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Federal Regulations: Efforts to Estimate Total Costs and Benefits of Rules

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Curtis W. Copeland
Specialist in American National Government
Government and Finance Division

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Summary

Cost-benefit analysis has long been used to try and measure the effects of individual regulatory actions, and underlies at least part of many attempts to assess the cumulative effects of regulations on society. Some policy makers have expressed an interest in cost-benefit analysis and in developing an accurate measure of total regulatory costs as a first step in developing a “regulatory budget” that would set a cap on compliance costs. Although measuring total regulatory costs and benefits is inherently difficult (e.g., determining what effects would have occurred in the absence of the regulation and aggregating the results of studies with different methodologies and quality), estimates of regulatory costs have been used in support of legislation (e.g., H.R. 2432 in the 108th Congress) and are widely cited by policymakers, the media, and others. This report examines one such study to illustrate the complexities of this type of analysis.

In 2001, W. Mark Crain and Thomas D. Hopkins estimated total regulatory costs at \$843 billion in 2000. To arrive at that figure, the authors developed estimates for different types of regulations (environmental, workplace, economic, and tax compliance) using various sources and sometimes making assumptions to adjust the results from previous studies. For example, to estimate the cost of environmental rules, the authors used only the upper end of a previous estimate range (\$96 billion to \$170 billion) that had been produced by the Office of Management and Budget (OMB), and then they adjusted it further upward. Also, the authors’ estimate of the cost of economic rules (\$435 billion) is heavily dependent on the accuracy of estimates from a previous study. The Crain and Hopkins study (as well as other studies) also indicated that federal regulations cost small businesses more per employee than larger businesses.

Since 1997, OMB has been required to issue an annual report containing, “to the extent feasible,” an estimate of the aggregate costs and benefits of federal regulations. OMB’s estimate of regulatory costs for 2000 (\$146 billion to \$229 billion) was significantly smaller than the Crain and Hopkins estimate (\$843 billion) because OMB considered it inappropriate to include certain types of costs that the authors used (transfers and tax compliance). More recently, OMB has concluded that aggregate estimates of regulatory costs and benefits are not feasible, and instead has provided a 10-year rolling summary of costs and benefits only for certain major rules. OMB’s draft report for 2004 indicated that the estimated costs of 85 major rules that the office reviewed from October 1993 through September 2003 ranged from \$34 billion to \$39 billion, with benefits estimated at between \$62 billion and \$168 billion.

Although accurate measures of the costs and benefits of all federal rules would be useful, decisionmakers using studies of aggregate regulatory costs and benefits to guide public policy need to be aware of those studies’ conceptual and methodological underpinnings. This report will be updated periodically to reflect changes in OMB’s estimates of regulatory costs and benefits, as well as the estimates developed by parties outside of the federal government.

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Federal Regulations: Efforts to Estimate Total Costs and Benefits of Rules

Regulation, like taxing and spending, is a basic function of government. Unlike taxing and spending, though, the costs that nonfederal entities pay to comply with federal regulations are not accounted for in the federal budget process. Cost-benefit analysis has long been used to try to account for the effects of individual regulatory actions, and underlies at least part of most attempts to assess the cumulative effects of regulations on society. Policy makers have long expressed an interest in cost-benefit analysis and in developing an accurate measure of total regulatory costs. Some have suggested that the federal government use that information to adopt a “regulatory budget” that could limit the total volume of regulatory programs, expenditures, and compliance costs, by setting a cap on the compliance costs each agency could impose on the economy. However, measuring total regulatory costs and benefits is inherently difficult. For example, researchers must determine the baseline for measurement (i.e., what effects would have occurred in the absence of the regulation) and aggregating the results of studies with different methodologies and quality can be highly problematic. Some observers, including the Office of Management and Budget (OMB), currently doubt whether an accurate measure of total regulatory costs and benefits is possible.

Nevertheless, estimates of total regulatory costs in the hundreds of billions of dollars are widely cited by policymakers, business interest groups, the media, and others. This report provides information on how one widely cited study was developed to illustrate the complexities associated with this type of analysis. The report also provides information on how OMB’s estimates of aggregate federal regulatory costs were developed and have varied over time, and on estimates that have been made of aggregate regulatory costs to businesses. Finally, the report indicates that estimates of aggregate regulatory costs need to be interpreted and used carefully. First, however, the report provides some background regarding the types of rules that federal agencies issue and current cost-benefit analysis requirements.

Background

Each year, about 60 federal agencies issue more than 4,000 final rules or regulations on topics ranging from the timing of bridge openings to the permissible levels of arsenic and other contaminants in drinking water. The federal government has long regulated economic activity, often through independent regulatory agencies or commissions. Although economic regulation is often dated to the creation of the Interstate Commerce Commission in the late 1800s, it began in earnest during the 1930s with the creation of such agencies as the Securities and Exchange Commission (SEC), the Federal Deposit Insurance Corporation (FDIC), and the Federal Communications Commission (FCC). Social regulation in such areas as

environmental quality, workplace safety, and consumer protection grew rapidly during the 1960s and 1970s with the creation of such agencies as the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the Consumer Product Safety Commission (CPSC).

In addition to these regulatory agencies, most cabinet departments and other agencies issue regulations that affect the public in a variety of ways. For example, the Department of Agriculture regulates the price, production, import, and export of agricultural crops; the safety of meat, poultry, and certain other food products, and broad-reaching welfare programs. Agencies within the Department of Transportation set safety standards for highways and heavy trucks (Federal Highway Administration), automobiles and light trucks (National Highway Traffic Safety Administration, or NHTSA), and railroads (Federal Railroad Administration). Taken together, federal regulations now affect virtually every person, business, and government in the United States.

Types of Rules

The types of regulations that federal agencies issue have been categorized into the following groups:

- *economic* regulations that directly restrict businesses' pricing and output decisions as well as limit the entry or exit of businesses into or out of certain types of industries. These regulations often affect the agriculture, trucking, banking, or communications industries, among others, and (as mentioned previously) have often been administered by independent regulatory agencies such as the SEC or the FCC;
- *environmental* regulations that focus on protecting or improving the quality of the environment, and include those issued by EPA as well as the Departments of Transportation, Energy, and the Interior;
- *other social* regulations that are designed to advance the health and safety of consumers and workers, promote social goals such as equal opportunity, provide equal access to facilities, and protect the public from fraud and deception. Examples include regulations issued by OSHA, NHTSA, and the Food and Drug Administration;
- *process* regulations that involve paperwork, such as income tax forms, applications for procurement contracts, and immigration papers. The Internal Revenue Service currently accounts for about 80% of the governmentwide paperwork estimate; and
- *transfer* regulations that move payments from one group in society to another, such as federal Social Security payments (from taxpayers to recipients) and agricultural price supports (from taxpayers to farmers).

Each of these types of regulations may have direct or indirect costs and benefits. For example, direct costs of environmental or other social regulations include the capital equipment and labor needed to meet the environmental or health and safety standard. Indirect costs can include lost productivity or competitive disadvantages caused by the need to pay for the direct compliance costs. Most cost and benefit estimates for non-economic rules do not include indirect effects because they are extremely difficult to measure (and therefore may understate the total effects of the rules). Estimates for economic rules are primarily indirect.

In general, the benefits of regulation are harder to measure than regulatory costs, particularly in dollar terms. For example, the benefits of environmental protection are often presented in terms of improved health, quality of life, preservation of ecosystems, and other outcomes of environmental quality that are not traded in the marketplace. As a result, the value of these benefits is often estimated by economists through indirect “willingness to pay” models and statistical techniques. These estimation methods have been strongly criticized by some who consider placing a value on human life or health inappropriate, particularly when regulatory benefits occur in the future and are discounted in present value terms.¹

Cost-Benefit Analysis

Some form of cost-benefit analysis underlies at least some part of most attempts to assess the cumulative effects of regulations on society. Conceptually, cost-benefit analysis is a rigorous procedure that involves systematically weighing the costs and benefits of various alternatives to a proposed action. The analysis is supposed to account for all of the effects of a regulatory action, including effects that are difficult to quantify or monetize. Although most economists view cost-benefit analysis as a useful tool in making decisions about a particular rule, others consider the technique inherently flawed because (among other things) they believe that the difficulty associated with measuring regulatory benefits often causes those benefits to be understated.

Since 1981, cabinet departments and independent agencies such as EPA have been required to prepare cost-benefit analyses before issuing “major” or “economically significant” rules (e.g., rules with a \$100 million impact on the economy).² Independent regulatory agencies such as the SEC and the FCC are generally not required to conduct those analyses, and no agency is required to do so for rules that are not major or economically significant. Also, as the Supreme Court affirmed in 2001, some statutes prohibit the consideration of costs when setting certain health standards.³

¹ See, for example, Lisa Heinzerling and Frank Ackerman, *Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection* (Washington: Georgetown University, 2002).

² The most widely applicable cost-benefit analysis requirements currently in place are in Executive Order 12866, “Regulatory Planning and Review,” 58 *Federal Register* 51735, Oct. 4, 1993.

³ *Whitman v. American Trucking Associations*, U.S., No. 99-1257, Feb. 27, 2001.

The cost-benefit studies that agencies conduct are almost always done before the rules are promulgated. These “ex ante” studies are often heavily dependent on assumptions, particularly regarding long-term or uncertain effects where subtle interactions between various factors are often not well understood or directly measurable. Very few “ex post” studies are done after rules are promulgated to try and determine whether the previous estimates were accurate.

Hopkins’ Estimates of Aggregate Regulatory Costs

As discussed in greater detail later in this report, for the past several years, Congress has required OMB to prepare a report each year on the aggregate costs and benefits of federal rules. Others outside of government have also published studies during the past 15 years attempting to measure total regulatory costs. Some of the most commonly cited of those studies have been published by Thomas D. Hopkins,⁴ and he has consistently concluded that the annual cost of federal regulations is in the hundreds of billions of dollars. For example, in 1991, Hopkins concluded that “federal regulation may be costing American taxpayers \$400-\$500 billion dollars annually (in 1988 dollars) over and above those costs of government that show up in the budget. This works out to an average of roughly \$4,000-\$5,000 per household.”⁵ Hopkins also concluded in this study that total regulatory costs had declined from 1977 to 1988, but had risen steadily thereafter. He also asserted that costs associated with environmental and process rules were rising more quickly than other types of regulatory costs.

Hopkins has updated his estimates of total regulatory costs several times over the years, with the results consistently indicating that those costs were growing rapidly. For example, in 1993 he estimated that total regulatory costs in 1991 were \$542 billion.⁶ In 1995, Hopkins concluded that “some \$600 billion annually is spent by those regulated to comply with all federal regulation.”⁷ In 1996, Hopkins said that total regulatory costs stood at \$668 billion (in 1995 dollars), and predicted that those costs would rise to more than \$720 billion by the year 2000.⁸

⁴ Hopkins is the Dean of the College of Business at the Rochester Institute of Technology in Rochester, NY. In the early 1980s he served as deputy administrator of the Office of Information and Regulatory Affairs within OMB.

⁵ Thomas D. Hopkins, “Cost of Regulation,” report prepared for the Regulatory Information Service Center (Washington: Aug. 1991), p. 1. Specifically, Hopkins estimated that the total annual cost of regulation in 1990 (in 1988 dollars) was between \$392 billion and \$510 billion.

⁶ Thomas D. Hopkins, *Federal Regulatory Burdens: An Overview*, RIT Public Policy Working Paper, Rochester Institute of Technology, Rochester, NY, 1993.

⁷ Statement of Thomas D. Hopkins before the Committee on Governmental Affairs, United States Senate, Feb. 8, 1995, p. 1.

⁸ Thomas D. Hopkins, *Regulatory Costs in Profile*, Policy Study Number 132, Center for the Study of American Business, Aug. 1996.

Most recently, in a 2001 report prepared for the U.S. Small Business Administration, Hopkins and W. Mark Crain estimated that the total cost of regulations was \$843 billion in 2000.⁹ This \$843 billion estimate has been cited in support of regulatory reform legislation (e.g., H.R. 2432, the “Paperwork and Regulatory Improvements Act of 2003”), and has been widely quoted by policy makers, the Small Business Administration, business interest groups such as the Chamber of Commerce, academicians, the media, and others.¹⁰ In some cases, the study is cited with a high degree of certainty. For example, some articles simply state that “regulations cost the economy \$843 billion.”¹¹ Less widely discussed, however, is how Crain and Hopkins developed that \$843 billion estimate.

How the \$843 Billion Estimate Was Developed

In their study, Crain and Hopkins presented estimates of both total regulatory costs (\$843 billion) and for four types of federal regulations that comprised that total:

- environmental rules (\$197 billion),
- economic rules (\$435 billion),
- workplace rules (\$82 billion), and
- tax compliance rules (\$129 billion).

The authors used a variety of sources of information to develop estimates for these types of rules, sometimes using multiple sources and making multiple assumptions for a single estimate. Crain and Hopkins’ estimation methods for each type of regulation are summarized below.

Environmental Regulations. To develop their estimate of environmental costs, the authors used the upper end of a cost estimate range that OMB had reported

⁹ W. Mark Crain and Thomas D. Hopkins, *The Impact of Regulatory Costs on Small Firms*, a report for the Office of Advocacy, U.S. Small Business Administration (2001). For a copy of this study, see [<http://www.sba.gov/advo/research/rs207tot.pdf>]. This study not only updated Hopkins’ estimates of the overall cost of regulations, but also a 1995 study by Hopkins on the effect of regulations on small businesses. See Thomas D. Hopkins, *Profiles of Regulatory Costs: Report to the U.S. Small Business Administration* (Washington: National Technical Information Service, Nov. 1995).

¹⁰ See, for example, Ashlea Ebeling, “The Other Federal Budget,” *Forbes*, Oct. 1, 2003; testimony of Thomas M. Sullivan, Chief Counsel for Advocacy, U.S. Small Business Administration, before the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, Committee on Government Reform, U.S. House of Representatives, Feb. 25, 2004; and testimony of William P. Kovacs, Vice President, U.S. Chamber of Commerce, before the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, Committee on Government Reform, U.S. House of Representatives, Feb. 25, 2004.

¹¹ See, for example, Cait Murphy, “Where Does Washington Go From Here?,” *Fortune Small Business*, Mar. 4, 2004.

in 2000 for rules issued through April 1999 (\$96 billion to \$170 billion),¹² and adjusted it further upward to account for rules issued in 1999 and 2000. The OMB estimate of environmental costs was initially based on a 1991 study by Robert W. Hahn and John A. Hird of regulatory costs in 1988, which was itself based on a compilation of previous studies and original research.¹³ In its 2000 report, OMB said it used the information in the Hahn and Hird study (after making some adjustments and supplementing it with cost information from rules issued after 1988) even though it recognized that there were gaps and weaknesses in underlying studies that the authors relied on for their estimates.

Crain and Hopkins said their decision to use only the upper-end of the OMB estimate of environmental costs (\$170 billion instead of, for example, the mid-point of the \$96 billion to \$170 billion range) reflected “a judgment on our part that cost estimates are absent for important environmental regulations and that government agencies tend to be conservative in estimating regulatory costs.”¹⁴ The authors’ decision to adjust this upper-end estimate further upward to account for more recent rules stands in contrast to the approach that OMB took in its 2001 report. OMB said that it did not adjust its estimate for more recent rules because, among other things, inclusion of some of those rules would have constituted double counting when combined with estimates from prior years.¹⁵

Economic Regulations. To estimate costs associated with economic regulations, Crain and Hopkins combined data from various sources and made certain assumptions. For example, the authors based their estimate of the cost of domestic commerce regulations on a study by the Organization for Economic Cooperation and Development that had estimated that reforms in the transportation, energy, and telecommunications sectors would increase the U.S. gross domestic product (GDP) by 1%.¹⁶ Because the GDP in 2000 was \$10.1 trillion, Crain and Hopkins multiplied that number by 0.01 and therefore estimated an efficiency cost of domestic commerce regulation at \$101 billion. Because a previous study suggested that transfer costs of rules could be at least twice as large as efficiency costs, the authors doubled the efficiency cost estimate and therefore estimated domestic transfer costs at \$202 billion. Combining these two sets of estimates, they concluded that the total economic cost associated with domestic commerce regulations was \$303 billion (\$101 billion plus \$202 billion).

¹² Office of Management and Budget, Office of Information and Regulatory Affairs, *Report to Congress On the Costs and Benefits of Federal Regulations*, 2000.

¹³ Robert W. Hahn and John A. Hird, “The Costs and Benefits of Regulation: Review and Synthesis,” *Yale Journal on Regulation*, vol. 8 (Winter 1991), pp. 233-280. This study provided estimates of the costs and benefits of economic and social regulation for 1988. Most of the studies that the authors relied on had been conducted between 1975 and 1990.

¹⁴ Crain and Hopkins, p. 9.

¹⁵ Office of Management and Budget, Office of Information and Regulatory Affairs, *Making Sense of Regulation: 2001 Report to Congress on the Costs and Benefits of Regulations and Unfunded Mandates on State, Local, and Tribal Entities*, 2001, p. 10.

¹⁶ Organization for Economic Cooperation and Development, *Regulatory Reform in the United States* (Paris: OECD, 1999).

Crain and Hopkins used a similar approach to estimate the economic costs associated with international trade regulations. Citing previous studies indicating that removal of U.S. trade barriers would reduce costs by 1.3 % of the GDP, the authors estimated that the economic cost of those trade barriers in 2000 was \$132 billion (1.3% of \$10.1 trillion). Combining the domestic and international estimates, Crain and Hopkins therefore estimated that the total cost of economic regulations in 2000 was \$435 billion (\$303 billion plus \$132 billion).

The authors' estimates of economic costs are heavily dependent on the accuracy of the previous studies' estimates. For example, if the OECD study had concluded that reforms in the transportation, energy, and telecommunications sectors would increase the GDP by one-half of 1% instead of 1%, Crain and Hopkins' estimate of the cost of domestic commerce regulations would have been 50% lower (about \$152 billion instead of \$303 billion). Because Crain and Hopkins' estimates of economic costs represent more than half of their estimate of all regulatory costs, these changes would have had a dramatic effect on their aggregate estimate.

It is also notable that the 1999 OECD study that Crain and Hopkins cite as the source of their estimate of the efficiency cost of domestic commerce regulation does not itself provide an estimate of economic costs in this manner. Instead, it cites a 1998 OMB study that concluded that "regulations on entry and prices still cost consumers and producers \$70 billion annually."¹⁷

Tax Compliance Regulations. To estimate tax compliance costs, Crain and Hopkins relied on a November 2000 report by the Tax Foundation, which the authors said had used data from the Internal Revenue Service (IRS) on the number of hours of compliance time associated with tax paperwork.¹⁸ The number of compliance hours was multiplied by various hourly wage rates (reflecting either the value of the preparer's time or the rate for a tax professional) to derive the estimated cost of tax compliance. The Tax Foundation study concluded that tax paperwork required 4.3 billion hours in 1999 and multiplied that by an average wage rate of about \$29 per hour, yielding a tax compliance estimate of about \$125 billion. Crain and Hopkins adjusted that figure upward to \$129 billion for 2000.

To develop its estimate of 4.3 billion hours, the Tax Foundation added together the IRS estimates of compliance hours for a number of tax forms in 1999. However, in April 2000, IRS estimated the tax compliance burden as of September 30, 1999, at nearly 5.9 billion hours — more than 35% higher.¹⁹ It is unclear why the Tax Foundation and Crain and Hopkins used the 4.3 billion-hour estimate based on certain forms instead of the 5.9 billion-hour estimate for all forms. Also, OMB had

¹⁷ OECD, p. 36.

¹⁸ J. Scott Moody, *The Cost of Complying with the U.S. Federal Income Tax*, Background Paper No. 35 (Washington: The Tax Foundation, Nov. 2000). The Tax Foundation is a tax-exempt education organization founded in 1937 by a group of business executives and funded by voluntary contributions from philanthropic foundations, corporations, and individuals.

¹⁹ See U.S. General Accounting Office, *Paperwork Reduction Act: Burden Increases at IRS and Other Agencies*, GAO/T-GGD-00-114, Apr. 12, 2000, p. 4.

previously used a wage rate of about \$26.50 per hour to estimate tax compliance costs, somewhat less than the \$29 average cost that the Tax Foundation used. Had Crain and Hopkins used the IRS estimate of its compliance hours (about 5.9 billion hours) and the OMB wage rate (\$26.50), the authors' estimate of tax compliance costs would have been about \$155 billion instead of \$129 billion.

Workplace Regulations. To estimate the costs of workplace regulations, Crain and Hopkins relied on a 2001 study by Joseph Johnson covering 25 statutes and executive orders governing such issues as labor standards, employee benefits, occupational safety and health, and civil rights.²⁰ This study summarized the available research on each of the statutes and executive orders, selecting the studies that the author considered to be the most accurate. For example, Johnson noted that the Department of Labor and the General Accounting Office estimated the annual cost to employers of the Family and Medical Leave Act at \$825 million, but that the Chamber of Commerce estimated the cost at between \$3.9 billion and \$24 billion. The author used the \$3.9 billion estimate, noting that the \$24 billion estimate assumed an unrealistically high rate of leave taking by employees and that it diverged significantly from the government estimates. However, Johnson did not explain why the government estimate — nearly five times lower than the estimate he used — was inappropriate.

Johnson reported that occupational safety and health regulations represented the largest single element of workplace costs, and said the Occupational Safety and Health Act was by far the largest component within this category. Johnson said that, based on OSHA's regulatory analyses, 31 major rules associated with the act imposed a total of \$7.4 billion in annual costs. Because another author²¹ had estimated that total costs (including fines for violations and costs for nonmajor rules) were actually at least 5.55 times these direct costs, however, Johnson used \$41 billion as his best estimate of costs associated with the act (\$7.4 billion times 5.55). Use of this multiplier had a dramatic effect on not only the estimated cost of regulations associated with Occupational Safety and Health Act regulations, but also the estimate for all workplace regulations. It is also unclear why fines for *violations* of OSHA rules should be considered *compliance* costs.

Hopkins' Cautionary Notes

Although some have treated Hopkins' estimates of regulatory cost as matters of certainty, the author himself has frequently cautioned readers that his estimates of regulatory costs are just that — estimates — and noted the sometimes limited nature of the data available. For example, in his 1991 report Hopkins said that, other than some general observations about the overall trends in regulatory activity, the report

²⁰ Cited in the Crain and Hopkins report as Joseph Johnson, *The Cost of Workplace Regulations* (Arlington, VA: Mercatus Center, April 2001). Johnson later published a similar paper entitled *A Review and Synthesis of the Cost of Workplace Regulations* (Arlington, VA: Mercatus Center, Aug. 30, 2001).

²¹ Harvey S. James, Jr., "Estimating OSHA Compliance Costs," Policy Study No. 135 (St. Louis: Center for the Study of American Business, Oct. 1996).

begins to resemble a patchwork quilt with some important patches missing and others in rather thread-bare condition. For the available sources of cost information ... are spotty in their coverage, diverse in their objectives, and inconsistent in a host of ways, including definitions, methodology, and data adequacy. Existing studies do not utilize the same cost concepts, and they do not for that matter share a common view of what is to be considered a regulation.

More recently, in their 2001 report, Crain and Hopkins noted that some experts do not consider transfer costs to be regulatory costs,²² and therefore presented estimates later in their report showing regulatory costs without transfers. Their estimate of the cost of economic regulation dropped from \$435 billion to \$145 billion, and the cost of workplace regulations dropped from \$82 billion to \$24 billion. Their estimate of overall regulatory costs went from \$843 billion to \$495 billion — more than 40% lower. However, the cost figures from the Crain and Hopkins study that are quoted by others (and the only figures reported in the authors' executive summary) are the costs including transfers.

Also, although none of Hopkins' studies of regulatory costs contained information on the benefits that regulations provide, he has consistently recognized that many regulations provide substantial benefits to society. For example, in his 1991 study Hopkins said "these benefits must be assessed before a balanced picture of regulation can be produced," and went on to say that, if commensurate benefits are being provided, rising regulatory costs were "not necessarily troublesome and may indeed be laudable."²³ In their 2001 report, Crain and Hopkins said developing data on regulatory benefits "would be a logical next step toward building a more rational regulatory system."

OMB Reports on Regulatory Costs and Benefits

As noted previously, for the past several years, Congress has required OMB to submit annual reports on the costs and benefits of federal regulations. The first such requirement was in section 645 of the Treasury, Postal Service and General Government Appropriations Act, 1997 (Public Law 104-208), which required the director of OMB to submit a report by September 30, 1997, that provided (among other things) "estimates of the total annual costs and benefits of federal regulatory programs, including quantitative and nonquantitative measures of regulatory costs and benefits." Similar requirements were contained in other appropriations bills in subsequent years.

More recently, section 624 of the Treasury and General Government Appropriations Act, 2001, (31 U.S.C. 1105 note), sometimes known as the "Regulatory Right-to-Know Act," put in place a permanent requirement for an OMB

²² These critics (including OMB) argue that, because transfer regulations move payments from one group in society to another, one group's cost represents another group's gain. As a result, the net cost to society as a whole is zero.

²³ Thomas D. Hopkins, "Cost of Regulation," report prepared for the Regulatory Information Service Center (Washington: Aug. 1991), p. 7.

report on regulatory costs and benefits. Specifically, it requires OMB to prepare and submit with the President's budget an "accounting statement and associated report" containing an estimate of the total costs and benefits (including quantifiable and nonquantifiable effects) of federal rules and paperwork, to the extent feasible, (1) in the aggregate, (2) by agency and agency program, and (3) by major rule. The accounting statement is also required to contain an analysis of the impacts of federal regulation on state, local, and tribal governments, small businesses, wages, and economic growth.

OMB's Estimates of Total Regulatory Costs and Benefits

For the first several years, OMB provided estimates of total regulatory costs and benefits, and those estimates (particularly the benefits estimates) varied substantially from year to year.

- In its 1997 report, OMB estimated total federal regulatory costs in 1997 at \$279 billion, and estimated the benefits of federal regulations at \$298 billion.
- In its 1998 report, OMB estimated federal regulatory costs at between \$170 billion and \$230 billion (in 1996 dollars as of 1998), and estimated regulatory benefits at between \$260 billion and \$3.5 trillion.²⁴ The dramatic increase in the benefits estimate (by a factor of 12) was almost entirely due to the inclusion of an EPA estimate of the benefits associated with the Clean Air Act.²⁵ Many observers had serious questions regarding the use of this EPA estimate, and EPA itself said it had only a small probability of being correct.
- In its 2000 and 2001 reports, OMB estimated the cost of all social regulations at between \$146 billion and \$229 billion (in 1996 dollars as of 1999), and estimated benefits at between \$254 billion and nearly \$1.8 trillion.²⁶ The nearly 50% drop in the upper-bound benefits estimate (from \$3.5 trillion to \$1.8 trillion) was primarily caused by a significant drop in the previously-mentioned EPA estimate of the benefits of the Clean Air Act (from \$3.2 trillion to \$1.45 trillion), which OMB said was EPA's more accurate "expected value estimate."

Each year, OMB presented its aggregate cost and benefit estimates with strong caveats. For example, in its first report in 1997, OMB said "it is extremely difficult,

²⁴ Office of Management and Budget, Office of Information and Regulatory Affairs, *Report to Congress on the Costs and Benefits of Federal Regulations*, 1998.

²⁵ U.S. Environmental Protection Agency, *The Benefits and Costs of the Clean Air Act, 1970-1990* (Oct. 1997).

²⁶ Office of Management and Budget, Office of Information and Regulatory Affairs, *Report to Congress On the Costs and Benefits of Federal Regulations*, 2000; Office of Management and Budget, Office of Information and Regulatory Affairs, *Making Sense of Regulation: 2001 Report to Congress on the Costs and Benefits of Regulations and Unfunded Mandates on State, Local, and Tribal Entities*, 2001.

if not impossible, to estimate the actual total costs and benefits of all existing Federal regulations with any degree of precision.”²⁷ The next year OMB said “there is not yet a professional consensus on methods that would permit a complete, consistent accounting of total costs and benefits of Federal regulation.”²⁸ Some of the methodological problems that OMB pointed out included the following:

- The baseline for measurement is often not clear (i.e., what costs and benefits would have occurred in the absence of the regulation).
- It is difficult to attribute costs or benefits to federal regulations as opposed to state or local rules, voluntary standards organizations, insurance requirements, or the tort system.
- Technological change can make previous estimates of benefits and costs extremely inaccurate.
- Regulatory requirements sometimes become standard business practice (e.g., requirements to remove lead from gasoline or to put air bags in automobiles), so cost or benefit reductions would be unlikely to occur if the rules were eliminated entirely.
- Aggregating the results of different studies is highly problematic, as the studies vary in the quality, methodology, and types of regulatory impacts they include.
- It is unclear which rules should be included in any tabulation of regulatory costs and benefits (e.g., “transfer” regulations such as crop subsidy payments).

In developing its estimates, OMB did not include “transfer” rules (which OMB said were about \$140 billion in costs and benefits in 1997) because it considered them to be payments that reflect a redistribution of wealth rather than social costs to society as a whole. OMB also excluded the costs associated with filling out tax paperwork (which OMB estimated were about \$140 billion in 1997) because it did not consider filling out income tax forms “regulations” in the traditional sense. Neither did it include estimates for rules published after 1987 for which agencies did not conduct cost-benefit analyses (e.g., rules with less than a \$100 million impact on the economy).

²⁷ Office of Management and Budget, Office of Information and Regulatory Affairs, *Report to Congress On the Costs and Benefits of Federal Regulations*, Sept. 30, 1997.

²⁸ Office of Management and Budget, Office of Information and Regulatory Affairs, *Report to Congress On the Costs and Benefits of Federal Regulations*, 1998.

Comparison of OMB's and Crain and Hopkins' Estimates of Regulatory Costs

Table 1 below compares the estimates of regulatory costs that were developed by Crain and Hopkins for 2000 with the estimates that OMB used in its report for 2000. Comparisons within the types of rules are not always possible, as somewhat different categories were used in the two studies. For example, whereas OMB presented "transportation" and "other social" regulations separately, they appear to be included in the Hopkins-Crain estimates as part of the economic regulations estimate. Where estimates were presented for similar types of rules in both studies (environmental and workplace/labor), the Crain and Hopkins estimates were usually larger. As noted previously, the significant difference between the two studies' aggregate estimates are primarily because Crain and Hopkins included certain costs that OMB did not — the transfer costs associated with economic regulations²⁹ and the costs associated with tax paperwork. (In its report, OMB provided separate estimates for both economic regulations and tax paperwork, but said they should not be added to the estimates for other types of rules.)

Table 1. Comparison of Regulatory Cost Estimates for Calendar Year 2000 in the Crain and Hopkins Study and the OMB Study

Type of regulation	Crain and Hopkins estimate (in billions)	OMB estimate (in billions)
Environmental	\$197	\$96 - \$170
Workplace/Labor	82	18 - 19
Transportation	---	15 - 18
Other social	---	17 - 22
Economic	435	---
Tax compliance	129	---
All rules	843	146 to 229

Sources: W. Mark Crain and Thomas D. Hopkins, *The Impact of Regulatory Costs on Small Firms*, a report for the Office of Advocacy, U.S. Small Business Administration (2001); and Office of Management and Budget, Office of Information and Regulatory Affairs, *Making Sense of Regulation: 2001 Report to Congress on the Costs and Benefits of Regulations and Unfunded Mandates on State, Local, and Tribal Entities*, 2001.

OMB No Longer Reports Estimates for All Rules

OMB's reports since 2001 that were developed pursuant to the Regulatory Right-to-Know Act have differed from the office's previous reports in that they have not presented cost or benefit estimates for all rules in existence. Instead, OMB has presented information for all regulations that it reviewed within a particular time-

²⁹ As noted previously, Crain and Hopkins also presented data later in their study showing significantly lower costs of regulation if transfer costs were excluded. However, the more commonly quoted estimates were those including transfer costs.

frame that (1) had costs or benefits of at least \$100 million annually and (2) the costs and benefits had been monetized by either the rulemaking agency or OMB. Specifically:

- OMB's report for 2002 presented information on the costs and benefits of all regulations meeting those criteria that it reviewed for a six-and-one-half year period from April 1, 1995, to September 30, 2001.³⁰ OMB said the total cost of those rules was about \$50 billion to \$53 billion (in 2001 dollars), and the benefits ranged from \$48 billion to \$101 billion.
- In its 2003 report, OMB provided estimates of the costs and benefits of 107 regulations meeting the above criteria that it reviewed during the 10-year period from October 1992 through September 2002.³¹ OMB estimated that the total costs of these rules ranged from nearly \$37 billion to nearly \$43 billion (in 2001 dollars), with benefits ranging from \$146 billion to \$230 billion. OMB noted that four rules issued by EPA accounted for a substantial fraction of the aggregate benefits for all 107 rules.

In its 2002 report, OMB said its decision to present data for only certain rules during a limited time-frame was driven by the inconsistent and increasingly aged nature of many of the studies used to develop aggregate estimates. OMB went on to say that “we do not believe that the estimates of the costs and benefits of regulations issued over ten years ago are reliable or very useful for informing current policy decisions.” Therefore, OMB said that “in keeping with the spirit of OMB's new information-quality guidelines, we have decided not to reproduce the aggregate estimates that were contained in Appendix C of the draft report.”³² The report went on to say that the total costs and benefits of all federal rules then in effect “could easily be a factor of ten or more larger.” In its 2003 report, OMB said that estimates prepared for rules adopted prior to the 10-year period “are of questionable relevance now.”

³⁰ Office of Management and Budget, Office of Information and Regulatory Affairs, *Stimulating Smarter Regulation: 2002 Report to Congress on the Costs and Benefits of Regulations and Unfunded Mandates on State, Local, and Tribal Entities*, 2002.

³¹ Office of Management and Budget, Office of Information and Regulatory Affairs, *Informing Regulatory Decisions: 2003 Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities*, 2003.

³² Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, generally known as the “Data Quality Act” or the “Information Quality Act,” amended the Paperwork Reduction Act and directed OMB to issue government-wide guidelines that “provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies.” OMB issued a final version of those guidelines in February 2002. The act also required agencies to establish administrative mechanisms allowing affected persons to seek and obtain correction of information maintained and disseminated by the agency.

OMB's 2004 Draft Report

In February 2004, OMB released a draft of its 2004 report on the costs and benefits of federal regulation.³³ This report focused on the 85 major rules that OMB reviewed from October 1, 1993, to September 30, 2003. OMB said the estimated costs of these rules ranged from \$34 billion to \$39 billion, and said the estimated benefits were from \$62 billion to \$168 billion (all in 2001 dollars). As Table 2 below illustrates, EPA's rules accounted for more than half of the benefits and about two-thirds of the costs of these rules, with the bulk of EPA's costs and benefits attributable to what OMB described as "a handful of EPA clean-air rules that reduce public exposure to fine particulate matter." With the exception of the Department of Homeland Security (DHS), all of the agencies' largest cost estimates are always smaller than the smallest benefits estimate.³⁴ OMB said the substantial drop in the benefits estimates from the previous report (from \$230 billion to \$168 billion at the upper end of the range) was caused by one EPA rule (implementing the sulfur dioxide limits of the acid rain provisions in the 1990 amendments to the Clean Air Act) that fell out of the 10-year window because it was issued in the 1992-1993 period.

**Table 2. Estimates of Total Annual Benefits and Costs of
85 Major Federal Rules Reviewed by OMB
Between Oct. 1, 1993, and Sept. 30, 2003**

Agency	Benefits (in millions)	Costs (in millions)
Agriculture	\$2,933 - \$6,123	\$1,634 - \$1,656
Education	655 - 813	361 - 610
Energy	3,990 - 4,058	1,836
Health and Human Services	8,742 - 12,138	3,025 - 3,121
Homeland Security	62	899
Housing and Urban Development	190	150
Labor	1,264 - 3,645	806
Transportation	6,608 - 9,386	3,814 - 5,854
Environmental Protection Agency	37,647 - 131,682	21,629 - 24,024
All agencies	62,091 - 168,098	34,156 - 38,958

Source: Office of Management and Budget, *Informing Regulatory Decisions: 2004 Draft Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities*, Feb. 2004.

³³ Office of Management and Budget, *Informing Regulatory Decisions: 2004 Draft Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities*, Feb. 2004.

³⁴ OMB noted that all of these DHS rules had been issued by the Coast Guard, and said that "the benefits of a reduced risk of terrorism have proven very difficult to quantify and monetize."

As in previous reports, OMB said that the total costs and benefits of all federal rules currently in effect “could easily be a factor of ten or more larger” than the estimates it provided for the 10-year period. Some have questioned why OMB only includes rules in its estimates that it reviewed within the previous 10 years.

Estimates of Regulatory Costs to Businesses

In addition to developing estimates of total regulatory costs, the 2001 Crain and Hopkins study also provided estimates of those costs to businesses. Specifically, the authors estimated that \$497 billion of the \$843 billion in aggregate regulatory costs in 2000 were imposed on businesses. To develop this estimate, Crain and Hopkins assumed that business costs were 65% of environmental costs, 50% of economic costs, 100% of workplace costs, and 54% of tax compliance costs. The environmental and tax cost assumptions were reportedly informed by previous studies, but the authors said the 50-50 division of economic costs was “a default judgment.” The allocation for workplace regulations was based “on the simple fact that these only apply to business enterprises.”

Regulatory Costs on Small Business and Manufacturers

In what they described as their most important finding, Crain and Hopkins also concluded that small businesses experienced about 60% greater costs per employee than larger firms — nearly \$7,000 per employee in firms with fewer than 20 employees compared to less than \$4,500 per employee in larger firms. As Table 3 below illustrates, Crain and Hopkins reported that environmental regulations and tax compliance paperwork were more than twice as costly per employee to small firms than to larger firms. In contrast, they said that the cost of economic regulations fell most heavily on large firms, and the costs of workplace regulation were slightly greater per employee to medium-sized firms.

Table 3. Crain and Hopkins’ Estimates of Total Federal Regulatory Costs Per Employee by Size of Firm, Calendar Year 2000

Type of regulation	Firms with fewer than 20 employees	Firms with 20 to 499 employees	Firms with 500 or more employees	All firms
Environmental	\$3,328	\$1,173	\$717	\$1,213
Economic	1,616	1,648	2,485	2,065
Workplace	829	873	698	779
Tax compliance	1,202	625	562	665
All types of regulation	6,975	4,319	4,463	4,722

Source: W. Mark Crain and Thomas D. Hopkins, *The Impact of Regulatory Costs on Small Firms*, a report for the Office of Advocacy, U.S. Small Business Administration (2001), p. 3.

Crain and Hopkins also reported the per-employee costs of regulation by type of firm — manufacturing, trade (wholesale and retail), services, and all other types of firms. As Table 4 below illustrates, the authors concluded that regulations were most costly to manufacturing and “other” firms (including such businesses as coal mining, ore mining, oil and gas extraction, coal gasification, and electric utilities), and they were particularly hard-hit by environmental regulations in comparison to their trade and service counterparts. Manufacturing and other firms also had somewhat higher compliance costs per employee for workplace regulations. In contrast, service firms reportedly experienced the least regulatory cost, particularly with regard to environmental and economic regulations.

Table 4. Crain and Hopkins’ Estimates of Total Federal Regulatory Costs Per Employee by Type of Firm, Calendar Year 2000

Type of regulation	Manufacturing firms	Trade firms	Service firms	Other firms
Environmental	\$3,691	\$0	\$33	\$2,823
Economic	2,553	2,166	847	3,704
Workplace	838	734	747	845
Tax compliance	822	698	273	1,193
All types of regulation	7,904	3,598	1,900	8,564

Source: W. Mark Crain and Thomas D. Hopkins, *The Impact of Regulatory Costs on Small Firms*, a report for the Office of Advocacy, U.S. Small Business Administration (2001), p. 27.

Crain and Hopkins also provided estimates of regulatory costs per firm and as a percentage of receipts. Both of these measures indicated that regulations were more costly for manufacturers than for other types of firms. For example, the authors reported that, on average, U.S. firms spend nearly \$90,000 per firm to comply with federal regulations, but said manufacturers’ costs were more than \$440,000 per firm. In contrast, they said regulatory costs for the service sector were less than \$32,000 per firm.

Finally, combining the two previous perspectives, the authors reported that small manufacturing firms appeared to be the most affected by regulatory costs on a per-employee basis. For example, they said that manufacturing firms with fewer than 20 employees averaged nearly \$17,000 in regulatory costs per employee, whereas regulatory costs in manufacturing firms with 500 or more employees were just over \$7,000 per employee. In the service sector, they said regulations cost more than \$2,200 per small firm but less than \$1,800 per large firm.

Manufacturers and Workplace Regulations

In December 2001, W. Mark Crain and Joseph Johnson reported the results of a survey that they conducted of 100 manufacturers concerning the cost of workplace regulations (e.g., those governing worker health and safety, employee benefits, civil

rights, labor standards, and labor-management relations).³⁵ Crain and Johnson said that, in 2000, complying with those regulations cost those 100 manufacturers an average of \$2.2 million per firm, or about \$1,700 per employee. The authors also said that there were significant differences in regulatory costs by firm size. For example, in small manufacturing firms (those with fewer than 100 employees), the authors reported that compliance with workplace regulations cost nearly \$2,600 per employee. In large firms (those with 500 or more employees) they said the cost was \$1,530 per employee, and in medium-size firms (those with 100 to 499 employees) the cost was about \$1,360 per employee. They said that if the results from these 100 firms were extrapolated to all manufacturing firms in the U.S. (about 300,000), the total cost of compliance with workplace rules for manufacturers would be \$32 billion.³⁶

The overall conclusion that the authors drew from this study is consistent with the conclusion in the previously mentioned study by Crain and Hopkins — that regulatory costs per employee are greater for small businesses than for larger businesses. The actual costs reported in these studies differ substantially. For example, whereas Crain and Hopkins found that compliance with workplace regulations in 2000 cost less than \$47,000 per manufacturing firm, Crain and Johnson concluded that workplace regulations cost them manufacturers in their study an average of about \$2.2 million per firm — about 50 times higher.

Aggregate Cost and Benefit Estimates Need Careful Interpretation

The differences in the estimates resulting from studies of aggregate regulatory costs or benefits suggest that users of those estimates would be wise to understand how they were developed. Most of the studies attempt to aggregate the results of previous studies, which may themselves be aggregations of previous studies with significantly different methodologies. Slight changes in these studies' assumptions or data can yield vastly different results, even when done by the same author. For example, the addition of one study, or even one rule, has caused OMB's estimates to fluctuate significantly from year to year. There are also substantial differences of opinion regarding which types of rules should be included in these tabulations; while some studies include transfer costs and costs associated with tax paperwork, others do not, yielding cost estimates for the same year that differ by hundreds of billions of dollars. Still other studies rely on surveys of regulated entities, asking them to self-report their regulatory costs. The use of self-reported information from regulated entities about the costs associated with regulatory compliance may be problematic in the absence of corroborating data.

³⁵ W. Mark Crain and Joseph M. Johnson, *Compliance Costs of Federal Workplace Regulations: Survey Results for U.S. Manufacturers* (Arlington, VA: Mercatus Center, Dec. 2001).

³⁶ This figure includes both recurring costs and one-time costs such as lawsuits. If only recurring costs are included the authors said the cost of compliance would drop to \$28 billion.

In 1996, the General Accounting Office (GAO) attempted to collect information from companies regarding their regulatory compliance costs.³⁷ GAO discovered that none of the more than 50 companies it contacted could provide reliable information on regulatory costs. Part of the problem was that companies found it difficult to identify incremental regulatory costs — i.e., the costs that would not have been borne in the absence of federal regulation. For example, even if they were not required by OSHA, most companies would take steps to protect their workers from obvious hazards. Therefore, the real cost of regulation is what those companies are required to spend over and above what they would have done anyway. None of the companies that GAO contacted had a database capable of capturing incremental costs, probably because there is no regular business use for such data. The companies also had difficulty developing a list of federal regulations applicable to their firms and differentiating federal regulatory costs from costs associated with requirements issued by other jurisdictions and other entities. GAO concluded that objectively measuring the aggregate cost of federal regulations in a single company was extremely difficult, and said “decisionmakers using studies that attempt to measure total current regulatory costs to guide public policy need to be aware of those studies’ conceptual and methodological underpinnings.”³⁸

Studies of aggregate regulatory costs can provide some useful perspective on the effects that federal regulations have on the economy in general and businesses in particular. Although reliant on numerous assumptions and sometimes dated information, the aggregate estimates of regulatory costs are the best measure of those effects currently available. The estimates derived from those studies can vary widely, and depend heavily on the quality of the information used and how the data are adjusted and combined. The fragility of those estimates is further underscored by the fact that OMB no longer considers it feasible to report the costs and benefits of all federal regulations. Also, to provide a full picture, estimates of regulatory costs should be accompanied by estimates of regulatory benefits. Unfortunately, regulatory benefits are even more difficult to measure than regulatory costs. Differences in the cost and benefit estimates derived from those studies illustrate the degree to which they should be viewed as providing interesting, but not necessarily definitive, information.

³⁷ U.S. General Accounting Office, *Regulatory Burden: Measurement Challenges and Concerns Raised by Selected Companies*, GAO/GGD-97-2, Nov. 18, 1996.

³⁸ Previously, GAO concluded that estimates of regulatory compliance costs reported in the banking industry were of little value due to serious methodological deficiencies. See U.S. General Accounting Office, *Regulatory Burden: Recent Studies, Industry Issues, and Agency Initiatives*, GAO/GGD-94-28, Dec. 13, 1993.