program for all the years in which it was published (1985-88, 1990-92).<sup>8</sup> This document provides information on all "significant regulatory actions" issued by the major regulatory agencies. We limited our analyses to seven agencies: the Department of Agriculture, the Department of Energy, the Environmental Protection Agency, the Food and Drug Administration, the Department of the Interior, the Department

<sup>8</sup>Executive Office of the President, Office of Management and Budget (OMB), Regulatory Program of the United States Government, 1985-88 and 1990-92.



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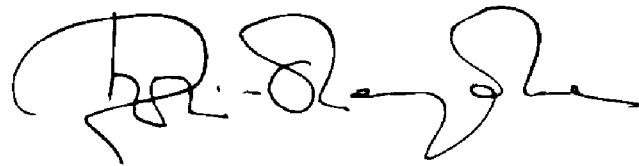
of Labor, and the Department of Transportation. These agencies were chosen because they represent the seven largest regulatory agencies that have been cited in discussions of regulatory reform.

Our review followed generally accepted government auditing standards and was performed in February and March 1995. We did not obtain formal agency comments on this report because of time limitations. We obtained informal comments on our analyses from Dr. Thomas Hopkins and Dr. Tammy Tengs, the two authors whose work we examined in the greatest depth, and for which we present additional analyses of their data. They concurred with our presentation of the information.

We are sending copies of this report to the members of the Committee and to other interested parties. Copies will also be made available to others upon request.

The major contributors to this briefing report are listed in appendix II. If you or your staff have any questions about this report, please call me on (202) 512-3092.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Kwai-Cheung Chan', with a long horizontal flourish extending to the right.

Kwai-Cheung Chan  
Director of Program Evaluation  
in Physical Systems Areas

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**Abbreviations**

CAA	Clean Air Act
CPSC	Consumer Product Safety Commission
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FDA	Food and Drug Administration
FHWA	Federal Highway Administration
GDP	Gross domestic product
NHTSA	National Highway Traffic Safety Administration
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation and Recovery Act
SRA	Significant regulatory action

# Cumulative Costs of Regulations

## GAO Studies of Regulatory Costs

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- We reviewed a number of studies of the cumulative costs of regulations.
- The studies all point out that federal regulations have a significant cost for the nation's economy.

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**Briefing Section I**  
**Cumulative Costs of Regulations**

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Different approaches are used to assess the costs imposed on the economy by federal regulations. Depending upon the measures used and the assumptions made, the estimates can vary widely. (See the bibliography for a list of the studies we reviewed.)

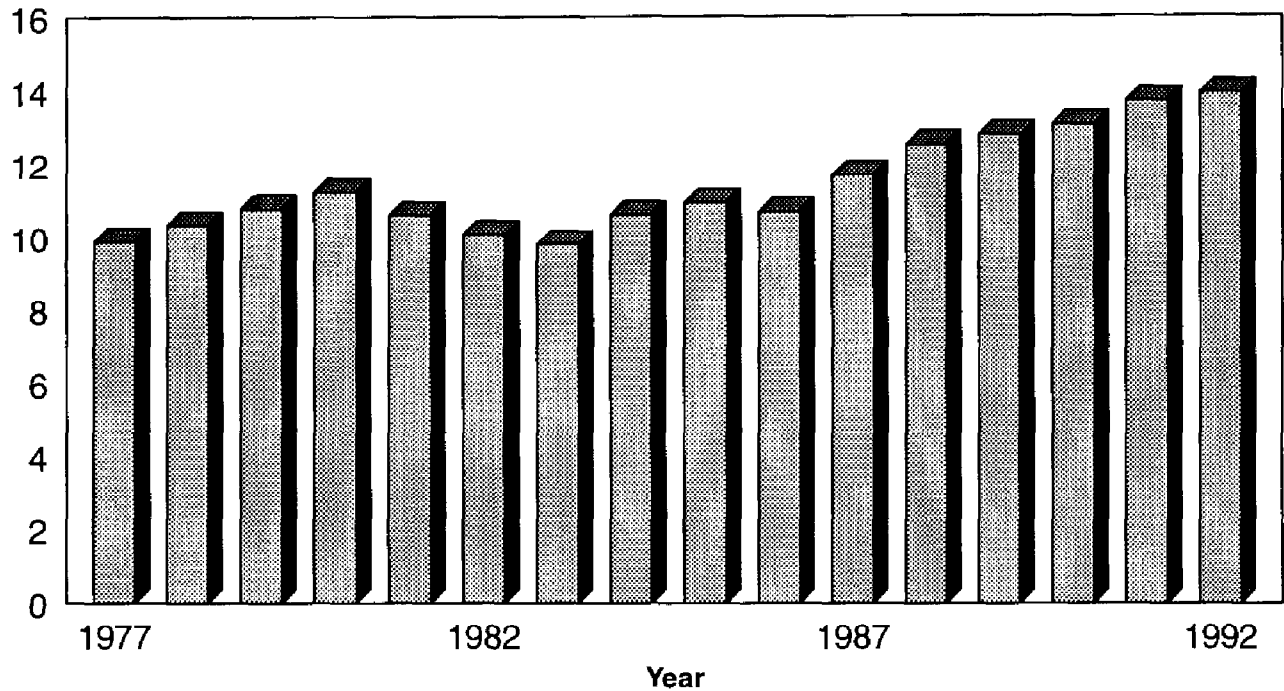
We were specifically asked to review the work of Thomas Hopkins, an economics professor at the Rochester Institute of Technology.<sup>1</sup> His work is a compilation of other efforts in this area, drawing on many studies to produce estimates of the cumulative cost of federal regulations.

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<sup>1</sup>Thomas D. Hopkins, *Cost of Regulation*, A Report to the Regulatory Information Service Center, Aug. 1991; "Federal Regulatory Burdens," RIT Public Policy Working Paper, Rochester, N.Y.: Rochester Institute of Technology, 1993; and unpublished data.

## GAO Federal Spending on Regulatory Programs

Dollars in Billions

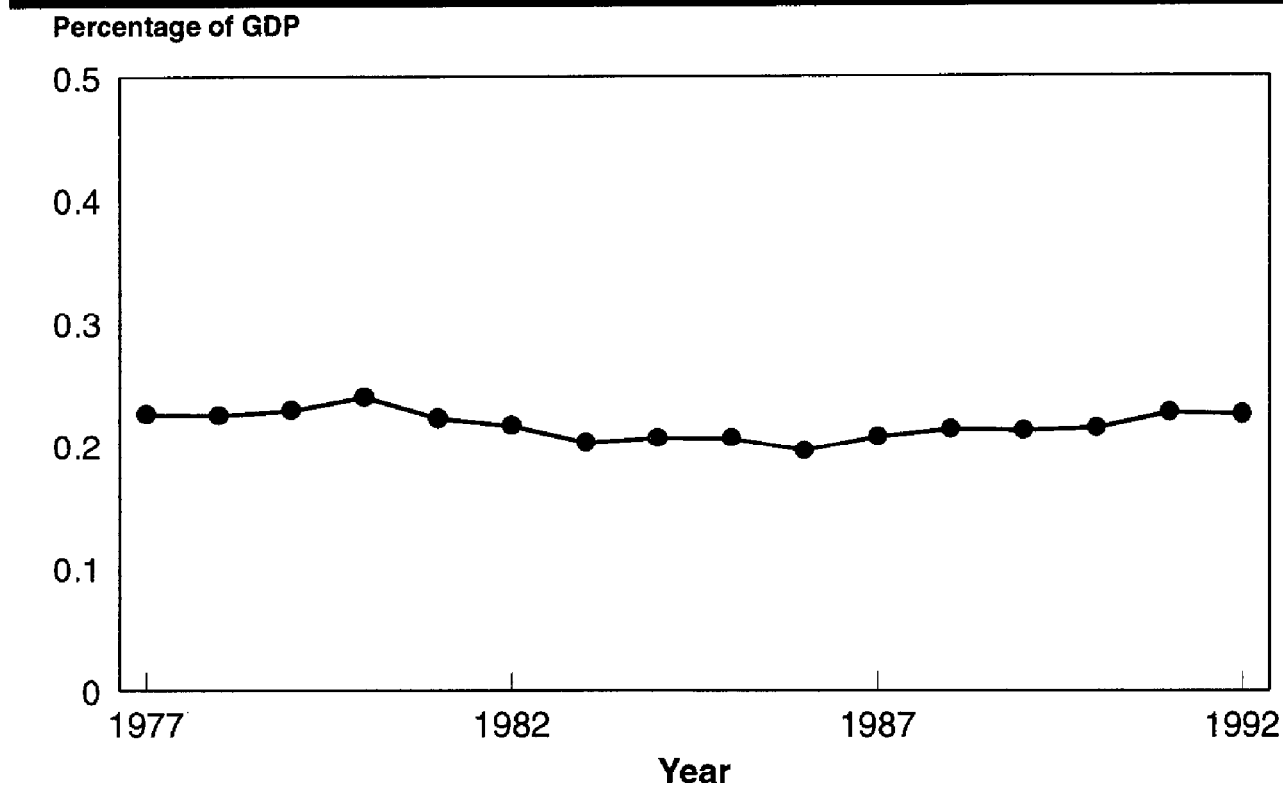


Source: Data derived from Hopkins, 1991; converted to constant 1995 dollars.

One indicator that Hopkins uses to assess the cost of federal regulations is federal spending on regulatory programs. Drawing upon estimates made by the Center for the Study of American Business, he sums the budgets of the major federal “regulatory” agencies including EPA, Coast Guard, FDA, and FAA.<sup>2</sup> Hopkins reports an estimate of federal spending on regulatory programs increasing from approximately \$10 billion to about \$14 billion from 1977 to 1992.

<sup>2</sup>Warren, 1991 and 1994.

## GAO Federal Spending on Regulatory Programs

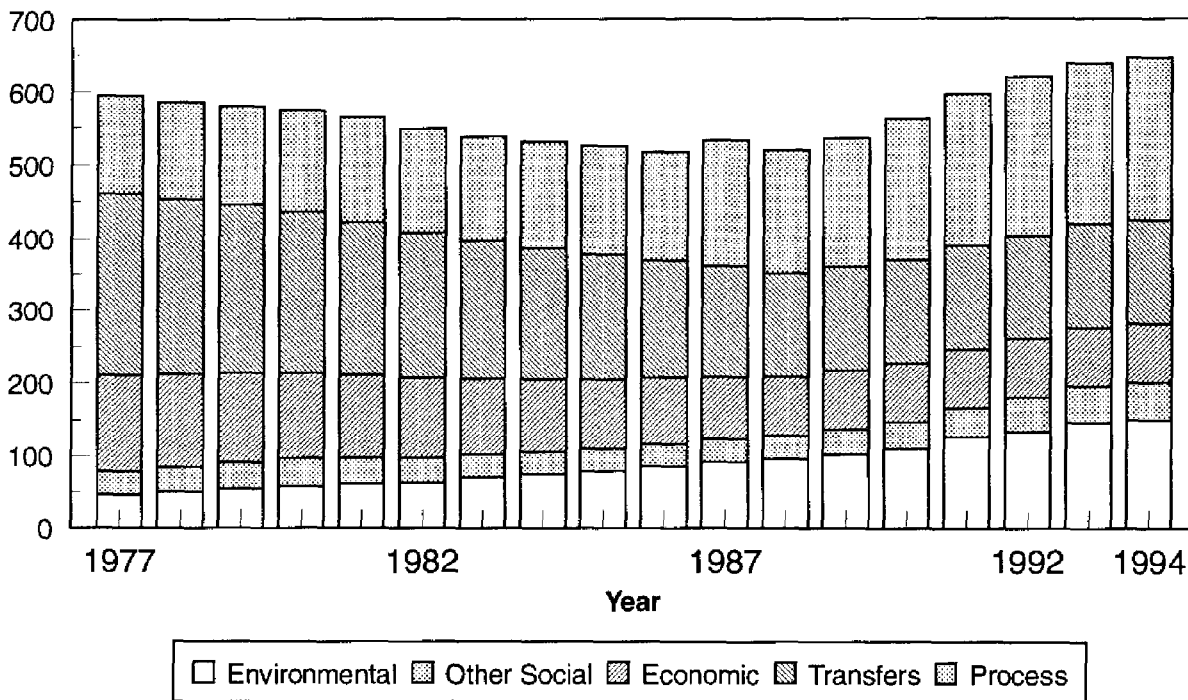


Source: Data derived from Hopkins, 1991, and Bureau of Economic Analysis, 1994; converted to constant 1995 dollars.

As a percentage of GDP, however, federal spending remained relatively constant over this period.

# GAO Hopkins' Estimates of Total Regulatory Costs

Dollars in Billions



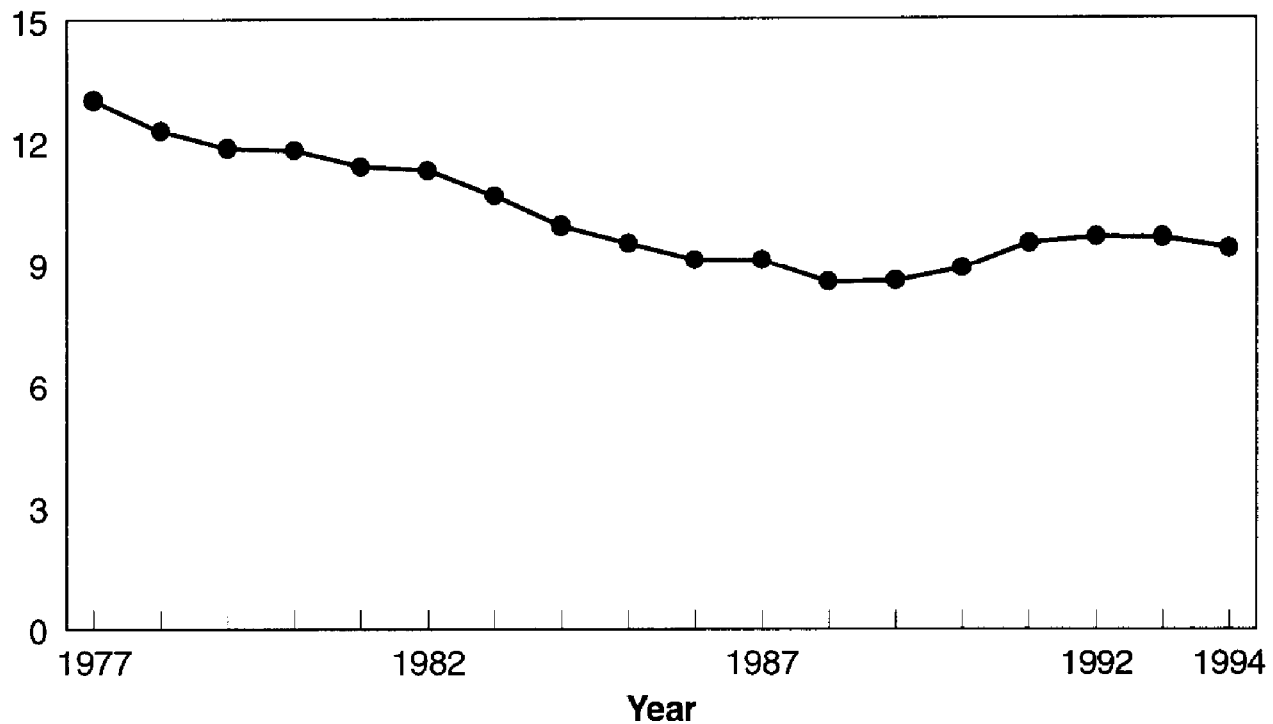
Source: Data derived from Hopkins, 1993; converted to constant 1995 dollars.

Hopkins computes an estimate of the total regulatory costs as his primary indicator of the cumulative costs that federal regulations place on the economy. Including all five cost categories (environmental, other social, economic, transfers due to economic regulation, and process costs), he estimates that cumulative regulatory costs to the economy declined from \$595 billion in 1977 to \$517 billion in 1986, rose slightly in 1987, then



## GAO Hopkins' Estimates of Total Regulatory Costs

Percentage of GDP



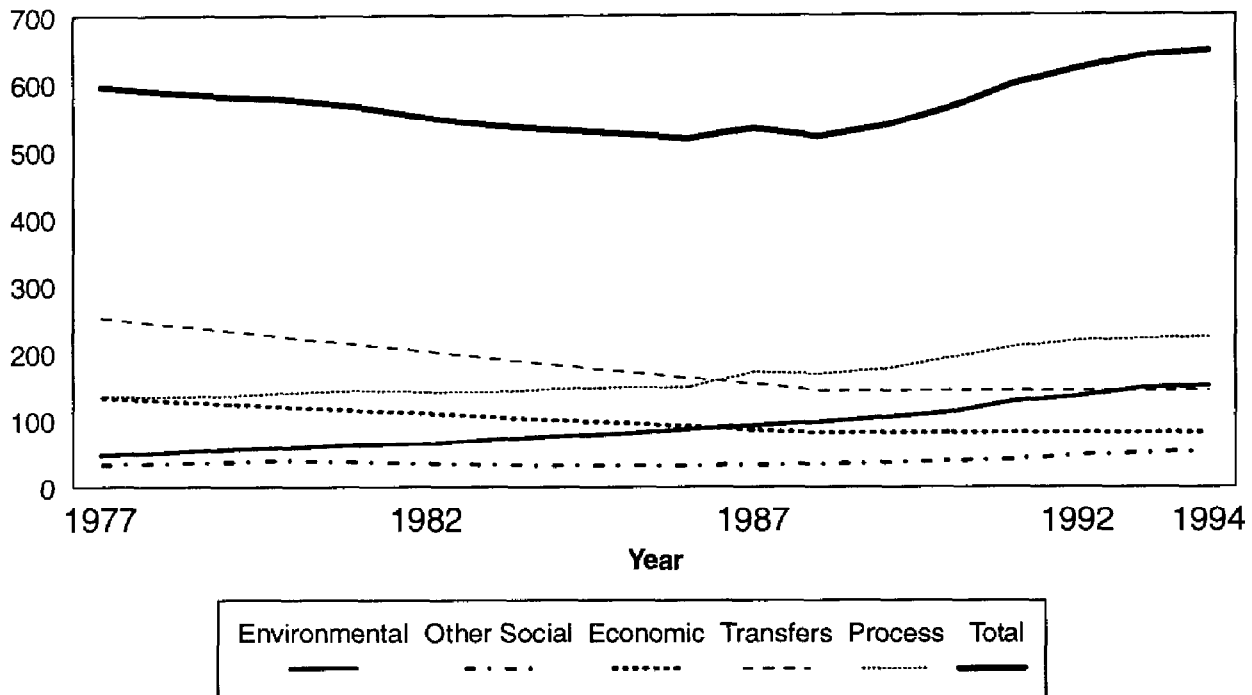
Source: Data derived from Hopkins, 1993, and Bureau of Economic Analysis, 1994; converted to constant 1995 dollars.

dipped in 1988 before increasing steadily to \$647 billion in 1994. This represents an increase of about 9 percent from 1977 to 1994.

At the same time, GDP grew steadily; hence, the percent of GDP devoted to the costs of federal regulations decreased over the period.

## GAO Hopkins' Estimates of Costs by Category

Dollars in Billions



Source: Data derived from Hopkins, 1993; converted to constant 1995 dollars.

The chart above provides Hopkins' estimates for the five categories of costs he includes:

- **Efficiency costs of environmental regulations.** These are the direct costs imposed by the range of environmental regulations. He incorporated an estimate of the impact of the 1990 Amendments to the Clean Air Act.
- **Efficiency costs of other social regulations.** These include consumer safety, nuclear safety, worker health, and worker security and pensions.

- **Efficiency costs of economic regulations.** These include agricultural, communications, transportation, energy, financial, construction, and international trade regulations.
- **Transfers stemming from economic regulations.** About half this estimate arises from transfers to stimulate exports. Also included in this category are transfers due to agricultural price supports.
- **Process costs.** This category is based upon the OMB estimate of paperwork burden hours, multiplied by \$20 per hour. Tax forms account for about 80 percent of the estimate.

As can be seen in the chart, environmental regulations were estimated as the fastest growing source of costs among the five categories. The 1990 estimate for this category was \$110 billion.

Other social regulation costs gradually rose between 1977 and 1980, then declined until 1984, and resumed rising about 1987. The 1990 estimate for this category was \$37 billion.

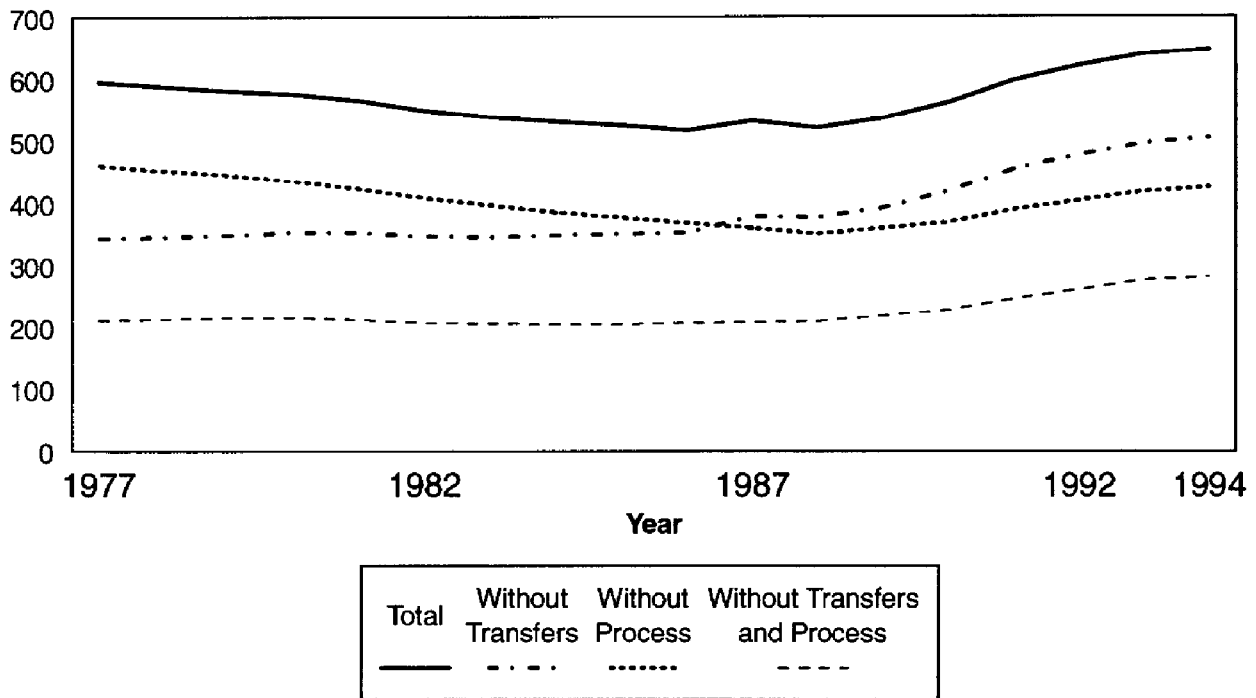
Economic regulation costs declined steadily until 1988. His estimate for 1988 onward is \$80 billion.

Transfers stemming from economic regulations declined steadily until 1988. He assumed they remained constant from that point forward at \$143 billion, in constant 1995 dollars.

Process costs were estimated at \$191 billion for 1990.

# GAO Hopkins' Estimates of Total Costs, With Adjustments

Dollars in Billions



Source: Data derived from Hopkins, 1993; converted to constant 1995 dollars.

Transfers are not considered to be “costs” to the economy by many economists. Rather, they represent a loss to one group and a corresponding benefit to another. As an example, the principal effect of agricultural price supports is a payment to farmers by consumers, not a net loss to the economy.

Including process costs may also be problematic because of measurement concerns. Also, any change associated with this category may be difficult

to achieve, since the majority of the estimate derives from completing tax forms. GAO recently pointed out that "a reliable estimate of the overall costs of tax compliance is not currently available," and in any event, "reducing (tax) compliance burden would be a difficult undertaking because of the various policy tradeoffs, such as revenue and taxpayer equity, that must be made."<sup>4</sup>

Excluding these, Hopkins' 1990 estimate would drop from \$562 billion to \$228 billion, or 3.6 percent of GDP.

What is clear is that the measures and assumptions used have large impacts on the estimates, imposing a great deal of uncertainty on them.

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<sup>4</sup>See Tax System Burden: Tax Compliance Burden Faced by Business Taxpayers (GAO/T-GGD-95-42; Dec. 9, 1994).

## GAO Studies of the Costs of Environmental Regulations

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Three principal sources of information

- Pollution Abatement Costs and Expenditures (PACE) by Census
- EPA, Environmental Investments: The Cost of a Clean Environment
- Rutledge and Vogan, "Pollution Abatement and Control Expenditures, 1972-92," Bureau of Economic Analysis, Department of Commerce

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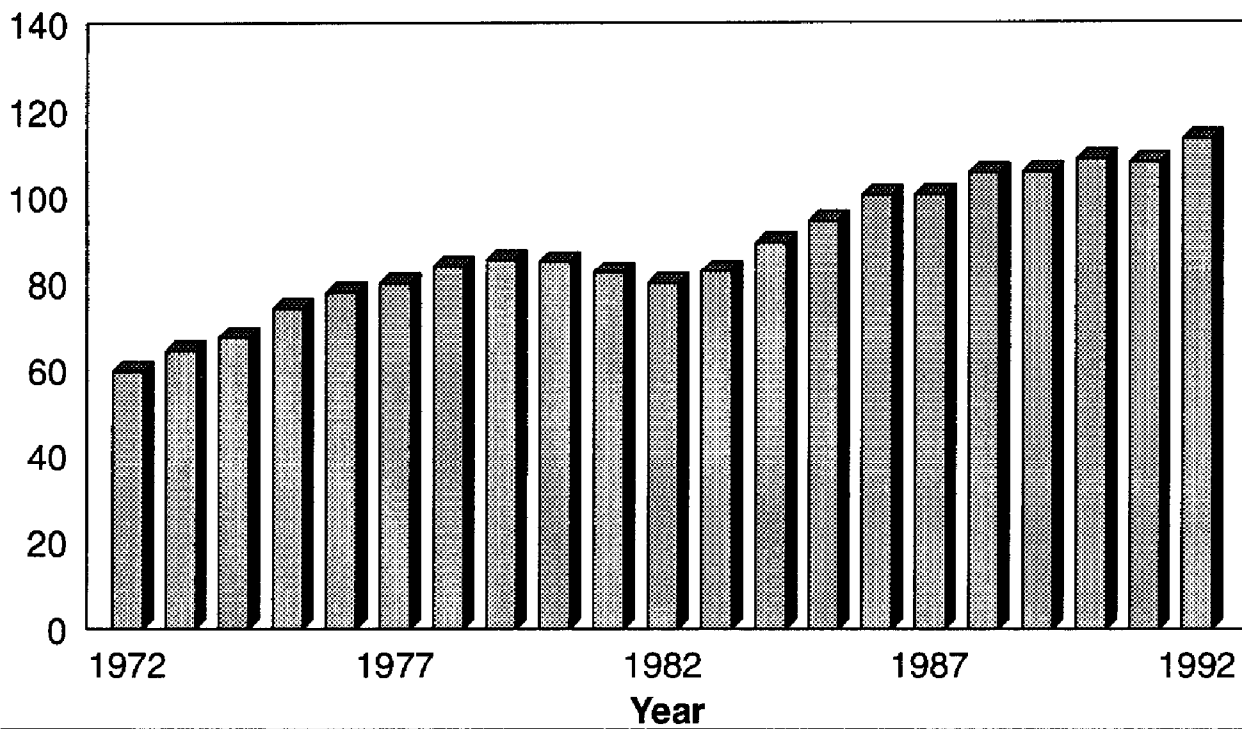
**Briefing Section I**  
**Cumulative Costs of Regulations**

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We were asked to consider additional information that would be relevant to understanding the costs associated with environmental regulations.

# GAO Pollution Abatement and Control Expenditures

Dollars in Billions



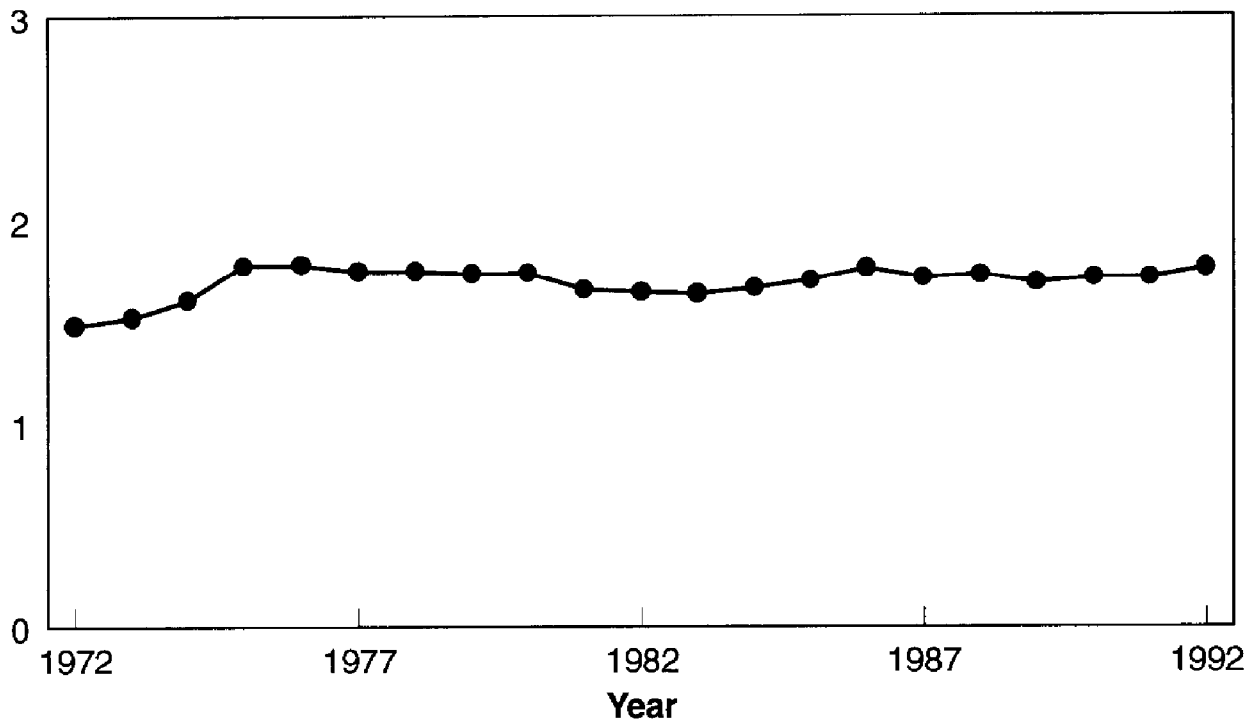
Source: Data derived from Bureau of Economic Analysis, 1994; converted to constant 1995 dollars.

Expenditures related to pollution abatement have increased from \$60 billion to \$113 billion, in constant dollars, from 1972 to 1992, a 90-percent increase. This period includes the enactment of almost all the major environmental statutes.



## GAO Pollution Abatement and Control Expenditures

Percentage of GDP



Source: Data derived from Bureau of Economic Analysis, 1994; converted to constant 1995 dollars.

Since the mid-1970s, these expenditures have remained relatively constant as a percentage of GDP.

# Cost-Effectiveness of Regulations

## GAO Defining Cost-Effectiveness

- Before issuing a significant regulation to reduce risks, agencies may prepare forecasts of the costs of the regulations and the lives that will be saved.
- We were asked to examine the range of predicted costs and lives saved by these regulations--that is, their cost-effectiveness.

*Several federal agencies issue regulations directing that actions be taken to reduce risks, thereby saving lives. These agencies operate under distinct statutory mandates requiring that decisions be made using different analyses and decision rules. Some statutes require both the costs and benefits of a regulation to be taken into account before issuing a rule, while other statutes specifically prohibit cost considerations to be used as a basis in decision-making. The studies we examined looked at the cost-effectiveness of agency actions, without regard to the type of decision rules called for by the various statutes.*

A low cost-per-life-saved should not be taken to indicate a low value placed on life by an agency, however, as it may simply indicate that there are inexpensive alternatives available that will save many lives. Thus, an agency issuing a regulation with an associated cost of \$10,000 per life saved should not be assumed to value life as worth only 10 percent of what another agency uses when it issues a rule with an associated cost of \$100,000 per life saved.

We reviewed several studies that have examined this issue. (See the bibliography for a list of the studies included.) These studies largely focus on lives saved by the regulations and do not include other benefits that may accrue, such as reduced morbidity or aesthetic improvements. The actions contained in these studies are typically the subset of actions for which complete data were available to the authors on the projected costs and lives saved. These should not be taken to be representative of all agency actions, for which such cost-effectiveness computations cannot be performed.

The studies indicate that

- cost-effectiveness across agencies and statutes varies enormously, and
- agencies may be including cost considerations in many decisions.

A number of factors can explain divergence in estimated cost-effectiveness. As noted above, statutory mandates for making these decisions often differ. In addition, some of these regulations could have benefits other than mortality reduction that could explain some of the divergence. Also, the costs of reducing risks inevitably differ. Given these factors, we would not expect to find a convergence of cost-effectiveness across agencies, statutes, and technologies.

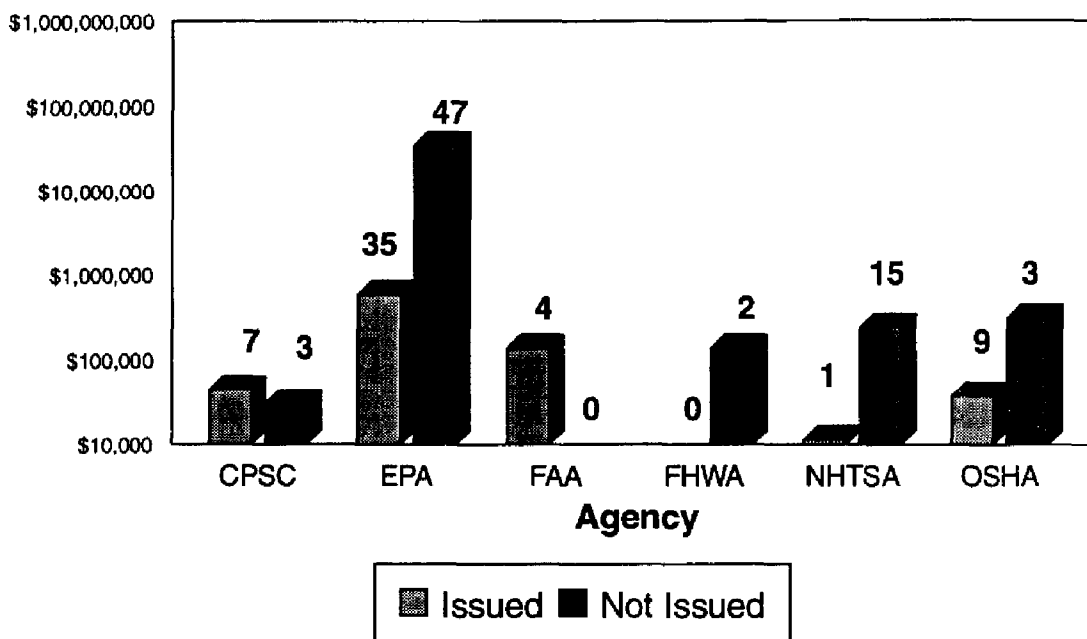
We provide some additional analyses of the most recent comprehensive work in this area, that of Tammy Tengs et al.<sup>1</sup> Tengs is affiliated with the Center for Health Policy Research and Education at Duke University.

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<sup>1</sup>Tammy Tengs et al., "Five-Hundred Life-Saving Interventions and Their Cost-Effectiveness," forthcoming in *Risk Analysis*, June 1995; and Tengs, unpublished data.

## GAO Cost-Effectiveness of Six Agencies' Regulations

Cost per life-year saved



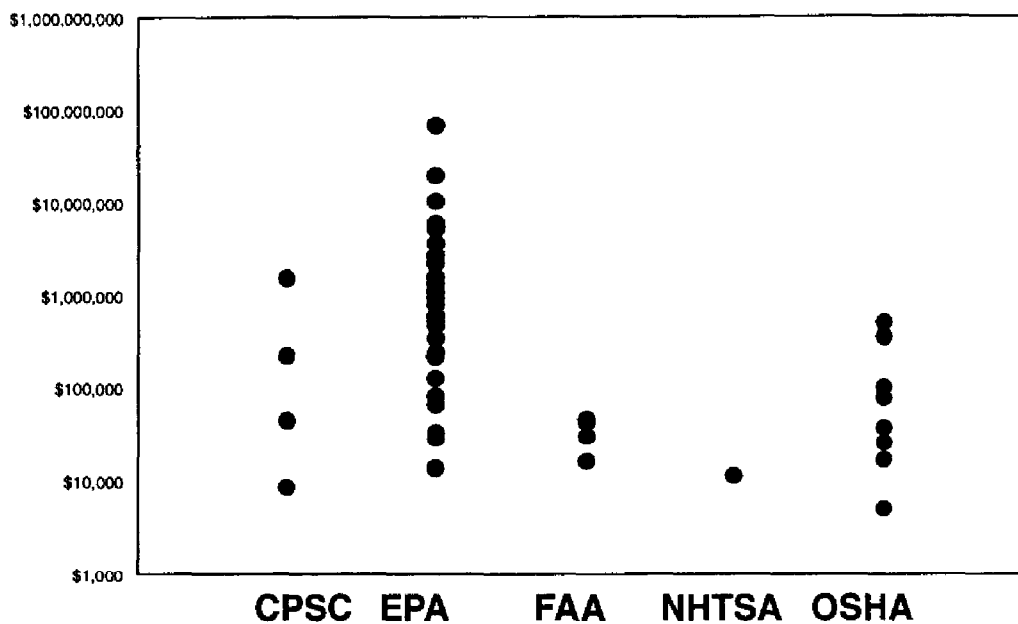
Note: Median values; logarithmic scale; numbers represent regulations issued and considered, but not issued, for each agency.

Source: Data derived from Tengs et al., 1995.

Of the regulations included in the analysis, those issued by EPA were estimated to have the highest cost-effectiveness ratio in general. That is, it was more expensive, on average, to reduce mortality risks a given amount than it was for regulations from the other agencies included in the study. EPA had the greatest number of regulations included in the analysis and also the greatest range of estimated cost-effectiveness.

## GAO Cost-Effectiveness of Regulations Issued by Five Agencies

Cost per life-year saved



Note: Logarithmic scale; four additional regulations (two by CPSC, one by EPA and one by OSHA) were estimated to have "negative" costs; that is, they would save the economy resources, in addition to the intended benefits to health and the environment.

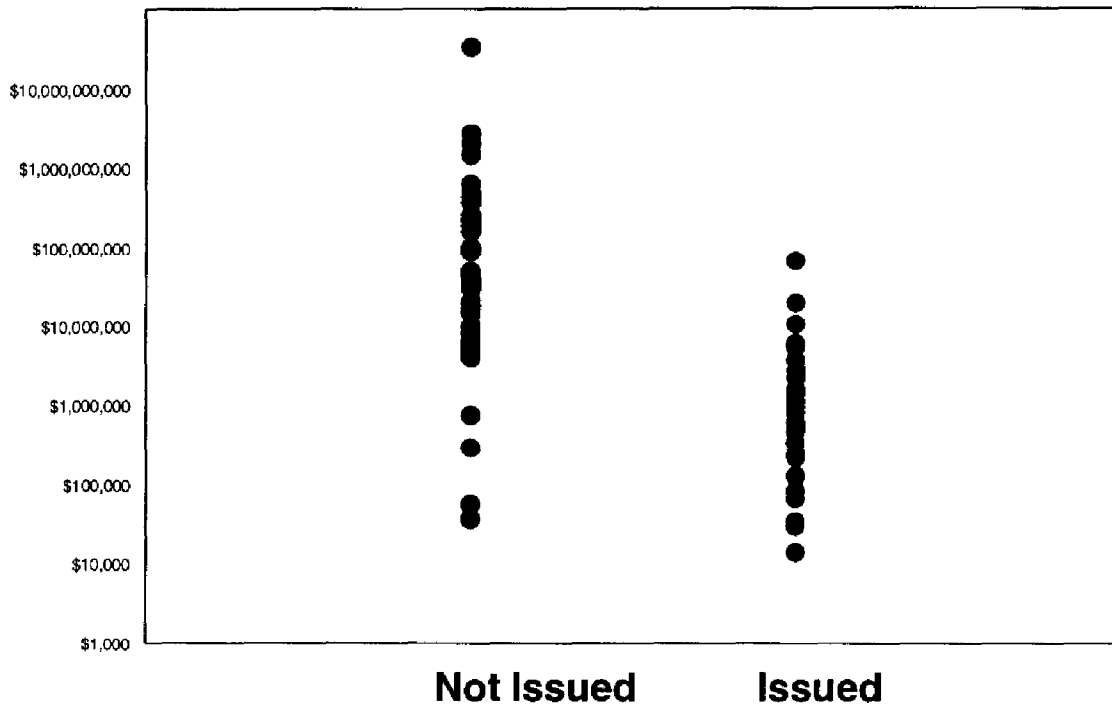
Source: Data derived from Tengs et al., 1995.

Four of these agencies had at least one "action" in each category (issued and not issued). For three of them, the issued regulations were, on average, more cost-effective than those actions that did not result in a regulation. This may suggest that these agencies incorporate costs in their decisions. This point has been made in other studies that have examined this issue.<sup>2</sup> Verifying this conclusion would require additional analysis.

<sup>2</sup>Notably, Travis et al., 1987(a); Travis et al., 1987(b); and Van Houtven and Cropper, 1993.

# GAO Cost-Effectiveness of 82 EPA "Actions"

Cost per life-year saved



Note: Logarithmic scale; one additional regulation was estimated to cost less than zero; that is, there was a projected net savings.

Source: Data derived from Tengs et al., 1995.

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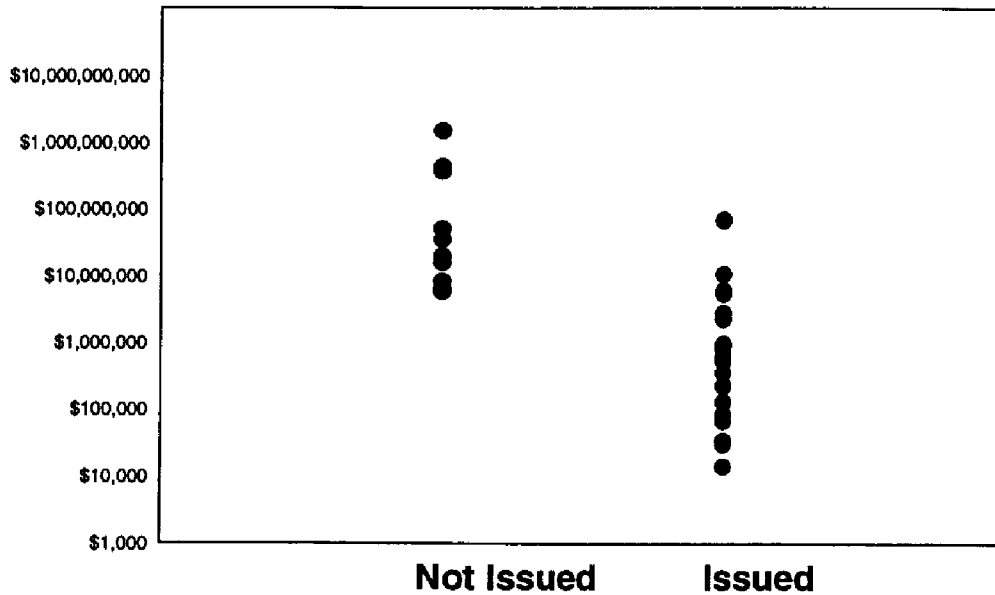
**Briefing Section II**  
**Cost-Effectiveness of Regulations**

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This and the following two charts illustrate the range of predicted cost-effectiveness of the 35 EPA regulations issued that were included in Tengs' study. As can be seen, the range of cost-effectiveness decreases when moving from all EPA regulations to those issued within individual programs.

## GAO Cost-Effectiveness of 31 Asbestos "Bans"

Cost per life-year saved



Note: Logarithmic scale.

Source: Data derived from Tengs et al., 1995.

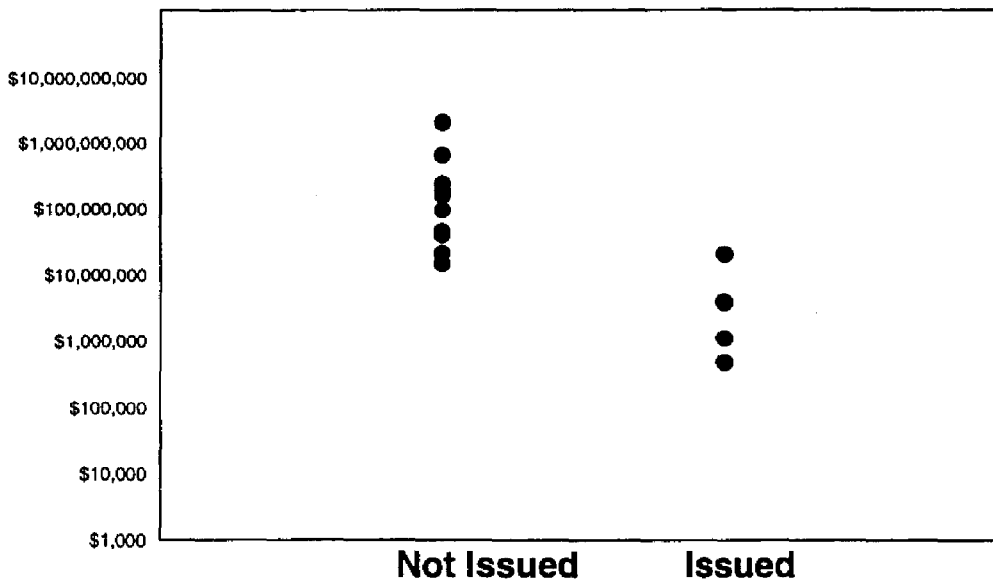
Cost-effectiveness of individual regulations within this group was estimated to range from about \$13,000 per life-year saved to \$66 million per life-year saved.

Cost-effectiveness of regulations for benzene was estimated to range from about \$456,000 to \$19 million per life-year saved. There is little overlap between estimated cost-effectiveness within the two groups of benzene



## GAO Cost-Effectiveness of 14 Benzene "Actions"

Cost per life-year saved



Note: Logarithmic scale.

Source: Data derived from Tengs et al., 1995.

“actions.” The use of cost data in deciding which regulations to promulgate may also be affected by court cases. One study notes that the average cost-per-cancer-case-avoided in EPA’s hazardous air pollutant regulations increased after 1987, when the Natural Resources Defense Council won a suit charging that EPA’s use of costs and benefits was a violation of the Clean Air Act.<sup>3</sup>

<sup>3</sup>Van Houtven and Cropper, 1993.

# Trends in Mandated Deadlines for Regulations

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## GAO Mandated Deadlines for Regulations

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- Congress and the courts sometimes impose deadlines on agency rule-making.
  - We were asked to examine the degree to which regulations are promulgated in response to statutorily or judicially mandated time frames.
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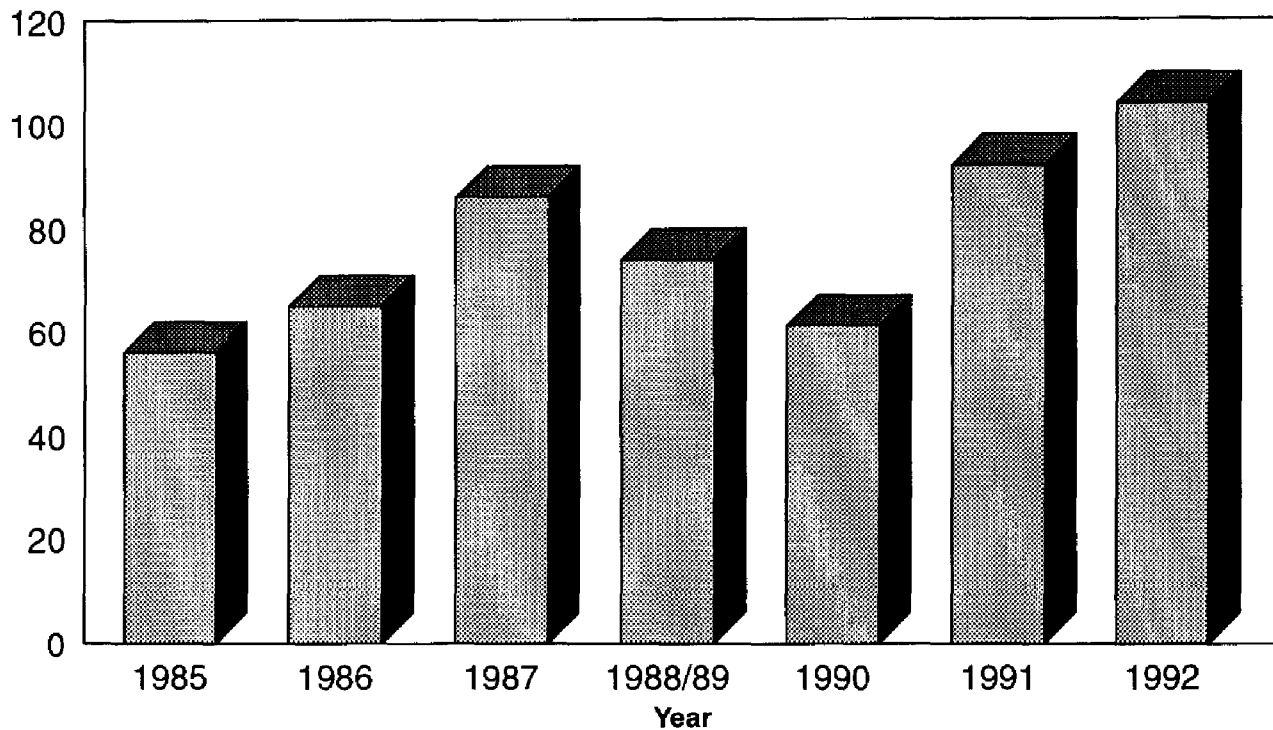
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Trends in Mandated Deadlines for  
Regulations**

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We reviewed data from the OMB Regulatory Program on regulatory actions by seven agencies: the Department of Agriculture, the Department of Energy, the Environmental Protection Agency, the Food and Drug Administration, the Department of the Interior, the Department of Labor, and the Department of Transportation. These agencies were chosen because they represent the seven largest regulatory agencies that have been cited in discussions of regulatory reform.

## GAO Significant Regulatory Actions by Seven Agencies

Number of SRAs



Note: The Regulatory Program was not published in 1989, so it was not possible to separate regulations issued in 1988 and 1989.

Source: Data derived from OMB, Regulatory Program (1985-88, 1990-92).

The data available were on significant regulatory actions. These were defined as the priority regulatory activities of the agencies during the time period covered by our analysis. "Major" regulations (those covered by Executive Order 12291 of 1981, whose criteria included a projected economic impact of \$100 million or more) comprise a subset of these

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**Briefing Section III  
Trends in Mandated Deadlines for  
Regulations**

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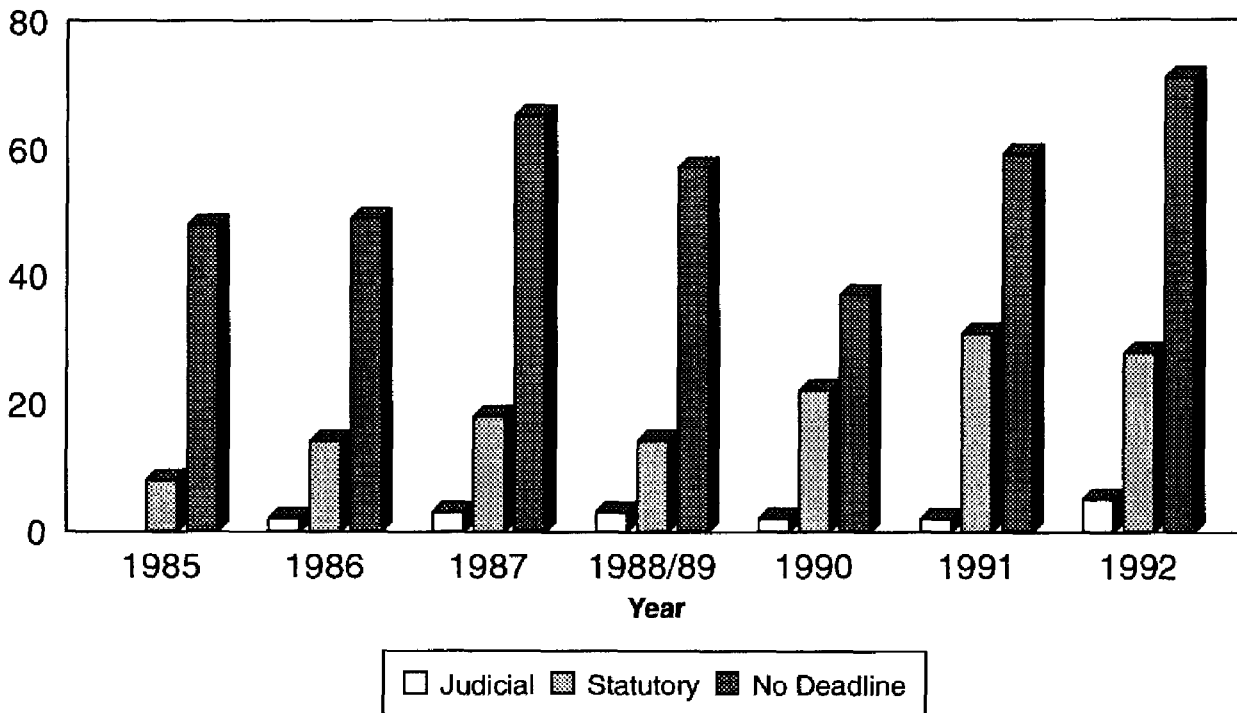
totals.<sup>1</sup> As can be seen in the chart above, the number of significant regulatory actions has been increasing over recent years.

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<sup>1</sup>The current Executive Order 12866 of 1993 defines significant regulatory actions differently.

## GAO Trends in Mandated Deadlines for Seven Regulatory Agencies

Number of SRAs



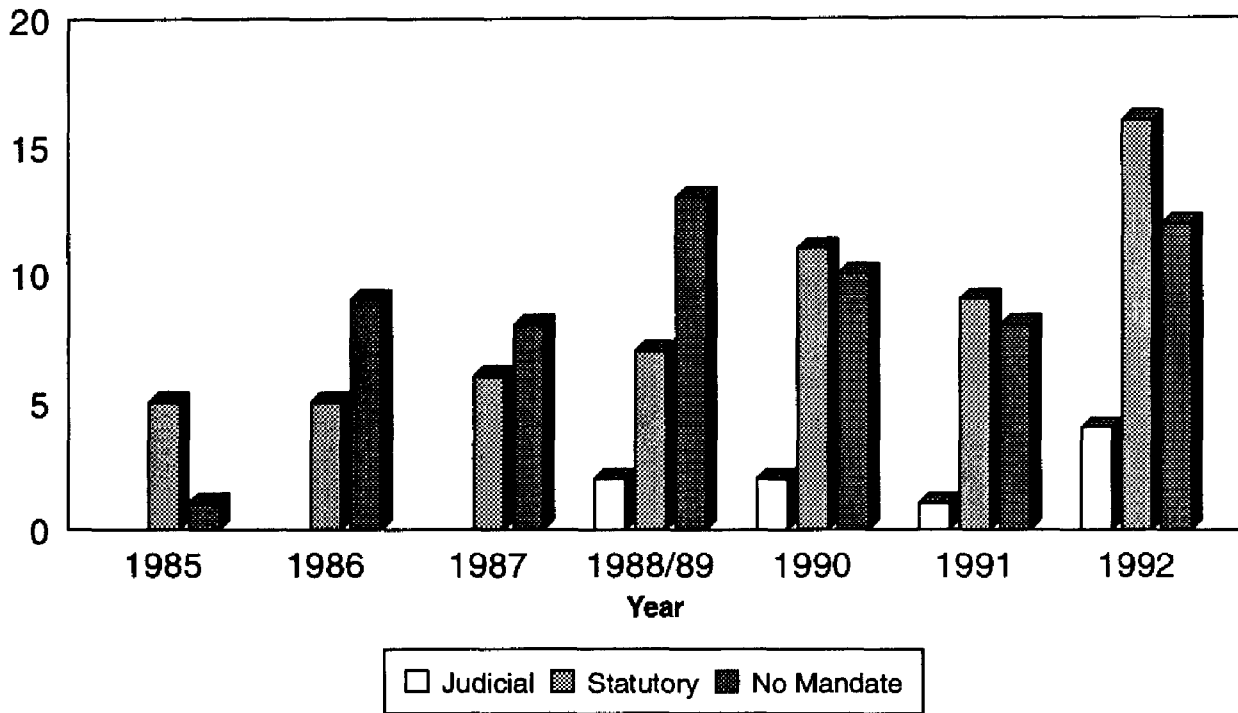
Note: The Regulatory Program was not published in 1989, so it was not possible to separate regulations issued in 1988 and 1989.

Source: Data derived from OMB, Regulatory Program (1985-88, 1990-92).

The percentage of regulations issued under a mandated deadline has increased, with the level in the 1990s being higher than in the 1980s, but it remains below 50 percent for the seven agencies.

# GAO Trends in Mandated Deadlines for EPA Regulations

Number of SRAs



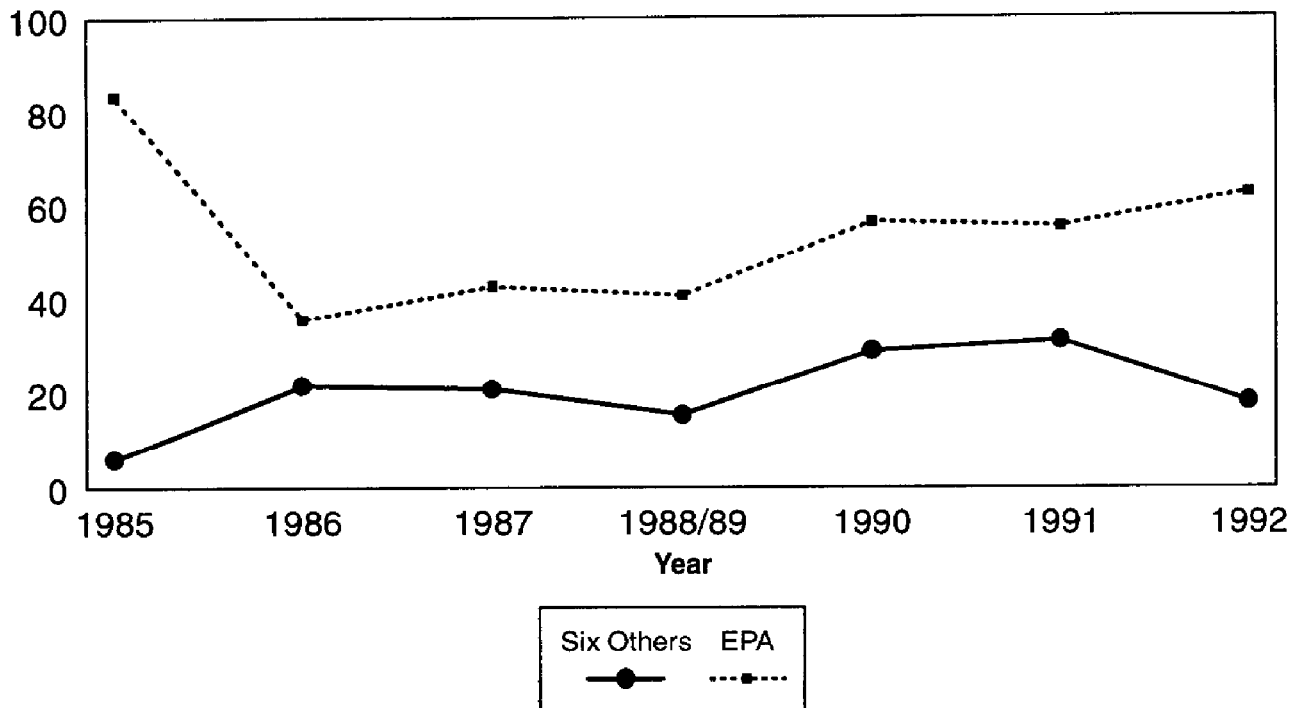
Note: The Regulatory Program was not published in 1989, so it was not possible to separate regulations issued in 1988 and 1989.

Source: Data derived from OMB, Regulatory Program (1985-88, 1990-92).

However, within EPA, a majority of significant regulatory actions are now issued under a mandated deadline. A more detailed list of these EPA actions, listing the regulations by statute and indicating which fell under a judicially or statutorily mandated deadline, is provided in appendix I.

## GAO Trends in Mandated Deadlines for EPA and Six Other Agencies

Percent of SRAs



Note: The Regulatory Program was not published in 1989, so it was not possible to separate regulations issued in 1988 and 1989.

Source: Data derived from OMB, Regulatory Program (1985-88, 1990-92).

As can be seen in the chart above, the proportion of significant regulatory actions issued under a judicially or statutorily mandated deadline remains below 40 percent for six of the seven agencies. At EPA, however, the proportion of SRAs with a mandated deadline has been consistently higher,



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**Briefing Section III  
Trends in Mandated Deadlines for  
Regulations**

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with recent levels exceeding 50 percent (and over 60 percent in 1992) after a drop in the late 1980s.

# EPA's Significant Regulatory Actions

**Table I.1: SRAs Having a Mandated Deadline as a Proportion of All Regulations Issued<sup>a</sup>**

Statute <sup>b</sup>	Year							Statute total
	1985	1986	1987	1988/89	1990	1991	1992 <sup>c</sup>	
CAA	1 of 1	1 of 2	2 of 3	1 of 6	1 of 5	4 of 6	14 of 17	24 of 40
CERCLA	1 of 1	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	3 of 4	<sup>d</sup>	0 of 1	4 of 6
CWA	<sup>d</sup>	<sup>d</sup>	1 of 1	1 of 1	2 of 2	1 of 2	2 of 2	7 of 8
FIFRA	<sup>d</sup>	0 of 1	0 of 1	0 of 1	<sup>d</sup>	1 of 3	0 of 1	1 of 7
RCRA	2 of 3	4 of 7	0 of 2	4 of 6	5 of 10	2 of 3	2 of 6	19 of 37
SDWA	<sup>d</sup>	<sup>d</sup>	2 of 2	2 of 3	2 of 2	1 of 1	1 of 1	8 of 9
TSCA	<sup>d</sup>	0 of 3	0 of 1	0 of 3	<sup>d</sup>	0 of 1	1 of 1	1 of 9
Other	1 of 1	0 of 1	1 of 4	1 of 2	<sup>d</sup>	1 of 2	0 of 3	4 of 13
<b>Year total</b>	<b>5 of 6</b>	<b>5 of 14</b>	<b>6 of 14</b>	<b>9 of 22</b>	<b>13 of 23</b>	<b>10 of 18</b>	<b>20 of 32</b>	

## Legend

CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWA	Clean Water Act
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
RCRA	Resource Conservation and Recovery Act
SDWA	Safe Drinking Water Act
TSCA	Toxic Substances Control Act

<sup>a</sup>Details are provided in table I.2.

<sup>b</sup>In several cases, two statutes were listed in the Regulatory Program. In these cases, we selected the one that appeared more pivotal.

<sup>c</sup>Some of these regulations may have been issued after 1992.

<sup>d</sup>None.

**Appendix I  
EPA's Significant Regulatory Actions**

**Table I.2: Status of Judicially or Statutorily Mandated Deadlines of EPA's Significant Regulatory Actions (1985-1992)**

Year	Statute	Regulation	Mandate		
			J	S	None
1987	AHERA	Asbestos-In-Schools Inspection and Abatement Rule		X	
1985	CAA	Review of the national Ambient Air Quality Standard for Carbon Monoxide		X	
1986	CAA	Guideline on Air Quality Models (Revision)			X
1986	CAA (1977)	Industrial Boilers - Particulate Matter and NOx		X	
1987	CAA (1987)	NSPS: Industrial Boilers - SO2		X	
1987	CAA	NSPS: Residential Wood Combustion		X	
1987	CAA	NSPS: Bubble for Central Illinois Public Service Company			X
1988	CAA	Alternative Rural Fugitive Dust Policies for PM10			X
1988	CAA	Development of EPA's Stratospheric Ozone Protection Plan			X
1988	CAA	Fugitive Emissions/Surface Coal Mines and Air Quality New Source Review			X
1988	CAA	Gasoline Volatility: Evaporative Hydrocarbon Emissions			X
1988	CAA	NESHAP: Benzene X Reconsideration	X		
1988	CAA	Standards and Test Procedures for Emissions From Methanol-Fueled Vehicles			X
1990	CAA	Development of a Strategy for Expedient Attainment of the National Ambient Air Quality Standards for Ozone and Carbon Monoxide			X
1990	CAA	Diesel Fuel Quality			X
1990	CAA	New Source Performance Standards: Municipal Waste Combustion			X
1990	CAA	Prevention of Significant Deterioration (PSD) Increments for Particulate Matter - 10 Micrometer (PM10)	X		
1990	CAA	Trading and Banking of Heavy-Duty Engine NOx and PM Emission Credits			X
1991	CAA (1990)	Cold Ambient Temperature Carbon Monoxide Emission Standards for Motor Vehicles		X	
1991	CAA (1990)	Control of Gasoline Refueling Emissions		X	
1991	CAA (1990)	Motor Vehicle Compliance and Fuel Economy Fees			X
1991	CAA (1990)	Operating Permit Regulations		X	
1991	CAA (1990)	Revised Motor Vehicle Emissions Standards		X	
1991	CAA (1990)	Revision of Rules for Prevention of Significant Deterioration and New Source Review			X
1992	CAA (1990)	Acid Rain Allowance System		X	
1992	CAA (1990)	Acid Rain Phase 2 Allocations and Phase 1 Reserve		X	
1992	CAA (1992)	Acid Rain Program Permits and Excess Emissions Regulations		X	
1992	CAA (1990)	Acid Rain Continuous Emissions Monitoring Regulation		X	
1992	CAA (1990)	Control Techniques Guidelines for Sources of Volatile Organic Compound Emissions		X	
1992	CAA (1990)	Heavy-Duty Engine Standards			X

(continued)

**Appendix I  
EPA's Significant Regulatory Actions**

Year	Statute	Regulation	Mandate		
			J	S	None
1992	CAA	Motor Vehicle Evaporative Emissions		X	
1992	CAA (1990)	National Emission Standards X for Hazardous Air Pollutants: Dry-Cleaning Facilities	X		
1992	CAA	NESHAP: Emissions of Radionuclides to the Air		X	
1992	CAA	New Source Performance Standards: Municipal Solid Waste Landfills			X
1992	CAA (1990)	Onboard Diagnostic Systems for Motor Vehicles		X	
1992	CAA (1990)	Phaseout of Lead in Gasoline and Test Procedure for Lead Substitutes		X	
1992	CAA (1990)	Reformulated Gasoline		X	
1992	CAA	Registration Requirements for X Fuels and Fuel Additives	X		
1992	CAA (1990)	Requirements for Basic and Enhanced Inspection/Maintenance Programs		X	
1992	CAA	Review of National Ambient Air Quality Standards for Sulfur Oxides		X	
1992	CAA (1992)	Winter Oxygenated Fuel Programs		X	
1985	CERCLA CWA	Proposed Revisions to the National Oil and Hazardous Substances Pollution Control Plan		X	
1990	CERCLA (1986) SWDA	Hazard-Ranking System for Uncontrolled Hazardous Substance		X	
1990	CERCLA (1986)	National Priorities List for Uncontrolled Hazardous Waste Sites		X	
1990	CERCLA (1986) RCRA	Procedures for Planning and Implementing Off-Site Response Actions			X
1990	CERCLA (1986)	Reportable Quantities for Releases of Hazardous Sustances		X	
1992	CERCLA	Reporting and Liability Exemptions for Federally Permitted Releases			X
1987	CWA	Current Effluent Guidelines		X	
1988	CWA (1987)	National Pollution Discharge Elimination System Sewage Sludge Permit Regulations State Sludge Management Program Requirements		X	
1990	CWA (1987)	National Pollutant Discharge Elimination System (NPDES) Permit Application Regulations for Storm-Water Discharges		X	
1990	CWA	The National Pollution Discharge Elimination System: General Pretreatment Regulations for Existing and New Sources		X	
1991	CWA	Denial or Restriction of Disposal Sites in U.S. Waters			X
1991	CWA (1987) SDWA (1986)	Required Clean Water Act and Safe Drinking Water Act Indian Regulations		X	
1992	CWA (1987)	Sewage Sludge Use and Disposal Regulations		X	
1992	CWA	Water Quality Standards for Toxic Pollutants		X	
1992	ESA FIFRA	Endangered Species			X
1987	FFDCA FIFRA	Scientific and Regulatory Issues Underlying Pesticide Use Patterns and Agricultural Innovation			X
1987	FFDCA	User Charges for Pesticide Registration			X
1986	FIFRA FFDCA	Pesticide Inert Ingredient Strategy			X

(continued)

**Appendix I  
EPA's Significant Regulatory Actions**

Year	Statute	Regulation	Mandate		
			J	S	None
1987	FIFRA	Pesticide Registration and Classification Procedures (Revision)			X
1988	FIFRA	Labeling Requirement for Pesticides and Devices (Revision)			X
1991	FIFRA (1988)	Accelerated Reregistration of Pesticides		X	
1991	FIFRA	Pesticides in Groundwater Strategy			X
1991	FIFRA	Worker Protection Standards for Agricultural Pesticides (Revision)			X
1992	FIFRA	Restricted-Use Classification for Groundwater-Contaminating Pesticides			X
1988	FRA	Federal Radiation Protection Guidance for Public Exposure to Radiofrequency Radiation			X
1991	IRAA	Radon User-Fee Rule			X
1986	MPRSA	Ocean Incineration Regulation			X
1991	MWTA	Management of Medical Waste		X	
1985	NWPA	Environmental Radiation Protection Standards for Management and Disposal of Spent Fuel, High-Level and Transuranic Radioactive Wastes		X	
1992	OPA CWA	Oil Pollution Prevention Regulation: SPCC Phase 1 Revisions			X
1985	RCRA (1984)	Burning and Blending Administrative Controls: Burning and Blending Technical Controls		X	
1985	RCRA (1984)	Loss of Interim Status for Land-Disposal Facilities			X
1985	RCRA (1984)	Standards for Storage or Treatment of Hazardous Waste in Tank Systems		X	
1986	RCRA (1984)	Guidance on Retrofitting Interim-Status Surface Impoundments			X
1986	RCRA (1984)	Liner, Leachate Collection, and Leak Detection System Standards for Hazardous Waste Land Disposal Facilities		X	
1986	RCRA	Mining Waste Regulatory Determination		X	
1986	RCRA (1984)	Preliminary Assessment/Site Investigation Guidance to Implement Corrective Action Requirements			X
1986	RCRA (1984)	Restrictions of Land Disposal of Certain Hazardous Wastes		X	
1986	RCRA (1984)	Subtitle C Corrective Action Policy			X
1986	RCRA	Used Oil Listing and Standards		X	
1987	RCRA (1984)	Financial Responsibility for Corrective Action for Continuing Releases at Hazardous Waste Management Facilities			X
1987	RCRA CERCLA	Landfill, Surface Impoundment, and Waste Pile Closures for Hazardous Waste Management Facilities			X
1988	RCRA (1984)	Double Liner and Leachate Collection Systems for Hazardous Waste Land Disposal Units		X	
1988	RCRA (1984)	Identification of Hazardous Wastes by Toxicity Characteristic and Listing of Additional Organic Toxicants		X	
1988	RCRA (1984)	Liners and Leak Detection for Hazardous Waste Land Disposal Units		X	
1988	RCRA	Permit Modifications for Hazardous Waste Management Facilities			X
1988	RCRA	Permitting Mobile Hazardous Waste Treatment Units			X
1988	RCRA (1984)	Underground Storage Tanks - Technical Requirements		X	

(continued)

**Appendix I  
EPA's Significant Regulatory Actions**

Year	Statute	Regulation	Mandate		
			J	S	None
1990	RCRA (1984)	Burning of Hazardous Waste in Boilers and Industrial Furnaces		X	
1990	RCRA (1984)	Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities			X
1990	RCRA (1984)	Corrective Action for Releases to Groundwater From Regulated Hazardous Waste Units			X
1990	RCRA	Determination on Solid Waste X From Selected Metallic Ore-Processing Operations	X		
1990	RCRA (1986)	Emergency and Hazardous Chemical Inventory Forms and Community Right-to-Know Reporting Requirements; Implementation of Reporting Requirements for Indian Lands		X	
1990	RCRA	Emission Controls for Hazardous Waste Incinerators			X
1990	RCRA (1984)	Location Standards for Hazardous Waste Facilities			X
1990	RCRA CERCLA	Mining Waste Management Under Resource Conservation and Recovery Act Subtitle D			X
1990	RCRA (1984)	Petroleum Refinery Primary Treatment Sludge Listing		X	
1990	RCRA	Wood Preserving and Surface Protection Waste Listings		X	
1991	RCRA	Groundwater Monitoring at Hazardous-Waste Facilities			X
1991	RCRA (1984)	Management of Used Oil		X	
1991	RCRA (1984)	Solid Waste Disposal Facility Criteria		X	
1992	RCRA (1984)	Corrective Action for Solid Waste-Management Units at Hazardous-Waste Management Facilities, Subpart S			X
1992	RCRA (1984)	Disposal of Containerized Liquids in Hazardous-Waste Landfills		X	
1992	RCRA	Final Determination of the Applicability of the Toxicity Characteristic Rule to Underground Storage Tanks Contaminated Media and Debris			X
1992	RCRA	Identification and Listing of Hazardous Wastes: Concentration-Based Exemption Levels: Hazardous Waste Identification Rule (HWIR)			X
1992	RCRA (1984)	Resource Conservation and Recovery Act: Air Emissions From Hazardous Waste Treatment Storage, and Disposal Facilities		X	
1992	RCRA (1984, 1986)	Underground Storage Tanks Containing Petroleum; Financial Responsibility Requirements; Financial Test for Self-Insurance by Local Government Entities			X
1987	SARA (1986)	Emergency and Hazardous Chemical Inventory Forms and Community Right-To-Know Reporting Requirements			X
1987	SDWA	Revised Primary Drinking Water Regulations for Volatile Synthetic Organic Chemicals (Phase I)		X	
1987	SDWA (1986)	Wellhead Protection Guidance		X	
1988	SDWA (1986)	Criteria for Identifying Critical Aquifer Protection Areas		X	
1988	SDWA	Guidelines for Classifying Groundwater Under the EPA Groundwater Protection Strategy			X
1988	SDWA	National Primary Drinking Water Regulations: Filtration and Disinfection, Turbidity, Giardia Lambia, Viruses, Total Coliform, Legionella, and Heterotrophic Bacteria		X	

(continued)

**Appendix I  
EPA's Significant Regulatory Actions**

Year	Statute	Regulation	Mandate		
			J	S	None
1990	SDWA	National Primary Drinking X Water Regulations: Synthetic Organic Chemical and Inorganic Chemical, Monitoring for Unregulated Contaminants (Phase 2, 38 Contaminants)	X		
1990	SDWA	Regulation of Corrosion Byproducts in Drinking Water (Lead and Copper)		X	
1991	SDWA (1986)	National Primary Drinking X Water Regulations: Synthetic Organic Chemical and Inorganic Chemicals (Phase 5, 24 Contaminants)	X		
1992	SDWA	National Primary Drinking X Water Regulations: Radionuclides	X		
1986	TSCA	2-Ethoxyethanol, 2-Methoxyethanol, and Their Acetates (Glycol Ethers)			X
1986	TSCA	Dioxin and Furan Rulemaking			X
1986	TSCA	Rulemaking Concerning Asbestos Abatement			X
1987	TSCA	User Fees for TSCA Reviews			X
1988	TSCA	Action Concerning Commercial and Industrial Use of Asbestos			X
1988	TSCA	Procedural Rule for Expedited New Chemical Followup			X
1988	TSCA	Toxic Substances Control Act Section 8(a) Comprehensive Assessment Information Rule			X
1991	TSCA	Regulatory Investigation of Chlorinated Solvents			X
1992	TSCA	Regulatory Investigation of X Dioxin in Pulp and Paper Mill Sludge	X		
1988	UMTRCA	Prevention of Significant X Deterioration (PSD) Increments for Nitrogen Oxides (NOx)	X		
1992	UMTRCA	Groundwater Protection Standards for Inactive Uranium Tailings Sites			X

Legend

J      Judicial  
S      Statutory

AHERA      Abestos Hazard Emergency Response Act  
CAA      Clean Air Act  
CERCLA      Comprehensive Environmental Response, Compensation, and Liability Act  
CWA      Clean Water Act  
ESA      Endangered Species Act  
FFDCA      Federal Food, Drug, and Cosmetic Act  
FIFRA      Federal Insecticide, Fungicide, and Rodenticide Act  
FRA      Federal Radiation Authority  
IRAA      Indoor Radon Abatement  
MPRSA      Marine Protection, Research, and Sanctuaries Act  
MWTA      Municipal Waste Treatment Act  
NESHAP      National Emission Standards for Hazardous Air Pollutants  
NPDES      National Pollution Discharge Elimination System  
NSPS      New Source Performance Standard  
NWPA      Nuclear Waste Policy Act  
OPA      Oil Pollution Act  
PDS      Prevention of Significant Deterioration  
RCRA      Resource Conservation and Recovery Act  
SARA      Superfund Amendments and Reauthorization Act  
SDWA      Safe Drinking Water Act  
TSCA      Toxic Substances Control Act  
UMTRCA      Uranium Mill Tailings Radiation Control Act

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# Major Contributors to This Report

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