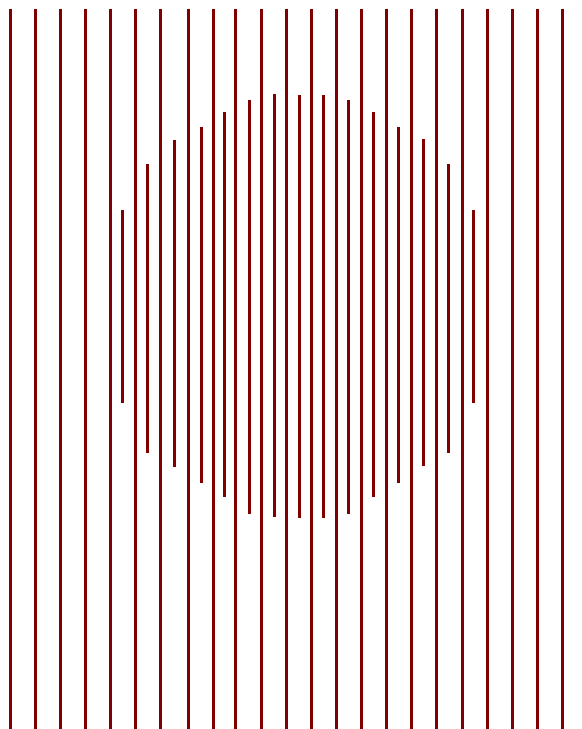


CBO PAPERS

**REGULATORY IMPACT ANALYSIS:
COSTS AT SELECTED AGENCIES
AND IMPLICATIONS FOR
THE LEGISLATIVE PROCESS**

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CONGRESSIONAL BUDGET OFFICE

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**CONGRESSIONAL BUDGET OFFICE
SECOND AND D STREETS, S.W.
WASHINGTON, D.C. 20515**

NOTE

Unless otherwise indicated, all dollar amounts in this paper are expressed in 1995 values.

PREFACE

Under President Clinton's Executive Order 12866 and the Unfunded Mandates Reform Act of 1995, federal agencies are required to analyze the costs, benefits, and other effects of proposed regulations. In many cases, those regulatory impact analyses (RIAs) cost agencies significant time, money, and staff effort. Recent proposals to extend such analysis to the legislative process could impose similar analytic and reporting requirements on Congressional committees, the Congressional Budget Office (CBO), and other support agencies of the legislative branch.

This CBO paper—prepared at the request of the House Committee on Commerce—examines the personnel, contracting, and other costs associated with recent RIAs, as well as the time required to prepare them. It focuses on a sample of federal agencies whose regulations have some of the largest impacts on the U.S. economy. The paper also looks at the implications of extending such analytic requirements to the legislative process. In keeping with CBO's mandate to provide objective, impartial analysis, the paper makes no recommendations.

Barbara Johnson, formerly of CBO's Natural Resources and Commerce Division, prepared the paper under the supervision of Jan Paul Acton. Carl Muehlmann wrote Appendix B and provided statistical support. The authors are grateful for the cooperation and comments of various federal employees who prepare RIAs, including Bret Snyder, Neil Patel, Carl Kessler, Ron Evans, Gary Ballord, Barnes Johnson, Lyn Luben, Sue Stendebach, Janice Wagner, and Judy Lebowich of the Environmental Protection Agency; Paul Larson of the Federal Aviation Administration; Bob Shelton and Jim Simmons of the National Highway Traffic Safety Administration; and agency staff at the Coast Guard and the Occupational Safety and Health Administration. In addition, Perry Beider, Jim Blum, Kim Cawley, Arlene Holen, Elliot Schwartz, and Bruce Vavrichek of CBO provided helpful comments on earlier drafts of the paper. (Despite the help of those individuals, responsibility for the final content rests solely with the authors.)

Sherry Snyder and Christian Spoor edited the paper, and Marlies Dunson provided editorial assistance. Angela McCollough prepared it for publication.

June E. O'Neill
Director

March 1997

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SUMMARY

Recent proposals for regulatory reform would subject the regulations that federal agencies issue to increased cost-benefit analysis. Various laws and executive orders already require such analyses (known as regulatory impact analyses, or RIAs) for any "significant" rule—defined as one that would cost more than \$100 million a year or have adverse effects on the U.S. economy or the federal budget. Some recent legislative proposals would also have the Congressional Budget Office (CBO) or other Congressional support agencies perform similar work.

Many studies have explored whether the benefits of regulation justify its costs, but few have examined the nature and level of resources necessary for the government to conduct cost-benefit analyses. CBO has tried to fill that gap by studying the costs of 85 RIAs from six offices in four agencies: the Environmental Protection Agency (EPA), the Coast Guard, the Federal Aviation Administration (FAA), and the National Highway Traffic Safety Administration. CBO chose those agencies because they are frequently cited as imposing significant regulatory costs on the economy.

CBO also examined cost data on regulatory analyses from the Occupational Safety and Health Administration, but OSHA was unable to distinguish RIAs from other analyses. Thus, OSHA's analyses are not included in the final RIA count, but

some of its cost information is presented for purposes of comparison. Examining other regulatory agencies, such as the Food and Drug Administration and the Department of Agriculture, would also have been instructive, but CBO was unable to do so because of time limitations.

The majority of the RIAs in CBO's study date from 1990 through 1996, although some of the analyses are still going on, and five were published before 1990. (The FAA submitted some RIA data from 1988 and 1989.) CBO reviewed that seven-year period to capture the most recent analyses and to account for the fact that RIAs can take years to complete.

Based on the sample of 85 analyses, the average cost per RIA was about \$570,000, with a range of \$14,000 to more than \$6 million per analysis. The median cost (the value below which half of the costs per RIA are found) was \$270,000, indicating that a few relatively expensive analyses were skewing the average upward. When the four RIAs that cost more than \$2 million were excluded, the average and median costs were about \$390,000 and \$270,000, respectively. (All values are stated in 1995 dollars.)

The RIAs in CBO's study also varied considerably in the amount of time they took to complete, with an average of three years and a range of six weeks to more than 12 years. For agencies that use outside contractors (all EPA offices and the

Coast Guard), in-house personnel costs—salary, fringe benefits, and estimated overhead—accounted for about one-third of all RIA costs; spending on outside contractors accounted for the remaining two-thirds.

Although CBO's study represents a best attempt to collect and verify original data from a sample of agencies that conduct RIAs, it leaves many questions unanswered. The most difficult is why the costs of analyses vary so much, both among agencies and within them. CBO identified several possible reasons based on anecdotal evidence from agency staff. A thorough exploration would require investigating the history of each rule, which was beyond the scope of CBO's review.

Despite those limitations, the Congressional Budget Office identified several features of regulatory impact analyses and similar analytic efforts by federal agencies:

- o There Is No Such Thing as a Typical RIA. The cost of the analyses and the time needed to complete them varied tremendously in CBO's survey. Anecdotal evidence suggests several reasons for that variability, including the scope and complexity of the rule being analyzed, the nature of the information required to perform the RIA, and the degree of political consensus surrounding the rule. The costs and time needed to perform similar regulatory analysis in the future will probably also vary—both at executive agencies and at CBO or other

parts of the legislative branch that might be required to undertake similar analysis.

- o Agencies Do Not Track Costs Separately for Each RIA. Although agencies employ both government personnel and outside contractors to perform RIAs, none of the agencies that CBO reviewed keep track of the total contract and personnel costs incurred for each regulatory impact analysis. In addition, estimates of the time that government personnel spend on RIAs are imprecise because agencies do not keep time sheets by activity. Estimates of contractor costs are more reliable because they can be traced through billing records. However, even contractor costs can be hard to allocate if one contract includes work on several RIAs. As a result, accurately projecting the costs that another office might experience in undertaking regulatory analysis is difficult because the components of the baseline costs are not well documented.

- o Reported RIA Costs Do Not Reflect the Cost of Some Supporting Analysis. Agencies routinely perform economic analysis on proposed rules. Some of that analysis is included in the RIA and some is not, but even analysis excluded from the final document plays a role in the decisionmaking process. Moreover, agencies often need to perform

other types of analysis—such as risk analyses or engineering studies—to determine the costs and benefits of a regulation. Although those studies are necessary precursors to the RIA, they are not included in the costs attributed to preparing it. By excluding the costs of those studies, the agencies in CBO's survey may underestimate the costs of performing regulatory impact analyses. Other agencies—including CBO—would therefore probably need to establish some added analytic infrastructure to support a regular program of regulatory analysis.

- o Determining What Constitutes an RIA Is Difficult. Although the term "regulatory impact analysis" usually signifies a cost-benefit analysis performed for a significant rule, other working definitions exist. Some officials define an RIA as any analysis that considers benefits as well as costs, or that considers alternatives as well as the preferred option, even if it is not for a significant rule. Also, some RIAs are never published because the rules they are associated with are never finished and put into effect. Consequently, although much work has gone into the analysis, the RIA will never show up on any list of published analyses. Given all of those difficulties, it can be hard to define and isolate the universe of RIAs. That problem will be compounded if such analysis is moved to the legislative stage, because the form the potential

regulations might take and whether they will be significant or minor are generally even more uncertain at that point.

In sum, regulatory impact analyses generally require a considerable amount of resources and time. Conducting comparable analysis within the current legislative process would be difficult even if sufficient resources were made available. The Congress has the ability to consider and vote on a bill the same day the bill is reported by a committee if it chooses to do so, and normal rules permit a bill to be considered in as few as three days. By contrast, even the quickest analysis in CBO's review took six weeks. Furthermore, the average duration per analysis—three years—is longer than the two-year session of Congress between national elections.

CHAPTER I

INTRODUCTION

Various laws and executive orders require federal agencies to analyze the potential costs and benefits of regulations they issue. Such cost-benefit studies are known as regulatory impact analyses (RIAs) or economic analyses and are required for all “significant” agency rules.¹ According to President Clinton’s Executive Order 12866, published in 1993, a regulation is significant if it:

- o Has an annual cost to the U.S. economy of more than \$100 million;

- o Has an adverse effect on the economy, productivity, jobs, or the environment;

- o Creates inconsistencies with other agency actions;

- o Affects the budgetary impact of entitlement programs, user fees, or loan programs; or

1. Executive Order 12866, signed by President Clinton, replaced the term “regulatory impact analysis” with “economic analysis,” although many participants in the process continue to use the former term. Because the Congressional Budget Office’s study covers a period before that change in designation and because most of the respondents refer to RIAs in their discussions, this paper refers to all such analyses as regulatory impact analyses. See Executive Order 12866, “Regulatory Planning and Review,” *Federal Register*, vol. 50 (October 4, 1993), p. 51735 ff.

- o Raises new legal or policy issues arising from the President's priorities.

The Congress formalized key provisions of that executive order in title II of the Unfunded Mandates Reform Act, enacted in March 1995. (See Appendix A for a history of executive orders establishing RIAs and Appendix B for a description of the steps that an agency such as the Environmental Protection Agency typically follows in preparing proposed and final rules.)

Several studies have examined the quality and consistency of federal RIAs, but few have looked at the cost of performing them. Such information is becoming essential, however, because recent attention in the Congress and elsewhere on regulatory reform has raised the profile of cost-benefit issues. Moreover, two recent federal laws and several bills in the previous Congress would require some agencies, including the Congressional Budget Office (CBO), to prepare more cost-benefit analyses or give more weight to cost-benefit issues in their decisionmaking. Without a better understanding of how many analyses are conducted now and what they cost, predicting the costs and time needed to comply with the new proposals is impossible. The proposed laws do not require studies that are identical to RIAs—in some cases they require analysis at a very different point in the rulemaking process—but current regulatory impact analyses performed by agencies and reviewed by the Office of Management and Budget (OMB) are the closest available approximation to the

analysis that those bills would require. Thus, RIAs provide a benchmark to help gauge the added workload of such legislation.

REGULATORY-REFORM LAWS AND BILLS

Recent laws to reform the regulatory process, driven by concerns about the growth of federal regulation, have included an increased role for cost-benefit analysis.² The Unfunded Mandates Reform Act requires agencies to choose the least costly, most cost-effective, or least burdensome alternative to a rule. The Small Business Regulatory Enforcement Fairness Act, enacted in March 1996, requires the General Accounting Office (GAO) to review cost-benefit analyses and send its reviews to relevant Congressional committees.

At least seven bills in the 104th Congress included cost-benefit provisions. Those bills were the Job Creation and Wage Enhancement Act of 1995 (H.R. 9), the Regulatory Transition Act of 1995 (H.R. 450), the Regulatory Reform and Relief Act (H.R. 926), the Regulatory Sunset and Review Act of 1995 (H.R. 994), the Risk Assessment and Cost Benefits Act of 1995 (H.R. 1022), the Regulatory Reform Act of 1995 (S. 291), and the Comprehensive Regulatory Reform Act of 1995 (S. 343).

2. All information on recent laws and proposed bills comes from Rogelio Garcia, *Federal Regulatory Reform: An Overview*, CRS Issue Brief IB95035 (Congressional Research Service, April 30, 1996).

Those bills would require agencies to perform more cost-benefit analyses or to include cost-benefit concerns in their regulatory reviews.

Another legislative proposal, the Regulatory Accountability Act (H.R. 3277), would require the Congressional Budget Office to estimate the costs—including social, environmental, and economic costs—likely to result directly or indirectly from a regulation or its alternative. That proposal would significantly expand CBO's activities.

PREVIOUS STUDIES OF THE COST OF COST-BENEFIT ANALYSIS

Although many studies have examined the costs and benefits of regulation as well as the quality and consistency of RIAs, only a few have reviewed the resources that are necessary to conduct cost-benefit analyses.³ The five most relevant studies report a wide range of costs for RIAs.

A 1982 report by GAO examined the costs of 38 analyses conducted before 1981 by eight executive branch agencies, including the Environmental Protection

3. For example, the statement of Professor Thomas J. Hopkins, University of Rochester, before the Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs of the House Committee on Government Reform and Oversight on May 16, 1996, discusses the costs and benefits of regulatory analysis. Robert W. Hahn discusses the information contained in RIAs in "Regulatory Reform: What Do the Government's Numbers Tell Us?" in Hahn, ed., *Risks, Costs, and Lives Saved: Getting Better Results from Regulation* (New York: Oxford University Press and AEI Press, 1996).

Agency (EPA), the National Highway Traffic Safety Administration, and the Coast Guard.⁴ GAO reported that nominal costs ranged from \$34,000 to \$1.2 million per RIA, with an average cost of \$212,000 (see Table 1). The office noted that its study did not include the costs of gathering data and that before 1981, agencies were required to focus primarily on costs rather than benefits in conducting RIAs.⁵

A GAO report issued in 1984 focused on EPA's implementation of President Reagan's Executive Order 12291, which required a regulatory impact analysis for every "major" federal rule.⁶ (See Appendix A for more details of the order.) The report noted that a 1983 cost-benefit analysis of regulations setting air-quality standards cost \$1.8 million in contractor expenses and 12.3 staff-years to complete—for a total of about \$2.4 million in 1983 dollars.

A 1984 study by Paul Portney concluded that multimillion-dollar RIAs are the exception rather than the rule; he estimated the average cost of a regulatory impact analysis at \$400,000 at that time. Portney defined the total costs of an RIA as including those for the agency personnel supervising the analysis, the OMB staff who

4. General Accounting Office, *Improved Quality, Adequate Resources, and Consistent Oversight Needed If Regulatory Analysis Is to Help Control Regulations*, GAO/PAD-83-6 (November 2, 1982).

5. *Ibid.*, pp. 19-20.

6. General Accounting Office, *Cost-Benefit Analysis Can Be Useful in Assessing Environmental Regulations Despite Limitations*, GAO/RCED 84-62 (April 6, 1984), pp. 18-20.

TABLE 1. SELECTED STUDIES OF THE COSTS OF PREPARING REGULATORY ANALYSES

Study	Scope	Average Cost	
		Nominal Dollars	1995 Dollars ^a
General Accounting Office (1982) ^b	38 RIAs by eight agencies	212,000	367,000
General Accounting Office (1984) ^c	1983 RIA by EPA on air-quality standards	2,394,176	4,019,000
Portney (1984) ^d	Approximate average cost of RIAs	400,000	657,000
Environmental Protection Agency (1987) ^e	15 RIAs by EPA, 1981-1986	675,000	1,102,000
General Accounting Office (1994) ^f	EPA's cost for Clean Air Act study to date	2,491,000	2,491,000
	Projected total cost	5,637,000	5,637,000
Congressional Budget Office (1997)	85 RIAs by six agencies, 1990-1996	570,000	570,000

SOURCE: Congressional Budget Office based on the studies below.

NOTE: RIAs = regulatory impact analyses; EPA = Environmental Protection Agency.

- a. CBO converted contractors' costs to 1995 dollars by using the price indices for federal nondefense consumption of services; it converted agencies' personnel costs using the specific price index for federal nondefense consumption of services for compensation for general government employees except force-account construction.
- b. General Accounting Office, *Improved Quality, Adequate Resources, and Consistent Oversight Needed If Regulatory Analysis Is to Help Control Regulations*, GAO/PAD-83-6 (November 2, 1982).
- c. General Accounting Office, *Cost-Benefit Analysis Can Be Useful in Assessing Environmental Regulations Despite Limitations*, GAO/RCED 84-62 (April 6, 1984).
- d. Paul R. Portney, "The Benefits and Costs of Regulatory Analysis," in V. Kerry Smith, ed., *Environmental Policy Under Reagan's Executive Order: The Role of Cost-Benefit Analysis* (Chapel Hill: University of North Carolina Press, 1984).
- e. Environmental Protection Agency, *EPA's Use of Cost-Benefit Analysis, 1981-1986*, EPA-230-05-87-028 (August 1987).
- f. General Accounting Office, *Air Pollution: EPA's Progress in Determining Costs and Benefits of Clean Air Act Legislation*, GAO/RCED-94-20 (February 1994).

reviews it, and any interagency groups needed to mediate disputes between OMB and other agencies.⁷

In a 1987 study, the Environmental Protection Agency examined 15 RIAs it had conducted between 1981 and 1986, 12 of which had cost data available.⁸ The average cost of those analyses was approximately \$675,000, although actual costs ranged from a low of \$210,000 to a high of \$2.3 million. EPA asserted that the total cost for those RIAs, about \$10 million, was small compared with the regulatory improvements expected from the rules, which it estimated at \$10 billion. (According to a recent Congressional Research Service report, that average cost of \$675,000 in the mid-1980s would correspond to about \$1 million in 1995 dollars.)⁹

In the most recent cost-related study, published in 1994, GAO evaluated EPA's efforts to determine the costs and benefits (both retrospective and prospective) of the entire set of rules under the Clean Air Act of 1990.¹⁰ Although the act required EPA to complete its analysis by 1991, a draft was not available until mid-1996. GAO

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7. Paul R. Portney, "The Benefits and Costs of Regulatory Analysis," in V. Kerry Smith, ed., *Environmental Policy Under Reagan's Executive Order: The Role of Cost-Benefit Analysis* (Chapel Hill: University of North Carolina Press, 1984), pp. 229-231.
 8. Environmental Protection Agency, *EPA's Use of Cost-Benefit Analysis, 1981-1986*, EPA-230-05-87-028 (August 1987).
 9. John L. Moore, *Cost-Benefit Analysis: Issues in Its Use in Regulation*, CRS Report for Congress 95-60 ENR (Congressional Research Service, June 28, 1995), p. 19. This report provides an excellent overview of the advantages and disadvantages of cost-benefit analysis.
 10. General Accounting Office, *Air Pollution: EPA's Progress in Determining Costs and Benefits of Clean Air Act Legislation*, GAO/RCED-94-20 (February 1994), pp. 2-3.

estimated that as of December 1993, EPA had devoted \$1.3 million in contractor costs and 12 full-time-equivalent staff-years, the equivalent of \$2.5 million, to the retrospective part of the analysis. Total costs for both parts could reach \$3.2 million in contractor costs plus 24 staff-years, the equivalent of \$5.6 million.

In addition to the published studies described above, EPA has provided information on its cost-benefit analyses as part of the legislative development process. In response to a 1995 Congressional inquiry about the Regulatory Sunset and Review Act, the agency estimated that it devotes roughly \$120 million a year to performing the risk assessments and cost-benefit analyses required by environmental statutes and administrative procedures.¹¹ Of that total, \$55 million pays for the work of 690 EPA staff members, and the remaining \$65 million goes for hiring contractors.

SCOPE AND METHODS OF CBO'S STUDY

The previous studies that attempted to gather cost data on specific RIAs are neither recent nor comprehensive. To help fill that gap, CBO examined the cost of 85 regulatory impact analyses, most of which were published from 1990 through 1996. The RIAs come from four agencies: the Environmental Protection Agency, the

11. Letter from the Environmental Protection Agency, Office of Policy, Planning and Evaluation, to Congressman Cardiss Collins, House Committee on Reform and Oversight, May 17, 1995.

National Highway Traffic Safety Administration (NHTSA), the Federal Aviation Administration (FAA), and the Coast Guard. CBO selected those agencies because their regulations are among those cited as having the largest impact on the U.S. economy.

The Environmental Protection Agency performed most of the RIAs in CBO's study: 65 of the total 85.¹² All of them came from three offices—the Office of Air and Radiation, the Office of Water, and the Office of Solid Waste—that have historically accounted for about 80 percent of the agency's RIAs.¹³ The NHTSA and the Coast Guard each provided CBO with seven RIAs, and the FAA provided six. That sample represents most of the regulatory impact analyses the agencies published during the study period (with the exception of EPA's Office of Air and Radiation, which provided only the 25 analyses it had already researched for another study). A fifth agency, the Occupational Safety and Health Administration (OSHA), gave CBO a high, low, and average cost for analyzing the 21 rules it has issued since 1990, but it was unable to distinguish between RIAs and other analyses. Thus, OSHA's analyses are not included in the 85 RIAs that CBO examined, but its cost figures are presented for purposes of comparison.

12. That proportion of RIAs from EPA is consistent with what other studies used. For example, Hahn, "Regulatory Reform: What Do the Government's Numbers Tell Us?" evaluated 92 RIAs, 70 of them from EPA.

13. Environmental Protection Agency, Office of Policy, Planning, and Evaluation, "List of Cost-Benefit Documents Prepared by EPA Since the Mid 1970's" (June 1996).

In estimating average costs of the regulatory impact analyses, CBO included employee benefits and overhead and converted all costs (but the OSHA figures) to 1995 dollars (see Appendix C for more details). The results should be viewed as best estimates rather than precise figures because of the uncertainties inherent in estimating agency costs. CBO also calculated both average and median costs per RIA, because even though average figures are useful measures of the overall cost picture, they may not be representative of the majority of analyses if one or two are unusually expensive.¹⁴ For example, although EPA's Office of Solid Waste had a relatively high average cost of \$989,000 per RIA, its median cost was about \$554,000, only 56 percent of the average.

CBO focused on RIAs published since 1990 for two reasons.¹⁵ First, the procedures for calculating regulatory costs may have changed over time. CBO reviewed the most recent analyses to obtain the most current cost information possible. Second, RIAs can take five years (or longer) to complete, so it is important to allow sufficient time to capture the full duration of the RIAs from an adequate sample. All agencies gave CBO information on analyses dating from 1990 and later except the Federal Aviation Administration, which included cost information on RIAs

14. The median value is the cost below which half of the observations are found. Chapter II also reports the statistics when the four most expensive studies are excluded.

15. To determine the date of the RIA, CBO used the date of publication whenever possible. Otherwise, CBO used the last year in which resources were expended for the analysis. Delays sometimes occur between the completion of an RIA and its publication, depending on the rulemaking process of the agency.

published in 1988 and 1989. CBO included them in its study because they account for five of the six analyses for major rules issued recently by the FAA.

Most of the 85 RIAs that CBO examined were completed and published in concert with their associated rules—27 for proposed rules and 44 for final rules.¹⁶ Another 10 were analyses in progress for either proposed or final rules. Of the remaining four RIAs, three were conducted for rules that were never proposed, and one evaluated the collective impact of a set of rules.

CBO did not distinguish between analyses conducted for proposed rules and final rules, for several reasons. First, agencies do not always record separate costs for analyzing the two types of rules. Second, economic analysis is cumulative: any analysis performed for the proposed rule will inform and guide analysis performed for the final rule, so the resulting continuum of work makes it difficult to attribute costs specifically to the draft or the final analysis. Third, a draft analysis does not necessarily cost more than a final analysis, or vice versa. If an agency receives many comments on a draft analysis, it may have to alter it substantially for the final proposal. If the agency receives few comments, it may not alter the draft very much.

16. A proposed rule is published in the *Federal Register* to allow a period of notice and comment. A final rule is also published in the *Federal Register* and may be different from the proposed rule, sometimes because of added analysis by the agency.

CHAPTER II

RESULTS OF THE STUDY

In its study of 85 regulatory impact analyses, the Congressional Budget Office focused on three principal indicators of the effort involved in preparing RIAs: dollar costs, time, and number of permanent staff members devoted to that work. Other measures are possible in some cases, but those are the ones most consistently available for quantitative analysis comparing agencies. All three indicators showed wide variations.

COSTS VARY CONSIDERABLY

The 85 RIAs that CBO reviewed exhibited a broad range of costs, both within and among agencies. Overall, the average cost per analysis was about \$573,000, with a median of \$271,000 (see Table 2).¹ Individual RIAs cost anywhere from \$14,000 to more than \$6 million. The average cost per analysis at each agency also ran the

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1. The cost data are skewed upward because a relatively small number of observations have very high values, while the bulk of the observations have a much lower value. Thus, the median—the halfway point of the values—is smaller than the average. The standard deviation of a highly skewed distribution is also large, about \$960,000 in this case. The influence of the expensive cases can be shown by removing the four observations with costs above \$2 million and recalculating the statistics. For the remaining 81 observations, the average value drops considerably, to about \$390,000; the median drops slightly, to about \$270,000; and the standard deviation falls to about \$330,000, less than one-third of its previous value. Neither set of statistics is "right" or "wrong." In this sample, a few very expensive cases have a substantial effect on the overall results and contribute heavily to the variability between cases. The four most expensive studies came from EPA—two each from the Office of Air and Radiation and the Office of Solid Waste.

TABLE 2. OVERVIEW OF 85 REGULATORY IMPACT ANALYSES BY FOUR AGENCIES

Agency	Number of RIAs	Staff FTEs per RIA	Contract Cost per RIA (In thousands of 1995 dollars)	Duration of RIA	Cost (In thousands of 1995 dollars)		
					Average	Median	Total Range
Environmental Protection Agency							
Office of Air and Radiation	25	0.1 to 37.0	0 to 2,590	9 months to 12 years	683	259	55 to 4,871
Office of Solid Waste	17	0.2 to 7.5	78 to 5,397	4 months to 9.75 years	989	554	87 to 6,097
Office of Water	23	0.1 to 2.8	26 to 824	1 year to 7 years	396	230	48 to 1,054
Subtotal	65	0.1 to 37.0	0 to 5,397	4 months to 12 years	662	376	48 to 6,097
National Highway Traffic Safety Administration	7	0.1 to 3.75	None	6 weeks to 9 months	112	57	14 to 429
Federal Aviation Administration	6	1.0 to 5.5	89 to 110 ^a	7 months to 1 year	245	251	118 to 458
Coast Guard	7	0.1 to 5.0	155 to 818	1 year to 6 years	497	361	183 to 1,387
Total	85	0.1 to 37.0	0 to 5,396	6 weeks to 12 years	573	271	14 to 6,097
Memorandum:							
Occupational Safety and Health Administration	21	6.4	420 ^b	5 years	1,000 ^b	N.A.	15 to 3,500 ^b

SOURCE: Congressional Budget Office.

NOTE: RIA = regulatory impact analysis; FTE = full-time equivalent; N.A. = not available.

a. The FAA uses one in-house contractor.

b. Costs in thousands of nominal dollars.

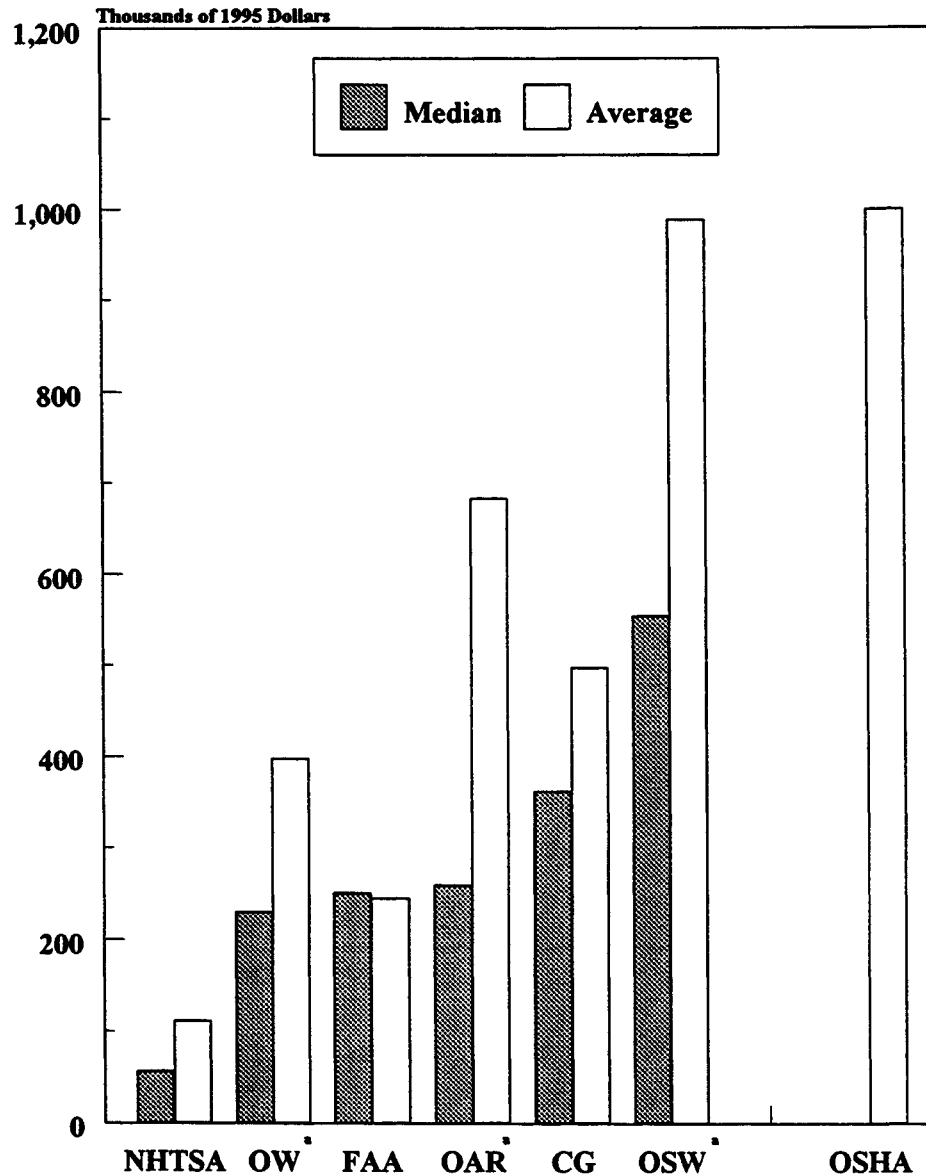
gamut—from \$112,000 to \$989,000 (see Figure 1). Median costs by agency ranged from \$57,000 to \$554,000. Chapter III examines why costs varied so widely.

The agencies with the least expensive RIAs were the National Highway Traffic Safety Administration (an average of \$112,000 and a median of \$57,000), and the Federal Aviation Administration (an average of \$245,000 and a median of \$251,000). The seven analyses performed by the NHTSA ranged in cost from \$14,000 to \$429,000 (see Figure 2). The FAA's six RIAs varied from \$118,000 to \$458,000. At both agencies, staff members rather than contractors performed most of the analyses, and because agencies do not keep time sheets, the costs of agency personnel are somewhat uncertain. Also, the NHTSA and the FAA analyzed relatively few “significant” rules—only about one per year.

All of the other offices included in CBO's study had wider (and higher) ranges of costs. The Coast Guard, for example, spent between \$183,000 and \$1.4 million per RIA, with an average of about \$500,000 and a median cost of \$361,000. Farther up the scale, the Occupational Safety and Health Administration estimated that it spent an average of \$1 million for each regulatory analysis, with actual costs ranging from \$150,000 to \$3.5 million per analysis.

Even within a single agency, costs can vary substantially among offices and program areas. At the Environmental Protection Agency, the Office of Water spent

FIGURE 1. MEDIAN AND AVERAGE COSTS OF REGULATORY IMPACT ANALYSES, 1988-1996

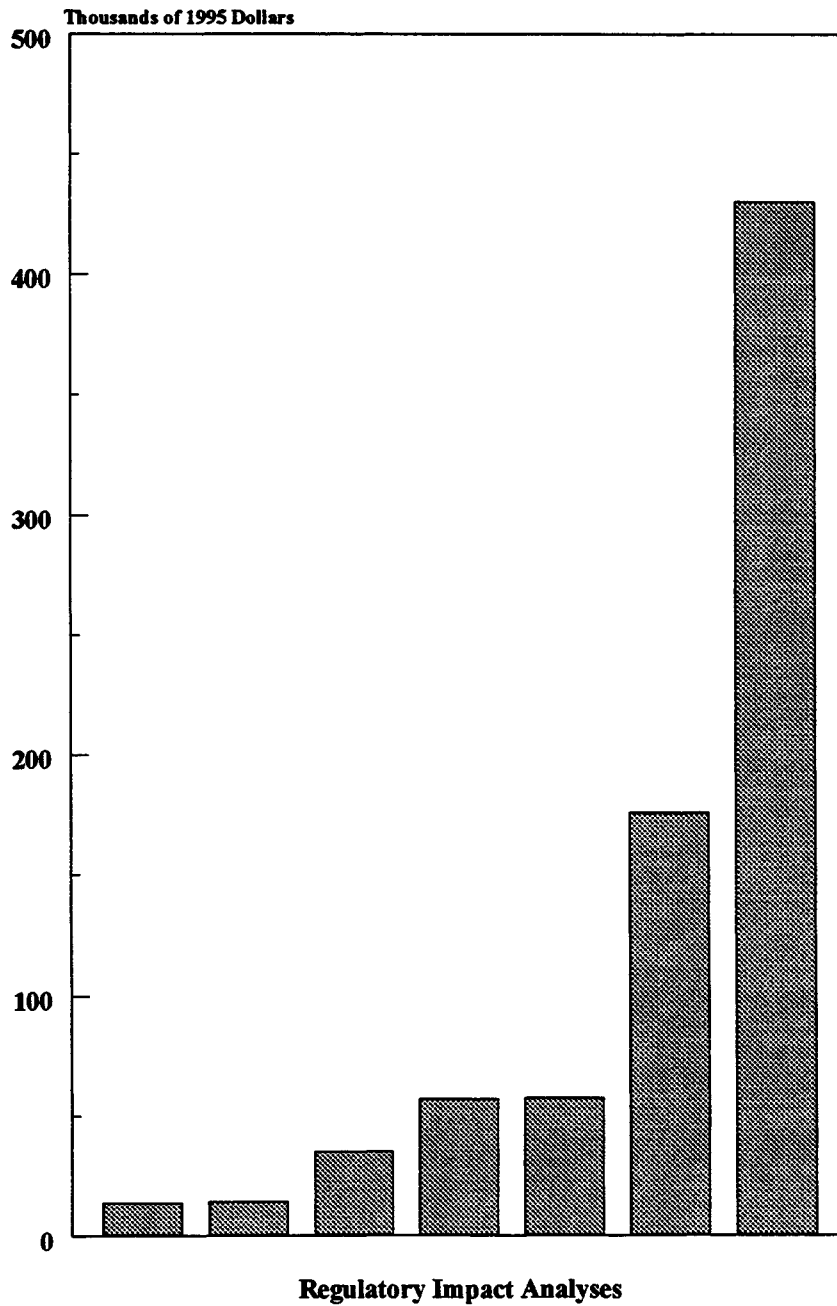


SOURCE: Congressional Budget Office using data from the agencies cited.

NOTE: NHTSA = National Highway Traffic Safety Administration; OW = Office of Water; FAA = Federal Aviation Administration; OAR = Office of Air and Radiation; CG = Coast Guard; OSW = Office of Solid Waste; OSHA = Occupational Safety and Health Administration.

a. An Office of the Environmental protection Agency

FIGURE 2. COSTS OF SEVEN REGULATORY IMPACT ANALYSES CONDUCTED BY THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, 1992-1995



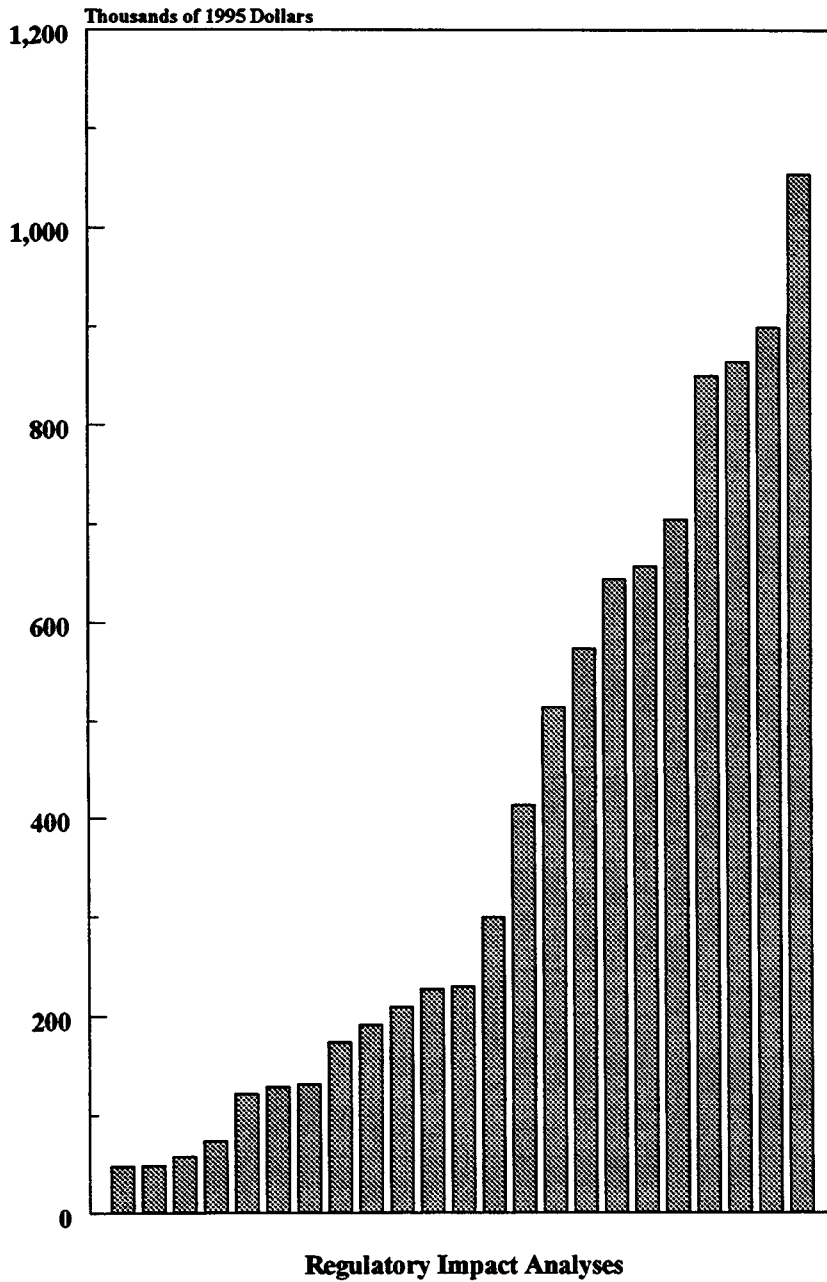
SOURCE: Congressional Budget Office using data from the National Highway Traffic Safety Administration.

\$48,000 to about \$1.1 million apiece for 23 analyses, with an average cost of \$396,000 and a median of \$230,000 (see Figure 3). The Office of Air and Radiation spent between \$55,000 and \$4.9 million per analysis, with an average of \$683,000 and a median of \$259,000 (see Figure 4). The Office of Solid Waste showed an even wider range. Its cost per RIA varied from \$87,000 to about \$6.1 million, with an average of \$989,000 and a median of \$554,000 (see Figure 5).

The \$6.1 million analysis in the Office of Solid Waste is a special case with a long history. It illustrates some of the reasons why costs for analysis can vary considerably from regulation to regulation. That RIA was conducted for the rule on "Corrective Action for Solid Waste Management Units." The corrective action program applies to more than 5,000 facilities in the United States that treat, store, or dispose of hazardous waste. The facilities subject to corrective action are generally still operating (as opposed to Superfund sites, which are usually closed or abandoned). The corrective action program directs owners and operators to clean up their sites to acceptable standards so as to prevent future Superfund sites from occurring. Because all of the sites have different contamination problems, estimating the cost of cleanups is very difficult and expensive. Cleaning up the sites is also quite costly, running to billions of dollars each year.

According to EPA, the RIA for corrective action is one of the most highly developed analyses the agency has ever conducted. Although EPA had already

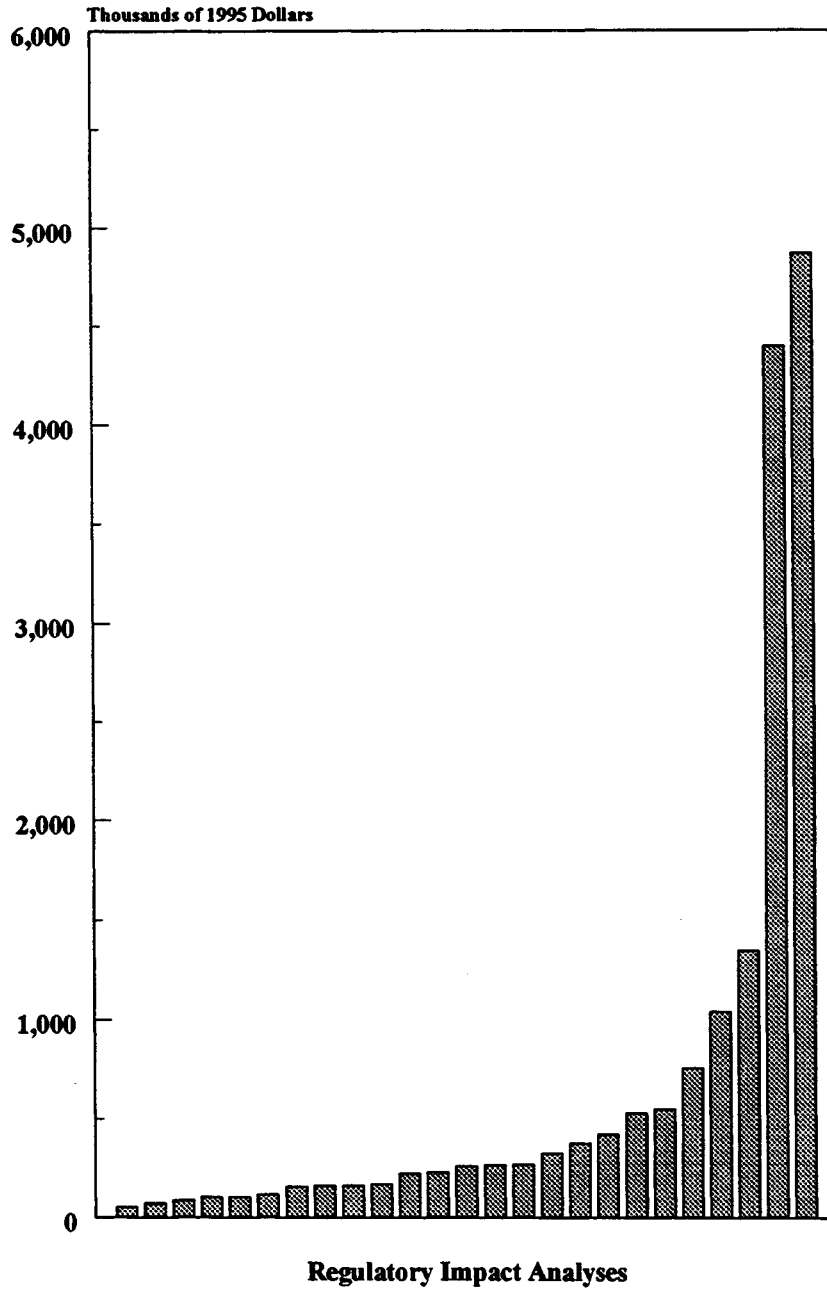
FIGURE 3. COSTS OF 23 REGULATORY IMPACT ANALYSES CONDUCTED BY THE OFFICE OF WATER, ENVIRONMENTAL PROTECTION AGENCY, 1990-1996



SOURCE: Congressional Budget Office using data from the Environmental Protection Agency.

NOTE: Costs are for agency personnel (full-time equivalents) and contractors.

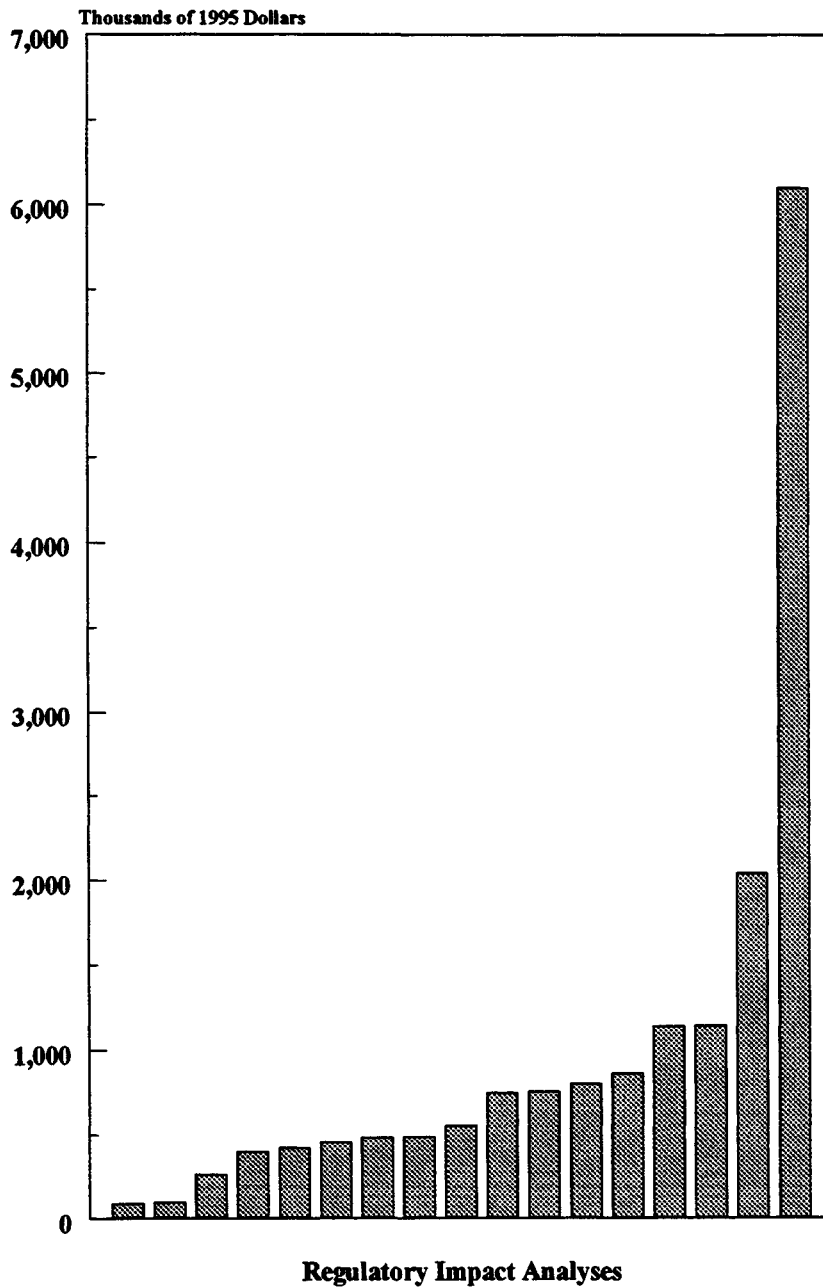
FIGURE 4. COSTS OF 25 REGULATORY IMPACT ANALYSES CONDUCTED BY THE OFFICE OF AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY, 1990-1996



SOURCE: Congressional Budget Office using data from the Environmental Protection Agency.

NOTE: Costs are for agency personnel (full-time equivalents) and contractors.

FIGURE 5. COSTS OF 17 REGULATORY IMPACT ANALYSES CONDUCTED BY THE OFFICE OF SOLID WASTE, ENVIRONMENTAL PROTECTION AGENCY, 1990-1996



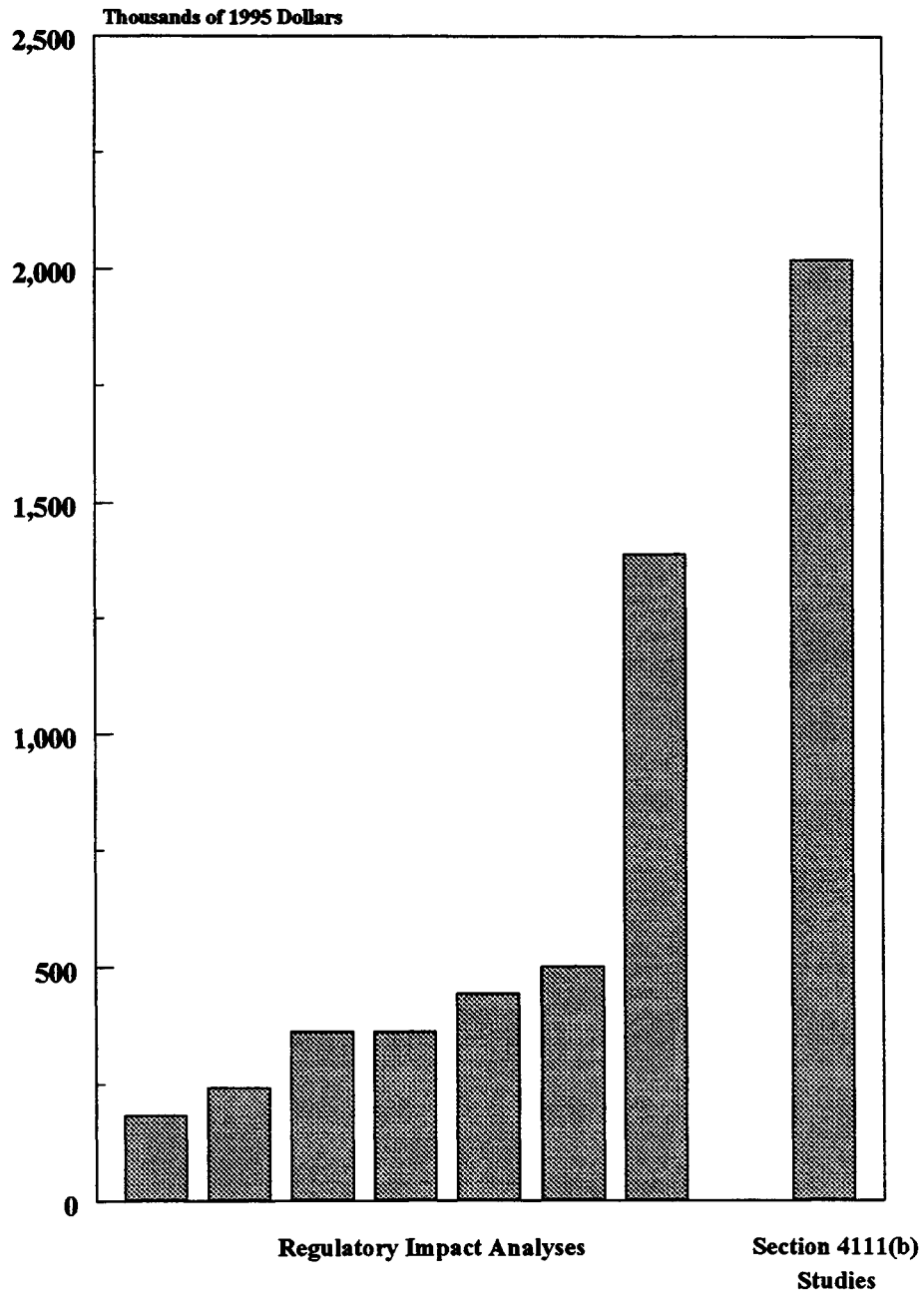
SOURCE: Congressional Budget Office using data from the Environmental Protection Agency.

NOTE: Costs are for agency personnel (full-time equivalents) and contractors.

completed a cost-benefit analysis of the corrective action program that was published in 1990 (at an estimated cost of about \$754,000 in 1995 dollars), the Office of Management and Budget made its approval of the rule contingent on a more extensive cost-benefit analysis. As a result, EPA convened national panels of experts for several weeks at a time and conducted in-depth studies of about 80 facilities. It also conducted several types of analyses, including property valuations (both for residences near the facilities and for the facilities themselves) and a valuation of the hypothetical environmental benefits of cleanup (based on surveys). Work on the RIA for corrective action is still going on.

Although regulatory impact analyses represent a significant cost to most agencies, they are not always the most expensive type of analysis the agencies perform. For example, section 4111(b) of the Oil Pollution Act of 1990, passed in the wake of the Exxon Valdez accident, mandated that the Coast Guard conduct studies of tanker safety. One set of such studies covered 12 topics, including the adequacy of training for tanker crews, the adequacy of inspection standards, tanker crews' ability to clean up oil spills, and other tanker-related safety issues. That set of studies cost an estimated \$2 million in all, more than any RIA produced by the Coast Guard (see Figure 6).

FIGURE 6. COSTS OF REGULATORY IMPACT ANALYSES AND SECTION 4111(b) STUDIES CONDUCTED BY THE COAST GUARD, 1990-1996



SOURCE: Congressional Budget Office using data from the Coast Guard.

NOTE: Costs are for agency personnel (full-time equivalents) and contractors. Section 4111(b) of the Oil Pollution Act of 1990 mandated that the Coast Guard conduct studies of tanker safety.

Distinguishing Personnel Costs from Contractor Costs

The costs of performing regulatory impact analyses are generally incurred as contractor costs, staff time, or both. Of the five agencies in CBO's study, EPA, OSHA, and the Coast Guard use outside contractors regularly. All of the agencies stressed that estimates of the staff time they expend on RIAs are uncertain because they do not keep time sheets. Instead, the estimates they provided to CBO, which are expressed in staff full-time equivalents (FTEs), depend largely on the recollection of the RIA manager (assuming that person still works at the agency).

The cost in terms of agency personnel varied considerably among the analyses. The average RIA required 2.2 staff FTEs to complete (the median was half that), although individual analyses ranged from 0.04 FTEs to more than 37. The two multimillion-dollar RIAs by the Office of Air and Radiation also consumed an unusually large number of staff—25 and 37 FTEs. Average personnel figures by agency showed a much narrower range, from one FTE per analysis at the NHTSA to more than four at EPA's Office of Air and Radiation. Only five of the 85 RIAs in CBO's sample took more than five FTEs.

Contracting costs varied as much as FTE costs, from none at the NHTSA (which uses no contractors) to more than \$5 million for one analysis at EPA's Office of Solid Waste (see Table 2 on page 14). Average contract costs per RIA at the

offices that used outside contractors—the Coast Guard and all EPA offices—were about \$420,000, with a median of \$230,000. The FAA used one in-house contractor, who works at the agency, at a nominal cost of \$85,000 per year. Table 2 displays the 1995 value of this amount. (OSHA, which was not officially part of CBO's study, reported that it spent an estimated \$420,000 per RIA on contractors.)² The Coast Guard's contract costs ranged from \$155,000 to \$818,000 per analysis. At the Environmental Protection Agency, contract costs in the Office of Air and Radiation ranged from zero to \$2.6 million per RIA; in the Office of Water, from \$26,000 to \$824,000; and in the Office of Solid Waste, from \$78,000 to about \$5.4 million. (Overall, only three of the 85 RIAs that CBO surveyed had estimated contract costs over \$1 million.) For most of those offices, contract costs accounted for 75 percent to 84 percent of total RIA costs. An exception was the Office of Water, where contract costs made up less than half of the total.

Three Caveats About Costs

Although CBO has made its best effort to present a valid picture of agencies' costs for preparing RIAs, the primary data contain some intrinsic ambiguities that should be acknowledged. Those fall into three categories: lack of cost information broken

2. OSHA's costs are in nominal dollar values since CBO could not separate individual expenditures by year. All other costs are stated in 1995 dollars.

down by RIA, instances in which the costs of other data or analytic activities were included in the cost reported for an RIA, and instances in which the costs of data or analysis that is needed for the RIA were not included.

Costs Are Not Broken Down by RIA. Agencies do not track costs separately for regulatory impact analyses or any other project. Instead, agencies track contractor costs through contracts—each of which may contain several projects—and through contractors' bills to the agency. As mentioned above, they generally do not keep time sheets for tracking staff time. Thus, agencies had trouble responding to CBO's request for the personnel time and contract costs of each RIA. To provide the data, agencies had to interview people who worked on the RIA and trace the costs through various annual contracts. In general, their estimates of staff time are less reliable than their estimates of contracting costs.

A case from EPA's Office of Water illustrates the difficulty of allocating costs when several projects are managed under the same contract. Three ongoing analyses—for the Disinfectants/Disinfection Byproducts Rule, the Interim Enhanced Surface Water Treatment Rule, and the Information Collection Rule—involve substantial spending for contractors. But because the projects have been part of the same contract since 1993, and because the same work may contribute to more than one analysis, agency staff said that assigning costs to a particular RIA is difficult.

(For the purposes of its study, CBO apportioned contract costs equally among the three analyses.)

RIA Costs Sometimes Reflect Related Activities. Besides the costs of actually preparing a regulatory impact analysis, the estimates in CBO's study generally include the government's cost of several other activities:

- o Collecting information;
- o Conducting an economic impact analysis, the analytical precursor to an RIA; or
- o Conducting a regulatory flexibility analysis, which examines, the impact of the rule on small entities (particularly small business), as required by the Regulatory Flexibility Act of 1980.

Information collection can be an essential precursor to cost-benefit analysis, especially for environmental regulations. Depending on the scope and complexity of the rule, EPA may have to survey hundreds of facilities to obtain the latest economic and technical information to determine the industry's cost of compliance. For example, the Office of Water issued a proposed rule applying to the pulp and paper industry, which includes some 10,000 to 15,000 facilities; EPA surveyed about 200

of them.³ EPA also sometimes performs a regulatory flexibility analysis at the same time as an RIA and publishes them together. In that case, costs are reported for both, but the majority of costs usually belong to the RIA.

In addition, if an RIA is for a final rule, the cost figure may include costs for both the draft RIA (for a proposed rule) and the final RIA. Although separating draft and final analyses would be preferable, the agencies that CBO surveyed could not consistently report data at that level of detail.⁴

RIA Costs Sometimes Do Not Reflect Necessary Supporting Analysis. Although RIAs are economic analyses, they often depend on the results of other kinds of analysis. According to a Congressional Research Service report about environmental regulations, "quantitative environmental risk analysis . . . is a necessary prerequisite to the conduct of cost-benefit-risk assessment of environmental regulations, because the 'benefits' are the risks avoided (that is, the adverse effects on human health or the environment, or risks of such effects, that the regulation is meant to address)."⁵ Other prerequisites for estimating costs and benefits may include environmental assessments

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3. Personal communication with Neil Patel, Chief, Economic and Statistical Analysis Branch, Environmental Protection Agency, July 1996.
 4. Agencies sometimes could not distinguish between costs for the draft and final RIAs both because they did not keep the data and because in some cases the final rule changed little from the draft rule.
 5. Linda-Jo Schierow, *Risk Analysis and Cost-Benefit Analysis of Environmental Regulations*, CRS Report for Congress 94-961 ENR (Congressional Research Service, December 2, 1994), p. 4.

and engineering studies. Although the results of those studies may be necessary for an RIA, they are usually not included as part of the regulatory impact analysis per se.

For example, the NHTSA generally produces an engineering study before developing a regulatory cost-benefit analysis. Engineering studies are necessary to determine the effects of new safety features, including how cars must be modified to comply with a rule (costs) and the physical safety effects of that modification (benefits). The NHTSA cannot estimate costs and benefits without that analysis, but the engineering analyses are performed by a separate office and published as separate documents. Their costs are not included in the costs of the agency's RIAs presented here.

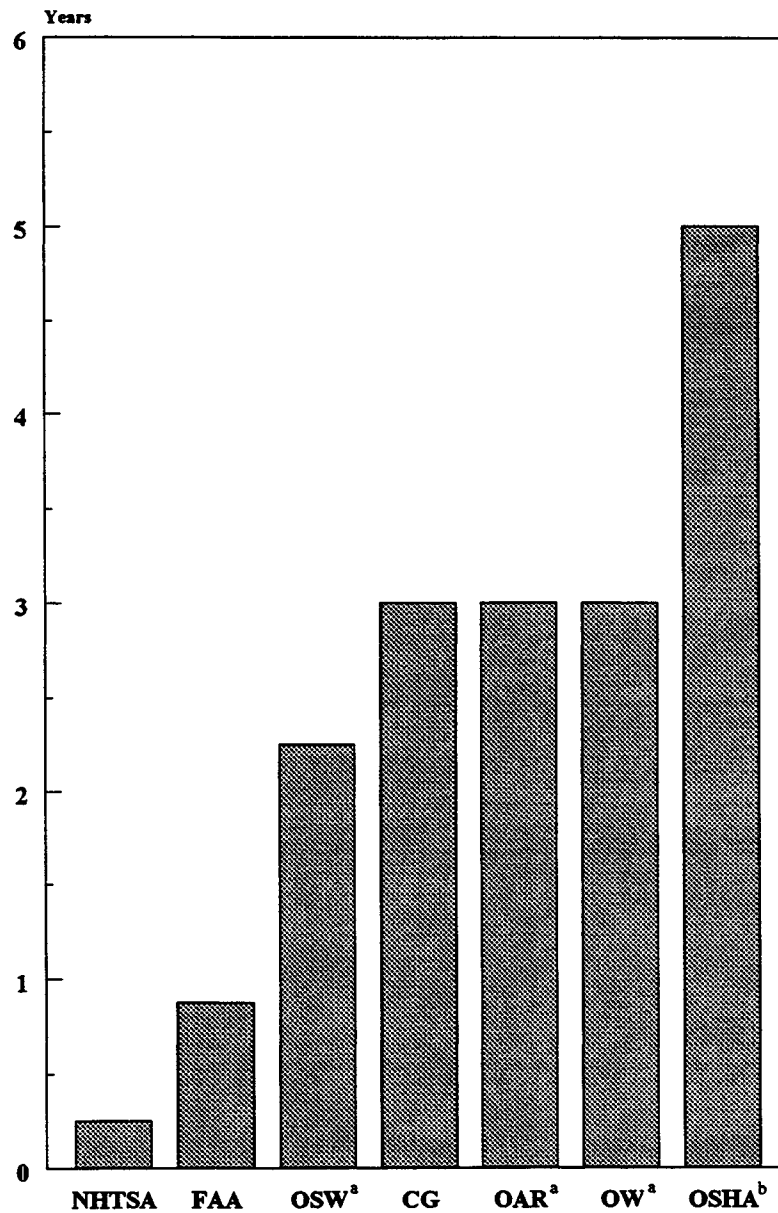
Moreover, one supporting analysis may contribute to several RIAs, so its cost may be difficult to allocate among them. For example, EPA's Office of Solid Waste is undertaking a comprehensive risk analysis (commonly referred to as the Multipathway Analysis) that will probably contribute to a number of RIAs. CBO's study did not include estimated costs for risk assessments or engineering studies; therefore, it may significantly understate the cost of conducting some RIAs.

THE AVERAGE RIA TOOK MORE THAN TWO YEARS TO COMPLETE

The time needed to complete regulatory impact analyses varied among and within agencies just as costs did. The average time per RIA in CBO's study was 2.7 years (with a standard deviation of 1.9 years and a median of 2.25 years). The NHTSA and the FAA took the least time to complete analyses. The NHTSA's analyses required between six weeks and nine months to complete, with a median time of about three months (see Figure 7). The FAA's analyses took anywhere from seven months to one year, with a median time of 10 months.

Several factors contribute to the length of time a regulatory impact analysis requires. FAA officials cited tight deadlines for analysis as one reason that their RIAs generally take less than a year to complete. Although it is not clear why the NHTSA conducts its analyses in less than a year's time, agency officials pointed out that the information it needs to assess costs and benefits is more accessible than the information that an agency such as EPA needs. For example, the NHTSA can experiment with crash-test dummies to determine the benefits of a new safety feature, whereas EPA may have to model the probabilities of specific interactions between contaminants in soil, air, and water. The NHTSA also maintains a comprehensive accident database that it uses to estimate benefits (such as potential lives saved) from a rule. Finally, the agency pointed out that the visible benefits from its rules begin to accumulate in five to 10 years, whereas the benefits from an EPA rule—for example,

FIGURE 7. MEDIAN TIME TO COMPLETE A REGULATORY IMPACT ANALYSIS



SOURCE: Congressional Budget Office using data from the agencies cited.

NOTE: NHTSA = National Highway Traffic Safety Administration; FAA = Federal Aviation Administration; OSW = Office of Solid Waste; CG = Coast Guard; OAR = Office of Air and Radiation; OW = Office of Water; OSHA = Occupational Safety and Health Administration.

a. An office of the Environmental Protection Agency.

b. The Occupational Safety and Health Administration estimated an average time for its analyses.

prevention of new cancer cases—may begin to accrue in 30 or 40 years. Benefits that accrue later are less certain than benefits that accrue immediately and may be harder to estimate.

All other agencies reported that completion time for RIAs ranged from months to years. Coast Guard analyses took an average of three years, with a range of one to six years; OSHA estimated that it spent five years per analysis; and EPA's analyses ranged from four months to 12 years. Within EPA, of course, times varied by office. RIAs at the Office of Water took from one to seven years to finish, with an average time of 3.3 years. RIAs at the Office of Solid Waste took one to four years to complete, with an average time of 2.5 years. RIAs at the Office of Air and Radiation took an average of about three years to complete and ranged from nine months to five years—with a few exceptions.

One very long analysis in the Office of Air and Radiation involved the Onboard Vapor Fuel Recovery Rule, which took 12 years to finish and cost about \$4.4 million. The RIA for that rule was conducted mainly in-house, so its costs are relatively uncertain, for the reasons noted earlier (about 80 percent of costs were for EPA personnel). The vapor-recovery rule requires automakers to install systems to recover fuel vapors that escape near automobile gas tanks. It stems from language in section 202(a)(c) of the 1977 Clean Air Act Amendments that gave EPA the authority to regulate fuel emissions either at the gas pump or on board the car. The proposal was

unusually controversial, and the rulemaking process involved a number of parties. According to EPA officials, the process stalled while interest groups debated whether it should proceed. That disagreement, as well as substantial comments that required a response from EPA, extended the regulatory analysis.

The following sequence of events illustrates why the analysis took 12 years. Work began on the rule in 1983, and EPA published a cost-benefit analysis the next year. But extensive public comment on that analysis and on a 1987 notice of proposed rulemaking forced EPA to conduct more studies and analysis. Later, EPA halted work on the analysis pending additional guidance from the 1990 Clean Air Act Amendments, which eventually directed EPA to go forward with the rule. In 1991, the agency published a notice seeking additional comment on the rule and other changed circumstances since the 1987 notice. However, the Clean Air Act also required EPA to consult with the Department of Transportation about safety concerns; those concerns prompted EPA to publish a 1992 notice of intent not to finalize the rule. That action was overturned by the Circuit Court of the District of Columbia in April 1993, and a final rule was promulgated in January 1994. The first set of cars equipped with refueling vapor recovery systems will probably be ready for the 1998 model year.

AGENCIES DEVOTE VARYING NUMBERS OF STAFF TO RIA WORK

The number of agency staff working on RIAs also varies tremendously. RIA work is concentrated primarily in one office at the NHTSA, the FAA, the Coast Guard, and OSHA. The NHTSA office has about six staff members and analyzes relatively few significant rules (only about one per year). The FAA has a 12-person office and also analyzes about one rule per year. The Coast Guard maintains a seven-person office. OSHA estimated that about 25 of its employees work on RIAs at any given time, although economic and risk analyses are done in separate offices. By contrast, RIA work at EPA is performed by several groups spread throughout the various offices, and CBO did not attempt to tally all of the people who ever worked on all 65 of that agency's RIAs. Clearly, some agencies need to devote more agency resources to RIAs than others.

DETERMINING WHAT CONSTITUTES AN RIA IS DIFFICULT

Accurately determining the number of RIAs an agency conducts is difficult, for two reasons. First, multiple definitions of the term "regulatory impact analysis" are in use. Although an RIA is generally understood to mean only a cost-benefit analysis required for a significant rule, some agencies use the term to denote any analysis that considers benefits as well as costs or that considers alternatives as well as the preferred

regulatory option—regardless of the dollar level. For example, the FAA defines an RIA to include consideration of alternatives; it does not analyze alternatives for rules that are not significant.

Likewise, one of the lowest-cost RIAs reported by officials in EPA's Office of Solid Waste was termed an "economic assessment"—that is, an analysis of a rule that is not significant. Program officials considered it an RIA because it analyzed benefits as well as costs. Analyzing the rule, which proposed regulating the waste from processes to protect wood surfaces, cost an estimated \$80,000. A second lower-cost analysis was also deemed an RIA because it analyzed possible costs and benefits although the rule did not meet the dollar threshold to be significant. The estimated cost of that analysis, titled "Analysis of Potential Cost Savings and the Potential for Reduced Environmental Benefits of the Proposed Universal Waste Rule," totaled about \$100,000.

A twist on the definition problem is that an addendum to a regulatory impact analysis is also considered an RIA in and of itself, at least as reported by the agencies to CBO. One of the least costly RIAs from the Office of Water involved an addendum to a previous analysis. The addendum to the RIA for "National Primary Drinking Water Regulations for Lead and Copper" cost about \$50,000 and took less than two years to complete.

Furthermore, although a regulatory impact analysis is required for every significant rule, the lack of a one-to-one correspondence between RIAs and significant rules leads to further imprecision in the number of RIAs. For example, in 1995, EPA told the Congress that since 1981 it had issued only about 70 rules that cost society more than \$100 million annually (the definition of significant).⁶ However, in a separate response to the Congress in 1995, EPA indicated that it had performed 250 draft and final RIAs since 1981.⁷ Although most rules have draft and final RIAs (for the proposed rule and final rule, respectively), some RIAs may go through many more than two iterations, and others may be completed but never published (since not all proposed rules become final).

One analysis from EPA's Office of Water illustrates the difficulty of keeping track of all RIAs. That analysis, which covers the proposed underground injection of so-called class II contaminants, cost about \$500,000 (of which 10 percent was EPA personnel costs) and took about six years to complete. However, the analysis indicated that the rule would impose significant costs on society; for that and other reasons, the rule was never promulgated. Because the rule was quashed, EPA did not publish the RIA, even though the analysis had consumed significant time and effort. Not surprisingly, finding out about such unpublished but still costly RIAs is difficult.

6. EPA response to Congressman Cardiss Collins, House Committee on Government Reform and Oversight, on H.R. 994, May 15, 1995, p. 1.

7. EPA response to Congressman George Brown, House Committee on Science, on H.R. 9, January 31, 1995, p. 7.

That case is not unique. The same office completed two other analyses in the 1992-1995 period (involving regulation of radionuclides) whose regulations were not issued because the costs they would impose on society were too high. Together, those two analyses cost about \$280,000.

CHAPTER III

WHY DO COSTS VARY SO MUCH?

The Congressional Budget Office's review of agencies that have conducted regulatory impact analyses raises an important question: why do costs per RIA vary so much, both among and within agencies? Answering that question definitively would require investigating the subject matter and history of each of the rules associated with the analyses; such an effort is beyond the scope of CBO's study. However, anecdotal evidence from agency staff provides some insight.

POLITICAL CONTROVERSY

In some instances, intense public controversy leads to a considerably more protracted and expensive rulemaking process. For example, the charged atmosphere surrounding the Office of Air and Radiation's rule on fuel vapor recovery, mentioned in Chapter II, contributed to the 12-year completion time for its RIA. Officials of the Occupational Safety and Health Administration cited an analysis that consumed about four years and \$3.5 million (in nominal dollars) as another example of that phenomenon. The rule involved ergonomic standards in the workplace, and its political profile was such that the Congress voted to stop spending money on analyzing it.

Agency officials sometimes cited consensus on a rule as a major factor in timely completion of its RIA. One of the Office of Air and Radiation's least costly RIAs involved a rule for a national low-emissions vehicle program that would permit cars designed to meet California's emissions standards to be sold in the rest of the country. Automakers wanted the rule and had already moved in that direction. According to the Environmental Protection Agency, the rule was not typical in that it did not set new standards for emissions. Instead, it involved mainly procedural changes to allow the nationwide sale of cars already in production. Because the rule was mainly procedural, its cost-benefit analysis was not as complex, and consensus sped the regulatory process. Consequently, the rule's RIA cost only about \$100,000.

OSHA's rule concerning power industrial trucks also enjoyed a high degree of consensus among all parties and imposed relatively fewer costs on society than other rules. Agency officials attributed the relatively low cost of analysis, an estimated \$150,000, to those factors.

THE RULE'S COST TO SOCIETY

In addition to political controversy, the anticipated cost of a rule is likely to increase the resources devoted to preparing its RIA. The less costly rules generally receive

less attention from interest groups, the Office of Management and Budget, or agency staff. That practice is consistent with the interpretation that if the stakes are lower, the cost of an error in rulemaking is less significant to the affected parties, and the benefits from an improvement in the rule are smaller. Viewed broadly, devoting more effort to evaluating rules whose consequences are more substantial and economizing on those whose consequences are smaller may represent an efficient allocation of society's resources.

In an informal discussion with CBO staff, agency personnel indicated that the probable cost to society, or to particular subgroups of society, may increase the level of effort they assign to an analysis. That may be done because of the perceived need to prepare a more detailed analysis before publishing a preliminary notice of rulemaking (so as to better establish the basis for the proposed rule) or because of a desire to better withstand any judicial challenge. Some agencies, notably EPA, have a formal system for classifying rules into three tiers, which range from Tier I (significant) to Tier III (not so significant). Within the agency, Tier I rules are given priority.

TECHNICAL DIFFICULTY OF THE ANALYSIS

Some rules involve very technically complex issues that make determining their costs and benefits expensive and time consuming. The Office of Solid Waste's draft rule on corrective action described in Chapter II—whose RIA has so far cost more than \$6 million—is one example. A second example comes from EPA's Office of Water, whose most costly RIA involved a proposed rule to regulate wastes from metal products and machinery. According to EPA, that rule covers 14 industry sectors with a wide range of processes and thus a wide range of wastes, so extensive information collection was necessary to determine the wastes and processes involved. As a result of that complexity, the proposed rule took about four years to develop, and its RIA cost an estimated \$1 million, including both contract dollars and personnel costs.

A third example involves a regulatory impact analysis at the Office of Air and Radiation on reformulated gas, which took six years and about \$4.9 million to complete. The significant cost resulted from the complexity of the rule, which was designed to change refinery processes so as to create gasoline with fewer evaporative emissions. Refinery operations differ depending on the source of the oil, so each refinery has a somewhat different process. According to EPA, the reformulated-gas rule involved very complex technical changes specific to particular refineries, and costs and benefits were accordingly difficult to estimate. Moreover, the rule was a

negotiated rulemaking, meaning that all parties (including industry, as well as environmentalists and other interest groups) were involved at a very early stage. Early involvement by interest groups tends to result in more scrutiny and more comments on the entire rulemaking, including the RIA, which may have contributed to the costs of the analysis. (Again, those costs are uncertain: about half were personnel costs.)

HIGH PUBLIC PROFILE OF THE RULE

Sometimes a regulation not only is controversial among the affected industries but also draws national attention. One recent example is a rule by the Federal Aviation Administration, which received so much national and Congressional scrutiny that it placed an extra burden on the FAA's regulatory analysis office. That rule, Commuter Operations and General Certification and Operations Requirements, was published in March 1995.¹ It was designed to bring small commuter planes up to the standards applied to larger planes; the rule grew out of a series of accidents involving planes with fewer than 30 passengers that drew national media attention and generated

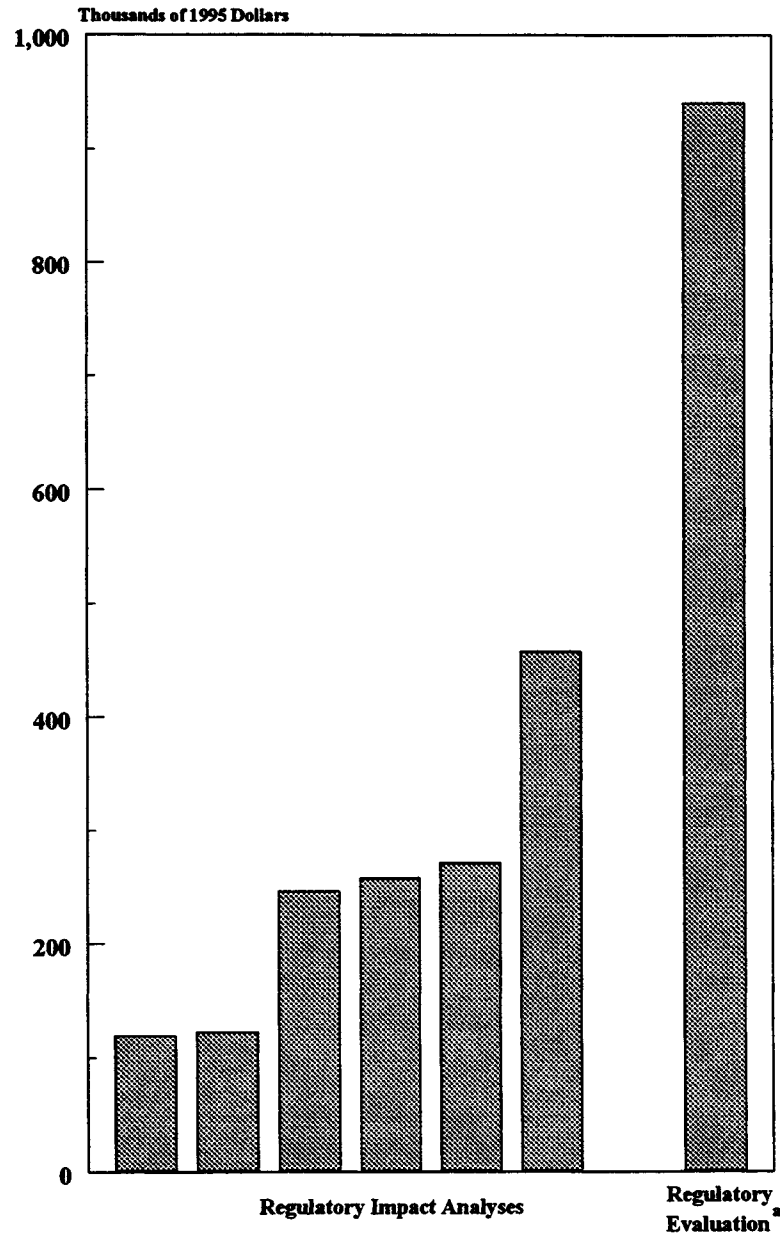
1. Department of Transportation, "Notice of Proposed Rulemaking for Commuter Operations and General Certification and Operations Requirements," *Federal Register*, vol. 60, no. 60 (March 29, 1995), p. 16230. All history on this rule is drawn from the *Federal Register* notice and personal communication with FAA staff.

Congressional hearings in February 1994. The testimony at those hearings and the evidence presented in a 1994 study by the National Transportation Safety Board prompted Secretary of Transportation Federico Pena to make the rule a political imperative, promising that it would be promulgated within a year. As a result, the FAA's Regulation and Organizational Analysis Division employed 10 of its 12 staff on the analysis for one year. That large staff effort drove the cost of the analysis to about \$960,000, although the rule's cost to society was estimated at about \$21 million in its highest year.

That single regulatory evaluation (the FAA's name for a cost-benefit analysis of a rule that is not "significant") cost more than any RIA performed by the agency during CBO's study period (see Figure 8). Although the cost of that evaluation is not included in CBO's figures, it is mentioned here to illustrate that the analysis for a nonsignificant rule can sometimes be more expensive than for a significant one.

National attention has also brought extra work to other agencies. Most of the major rules issued by the Coast Guard in recent years—and six of the seven RIAs it reported to CBO—stem from the Oil Pollution Act of 1990, which the Congress passed in response to the Exxon Valdez accident the previous year.

FIGURE 8. COSTS OF REGULATORY IMPACT ANALYSES AND A REGULATORY EVALUATION AT THE FEDERAL AVIATION ADMINISTRATION



SOURCE: Congressional Budget Office using data from the Federal Aviation Administration.

NOTE: Data reflect costs of agency personnel (full-time equivalents) only.

a. The evaluation was performed in 1995; nominal and real costs are the same.

TYPE OF INFORMATION NEEDED FOR THE ANALYSIS

The diversity of information needed for a regulatory impact analysis can also increase the cost of preparing it. The nature of the information and the ease with which it can be retrieved vary considerably. In some agencies, such as the Federal Aviation Administration, officials may already have access to detailed information on the equipment they may be regulating and the inventory of equipment in use. In other agencies, such as EPA or OSHA, the inventory of plant equipment and equipment in use may not be readily available, and a substantial data collection effort may be needed to establish a baseline before any alternatives can be considered. For example, within EPA's Office of Water, the diverse set of contaminants that may be involved in rulemaking increases the costs of the office's RIAs. Similarly, the corrective action program often involves a diverse set of processes or substances, which in turn leads to more expensive analysis.

CHAPTER IV

CONCLUSIONS

The Congressional Budget Office's study looked at primary data on the costs and time associated with preparing regulatory impact analyses at a sample of agencies that have considerable experience with the process. Although there are important qualifications to the study concerning the definition of an RIA, the accuracy of agencies' records, and the representativeness of the sample, the analysis seems to support four general conclusions.

THERE IS NO SUCH THING AS A TYPICAL RIA

All agencies in CBO's study exhibit a wide range of costs for their regulatory impact analyses, although most RIAs cost less than \$1 million. Costs vary depending on the scope and complexity of the rule, the type of information needed to analyze it, and the likely cost that the proposed regulation would impose on society.

The public attention and controversy surrounding a rule may be significant. At least one regulation (the Federal Aviation Administration's rule on standards for small planes) was accelerated by the attention it received from the Congress and the media. Other rules, such as the Environmental Protection Agency's regulation on vapor

recovery, seem to have been delayed by the controversy that surrounded them. In still other cases, the technical difficulty of the rule required a great deal of effort to estimate its costs and benefits. CBO's study did not examine the impact of deadlines for rules, whether statutory or judicial (resulting from litigation of the rule), but they may also have an impact.

AGENCIES DO NOT SEPARATELY TRACK COSTS FOR EACH RIA

Agencies do not track costs by project. Instead, they track contractor costs by contract; and each contract may contain more than one project. To obtain estimates of contractor costs, agency officials often had to trace RIA costs through successive contracts. Estimates of contractor costs are generally more reliable than those of the costs of agency personnel, which rely mostly on employees' memories. The personnel estimates provided here are a rough approximation.

**RIA COSTS DO NOT REFLECT SOME
NECESSARY SUPPORTING ANALYSIS**

In many cases, an agency must conduct an engineering study, a risk assessment, or other technical analysis to determine the effects of a rule. Studies such as those conducted by the National Highway Traffic Safety Administration (for example, to determine effects of new safety regulations) or by EPA (for example, to determine how industry will comply with a rule) are typically not included in the reported costs of a regulatory impact analysis. Thus, CBO's study may underestimate the cost of RIAs.

ISOLATING THE UNIVERSE OF RIAs IS DIFFICULT

Two factors make isolating the exact number of RIAs performed difficult. First, more than one working definition of the term "regulatory impact analysis" is in use. Some agencies consider an analysis that looks at benefits or alternatives as well as costs of an RIA even if the rule is not "significant." Second, some RIAs are completed but never published—generally because their regulation is withdrawn—and thus are hard to track.

IMPLICATIONS FOR EXTENDING REGULATORY ANALYSIS TO THE LEGISLATIVE PROCESS

Many observers of the regulatory process—both supporters and opponents—have raised the possibility of expanding some aspects of regulatory analysis at the stage in which legislation is being developed and approved by the Congress. However, having the same type of analysis at the legislative and rulemaking stages is usually not possible. Legislation generally states broad principles and goals for achieving a particular outcome. It may specify the entities covered or the activities subject to regulation, but it usually does not state the technical details and standards that are envisioned. Rulemaking, in contrast, typically states very specific regulations concerning the entities covered, the processes or activities involved, the permissible activities or outcomes, and so forth. That level of detail may not be known without substantial information collection and analysis. Nevertheless, some legislative proposals call for an identification and quantitative description of economic, social, or environmental costs and benefits that is much more specific than current practice and at a level that approaches the requirements of some regulatory impact analyses.

Depending on its form, a new analytic requirement at the legislative stage could present a significant challenge to lawmakers and their support staff, as well as to the agencies involved, for at least three reasons. First, no single definition of a regulatory

analysis exists; even when carrying out analysis under the same executive order, offices and agencies vary considerably in the amount of information they develop and provide.

Second, CBO's study found that some analysis proceeded relatively quickly and easily if a good database was available and the technical information was well understood and not controversial. In many cases, however, the agencies had to develop a substantial amount of original information in the course of preparing the regulatory analysis. Producing similar comparisons of costs and benefits as part of the legislative process would probably require a similar effort.

Third, regulatory impact analyses take significant amounts of resources and time. Although there was wide variation among the RIAs in CBO's study, the average cost was about \$570,000 and the average time was about three years. The quantitative estimates of benefits and costs necessary for an RIA in turn require specific values for the details of the proposed regulation (such as the firms affected, the level of emissions permitted, or the technological process to be modified). Depending on the stage in the legislative process at which the Congress tried to undertake such analysis, those features could add substantially to the time needed to prepare legislation.

APPENDIX A
HISTORY OF REQUIREMENTS FOR
REGULATORY IMPACT ANALYSES

Regulatory analyses have been required by executive order since the Nixon Administration. However, agencies' use of the analyses has been constrained by statutes that may be silent about or even prohibit the consideration of costs and benefits. A series of executive orders, associated with different presidents, have shaped the evolution of the process.

EXECUTIVE ORDERS SINCE THE NIXON ADMINISTRATION

President Nixon required "quality of life" reviews of regulations, which provided the Office of Management and Budget (OMB) with a formal mechanism to track rules, although it was used mostly to review rules of the Environmental Protection Agency (EPA).¹ President Ford, in his executive orders on inflation impact analysis (Executive Order 11821) and economic impact analysis (11949), required "inflation impact" statements to review how proposed rules would affect the level of inflation.²

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1. General Accounting Office, *Improved Quality, Adequate Resources, and Consistent Oversight Needed If Regulatory Analysis Is to Help Control Costs of Regulations*, GAO/PAD-83-6 (November 2, 1982), p. 45.
 2. House Committee on the Judiciary, *Report on Regulatory Review and Sunset Act of 1995* (November 7, 1995), p. 9.

President Carter issued Executive Order 12044 requiring regulatory analysis on all "significant" rules, defined as those having an annual effect on the economy of at least \$100 million or expected to result in a major increase in costs or prices for industries, governments, or regions.³ The order specified consideration of regulatory alternatives and their economic consequences, but it was interpreted to require mostly cost analysis.

Executive Order 12291, which was issued by President Reagan and remained in effect until 1993, required strict cost-benefit analysis for "major" regulations. The order defined major as a rule that resulted in an annual cost to the economy of over \$100 million, a major increase in costs or prices, or significant adverse effects on competition, employment, investment, productivity, or innovation. The order coined the term regulatory impact analysis (RIA) and required agencies to prepare one for every major rule. In contrast to President Carter's order, this one stressed choosing the regulatory option that maximized net benefits and minimized net costs.⁴

President Clinton replaced Executive Order 12291 with Executive Order 12866, which again defines rules as significant rather than major. The definition of significant is much broader than before, including any rule that has an expected impact

3. Executive Order 12044, "Improving Government Regulations," *Federal Register* vol. 43 (March 23, 1978), p. 12661.

4. Executive Order 12291, "Federal Regulation," *Federal Register*, vol. 46 (February 19, 1981), p. 13193.

on the economy of \$100 million per year; has an "adverse effect" on the economy, productivity, jobs, or the environment; creates inconsistencies with other agency actions; affects the budgetary impact of entitlements, user fees, or loan programs; or raises new legal or policy issues arising from the President's priorities. The order directs agencies to consider the distributional impact of benefits and to select options that maximize net benefits, including health and safety, environmental, and equity benefits.⁵

The RIAs that the Congressional Budget Office (CBO) examined were all issued under Executive Order 12291 or 12866. Because the most recent executive order substantially widens the definition of significant, determining which rules qualify and which do not is difficult. Consequently, isolating the universe of analyses required for those rules can also be difficult.

STATUTES RELATING TO REGULATORY ANALYSIS

Recent legislation has codified many of the procedures covered by Executive Order 12866. Title II of the Unfunded Mandates Reform Act of 1995 provides that agencies

5. Executive Order 12866, "Regulatory Planning and Review," *Federal Register*, vol. 50 (October 4, 1993), p. 51735. For an in-depth treatment of Executive Orders 12291 and 12866, see Congressional Research Service, *Risk Analysis and Cost-Benefit Analysis of Environmental Regulations*, CRS Report for Congress 94-961 ENR (December 2, 1994), pp. 23-35.

assess the effects of their rules on other levels of government and on the private sector. The agencies must provide written statements that contain, among other things, a consideration of a reasonable number of regulatory alternatives. Except in certain circumstances, agencies must also select the "least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule." The act also requires specific analysis and consultation with state, local, and tribal governments when the proposed rule may cause those levels of government to spend a total of more than \$100 million in any year. Similar analysis is required for rules affecting the private sector if total expenditures are expected to exceed \$100 million per year.

In addition, the Small Business Regulatory Enforcement Fairness Act of 1996 requires agencies to submit to the Congress and the General Accounting Office (GAO) a copy of each proposed rule, accompanied by a cost-benefit analysis and an estimate of regulatory burden. GAO must report to the Congress whether the agency followed procedural requirements associated with rulemaking, including those designed to ensure that the rules do not impose an undue burden on small businesses. The law applies to major and minor rules. Major rules cannot go into effect until 60 days after the proposed rule has been submitted to GAO and the Congress, and the Congress can enact legislation disapproving any rule found to be too burdensome, excessive, inappropriate, or duplicative.

OTHER STATUTES

Although CBO's study did not review the authorizing statutes for every agency that submitted cost data for RIAs, a variety of statutes introduce different considerations into the analytic processes of all agencies. For example, although RIA guidelines generally urge offices to consider benefits and costs, many statutes were aimed at reducing risks rather than costs. At the extreme, some statutes prohibit agencies from considering costs when developing rules. A 1981 Supreme Court decision on the Occupational Safety and Health Administration's (OSHA's) cotton dust standard made it clear that the language in the Occupational Safety and Health Act prohibited the use of cost-benefit tests for new OSHA regulations.⁶ Nonetheless, OSHA performs cost-benefit studies under direction from OMB.⁷

Similarly, sections of the Clean Air Act prohibit balancing costs and benefits.⁸ Although the Clean Air Act Amendments of 1990 require cost-benefit studies of clean air regulations, no pollution control statute has been amended to shift the basis of decisionmaking from health or technology criteria to cost-benefit criteria.⁹

6. American Textile Manufacturers Institute v. Donovan, 452 U.S. 490 (1981).

7. Mary Jane Bolle, *Regulatory Reform: Implications for OSHA*, CRS Report for Congress 95-213E (Congressional Research Service, January 27, 1995), p. 4.

8. Robert W. Hahn, "Regulatory Reform: A Legislative Agenda," in Hahn, ed., *Risks, Costs, and Lives Saved: Getting Better Results from Regulation* (New York: Oxford University Press, and AEI Press, 1996).

9. John Blodgett, *Environmental Reauthorizations and Regulatory Reform: Recent Developments*, CRS Report for Congress 95-3 ENR (Congressional Research Service, December 19, 1994), p. 4.

Environmental statutes generally exclude costs from consideration in setting safety goals or health-based standards of ambient environmental quality (such as air standards), although most EPA statutes authorize the agency to consider compliance costs, risk reduction, and technical feasibility when issuing regulations.¹⁰

10. Ibid., p. 22.

APPENDIX B

**HOW THE ENVIRONMENTAL PROTECTION AGENCY
CONDUCTS A REGULATORY IMPACT ANALYSIS**

A regulatory impact analysis (RIA) at the Environmental Protection Agency (EPA) originates in one of the program offices—primarily, the Office of Solid Waste, the Office of Water, or the Office of Air and Radiation. Each office has a division that is responsible for undertaking regulatory analyses. To illustrate the process, the Office of Solid Waste's Economic Methods and Risk Analysis Division (EMRAD) is used to represent those divisions and the tasks they perform. (The description that follows is based on discussions with staff in EPA offices and at the Office of Management and Budget, as well as a review of the executive order guidelines.)

The staff at EMRAD decide what resources they need to conduct an RIA. If they feel that the task is simple and all the necessary expertise is available within their division, they complete the RIA in-house. Otherwise, they may involve other EPA divisions or even an outside contractor. Contractors are subject to limits about making policy-related assessments, however, so EMRAD takes responsibility for those parts of the analysis. In general, EMRAD and the contractor communicate frequently throughout the initial development of the RIA. Because the process is collaborative and the scope of the work is developed through discussions between EPA and the contractor, clear divisions of labor may not exist. Furthermore, the wide

variation in the complexity of RIAs forces the division doing the regulatory analysis to approach each RIA on an individual basis.

Since RIAs accompany both proposed and final regulatory actions, the review process for any RIA follows the review process for rulemaking. An EPA internal review begins with a work group, which consists, at a minimum, of staff in the lead office and the Office of General Counsel, although other offices may elect to participate as well. EPA's work groups range in size from two to 25 people, depending on the complexity and scope of the subject matter. Much of the internal debate about the proposed analysis is resolved there. Any issues raised by other offices that have not been settled in the work group are presented to each office's management. Any further disagreement is then brought before the Offices of the Deputy Administrator and the Administrator. The office designing the regulation may request a review from outside experts. For example, RIA materials may occasionally be sent to the Economic Subcommittee of EPA's Science Advisory Board. Policies for such external review depend on the individual office. EPA's Office of Policy, Planning, and Evaluation once participated as a regular member of the work groups, but since agency reforms in 1992, its presence has been minimal.

Next, the work group's report, the RIA, and any other studies supporting the proposed regulatory action are presented to the Administrator of EPA. Upon his or

her approval, the materials are delivered in draft form to the Office of Management and Budget (OMB) for its review under Executive Order 12866.

In the course of considering a regulatory action, an agency can provide public notice through the *Federal Register* at several stages in its activities. Those notices may be made to solicit information or to meet requirements of the Administrative Procedures Act for providing a period of public comment on a proposed action before a final rule is promulgated. Specifically, an agency can publish one or more of the following: a notice of inquiry, an advance notice of proposed rulemaking (ANPRM), a notice of proposed rulemaking (NPRM), and finally, a final rule. Under some circumstances, an agency may issue more than one of each type of notice.

OMB has the option to review an agency's notice of inquiry, ANPRM, or other preliminary regulatory action, but the period for it to do so is 10 working days. For proposed rules (NPRMs) and final rules, OMB may waive review if the rule is not "significant" under Executive Order 12866. Otherwise, under the executive order, OMB must notify the agency of the results of its review within 90 calendar days of the date of submission of the draft rule. The executive order stipulates that in the event of disputes between OMB and an agency, the matter is submitted for resolution to the President (or to the Vice President's office at the request of the President). During its review, OMB may also invite other interested federal agencies to comment.

The comments of those agencies must be entertained before the rule is published. In a typical case, OMB asks for an alternative presentation of the information, and the program office originally responsible for the rule will make the necessary changes. When changes to the draft are agreed to, the proposed rule is published in the *Federal Register*.

Typically, a proposed rule is published in the *Federal Register* before it becomes effective. At that point, the public can make comments. (The prominence and importance of publication in the *Federal Register* generally ensure that interested individuals and organizations will read the proposal critically and possibly submit comments.) At the close of the public comment period, the comments are considered, and the originating office prepares the final regulation following procedures similar to those described above for a proposed regulation. Under the Administrative Procedures Act, however, the final rulemaking process is not as open as proposed rulemaking. The final rule must be based on information in the record. Thus, comments from private parties, if not substantiated by agency data or by comments received from the public, are excluded from the docket and are not to be considered. In addition, information about the final rule is more closely guarded in the final stage to limit the lobbying powers of interested parties.

Legislation passed in March 1996 inserts another step before EPA can send the finished rule to the *Federal Register*. The Small Business Regulatory Enforcement Fairness Act requires that the materials be sent to the General Accounting Office and Congressional committees when the final rule is promulgated and published.

APPENDIX C

CBO'S METHOD FOR CALCULATING RESOURCE COSTS

The Congressional Budget Office's (CBO's) estimate of the cost of completing a regulatory impact analysis (RIA) involved several calculations for three agencies—the Environmental Protection Agency, the Federal Aviation Administration, and the National Highway Traffic Safety Administration. Based on data from those agencies, CBO was able to make the following calculations:

- o Total personnel levels, measured in full-time equivalents (FTEs) per RIA;
- o Nominal and real (inflation-adjusted) FTE costs per RIA;
- o Nominal and real contracting costs per RIA;
- o Total nominal costs (nominal contracting costs plus nominal FTE costs); and
- o Total real costs (real contracting costs plus real FTE costs).¹

1. The number of FTEs may not always match the number of employees because some people work part time or overtime. FTEs are therefore measured in terms of hours rather than people.

CBO also tabulated the number of years it took to complete the RIA. Information provided by two other agencies—the Coast Guard and the Occupational Safety and Health Administration (OSHA)—did not include enough detail for CBO to perform those calculations, but their cost data were included in the study for comparison.

To obtain cost figures for RIAs, CBO contacted the managers in charge of regulatory analysis at each agency and requested a list of RIAs published since 1990, including annual contract costs and FTEs expended on each analysis. At the National Highway Traffic Safety Administration, OSHA, and the Coast Guard, one office in each agency handled regulatory analysis. In the case of the Environmental Protection Agency, several divisions within the Office of Air and Radiation and the Office of Water conducted RIAs, and two divisions (recently reorganized into one) in the Office of Solid Waste conducted RIAs.

Agencies reported contract costs in nominal dollars (that is, dollars of the year in which the costs were incurred). To convert nominal dollars into real 1995 dollars, CBO indexed the nominal numbers using a chain-type price index of federal nondefense consumption of services, as reported by the Survey of Current Business.²

2. Department of Commerce, Bureau of Economic Analysis, "Chain-Type Quantity and Price Indexes for Government Consumption Expenditures and Gross Investments by Type," *Survey of Current Business*, vol. 76, no. 1/2 (January/February 1996) and no. 6 (June 1996), Table 7.11B. The 1996 numbers reflect the first-quarter index, which was the most recent available at the time of CBO's study. Indexes before 1991 are from supplemental tables provided by the Bureau of Economic Analysis.

CBO used 1995 dollars because that was the most recent year with a full year of index information.

Translating FTEs into nominal dollars (and then real dollars) was more complex. The method CBO used to convert the data that agencies reported is described below.

ENVIRONMENTAL PROTECTION AGENCY

All offices at EPA were able to provide estimates of annual contract costs and FTE costs for all RIAs. EPA's budget office provided annual average values for salary and benefits dating back to 1983 for the Office of Air and Radiation, to 1986 for the Office of Solid Waste and Emergency Response, and to 1987 for the Office of Water.³ EPA estimated that each FTE cost approximately \$20,000 per year for overhead.⁴ That figure applies only to 1996, however; EPA did not have comparable lump-sum figures for previous years. To estimate the overhead costs per FTE for previous

3. The Office of Solid Waste and Emergency Response contains the Office of Solid Waste (OSW) as one of its several divisions. Data on RIAs came from the Office of Solid Waste, but EPA's budget office provided information on salaries and benefits for the larger entity, so CBO used that information to calculate FTE figures for the OSW.

4. EPA termed overhead as "general support expenses," which included rent, utilities, telecommunications, security, housekeeping, printing, training, supplies, and equipment.

years, CBO calculated the annual percentage change in salary and benefits for each office and applied the same rate of change to the 1996 lump-sum overhead figure for each office. That calculation produced an annual lump-sum number for each office for overhead, which CBO added to annual salary and benefits derive a complete FTE figure. That method assumes that overhead costs changed at the same rate as salary and benefits, which may or may not have been the case.

FEDERAL AVIATION ADMINISTRATION

The FAA issues a "significant" rule only about once a year and therefore performs only about one RIA per year. The agency provided annual FTE levels per RIA and listed the employees working on the analyses as GS-13 (step 5) or GS-14 (step 5) staff. CBO used the annual salaries for those levels stated in the government's General Schedule salary tables and also contacted the FAA budget office for a formula to calculate benefits and overhead. The budget office estimated benefits at 20 percent of salary. The FAA does not calculate overhead per FTE but offered two suggestions for an overhead rate; CBO used 21.5 percent, the average of the two rates.

COAST GUARD

The Coast Guard's Standards, Evaluation, and Analysis Division, which performs RIAs, has seven employees: one manager (a GS-14), two other GS-14s, three GS-13s, and one GS-7. The division also uses contractors extensively. Since the Coast Guard did not provide an estimate of staff effort by level and year, CBO assumed an average cost of \$100,000 per year for salary and benefits. As with other agencies, the Coast Guard's estimates of FTE time spent on RIAs are uncertain. In addition, division staff say they often borrow government employees from other offices for temporary assignments. However, that division performs most of the regulatory analysis for the Coast Guard.

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

The NHTSA's Office of Regulatory Analysis has averaged about six FTEs from 1990 to 1996, and most of its staff are GS-14 (step 10). The NHTSA provided data for each RIA between 1992 and 1996 by year and FTE level. CBO used a GS-14, step 10 salary level for each year and calculated annual benefits and overhead using a

formula provided by the NHTSA's budget office.⁵ The budget office estimated benefits at about 15 percent per year and added a lump sum of roughly \$15,000 per FTE per year to account for overhead.⁶ CBO added the estimates of benefits and overhead to salary to obtain the complete nominal FTE cost for each year.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

OSHA did not provide data in as much detail as the other agencies. It reported the rules it had published by year from 1990 through 1995 but was unable to determine which economic analyses were RIAs and which were not. OSHA's Office of Regulatory Analysis reported that it spends an average of \$420,000 in contract money and about 6.4 FTEs for each economic analysis. According to OSHA's budget office, the cost of salary and benefits for an FTE in the Office of Regulatory Analysis is about \$100,000 per year because of the relatively high GS level of its staff (GS-13 and GS-14). Using those numbers, CBO calculated an average cost of \$1,060,000 per RIA (\$420,000 for contracts plus \$640,000 for salaries and benefits). Those figures are not provided in real terms since OSHA could not differentiate costs by year. OSHA

5. The salary numbers used in this paper incorporate locality pay beginning in 1994, the first year it was instituted for federal employees.

6. NHTSA estimated benefits at 15 percent of salary for every year except 1996, for which it used a 16 percent rate. The lump-sum amount varied by year but was approximately \$15,000.

did provide examples of a low-cost and a high-cost RIA, and that range is reported in the results.

