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Office of Management and Budget

Draft Report to Congress on the Costs and Benefits of Federal Regulations; Notice

OFFICE OF MANAGEMENT AND BUDGET

Draft Report to Congress on the Costs and Benefits of Federal Regulations

AGENCY: Office of Management and Budget, Executive Office of the President.

ACTION: Notice and request for comments.

SUMMARY: On January 7, 2000, OMB published a notice of availability of and requested comments on its Draft Report to Congress on the Costs and Benefits of Federal Regulations. On January 27, 2000, OMB extended the public comment period to February 22, 2000. In order to assure the broadest possible public access, we are publishing the draft report in this **Federal Register**.

DATES: *Comment Due Date:* February 22, 2000.

ADDRESSES: Comments on this draft report should be addressed to John Morrall, Office of Information and Regulatory Affairs, Office of Management and Budget, NEOB, Room 10235, 725 17th Street, N.W., Washington, D.C. 20503.

You may submit comments by regular mail, by facsimile to (202) 395–6974, or by electronic mail to jmorrall@omb.eop.gov.

FOR FURTHER INFORMATION CONTACT: You can review the report on the Internet at: ''*http://www.whitehouse.gov/omb/inforeg/index.html*''. You may also request a copy from John Morrall, Office of Information and Regulatory Affairs, Office of Management and Budget, NEOB, Room 10235, 725 17th Street, NW, Washington, D.C. 20503. Telephone: (202) 395–7316. E-mail: jmorrall@omb.eop.gov.

SUPPLEMENTARY INFORMATION: On January 7, 2000, OMB published in the **Federal Register** (65 FR 1296) a notice of availability of the Draft Report to Congress on the Costs and Benefits of Federal Regulations and posted it on our web site. The comment period on the draft report was scheduled to end January 21, 2000. Members of the public and Congress asked for additional time and better access to the draft report to allow the public a better opportunity to participate in the comment process. Accordingly, OMB extended the public comment period on the draft report to February 22, 2000 by a notice in the **Federal Register** (65 FR 4447) and with this notice is publishing the entire draft report.

John T. Spotila,

Administrator, Office of Information and Regulatory Affairs.

Draft Report to Congress on the Costs and Benefits of Federal Regulations

Introduction

This is a draft for public comment of the Office of Management and Budget's third report to Congress on the costs and benefits of Federal regulations.[1] This report is required by Section 638(a) of the 1999 Omnibus Consolidated and Emergency Supplemental Appropriations Act (the Act). The Act requires OMB to submit ''an accounting statement and associated report'' containing:

''(1) an estimate of the total annual costs and benefits (including quantifiable and nonquantifiable effects) of Federal rules and paperwork, to the extent feasible:

(A) in the aggregate;

(B) by agency and agency program; and

(C) by major rule;

''(2) an analysis of impacts of Federal regulation on State, local, and tribal government, small business, wages, and economic growth; and

''(3) recommendations for reform.

The Act at Section 638(b), (c), and (d) also specifies how we are to produce the report. We must:

''(b) * * * provide public notice and an opportunity to comment on the statement and report,

''(c) * * * issue guidelines to agencies to standardize (1) measures of costs and benefits and (2) the format of accounting statements, and

''(d) * * * provide for independent and external review of the guidelines and each accounting statement and associated report under this section.''

This draft report provides the public with an opportunity to comment on the ''statement and report'' before we submit it to Congress. We are also asking independent and external experts in the economics of Federal regulation to peer review this draft report. After taking the public comments and peer reviews into account, we will submit the final report to Congress.

In early October 1999 in accordance with the Act, we drafted guidelines for standardizing measures of costs and benefits and the format of the accounting statements. We circulated them for ''independent and external review'' by nine experts in the field of benefit cost analysis. In late October 1999, we sent the guidelines and format to the agencies for their use in reporting the costs and benefits of their regulations. Using this information as well as other information from the agencies and published literature on the costs, benefits, and impacts of Federal regulation, we prepared this draft report.

Chapter I presents our estimates of total annual costs and benefits of Federal regulation and paperwork in the aggregate, and by agency and agency program. It also presents an analysis of the impacts of Federal regulation on State, local, and tribal government, small business, wages, and economic growth. Finally, Chapter I presents estimates of the costs and benefits by agency of the major final regulations issued between April 1, 1995 and March 31, 1999 for which we could quantify and monetize impacts.

Chapter II uses agency regulatory impact analyses to present quantitative estimates and qualitative descriptions of the benefits and costs of the 44 major rules issued by Federal agencies for which we concluded review during the 12-month period between April 1, 1998 and March 31, 1999. This ''regulatory year'' is the same period we used for the first two reports.

Chapter III presents our estimates of the costs and benefits of major Federal regulations for which we concluded review during the period April 1, 1995 to March 31, 1999. We included only the regulations for which we had quantitative information on both costs and benefits. For these regulations, we applied a uniform format and standardized measures of costs and benefits to produce estimates that could be more readily compared to each other. This information is used in our aggregate and by-agency estimates of the total annual costs and benefits of Federal regulation in Chapter I.

Chapter IV presents ten recommendations for reform of specific Federal regulations.

Chapter I: Estimating the Total Annual Costs, Benefits, and Impacts of Federal Regulations and Paperwork

I. Overview

This chapter presents estimates of the total annual costs and benefits of Federal rules and paperwork in the aggregate and by agency and agency program as required by Sec 638(a)(1)(A) and (B) of the 1999 Omnibus Consolidated and Emergency Supplemental Appropriations Act (the Act). In this chapter, we build on the information found in Chapter I of the

[1] This report uses the terms ''rule'' and ''regulation'' interchangeably.

1998 Report to Congress On the Costs and Benefits of Federal Regulations (OMB 1998) by using data and information newly available during 1999. These data include information:

- On costs and benefits of regulations provided by the agencies at our request pursuant to Sec 638(c) of the Act, which requires us to ''issue guidelines to agencies to standardize measures of cost and benefits and the format of accounting statements.''
- From the economic impact analyses that agencies prepare for major rules for which we completed review between April 1, 1998 and March 31, 1999.
- From other government reports and sources on the impacts of regulation and paperwork.

This chapter also analyzes the impacts of Federal regulation on State, local, and tribal government, small business, wages, and economic growth—as required by Sec. 638(a)(2) of the Act.

A. Estimation Problems

This is our third report estimating the total annual costs and benefits of Federal regulations. In our previous two reports (OMB 1997 and 1998), we included a detailed discussion of the methodological problems inherent in such an undertaking.[2] We recognize the importance of providing information to the public on the costs, benefits, and impacts of Federal regulations. Such information is useful for policymakers who are designing new regulations or revising existing ones to make them more cost efficient and fair. Nevertheless, any estimate of total annual costs and benefits can only be rough at best.

It is difficult, if not impossible, to estimate the actual total costs and benefits of all existing Federal regulations with accuracy. We lack good information about the complex interactions between the different regulations and the economy. A variety of estimation problems for individual and aggregate estimates distort the results in different ways. The difficulty of answering the following questions illustrate these problems:

1. What Baseline Should We Use?

In order to estimate the impact of a regulation, we need to know what would have happened if the regulation had not been issued. In other words, what is the baseline against which costs and benefits should be measured? The baseline problem has several dimensions. First, what happens in the absence of regulation is only an educated guess (since it never happened). Moreover, the greater the regulatory change, the less sure we are of the regulatory benefits and costs. The techniques of applied welfare economics, upon which benefit-cost analysis is based, hold only for marginal changes in economic activities. The larger the changes, the less certain we are of the accuracy of these techniques. Thus, we are more confident in our estimates of the costs and benefits of a small change in the level of automobile emissions than in the costs and benefits of all Clean Air Act regulations and especially in estimates of the total costs and benefits of all regulations issued by the Federal Government since the early 1900s.

Even if we disregard the problem of modeling large changes, significant difficulties remain. It is difficult to determine the baseline for the individual regulations that must be added together to get an aggregate estimate for all regulations. Bias is always a problem when surveying firms and other regulated entities on their expected compliance costs. Both regulators and the regulated may have a stake in the survey results. The problem is potentially greater for prospective studies because they must predict both the baseline and the regulatory effects. Retrospective studies concern themselves only with the baseline. In general, the most precise estimates of the costs and benefits of regulation appear in retrospective studies done by individuals who are not interested parties, but who do seek to maintain their reputations as objective professional analysts.

2. What Costs Should We Measure?

Most of the studies of the costs of regulation produced to date measure the direct expenditures required by regulation. It is hard to do more. Yet, as Cropper and Oates (1992) point out, the cost to society of regulation is properly measured by the change in consumer and producer ''surplus''[3] associated with the regulation and with any price and/or income changes that may result. At one extreme, ignoring the consumer surplus loss produced by a ban on the sale of a product understates costs to society. Even though compliance costs are zero, consumers are less well off because they can no longer buy the product. At the other extreme, calculating compliance expenditures based on pre-regulation output overstates costs because, if the firm raises prices to cover compliance costs, consumers may shift to other products to compensate partially for the accompanying welfare losses (Cropper and Oats 1992, p. 722). Actually estimating the changes in consumer and producer ''surplus'' caused by regulation requires data that is usually not easily obtained and assumptions that are at best only educated guesses.

3. What Is the Effect of Technological Change?

Many of the studies on which we must rely for cost and benefit estimates are dated. Over time the dynamic nature of the economy may affect the estimation of both benefits and costs. Technological improvements are often cited as the reason that predicted costs of compliance often turn out to be less than actual costs (Office of Technology Assessment 1995). Less well noted, however, is that technological progress also alters the benefits of regulation over time. Medical progress can reduce the future benefits estimated for health, safety and environmental regulations, just as productivity improvements in manufacturing reduce the costs of compliance of some regulations. New drugs or medical procedures can reduce the benefits of regulations aimed at reducing exposure to certain harmful agents such as an infectious disease. Regulations aimed at increasing the energy efficiency of consumer products or buildings may have their expected benefits reduced by new technology that lowers the cost of producing energy.

Technological change also leads directly to higher incomes, which allow people to demand better health and more safety. Business often responds to these demands by providing safer products and workplaces, even in the absence of regulation. Individuals with rising incomes may purchase or donate land to nature conservancies to provide ecological benefits—not to mention tax writeoffs. Yet, as on the cost side, the baseline that we use is generally the status quo, rather than a best guess as to what is likely to happen in the future.

4. How Do We Determine Causality?

It is often difficult to attribute changes in behavior to specific Federal regulations because there can be many other causal factors. In the

[2] The first two reports also provide background information helpful for understanding and placing in context this third report. Together, the reports contain information on the history of regulation and its reform, the Administration's regulatory review program, the basics of economic analysis of regulations, and several case studies comparing various prospective and retrospective analyses of regulations.

[3] Consumer surplus refers to the incremental value of a product, as perceived by the consumer, over and above the price paid by the consumer for that product. Producer surplus refers to the incremental revenue received by the producer of a product over and above the producer's marginal costs of production.

environmental area, there are regulations from several different Federal agencies—the Environmental Protection Agency (EPA), the Department of Agriculture (USDA), the Department of Energy (DOE), the Department of the Interior (DOI), the Department of Commerce (DOC) and the Department of Transportation (DOT) as well as numerous State and local government entities. The tort system, voluntary standards organizations, and public pressure also may cause firms to provide a certain degree of public protection in the absence of Federal regulation. As the General Accounting Office (GAO) points out, determining how much of the costs and benefits of these activities to attribute solely to Federal regulation is a difficult undertaking (GAO 1996).

5. How Do We Assess Older Regulations?

Once regulations are implemented and compliance has begun, public attitudes about the desirability of mandated actions often change. Regulations that were widely questioned before implementation—for example, airbags and family leave—often find wide acceptance afterwards. If the National Highway Traffic Safety Administration's (NHTSA) regulations were eliminated, the automobile companies are not likely to discontinue all the safety features that NHTSA has mandated. Consumers now expect safer cars and seem willing to pay for them. Indeed, they often demand more safety than NHTSA requires.

This same phenomenon is taking place in the environmental area. Environmentally responsible behavior can be good for the bottom line. Rising per capita income and greater acceptance of regulation encourage such behavior, although their precise impact can be hard to measure. Changes in consumer preferences can create a ''rising baseline'' phenomenon, which reduces the ongoing significance of health, safety, and environmental regulations. Estimates of the aggregate regulatory costs and benefits that use a pre-regulation baseline as opposed to a post-regulation baseline may thus overestimate the current costs and benefits of those regulations.

6. Is There an ''Apples and Oranges'' Problem?

Most attempts to summarize the total costs and benefits of Federal regulations have simply added together a diverse set of individual studies. This is an inherently flawed approach. These individual studies vary in the quality, methodology, and type of regulatory impacts they include. They use different assumptions about baselines and time periods, different discount rates, different valuations for the same attribute, and different approaches to dealing with uncertainty. They also are seldom able to analyze the interaction effects among the tens of thousands of regulations. Although we are mindful of, and tried to tried to correct for, these problems in our estimates, our numbers too should be used with caution.

7. Is it Enough To Know the Costs and Benefits?

Accurate assessment of costs and benefits does not necessarily give us information concerning the distribution of such effects. None of the analyses addressed in this report provides quantitative information on the distribution of benefits or costs by income category, geographic region, or any other equity-related factor. As a result, there is no basis for quantifying distributional or equity impacts, which often can be a key reason for regulation.

B. Types of Regulation

Since there are so many different types of Federal regulations, it is useful to break this heterogeneous body up into categories. Three main categories are widely used: social, economic, and process.

- Social Regulation seeks to benefit the public interest in one of two ways. It prohibits firms from producing products in certain ways or with certain characteristics that are harmful to public interests such as health, safety, and the environment. Examples would be OSHA's rule prohibiting firms from allowing in the workplace more than one part per million of Benzene averaged over an eight hour day and the Department of Energy's rule prohibiting firms from selling refrigerators that do not meet certain energy efficiency standards. It also requires firms to produce products in certain ways or with certain characteristics that are beneficial to these public interests. Examples are FDA's requirement that firms selling food products must provide a label with specified information on its package and DOT's requirement that automobiles be equipped with certain kinds of airbags.
- Economic Regulation prohibits firms from charging prices or entering or exiting lines of business that might cause harm to the economic interests of other firms or economic groups. Such regulations usually apply on an industry-wide basis (for example, agriculture, trucking, or communications). In the United States, this type of regulation at the Federal level has often been administered by ''independent'' commissions such as the Federal Communications Commission (FCC), the Securities and Exchange Commission (SEC), or the Federal Energy Regulatory Commission (FERC). This type of regulation can cause economic loss from the higher prices and inefficient operations that often occur when competition is restrained.
- Process Regulations impose administrative or paperwork requirements such as income tax, immigration, social security, food stamps, or procurement forms. Most process costs result from program administration, government procurement, and tax compliance efforts. Social and economic regulation may also impose paperwork costs due to disclosure requirements and enforcement needs. These costs generally appear in the cost for such rules. Procurement costs generally show up in the Federal budget as greater fiscal expenditures.

1. Measuring the Impacts of the Different Types of Regulation

The impacts of regulation have several dimensions. Regulation either increases or decreases the total welfare or well being of society, or redistributes it among different groups. Usually it does both, but the relative degree varies significantly by type of regulation. The public purpose for a regulation usually takes one of two forms: to maximize society's welfare or to redistribute costs and benefits from one group to another.

Social Regulation often seeks to improve the efficiency of the market by correcting what economists call ''market failures''—for example, pollution or public health risks or other unintended consequences on third parties and unequal information between buyers and sellers. Such regulation affects the value of goods and services or welfare enjoyed by society. We measure the impact of a social regulation on society's welfare by estimating its net benefits: social costs subtracted from social benefits.

Redistributive effects or ''income transfers'' should also be measured, noted, and presented to policymakers to help in forming their decision. OMB has issued recommended procedures or ''Best Practices,'' which are particularly useful for estimating the benefits and costs of social regulations. We have described and discussed these procedures in the two previous Reports to Congress on the Costs and Benefits of Federal Regulation. As mentioned above in the introduction, we have provided additional guidance for the agencies for standardizing the measures of costs and

benefits sent us for this and next year's report.

We can divide social regulation into several categories:

Environmental. The true social cost of regulations aimed at improving the quality of the environment is represented by the total value that society places on the goods and services foregone as a result of resources being diverted to environmental protection. (EPA's Cost of a Clean Environment, pp. 1–2, 1–3.) These social costs include the direct compliance costs of the capital equipment and labor needed to meet the standard. They also include the more indirect consumer and producer surplus losses from lost or delayed consumption and production opportunities that result from the higher prices and reduced output needed to pay for the direct compliance costs. In the case of a product ban or prohibitive compliance costs, almost all of the costs represent consumer and producer surplus losses. Most of the cost estimates used in this report do not include consumer and producer surplus losses because it is difficult and often impractical to estimate the demand and supply curves needed to do this type of analysis.

Further indirect effects on productivity and efficiency result from price and output changes that spread through other sectors of the economy. Estimates of compliance costs may understate substantially the true long-term costs of pollution control.[4] The estimates used in this report do not include these indirect and general equilibrium effects.

The benefits of environmental protection are represented by the value that society places on improved health, recreational opportunities, quality of life, visibility, preservation of ecosystems, biodiversity, and other attributes of protecting or enhancing our environment. This value is best measured by society's willingness-to-pay (WTP) for these attributes. Since most types of improvement in environmental quality are not traded in markets, benefits must be estimated by indirect means using sophisticated statistical techniques or ''contingent valuation'' survey methods. Such methods often have more difficulty with benefit estimation than cost estimation.

Other Social. This category of regulation includes rules designed to advance the health and safety of consumers and workers, as well as regulations aimed at promoting social goals such as equal opportunity, equal access to facilities, and protection from fraud and deception. These kinds of regulation, as well as environmental regulation, are concerned with controlling or reducing the harmful or unintended consequences of market transactions. Such consequences as air pollution, occupationally induced illness, or automobile accidents are commonly called ''negative externalities.'' Regulations designed to deal with such externalities are said to ''internalize'' the externalities.

This can be done by regulating the amount of the externality, for example, banning a pollutant or limiting it to a ''safe'' level, or regulating how a product is produced or used. Social regulation may also require the disclosure of information about a product, service, or manufacturing process where inadequate or asymmetric access to information may place consumers, citizens, or workers at a disadvantage. The techniques and methodological concerns involved in the estimation of the social costs and benefits generated by these rules are similar to those involved in the estimation of costs and benefits of environmental regulation discussed above. In the results reported below, we further break ''Other Social'' into three categories: transportation, labor and other regulations. The third category includes food and drug safety, energy efficiency, and quality of medical care regulations.

Economic regulation, especially in the past, often served to transfer income among economic groups. In certain circumstances, however, such as when used to regulate natural monopolies, economic regulation can produce net social benefits. In the last twenty years, deregulation and improvements in technology have reduced entry barriers in a variety of sectors, including transportation, communications, energy, and financial services. To a large degree, economic regulation now serves more and more to promote competition, rather than to protect firms from it. The costs of economic regulation are usually measured by modeling or comparing specific regulated sectors with less regulated sectors, estimating the consumer and producer surplus losses that result from higher prices and lack of service, and estimating the excess costs that may result from the lack of competition. These costs are made up of efficiency losses, or costs to society, and income transfers that one group gains at the expense of another. The Hopkins (92) and Hahn and Hird (91) surveys of regulatory costs found that transfer costs were generally about two to three times the social costs of economic regulation.

Economic regulation may produce net social benefits when natural monopolies are regulated to simulate competition. Although Hahn and Hird (1991) argue that the dollar amounts of such efficiency benefits are small and short lasting in a dynamic and technologically vibrant economy, this is a judgment that is not the result of an empirical study. It is, however, based on the increasingly accepted view that the U.S. economy is becoming more competitive over time, with fewer long-lasting natural monopolies, and on evidence that much economic regulation seeks primarily to enhance one group at the expense of another. Even though monopoly power may not be as long lasting in the ''new economy'' as it was in the old, it can still be important at a given point in time.[5]

Process Regulation mainly serves to collect funds, allocate them among groups of recipients, and establish the conditions under which the government purchases or provides goods and services from and to the public. Although allocating and collecting funds can serve to transfer income between economic groups, the fiscal budget already accounts for these transfers and we do not provide separate estimates below. We do, however, provide estimates of the administrative costs to the public of providing the information needed by the government to collect these funds and provide these services because these estimates are not included in the fiscal budget. These costs are also real burdens to society, not transfers. Government can reduce them streamlining paperwork and red tape.

2. Other Types of Regulatory Impacts

As discussed above, analysts often use estimates of benefits and costs to measure the net impact of regulation on society as a whole. Executive Order No. 12866, Regulatory Planning and Review, issued by President Clinton on September 30, 1993, requires the agencies to measure such impacts (Sect. 1(b)(6)). It also requires that the agencies analyze the effect of a proposed regulation on State, local, and tribal governments and on businesses of differing sizes (Sect.1. (b) ((9) and (11)). As mentioned, Sect. 638 (a)(2) of the Act asks for information on these impacts as well as on wages and economic growth.

Clearly, the impacts of regulation on these sectors are of special interest to policymakers and should be examined

[4] See Jaffe, Peterson, Portney, and Stavins' survey (1995), p. 153.

[5] Note that our definition of economic regulation does not include antitrust activities such as preventing the formation of monopolies through mergers or anticompetitive behavior.

in a full analysis of regulatory impacts. The impacts on State, local, and tribal governments, small businesses, and workers can be measured by distributional analysis, which looks at the transfers of income among groups caused by regulations. Generally the analysis does not make value judgments about the merits of these transfers, leaving that up to policymakers. This approach is in contrast to Benefit Costs Analysis, which generally ignores income transfers and focuses on whether social benefits exceed social costs. Since distributional effects and net benefits are both important, both analyses should be presented to policymakers. Reflecting this philosophy, Executive Order 12866 states that agencies should select regulatory approaches that ''maximize net benefits'' taking into account distributional impacts and equity.

As required by the Act, we present estimates in section II of the costs and benefits of regulation and paperwork, and in section III present what we know about its distributional impacts.

II. The Costs and Benefits of Regulation and Paperwork

Our estimate of the total annual costs and benefits of Federal rules and paperwork starts with our estimates in last year's report. It then adds new information received from the agencies about previous regulations and about new regulations issued during the last year.

A. Social Regulation

1. Total Annual Costs and Benefits

Tables 1, 2, and 3 document how we estimate the total annual monetized costs and benefits of social regulation as of April 1, 1999.[6]

Table 1 relies on estimates from Hahn and Hird (1991) and EPA's Cost of a Clean Environment (1990) and Section 812 Retrospective Report (1997) to present a range of estimates for costs and benefits as of 1988.[7] The estimates of costs range between $84 billion and $140 billion and the benefits between $56 billion and $1.51 trillion annually.

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[6] Our general approach follows the procedures we used in last year's report which discusses them in more detail. (See OMB 1999, pp 13–18).

[7] We discussed in detail the problems and uncertainties associated with these estimates in the two previous reports. We refer the reader to them for more specific information. The estimation problems discussed earlier in this report explain the general estimation problems with these types of aggregate estimates.

Table 1:
Estimates of Total Annual Monetized Costs and Monetized Benefits of Social Regulation as of 1988
(Billions of 1996 dollars)

	Environment			Transportation	Labor	Other	Total
	Hahn & Hird (1991)	EPA	Combined Ranges (a)				
Costs	76 to 99	54(b)	54 to 99	9 to 12	11 to 12(d)	10 to 15	84 to 140
Benefits	22 to 180	1,450(c)	22 to 1,450	34 to 60	not available(e)	not available(e)	56 to 1,510

Sources: Calculations based on information from Hahn and Hird (1991) unless otherwise noted.
(a) Combined ranges from Hahn and Hird (1991) and EPA section 812 retrospective (1997).
(b) Includes water pollution control costs from Cost of Clean (1990), air pollution control costs from EPA's Section 812 Retrospective Report (1997),less adjustments for 1988-1990 overlap.
(c) Benefits from air pollution control only, based on EPA section 812 retrospective (1997).
(d) Based on total expenditures for safety and health rather than regulation-induced expenditures.
(e) Hahn and Hird (1991).
Note: The dollar figures in this table do not reflect benefits that were quantified but not monetized. They also do not reflect benefits and costs that were not quantified.

Table 2:
Estimates of Total Annual Monetized Costs and Monetized Benefits of Social Regulations Issued Between 1987 and First Quarter of 1999
(Billions of 1996 dollars)

Time Period	Environ-mental	Transpor-tation	Labor	Other	Total
Costs	71	6	7	7	92
Benefits	75 to 145	50	28 to 30	55 to 60	208 to 285

Source: The 1987 to 1994 estimates of costs are from OMB (1996) p. A-5. The 1987 to 1994 estimates of benefits are calculated by taking the benefit/cost ratios for the final rules issued between 1990 and 1995 from Hahn (1996) Table 10-4 and applying them to our costs estimates to derive benefit estimates. (See caveats above and the discussion in OMB (1997) for the rationale for this approach). The benefit/cost ratios are 1.4 for environmental, 9.7 for transportation, 3.8 for labor and 7.9 for other social regulations. The estimates for 1995 through the first quarter of 1999 are derived as described in tables 6 through 17. Note that totals may not add because of rounding.
Note: The dollar figures in this table do not reflect benefits that were quantified but not monetized. They also do not reflect benefits and costs that were not quantified.

Table 3:
Estimates of Total Annual Monetized Costs and Monetized Benefits of Social Regulations
(Billions of 1996 dollars as of 1999, Q1)

	Environ-mental	Transpor-tation	Labor	Other	Total
Costs	$124 to 175	$15 to 18	$18 to 19	$17 to 22	$174 to 234
Benefits	$97 to 1,595	$84 to 110	$28 to 30	$55 to 60	$264 to 1,795
Net Benefits(a)	$-78 to 1,471	$66 to 95	$9 to 12	$33 to 43	$30 to 1,621

Source: Tables 1 and 2.
(a) Lower estimate calculated by subtracting high cost from low benefit. Higher estimate calculated by subtracting low cost from high benefit.
Note: The dollar figures in this table do not reflect benefits that were quantified but not monetized. They also do not reflect benefits and costs that were not quantified.

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The $1.51 trillion upper-range estimate is dominated by EPA's Section 812 Retrospective, which estimates the benefits of the Clean Air Act from 1970 to 1990.

In last year's report we used EPA's upper range estimate for benefits of $3.2 trillion. This estimate engendered considerable public criticism. For example, a panel of regulatory experts convened by GAO expressed considerable scepticism about the magnitude of the estimate (GAO, 1999). EPA points out, however, that this criticism was somewhat misdirected because the $3.2 trillion estimate was the upper bound, 95th percentile estimate generated by the 812 Retrospective Study for the year 1990, a value which EPA itself believes has a very small probability of being the correct estimate (that is, the probability that benefits are equal to or greater than $3.2 trillion is 5%). EPA's expected value for the benefits of 1970 to 1990 programs in the year 1990 is $1.45 trillion (in 1997 dollars). We have amended our report this year to incorporate EPA's expected-value estimate.

GAO (1999) also reported that many of the experts identified specific concerns about some of the assumptions in the Retrospective Report, including: (1) The assumption that air quality would have deteriorated significantly between 1970 and 1990 in the absence of the Clean Air Act, (2) the assumed health effects from limiting exposure to particulate matter, and (3) the methods used to estimate the value that individuals would place on reducing health and mortality risks.[8]

Table 2 provides estimates of the total annual monetized costs and benefits of social regulations issued between 1987 and the first quarter of 1998. As explained in last year's report, the cost estimates are based on the Regulatory Impact Analyses (RIAs) for major rules that agencies submitted to OMB under Executive Order 12866 and its predecessor, Executive Order 12291. To estimate benefits, we used a combination of sources. For the years 1987 to 1995, we assumed that benefits bore the same ratio to our cost estimates for the four categories of regulations shown in Table 2 as they did in a study by Robert Hahn (1996) of major regulations issued between 1990 and mid-1995. We did this because we do not have our own systematic estimates of the benefits for major rules issued before 1995.[9] For the benefit estimates for 1995 through the first quarter of 1999, we used the information from agency-supplied RIAs modified for consistency with Best Practices as appropriate and extended to provide more monetized estimates of benefits and costs using consensus value estimates used by the agencies or found in the literature. These estimates are explained in detail in Chapter III.

Table 3 combines the results from Tables 1 and 2 to present our estimates for the existing costs of social regulation as of the first quarter in 1999. It shows that health, safety and environmental regulation produces between $32 billion and $1,621 billion of net benefits per year.

2. New Estimates for the Clean Air Act Amendments

EPA has also called to our attention its new study, The Benefits and Costs of the Clean Air Act 1990 to 2010, (EPA 1999) to supplement the set of studies that served as the basis for the monetized estimates of benefits and costs in last year's report. This study presents estimates of the benefits and costs of the regulatory program mandated by the 1990 Clean Air Act Amendments (CAAA). It does not, however, cover the benefits and costs of many of EPA's recent major regulations, such as the 1997 final rule setting new Ozone and Particulate Matter National Ambient Air Quality Standards and the recent regional haze final rule. Nor does it include the costs and benefits of the regulations EPA issued during this period pursuant to its Acts other than the CAAA.

EPA's new study estimates total annual costs for the CAAA of about $19 billion and total annual benefits of $71 billion in the year 2000. We note that the adoption of a value for the projected reduction in the risk of premature mortality is the subject of continuing discussion within the economic and public policy analysis community within and outside the Administration. In response to the sensitivity of this issue, we provide estimates reflecting two alternative approaches. The first approach—supported by some and preferred by EPA—uses a Value of a Statistical Life (VSL) approach developed for the Clean Air Act Section 812 benefit-cost studies. This VSL estimate of $5.9 million (1997$) was derived from a set of 26 studies identified by EPA using criteria established in Viscusi (1992), as those most appropriate for environmental policy analysis applications.

An alternative, age-adjusted approach is preferred by a number of others both within and outside the Administration. This approach was also developed for the Section 812 studies and addresses concerns with applying the VSL estimate—reflecting a valuation derived mostly from labor market studies involving healthy working-age manual laborers—to PM-related mortality risks that are primarily associated with older populations and those with impaired health status. This alternative approach leads to an estimate of the value of a statistical life year (VSLY), which is derived directly from the VSL estimate. It differs only in incorporating an explicit assumption about the number of life years saved and an implicit assumption that the valuation of each life year is not affected by age.[10] Under this alternative approach, the estimated mean VSLY is $360,000 (1997$); combining this number with a mean life expectancy of 14 years would yield an age-adjusted VSL of $3.6 million (1997$).

Both approaches are imperfect, and raise difficult methodological issues which are discussed in depth in the recently published Section 812 Prospective Study, draft EPA Economic Guidelines, and the peer-review commentaries prepared in support of each of these documents. For example, both methodologies embed assumptions (explicit or implicit) about which there is little or no definitive scientific guidance. In particular, both methods adopt the assumption that the risk versus dollars trade-offs revealed by available labor market studies are applicable to the risk versus dollar trade-offs in the air pollution context.

EPA currently prefers the VSL approach because, essentially, the method reflects the direct application of what EPA considers to be the most reliable estimates for valuation of premature mortality available in the current economic literature. While there are several differences between the labor market studies EPA uses to derive a VSL estimate and the particulate matter air

[8] GAO also points out that these are similar to the concerns expressed by OMB in last year's report. (See OMB 1999, pp. 25–35).

[9] Admittedly this is a crude estimation procedure because Hahn's inventory of rules begins in 1990 and ours extends back to 1987. Consequently, we are assuming that the relationship between costs and benefits that Hahn found for the later period extends back three years. Still, we know of no other approach to fill this gap in the data until RIAs for these years are re-examined. For further details see last year's report (OMB, 1999).

[10] Specifically, the VSLY estimate can be calculated by amortizing the $5.9 million mean VSL estimate over the 35 years of life expectancy associated with subjects in the labor market studies. The resulting estimate, using a 5 percent discount rate, would be $360,000 per life-year saved in 1997 dollars. This annual average value of a life-year can then be multiplied times the number of years of remaining life expectancy for the affected population.

pollution context addressed here, those differences in the affected populations and the nature of the risks imply both upward and downward adjustments. For example, adjusting for age differences may imply the need to adjust the $5.9 million VSL downward, as would adjusting for health differences; but the involuntary nature of air pollution-related risks and the lower level of risk-aversion of the manual laborers in the labor market studies may imply the need for upward adjustments. In the absence of a comprehensive and balanced set of adjustment factors, EPA believes it is reasonable to continue to use the $5.9 million value while acknowledging the significant limitations and uncertainties in the available literature. Furthermore, EPA prefers not to draw distinctions in the monetary value assigned to the lives saved even if they differ in age, health status, socioeconomic status, gender or other characteristics of the adult population.

Those who favor the alternative, age-adjusted approach emphasize that the value of a statistical life is not a single number relevant for all situations. Indeed, the VSL estimate of $5.9 million (1997$) is itself the central tendency of a number of estimates of the VSL for some rather narrowly defined populations. When there are significant differences between the population affected by a particular health risk and the populations used in the labor market studies—as is the case here—they prefer to adjust the VSL estimate to reflect those differences. While acknowledging that the VSLY approach provides an admittedly crude adjustment (for age though not for other possible differences between the populations), they point out that it has the advantage of yielding an estimate that is not presumptively biased. Proponents of adjusting for age differences using the VSLY approach fully concur that enormous uncertainty remains on both sides of this estimate —upwards as well as downwards—and that the populations differ in ways other than age (and therefore life expectancy). But rather than waiting for all relevant questions to be answered, they prefer a process of refining estimates by incorporating new information and evidence as it becomes available.

Our estimates of the costs and benefits of environmental regulations in Table 2 above include estimates for CAAA regulations as well as other EPA regulations based on the RIAs EPA prepared at the time. The new CAAA report estimates cannot simply be added to our estimates in Table 2 without adjustments to correct for the overlapping regulations. The CAAA report estimates cannot replace our estimates because they do not include all the regulations EPA issued between 1987 and the first quarter of 1999.

3. Costs and Benefits of Major Rules by Agencies

Table 4 lists the costs and benefits by agency and agency program for major regulations issued over the last four years (April 1, 1995 to March 31, 1999) as estimated by us in Chapter III. During this period, only seven agencies issued major rules. Of these, rules by EPA and HHS had the greatest impact. Those issued by EPA are expected to provide between $17 billion and $84 billion in annual benefits for society at an annual cost of about $28 billion. Those issued by HHS are expected to provide $12 billion to $14 billion in annual benefits at an annual cost of about $800 million.

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Table 4
Estimates of the Total Annual Monetized Benefits and Monetized Costs of Social Regulations by Agency
April 1995 to March 1999
($ millions)

Agency	2000	2005	2010	2015	Annualized	Net Present Value
Dept. of Agriculture						
Benefits	$2,300-4,900	$2,300-4,900	$2,300-4,900	$2,300-4,900	$2,600-5,300	$35,000-72,000
Costs	$1,170-1,190	$1,170-1,190	$1,170-1,190	$1,170-1,190	$1,270-1,290	$17,100-17,400
Dept. of Education						
Benefits	$580-720	$580-720	$580-720	$580-720	$580-720	$8,000-10,000
Costs	$320-540	$320-540	$320-540	$320-540	$320-540	$4,500-7,500
Dept. of Energy						
Benefits	$670	$750-780	$870-940	$970-1,100	$780-840	$11,000-12,000
Costs	$300	$300	$300	$300	$280	$3,900
Dept. of Health and Human Services						
Benefits	$11,000-13,000	$11,000-13,000	$11,000-13,000	$11,000-13,000	$12,000-14,000	$170,000-190,000
Costs	$690-750	$690-750	$680-740	$680-740	$700-770	$10,000-11,000
Dept. of Labor						
Benefits	$390-810	$390-810	$390-810	$390-810	$890-3000	$12,000-41,000
Costs	$230	$230	$230	$230	$250	$3,400
Dept. of Transportation						
Benefits	$1,200-1,700	$2100-2500	$2,100-2,500	$2,100-2,500	$2,000-2,400	$27,000-33,000
Costs	$980-2,200	$1200	$1200	$1,200	$1,200-1,600	$16,000-22,000
Environmental Protection Agency						
Benefits	$4,300-22,000	$4900-25000	$27,000-150,000	$31,000-170,000	$17,000-84,000	$220,000-1,200,000
Costs	$5,500-5,600	$6400-6600	$17,300-17,500	$61,000-61,100	$27,600-27,700	$370,000-380,000

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B. Economic Regulation

In our 1997 and 1998 reports, we presented an estimate that the efficiency costs of economic regulation amounted to $71 billion. This is based on an estimate by Hopkins (1992) of $81 billion, which we adjusted downward by $10 billion to account for the deregulation and increase in competition that has occurred in the financial and telecommunications sectors since Hopkins' estimates were made in 1992. In a recent comprehensive report on regulatory reform in the United States by a panel of experts from around world, the OECD estimated that additional reforms in the transportation, energy, and telecommunications sectors would lead to an increase in GDP of 1 percent (OECD, 1999). One percent of the revised first quarter 1999 GDP of $9,073 billion is about $90 billion.

This estimate does not include the costs of international trade protection, which Hopkins included in his estimate of the cost of economic regulation. According to a recent study, the static gains from removing trade barriers existing in 1990 suggested potential gains of about 1.3 percent of GDP (Council of Economic Advisers 1998) or $120 billion for the first quarter of 1999, assuming trade barriers have not changed.[11] These estimates taken together suggest that Hopkins' estimate may be too low.

As we discuss above, economic regulation also results in income transfers from one group to another. In our previous two reports, we used an approach used by Hahn and Hird, and Hopkins, to estimate transfers as a multiple of the efficiency losses. Based on the OECD estimate of efficiency losses, Hopkins' multiple of two (1992) gives rise to an estimate of transfer costs for economic regulation (not counting trade protection) of $180 billion.

C. Process Regulation

The main costs of process regulation consist of the paperwork costs imposed on the public. Sec. 638(a)(1)(A) of the Act calls on OMB to examine the costs and benefits of paperwork. Currently OMB is in the process of revising its guidance on how the agencies should evaluate paperwork burden. OMB issued a notice in the **Federal Register** on October 14, 1999 (64 FR 55788) inviting comments on how best to improve the uniformity, accuracy, and comprehensiveness of agency burden measurement. In this notice, we raise the issue of expanding the reporting of burden to include a monetized value of time, and specifically seek comment on the idea of converting ''burden hours'' into a dollar measure of burden. If a dollar-equivalent value is calculated for burden hours, agencies and OMB could report a single estimate—in dollar terms—of paperwork burden that would combine monetized burden hours with the ''cost burden'' calculation. This would estimate out-of-pocket expenses that are not captured by the time-based measure of burden. While this approach has analytical appeal, it does pose significant methodological challenges.

In addition, IRS has begun work on a new model that will estimate the amount of burden incurred by wage and investment taxpayers as a result of complying with the tax system. IRS has undertaken this study to improve our understanding of taxpayer burdens, to enable us to measure both current and future levels of burden, and to help us isolate the burden of particular tax provisions, regulations, or procedures. To help provide input into our consideration of methods to expand the reporting of burden to include monetized burden hours, the IRS paperwork burden study will include the development of a White Paper on the Monetization of Taxpayer Time. This White Paper will examine the issues surrounding monetization, review existing research, identify lessons learned, and discuss the implications for efforts to monetize taxpayer time.

In our Information Collection Budgets, published annually, we calculate paperwork burden imposed on the public using information agencies give us with their requests for information collection approvals.[12] We present below in Table 5 estimates of paperwork burden in terms of the hours the public devotes annually to gathering and providing information for the Federal government. At a future point in time, we hope to be able to provide information on the dollar costs of paperwork. At present we do not know how to estimate the value of the total annual benefits to society of the information the government collects from the public.

Table 5 shows our estimates of the expected paperwork burden hours for FY 1999 by agency. The total burden of 7,202 million hours is made up of 5,912 million hours for the Treasury Department (82%) and 1,290 million hours for the rest of the Federal government (18%). Using the estimate of the average value of time for the individuals and entities that provide information to the government of $26.50 per hour, which we used in the last two reports, we can get an idea of the dollar burden of paperwork on the public: $190 billion. Note, however, that (1) this is a rough average and should not be applied to individual agencies or agency collections, and (2) this estimate should not be added to our estimates of the costs of regulation because it would result in some double counting. Our estimates of regulatory costs already include paperwork costs. Many paperwork costs arise from regulations, often for enforcement and disclosure purposes.

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[11] The CEA report also went on to state that studies of this type only capture static costs, fail to capture value of foregone varieties of products, quality improvements, and productivity enhancements that would take place in the absence of trade barriers, and thus understate the benefits from trade (CEA 1998, p. 238).

[12] The Paperwork Reduction Act of 1995 requires Federal agencies to seek approval from OMB for each information collection sought from ten or more individuals or entities. As part of that request agencies must estimate the burdens that their individual collection requests impose on the public.

Table 5
Information Collection Budget for FY 1999
(millions of hours)

Department/Agency	Expected Total Hour Burden
Agriculture	83.55
Commerce	10.74
nonperiodic	8.74
periodic	2.25
Defense	105.20
Education	35.89
Energy	3.88
Health and Human Services	164.55
Housing and Urban Development	22.33
Interior	4.98
Justice	37.37
Labor	193.20
State	28.90
Transportation	143.20
Treasury	5,912.44
Veterans Affairs	3.87
EPA	120.61
FAR	20.36
FCC	31.72
FDIC	7.57
FEMA	3.82
FERC	4.23
FTC	126.83
NASA	7.33
NSF	4.41
NRC	9.59
SEC	75.41
SBA	3.71
SSA	21.60
Government Total	7,202.59

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III. The Other Impacts of Federal Regulation

Sec. 638(a)(2) of the Act calls on OMB to present an analysis of the impacts of Federal regulation on State, local, and tribal government, small business, wages, and economic growth.

A. Impact on State, Local, and Tribal Government

Over the past four years, four rules have imposed costs of more than $100 million on State, local, and Tribal governments (and thus have been classified as public sector mandates under the Unfunded Mandates Act of 1995).[13] All four of these rules were issued by the Environmental Protection Agency. These four rules are described in greater detail below.

1. EPA's Rule on Standards of Performance for Municipal Waste Combustors and Emissions Guidelines (1995): This rule set standards of performance for new municipal waste combustor (MWC) units and emission guidelines for existing MWCs under sections 111 and 129 of the Clean Air Act [42 U.S.C. 7411, 42 U.S.C. 7429]. The standards and guidelines apply to MWC units at plants with aggregate capacities to combust greater than 35 megagrams per day (Mg/day) (approximately 40 tons per day) of municipal solid waste (MSW). The standards require sources to achieve emission levels reflecting the maximum degree of reduction in emissions of air pollutants that the Administrator determined is achievable, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements.

EPA estimated the national total annualized cost for the emissions standards and guidelines to be $320 million per year (in constant 1990 dollars) over existing regulations. EPA estimated the cost of the emissions standards for new sources to be $43 million per year. EPA estimated the cost of the emissions guidelines for existing sources to be $277 million per year. The annual emissions reductions achieved through this regulatory actions include, for example, 21,000 Mg. of SO2; 2,800 Mg. of particulate matter (PM); 19,200 Mg of NOX; 54 Mg. of mercury; and 41 Kg. of dioxin/furans.

2. EPA's Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills (1996): This rule set performance standards for new municipal solid waste landfills and emission guidelines for existing municipal solid waste landfills to implement section 111 of the Clean Air Act. The rule addressed non-methane organic compounds (NMOC) and methane emissions. NMOC include volatile organic compounds (VOC), hazardous air pollutants (HAPs), and odorous compounds. Of the landfills required to install controls, about 30 percent of the existing landfills and 20 percent of the new landfills are privately owned. The remainder are publicly owned. The total nationwide annualized costs for collection and control of air emissions from new and existing MSW landfills are estimated to be $94 million per year annualized over 5 years, and $110 million per year annualized over 15 years.

3. National Primary Drinking Water Regulations: Disinfectants and Disinfection Byproducts (1998): This rule promulgates health based maximum contaminant level goals (MCLGs) and enforceable maximum contaminant levels (MCLs) for about a dozen disinfectants and byproducts that result from the interaction of these disinfectants with organic compounds in drinking water. The rule will require additional treatment at about 14,000 of the estimated 75,000 residential water systems nationwide. The costs of the rule are estimated at $700 million annually. The quantified benefits estimates range from zero to 9,300 avoided bladder cancer cases annually, with an estimated monetized value of $0 to $4 billion. Possible reductions in rectal and colon cancer and adverse reproductive and developmental effects were not quantified.

4. National Primary Drinking Water Regulations: Interim Enhanced Surface Water Treatment (1998): This rule establishes new treatment and monitoring requirements (primarily related to filtration) for drinking water systems that use surface water as their source and serve more than 10,000 people. The purpose of the rule is to enhance protection against potentially harmful microbial contaminants. The rule is expected to require treatment changes at about half of the 1,400 large surface water systems, at an annual cost of $300 million. All systems will also have to perform enhanced monitoring of filter performance. The estimated benefits include mean reductions of from 110,000 to 338,000 cases of cryptosporidiosis annually, with an estimated monetized value of $0.5 to $1.5 billion, and possible reductions in the incidence of other waterborne diseases.

While these four EPA rules were the only ones over the past four years to require expenditures by State, local and Tribal governments exceeding $100 million, they were not the only rules with impacts on other levels of governments. For example, 18% of rules listed in the April 1999 Unified Regulatory Agenda cited some impact on State, local or Tribal governments. In general, OMB works with the agencies to ensure that the selection of the regulatory option for all final rules fully complies with the Unfunded Mandates Reform Act. For proposed rules, OMB works with the agencies to ensure that they also solicited comment on alternatives that would reduce costs to all regulated parties, including State, local and Tribal governments.

Agencies have also significantly increased their consultation with State, local, and Tribal governments on all regulatory actions that impact them. For example, EPA and the Department of Health and Human Services engaged in particularly extensive consultation efforts over a wide variety of programs, on both formal unfunded mandates as defined by the Unfunded Mandates Reform Act and other rules with intergovernmental impacts. Agencies also made real progress in improving their internal systems to manage consultations better. This has helped them analyze specific rules in ways that reduce costs and increase flexibility for all levels of government and for the private sector, while implementing important national priorities.

This trend toward increased consultation is expected to continue. On August 5, 1999, President Clinton issued Executive Order 13132 entitled ''Federalism.'' This Executive Order emphasizes consultation with State and local governments and greater sensitivity to their concerns. It also establishes specific requirements that Federal agencies must follow as they develop and carry out policies that affect State and local governments.

B. Impact on Small Business

The President explicitly recognized the need to be sensitive to the impact of regulations and paperwork on small business in his Executive Order 12866,

[13] EPA's proposed rules setting air quality standards for ozone and particulate matter may ultimately lead to expenditures by State, local or tribal governments of $100 million or more. However, Title II of the Unfunded Mandates Reform Act provides that agency statements on compliance with Section 202 must be conducted ''unless otherwise prohibited by law''. The Conference report to this legislation indicates that this language means that the section ''does not require the preparation of any estimate or analysis if the agency is prohibited by law from considering the estimate or analysis in adopting the rule.'' EPA has stated, and the courts have affirmed, that under the Clean Air Act, the air quality standards are health-based and EPA is not to consider costs.

''Regulatory Planning and Review,'' issued September 30, 1993. The Executive Order called on the agencies to tailor their regulations by business size in order to impose the least burden on society, consistent with obtaining the regulatory objectives. It also called for the development of short forms and other streamlined regulatory approaches for small businesses and other entities. The President also supported and signed into law the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA). In the findings section of SBREFA, Congress stated that ''. . . small businesses bear a disproportionate share of regulatory costs and burdens.'' This is largely attributable to fixed costs—costs that all firms must bear regardless of size. Each firm has to determine whether a regulation applies, how to comply, and whether it is in compliance. As firms increase in size, fixed costs are spread over a larger revenue and employee base resulting in lower unit costs.

This observation is supported by empirical information from a study by the Office of Advocacy of the Small Business Administration (1995). That study found that regulatory costs per employee decline as firm size—as measured by the number of employees per firm—increases. Using data from Hopkins (1995), SBA estimates that the total cost of regulation (environmental, other social, the efficiency costs of economic, the transfer costs of economic, and process regulation) was 50 percent greater per employee for firms with under 20 employees compared to firms with over 500 employees.[14]

These results do not necessarily indicate, however, the extent to which reducing regulatory requirements on small firms would produce more benefits for society at lower costs. That depends in part on the contribution of small firms to the risks being addressed and the benefits produced per dollar of compliance costs by regulating small firms.

C. Impact on Wages

The impact of Federal regulations on wages depends upon how ''wages'' is defined and on the types of regulations involved. If we define ''wages'' narrowly as workers' take-home pay, social regulation may have decreased average wage rates, while economic regulation may have increased them, especially for specific groups. If we define ''wages'' more broadly as the real value or utility of workers' income, the directions of the effects of the two types of regulation are probably reversed.

1. Social Regulation

By a broad measure of welfare, social regulation, regulation directed at improving health, safety, and the environment, can create benefits for workers that outweigh the costs. This is true even if take-home pay does not increase. Compliance costs must be paid for by some combination of workers, business owners, and/or consumers through adjustments in wages, profits, and/or prices. This effect is most clearly recognized for occupational health and safety standards. As one leading text book in labor economics suggests: ''Thus, whether in the form of smaller wage increases, more difficult working conditions, or inability to obtain or retain one's first choice in a job, the costs of compliance with health standards will fall on employees.'' [15]

Viewed in terms of overall welfare, the regulatory benefits of improved health, safety, and environment improvements for workers can outweigh the costs. In the occupational health standards case where the benefits of regulation accrue mostly to workers, workers are likely to be better off if health benefits exceed compliance costs.[16] Although wages may reflect the cost of compliance with health and safety rules, the job safety and other benefits of such regulation can more than compensate for any monetary loss. Workers as consumers benefitting from safer products and cleaner environment may also come out ahead if regulation produces significant net benefits for society.

2. Economic Regulation

For economic regulation, designed to set prices or conditions of entry for specific sectors, these effects may at times be reversed to some degree. Economic regulation can result in increases in income narrowly defined, but decreases in broader measures of income based on utility or overall welfare. Economic regulation is often used to protect industries and their workers from outside competition. Examples include the airline and trucking industries in the 1970's. These wage gains come at a cost in inefficiency from reduced competition, however, which consumers must bear. Moreover, real wages, which depend upon productivity, do not grow as fast without the stimulation of outside competition.[17]

These statements are generalizations for the impact of regulation in the aggregate or by broad categories. Specific regulations can increase or decrease the overall level of benefits accruing to workers depending upon the actual circumstances.

D. Economic Growth

The conventional measurement of GDP does not take into account the market value of improvements in health, safety, and the environment. It does incorporate the direct compliance costs of social regulation. Accordingly, conventional measurement of GDP can suggest that regulation reduces economic growth.[18] In fact, sensible regulation and economic growth are not inconsistent once all benefits are taken into account.

The OECD (1999) estimates that the economic deregulation that occurred in the U.S. over the last 20 years permanently increased GDP by 2 percent. The OECD also estimates that further deregulation of the transportation, energy, and telecommunication sectors would increase U.S. GDP by another 1 percent. Jaffe, Peterson, Portney, and Stavins (1995) summarize their findings after surveying the evidence of the effects of environmental regulation on economic growth as follows: ''Empirical analysis of the productivity effects have found modest adverse impacts of environmental regulation.'' Based on the studies that tried to explain the decline in productivity that occurred in the U.S. during the 1970's, they placed the range attributable to environmental regulation from 8 percent to 16 percent (p. 151). The recent increase in productivity growth in the U.S. coinciding with continued health, safety, and environmental regulation supports the notion that the negative growth effects

[14] SBA estimated that average per employee regulatory costs were $5,106 for firms with under 20 employees compared to $3,404 for firms with over 500 employees. These estimates are based on 1992 conditions using 1995 dollars. Hopkins' own estimates found a 86 percent differential (*See* SBA 1995, pp 39–46).

[15] From Ehrenberg and Smith's Modern Labor Economics, p 279.

[16] Based on a cost benefit analysis of OSHA's 1972 Asbestos regulation by Settle (1975), which found large net benefits, Ehrenberg and Smith cite this regulation as a case where workers' wages were reduced, but they were made better off because of improved health (p. 281).

[17] Winston (1998) estimates that real operating costs declined between 25 and 75 percent in the sectors that were deregulated over the last 20 years—transportation, energy, and telecommunications.

[18] Social regulation reduces growth by diverting resources from the production of goods and services that are counted in GDP to the production or enhancement of ''goods and services'' such as longevity, health, and environmental quality that generally are not counted in GDP.

of social regulation have been relatively small.[19]

As indicated above, conventionally measured GDP growth does not take into account the market value of the improvements in health, safety, and the environment that social regulation has brought us. If even our lower range estimate of the benefits of social regulation ($266 billion) were added to GDP, then the more comprehensive measure of GDP, one that includes the value of nonmarket goods and services provided by regulation, would be about 3 percent greater.[20] Focusing on the effect of social regulation on economic growth is misleading if it does not take into account the full benefits of regulation.

More important than knowing the impact of regulation in general on growth is the impact of specific regulations and alternative regulatory designs on economic growth. As Jaffe *et al.* put it: ''Any discussion of the productivity impacts of environmental protection efforts should recognize that not all environmental regulations are created equal in terms of their costs or their benefits.'' (p. 152).

In this regard, market-based or economic-incentive regulations will tend to be more cost-effective than those requiring specific technologies or engineering solutions. Under market-based regulation, profit-maximizing firms have strong incentives to find the cheapest way to produce the social benefits called for by regulation. How you regulate can go a long way toward reducing any negative impacts on economic growth and increasing the overall long run benefits to society.

Chapter II: Estimates of Benefits and Costs of This Year's ''Major'' Rules

In this chapter, we examine the benefits and costs of each ''major rule,'' as required by section 638(a)(1)(C). We have included in our review those final regulations on which OMB concluded review during the 12-month period April 1, 1998, through March 31, 1999. This ''regulatory year'' is the same calendar period we used for last year's report. It ensures that we cover a full year's regulatory actions as close as practicable to the date our report is due, given the need to compile and analyze data and publish the report for public comment.

The statutory language categorizing the rules we consider for this report differs from the definition of ''economically significant'' in Executive Order 12866 (section 3(f)(1)). It also differs from similar statutory definitions in the Unfunded Mandates Reform Act and subtitle E of the Small Business Regulatory Enforcement Fairness Act of 1996—Congressional Review of Agency Rulemaking. Given these varying definitions, we interpreted section 638(a)(1)(C) broadly to include all final rules promulgated by an Executive branch agency that meet any one of the following three measures:

- Rules designated as ''economically significant'' under section 3(f)(1) of Executive Order 12866;
- Rules designated as ''major'' under 5 U.S.C. 804(2) (Congressional Review Act); and
- Rules designated as meeting the threshold under Title II of the Unfunded Mandates Reform Act (2 U.S.C. 1531–1538).

We also include a discussion of major rules issued by independent regulatory agencies, although OMB does not review these rules under Executive Order 12866. This discussion is based on data provided by these agencies to the General Accounting Office (GAO) under the Congressional Review Act.

During the regulatory year selected, OMB reviewed 44 final rules that met the criteria noted above. Of these final rules, HHS submitted 15; EPA eight; DOT six; USDA four; DOI two; and DOL, DOC, SBA, DOJ, PBGC, and Education, one each. Two were Federal Acquisition Regulations rules. In addition, three agencies—DOL, HHS, and Treasury—worked together to issue one common rule. These 44 rules represent about 18 percent of the 255 final rules reviewed by OMB between April 1, 1998, and March 31, 1999, and less than one percent of the 4,752 final rule documents published in the **Federal Register** during this period. Nevertheless, because of their scale and scope, we believe that they represent the vast majority of the costs and benefits of new Federal regulations during this period.

I. Overview

As noted in Chapter II of last year's report, Executive Order 12866 ''reaffirms the primacy of Federal agencies in the regulatory decisionmaking process'' because agencies are given the legal authority and responsibility for rulemaking under both their organic statutes and certain process-oriented statutes, such as the Administrative Procedure Act, the Unfunded Mandates Reform Act, and the Small Business Regulatory Enforcement Fairness Act. The Executive order also reaffirms the legitimacy of centralized review generally and, in particular, review of the agencies' benefit cost analyses that are to accompany their proposals. The Executive Order recognizes that in some instances the consideration of benefits or costs is precluded by law. Nevertheless, the Executive Order requires agencies to prepare and submit benefit cost analyses even if those considerations are not a factor in the decisionmaking process. Again, it is the agencies that have the responsibility to prepare these analyses, and it is expected that OMB will review (but not redo) this work. In some cases where the agency has substantial discretion, the costs and benefits identified may be attributable to the regulation. In other cases, where the agency has limited discretion, they may be attributable primarily to the statute.

We found that the benefit cost analyses accompanying the 44 final rules listed in Table 6 vary substantially in type, form, and format of the estimates the agencies generated and presented. For example, agencies developed estimates of benefits, costs, and transfers that were sometimes monetized, sometimes quantified but not monetized, sometimes qualitative, and, most often, some combination of the three.

II. Benefits and Costs of Economically Significant/Major Final Rules (April 1998 to March 1999)

A. Social Regulation

Of the 44 rules reviewed by OMB, 22 are regulations requiring substantial additional private expenditures and/or providing new social benefits,[21] as described in Table 6.[22] EPA issued eight of these rules; HHS and DOT, three each; USDA and DOI, two each; DOC, DOL and Education, one each; and HHS/DOL/Treasury jointly issued one rule. Agency estimates and discussion are presented in a variety of ways, ranging from a purely qualitative discussion,for example, the benefits of the joint HHS/DOL/Treasury rule establishing minimum length-of-stay requirements for mothers and newborns, to a more complete benefit-cost

[19] For the last three years, output per hour in nonfarm business has been growing as rapidly as it did on average during productivity's golden years from 1948 though 1973.

[20] Including the value of increasing life expectancy in the GDP accounts to come up with a more comprehensive measure of the full output of the economy is not as far fetched as it sounds. It was first proposed and estimated in 1973 by D. Usher in ''An Imputation to the Measure of Economic Growth for Changes in Life Expectancy'' NBER Conference on Research in Income and Wealth.

[21] The other 22 are ''transfer'' rules.

[22] Note that all dollar figures Table 6 are in 1996 dollars unless otherwise noted.

analysis,for example, EPA's surface water treatment rule.

1. Benefits Analysis

Agencies monetized at least some benefit estimates in a number of cases including: (1) FDA's $5.7 billion over 5 years from the additional transplants resulting from its transplant-related data rule; (2) EPA's estimate of $1.1 to $4.2 billion per year in terms of better air quality from its ozone transport (NO_X SIP Call) rule; and (3) DOT's $360 million over 10 years in highway safety improvements from its reflector rule for trailers.

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TABLE 6: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/98 - 3/31/99
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
USDA	Solid Wood Packing Material from China	Not Estimated	Not Estimated	USDA estimates that if left unchecked, these pests have the potential to create losses in excess of $41 billion to forest products, commercial fruit, maple syrup, nursery, and tourist industries. The value of imports from China potentially affected is estimated to range between $12 billion and $16 billion. These estimates represent a maximum cost that would occur only if all these imports were lost to U.S. markets. [63 FR 50107]
USDA	Pseudorabies in Swine	Not Estimated	Not Estimated	USDA authorizes the transfer of $80 million in funds for the accelerated pseudorabies eradication program. USDA has determined that this is the most appropriate time to conduct the program because of the depressed market value of swine. This will mean that the indemnity will be paid at considerable savings. [64 FR 2548]
DOC	Endangered and Threatened Species of Salmonids	Not Estimated	Not Estimated	

TABLE 6: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/98 - 3/31/99
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
HHS-FDA	Safety and Effectiveness of New Drugs in Pediatric Patients	$76 million/yr.	$47 million/yr.	"FDA could not develop a quantifiable estimate of the benefits of this regulation, although numerous anecdotal examples illustrate the current health problem. To consider some of these potential benefits, the agency examined hospitalization rates for five serious illnesses (asthma, HIV/AIDS, cancer, pneumonia, and kidney infections) and found significantly higher rates for children than for middle-aged adults...the analysis suggests that a 25 percent reduction in the pediatric/adult hospitalization rate differentials would yield annual [medical cost] savings of $76 million for these five illnesses." [63 FR 66666] "This estimate may represent a lower bound on the benefits to pediatric patients, however, because a number of other disease conditions are also common to children and adults, including such life-threatening conditions as hypertensive disease and renal disease. These pediatric populations would also experience significant benefits from increased safety and access to drug treatments currently available only to adult patient. Moreover, the analysis omits any quantification of benefits from reduced pain and suffering and reduced pediatric mortality. Thus the full benefits of the rule could easily exceed $100 million per year." [63FR 66667]

TABLE 6: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/98 - 3/31/99
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
HHS-FDA	Over-The-Counter Drug Labeling	$61-80 million/yr.	$18 million/yr.	Monetized benefits are based on the assumption that the rule will reduce hospitalizations resulting from unintentional misuse of drugs by 5 percent. These benefits include avoided direct cost of hospitalizations, and the associated lost work time. They also include the value of time savings in making drug purchase decisions. "Although the agency cannot quantify the value of health improvements that would result, the agency is confident that more informed OTC drug selection and use produced by this rule will increase consumer satisfaction and, at times, reduce health care costs for additional or supplemental medications, doctor visits, and hospitalizations." [64FR 13277] "The new label format will establish a consistent order of presentation and group similar information (such as ingredients, warnings, and directions) together under relevant headings so that it will be easier for consumers to find and read this information, thus helping to reduce the number of [less severe] adverse event occurrences." [64FR 13277-8]
HHS - HCFA	Provision of Transplant-Related Data	$5.7 billion over the first 5 years	$1.4 billion (direct medical costs) plus 399,000 - 752,000 additional paperwork burden hours over the first 5 years	Benefits and costs based on expectation of 4,118 additional non-renal (primarily liver, heart, pancreas, and lung) transplants over first 5 years and assume an average of 12 life-years gained per transplant at a value of $116,000 per life-year. [63 FR 33873] The agency also expects "this regulation will increase tissue and eye donations as well as organ donations," but did not quantify this effect. [63 FR 33872]

TABLE 6: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/98 - 3/31/99
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
HHS/ DOL/ Treasury	Group Health Plans Under the Newborns' and Mothers' Health Protection Act	Not estimated	$130-200 million/yr.	"Many believe that the minimum length-of-stay requirements of 48 hours for a vaginal delivery and 96 hours for a cesarean section will have a positive impact on the overall health and well-being of mothers and newborns. The longer stays will allow health care providers sufficient time to assess their ability to care for the newborn. Although some services performed in an inpatient hospital setting may be effectively provided in other settings, such as clinics or physicians' offices, not all women have access to the full range of appropriate follow-up care. [This law] ensures that many women and newborns with health coverage will now be provided an acceptable level of postpartum care." [63FR 57550-1]
DOI	Migratory Bird Hunting (Early Season Frameworks)	$50-192 million/yr.	Not Estimated	Estimates of individual's willingness to pay for an additional duck indicate the size of this benefit. Willingness to pay for generally improved duck hunting in California was $32. Willingness to pay for taking twice as many birds in Montana was $123. Expanding these estimates nationwide, the welfare benefit of the duck hunting frameworks is on the order of $50 to $192 million.
DOI	Migratory Bird Hunting (Late Season Frameworks)	$50-192 million/yr.	Not Estimated	Estimates of individual's willingness to pay for an additional duck indicate the size of this benefit. Willingness to pay for generally improved duck hunting in California was $32. Willingness to pay for taking twice as many birds in Montana was $123. Expanding these estimates nationwide, the welfare benefit of the duck hunting frameworks is on the order of $50 to $192 million.

TABLE 6: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/98 - 3/31/99
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
DOL	Powered Industrial Truck Operator Training	$136 million/yr. (1993 dollars); 11 fatalities and 6,449 non-lost-workday injuries prevented/yr.	$16.9 million/yr. (1993 dollars)	The monetized portion of benefit estimate includes savings in medical costs, the value of lost output, savings in administrative costs of workers' compensation claims, and indirect costs to employer associated with lost-workday injuries [2,973 per year] only. It also includes reduced property damage and reduced litigation costs. It does not include a monetized estimate of loss of life or pain and suffering of injured workers. [63FR 66265]
Education	Education of Children with Disabilities and Early Intervention Program	$577-723 million/yr.	$324-544 million/yr.	The Department's estimates include the benefits and costs of significant statutory changes to the IDEA that have been incorporated in the rule and the benefits and costs of those non-statutory provisions that could be quantified. Estimated savings are attributable to statutory changes regarding the responsibility of private schools to provide services to children with disabilities and the elimination of unnecessary testing and non-statutory changes that reduce the number of meetings of school personnel that are required for children who are being disciplined and the extent of required services for children who have been suspended. These savings would be offset to some extent by the costs associated with the statutory changes requiring the participation of the child's regular education teacher in certain meetings and requiring alternate assessments for children with disabilities not included in general assessments. these estimates also include the cost of the non-statutory requirement for continued services to students who have exited high school without earning a regular high school diploma.
DOT/ FHWA	Lighting Devices, Reflectors, and Electrical Equipment	$360 million (present value) over 10 years	$228 million over 2-year phase-in period	
DOT/	Child Restraint	36-50 fatalities and	$152 million/yr.	

TABLE 6: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/98 - 3/31/99
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
DOT/ NHTSA	Light Truck CAFÉ Model-Year 2001	Not Estimated	Not Estimated	
EPA	Stage 1 Disinfectants/ Disinfection Byproducts	$0 - 3.88 billion/yr.	$626 - 701 million/yr.	Quantified benefits based on potential reductions in fatal and non-fatal bladder cancers. Non-quantified benefits include possible reductions in colon and rectal cancer and possible reductions in adverse reproductive and developmental effects. Regarding colon and rectal cancer, EPA notes that "...the association...while possibly significant, cannot be determined at this time because of limited data..." [RIA, p 4-14] with regard to reproductive and developmental effects, EPA notes that "...the results are inconclusive and do not support quantification of benefits at this time." [RIA p 4-16]
EPA	Enhanced Surface Water Treatment	$348 - 1,603 million/yr.	$287 - 307 million/yr.	Quantified benefits based on reduced illness and death from avoided cases of cryptosporidiosis only. Non-quantified benefits include reduced risks from other pathogens, and avoided costs of averting behavior (by people who would not have gotten cryptosporidiosis) in a major, well-publicized outbreak, such as occurred in Milwaukee in 1993.
EPA	Petroleum Refining Process Waste	See "Other Information"	$30 million/yr.	Recovered oil benefits were identified and netted out of the cost estimate. Risks to exposed populations were assessed. EPA evaluated fifteen waste streams and listed four of these waste streams that it determined to pose potential risks to exposed populations.

TABLE 6: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/98 - 3/31/99
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
EPA	Nitrogen Oxide Emissions from New Fossil-Fuel-Fired Steam Generating Units	46,000 tons of nitrogen oxides in 2000	$81 million in 2000	"Certain simplifying assumptions, such as no fuel switching in response to the rule, may have resulted in a significant overestimation of these costs." [63FR 49450] "Emissions reductions from replacement boilers are not quantified because of difficulties in characterizing emission rates for the boilers being replaced and the inability of the replacement model to predict selection of different types of boilers in both the baseline case and in response to the regulation. A qualitative analysis of industrial boiler replacement raises the possibility that replacement delay due to the revision may keep some boilers continuing to emit at a higher level than they would in the baseline case where they would be replaced by a lower emitting boiler." [63FR 49450]
EPA	Volatile Organic Compound Emission Standards for Architectural Coatings	113,500 tons of volatile organic compounds per year	$26 million/yr.	"The EPA believes the estimates of total cost and associated economic impacts are conservatively high. Since the best available data on VOC content of architectural coatings is from 1990, and the final rule has VOC content requirements similar to State rules which have been enforced since 1990, the EPA believes the estimated number of reformulations and/or their reformulation cost that result from this action may be overstated in that the compliant products developed by manufacturers to comply with various State rules can be used to meet the requirements of the Federal rule." [63FR 48856]

TABLE 6: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/98 - 3/31/99
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
EPA	Non-Road Diesel Engines	768,000 tons of nitrogen oxides; 110,000 tons of hydrocarbons; and 87,000 tons of particulate matter annualized emission reductions (1999-2018)	$298 million/yr. annualized (1999-2018)	
EPA	Regional Transport of Ozone (NOx SIP Call)	$1.1-4.2 billion/yr. (1990 dollars) in 2007	$1.7 billion/yr. (1990 dollars) in 2007	Agency estimates based on analysis of 2007. Actual benefits and costs begin in 2003. The monetized benefits reflect improvements in health, crop yields, visibility, and ecosystem protection. "Due to practical analytical limitations, the EPA is not able to quantify and/or monetize all potential benefits of this action." [63FR 57478]
EPA	New Non-Road Non-Handheld Engines At or Below 19 Kilowatts	194,000 tons of combined hydrocarbons plus nitrogen oxides annualized emission reductions (2001-2020); $200 million/yr. annualized fuel savings (2001-2020)	$132 million/yr. annualized (2001-2020)	

TABLE 6: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/98 - 3/31/99
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
TRANSFER RULES				
Dept. of Agriculture (USDA)				
Disaster Set-Aside Program				
Livestock Assistance Program				
Dept. of Health and Human Services (HHS)				
Definition of an Unemployed Parent				
Clinical Psychologist and Clinical Social Worker Services				
Prospective Payment System for Skilled Nursing Facilities				
Medicare Coverage and Payment for Bone Mass Measurements				
Establishment of the Medicare+Choice Program				
Hospital Inpatient Prospective Payment System FY1999				
Inpatient Hospital Deductible and Hospital and Extended Care Coinsurance 1999				
Monthly Actuarial Rates and Insurance Premium Rate beginning 1/1/99				
Physician Fee Schedule for CY1999				
Medicare Program: Hospital Wage Data Revisions				
Temporary Assistance for Needy Families				
Medicare State Allotments for Payment of Medicare Part B Premiums FY 1999				
Department of Justice (DOJ)				
Immigration Examinations Fee Account				
Pension Benefit Guarantee Corporation (PBGC)				
Payment of Premiums				

TABLE 6: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/98 - 3/31/99
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
Department of Transportation				
	State Observational Surveys of Belt Use			
	Operation of Motor Vehicles by Intoxicated Persons			
	Incentive Grants for Use of Seat Belts			
Small Business Administration				
	HUBZone Empowerment Contracting Program			
Federal Acquisition Regulation				
	Reform of Affirmative Action In Federal Procurement - Cases 97-004A and B			
	Reform of Affirmative Action In Federal Procurement - Case 97-004C			

Of the 22 (non-transfer) rules listed in Table 6, agencies monetized all the benefit estimates that they were able to quantify in 10 cases. In two cases,

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agencies provided some of the benefit estimates in monetized and quantified form, but did not monetize other, important quantified components of benefits. DOL's analysis of its powered industrial truck operator training rule monetized the property damage reductions and out-of-pocket savings associated with injury reductions. DOL, however, did not monetize the other aspects of those injuries (such as pain and suffering) nor the fatalities avoided. EPA's analysis of its non-handheld engines rule monetized the projected fuel savings, but not the estimated hydrocarbon and nitrogen oxide emission reductions.

In four cases, agencies provided quantified benefit estimates but did not provide monetized estimates. These included: (1) DOT's 36 to 50 fatalities and 1,231 to 2,229 injuries prevented per year as a result of child seat rule; (2) EPA's 113,500 tons of volatile organic compound emission reductions per year from its architectural coatings rule; and (3) EPA's annualized emission reductions of 786,000 tons of nitrogen oxides, 110,000 tons of hydrocarbons and 87,000 tons of particulate matter from its nonroad diesel engines rule.

Finally, in six cases, agencies did not report any quantified (or monetized) benefit estimates. In many of these cases, the agency provided a qualitative description of benefits. For example, USDA's wood packing material rule discusses the potential benefits of avoiding the loss of forest products, commercial fruit, maple syrup, and tourism associated with a massive beetle infestation, but does not estimate the probability of such an episode. HHS's analysis of its length-of-stay rule for mothers and newborns includes a qualitative discussion of the rule's positive impact on the overall health and well-being of those affected.

2. Cost Analysis

In 16 of the 22 cases, agencies provided monetized cost estimates. These include such items as HHS's estimate of $1.4 billion over 5 years in direct medical costs for its transplant-related data rule; DOT's estimate of $152 million per year for its child restraint rule; and EPA's estimate of $1.7 billion per year for its ozone transport rule.

For the remaining six rules, the agencies did not estimate costs. These rules included both USDA rules, DOI's two migratory bird hunting rules, DOC's endangered species listing rule and NHTSA's light truck fuel economy rule.

3. Net Monetized Benefits

Ten of the 22 rules provided at least some monetized estimates of both benefits and costs. Of those, eight have positive net monetized benefits, that is, estimated monetized benefits that unambiguously exceed the estimated monetized costs of the rules. For example, DOT's reflector rule will generate an estimated net benefit of about $140 million (present value) over 10 years. EPA's surface water treatment rule will result in an estimated net benefit of between $41 million and $1.3 billion per year. In the case of certain health, safety, and environmental rules, the epidemiologic evidence may indicate, but not establish with certainty, that a causal link exists between the regulated substance and the occurrence of serious illness. Despite the lack of certainty, an agency may decide that regulation is appropriate. In calculating the benefits of such a rule, it is necessary to describe more than one possible outcome, reflecting the current state of knowledge referred to above. Thus, for example, two EPA rules resulted in monetized benefit estimates that included the possibility of both positive or negative net benefits. For example, EPA's disinfection byproducts rule was estimated to generate between $3.18 billion in net benefits and $701 million in net costs. This reflected the lack of certainty as to whether the rule would definitely prevent bladder cancer.

4. Rules With Quantified Effects of Less Than $100 Million per Year

Seven of the rules in Table 6 are classified as economically significant even though their quantified effects do not exceed $100 million in any one year:

USDA—Solid Wood Packing Material from China: Because of a lack of data, the USDA was not able to estimate the benefits and costs associated with regulating solid wood packing materials from China to prevent the importation of wood pests. USDA stated, however, that in the absence of regulatory action, the wood pests could significantly affect the forest products, commercial fruit, maple syrup, nursery, and tourist industries, which have a value of $41 billion.

USDA—Pseudorabies in Swine: In 1999, USDA began implementing a policy to accelerate the Federal eradication program for pseudorabies. Although USDA authorizes a $80 million fund for indemnity payments, the producers of the swine incur other costs such as the cost of cleaning and disinfection. USDA did not estimate these costs because it did not have sufficient information to determine the effect of its actions on the market. USDA believed it was important to act immediately because the severely depressed values of market swine presented a unique opportunity to accelerate significantly pseudorabies eradication in a cost-effective way through depopulation.

DOC—Endangered and Threatened Species of Salmonids: Based upon publicly available information, OMB determined that rules covering these species were major. Citing the Conference Report on the 1982 amendments to the Endangered Species Act, however, the agency did not perform a benefit-cost analysis of the final rules. This report specifically provides that economic impacts cannot be considered in assessing the status of a species.

HHS—Safety and Effectiveness of New Drugs in Pediatric Patients: FDA estimated that this rule will generate benefits of about $76 million per year. FDA also noted, however, that this should be interpreted as a lower bound, since the analysis covered only five illnesses and did not include any estimate for avoided pain and suffering. FDA expressed the belief that the benefits of the rule could easily exceed $100 million.

HHS—Over-The-Counter Drug Labeling: FDA estimated the benefits of this rule at $61 to $80 million/yr. In addition, the agency was unable to quantify several components of benefits that it believes are significant. These include increased consumer satisfaction and a reduction in less-severe adverse health outcomes.

DOT—Light Truck CAFE: For each model year, DOT must establish a corporate average fuel economy (CAFE) standard for light trucks, including sport-utility vehicles and minivans. (DOT also sets a separate standard for passenger cars, but is not required to revisit the standard each year.) For the past four years, however, appropriations language has prohibited NHTSA from spending any funds to change the standards. In effect, it has frozen the light truck standard at its existing level of 20.7 miles per gallon (mpg) and has prohibited NHTSA from analyzing effects at either 20.7 mpg or alternative levels. Although DOT did not estimate the benefits and costs of the standards, the agency's experience in previous years indicates that they may be substantial. Over 5 million new light trucks are subject to these standards each year, and the standard, at 20.7 mpg, is binding on several manufacturers. In view of these likely,

substantial effects, we designated the rule as economically significant even though analysis of the effects was prohibited by law.

EPA—Petroleum Refining Process Waste: EPA estimated the cost of the rule at $20 to $40 million/yr. with an expected value of $30 million/yr. Based on new cost information submitted to EPA after the close of the comment period, OMB determined that the rule as written could impose costs in excess of $100 million/yr. EPA subsequently determined that the higher cost estimates are attributable to waste leachates not intended to be covered by the petroleum listing, and EPA published in the **Federal Register** another rule clarifying that leachates are excluded from this petroleum listing and other listings, and are deferred to Clean Water Act discharge standards. This deferral was in effect when the petroleum rule became effective; consequently, the impacts for the petroleum listing are correctly estimated to be $30 million.

B. Transfer Regulations

Of the 44 rules listed in Table 6, 22 were necessary to implement Federal budgetary programs. The budget outlays associated with these rules are ''transfers'' to program beneficiaries. Of the 22, two are USDA rules that implement Federal appropriations language regarding disaster aid for farmers; eleven are HHS rules that implement Medicare and Medicaid policy; one is an HHS rule providing assistance to needy families; three are DOT rules regarding grants to states to increase seatbelt usage and reduce intoxicated driving; one is an SBA rule regarding contracting; two are Federal Acquisition Regulation rules; one is a DOJ rule regarding immigration policy; and one is a Pension Benefit Guaranty Corporation (PBGC) rule regarding payment of premiums.

1. Major Rules for Independent Agencies

The Congressional review provisions of the Small Business Regulatory Enforcement Fairness Act (SBREFA) require the General Accounting Office (GAO) to submit reports on major rules to the Committees of jurisdiction in both Houses of Congress, including rules issued by agencies not subject to Executive Order 12866 (the ''independent'' agencies). We reviewed the information on the costs and benefits of major rules contained in GAO reports for the period of April 1, 1998 to March 31, 1999. GAO reported that four independent agencies issued twenty-four major rules during this period. We list the agencies and the type of information provided by them (as summarized by GAO) in Table 7.

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Table 7 Benefit and Cost Information on Independent Agency Rules				
Agency	**Total Rules**	**Rules with Some Information on Costs or Benefits**	**Monetized Information on Costs**	**Monetized Information on Benefits**
Federal Communications Commission (FCC)	**15**	**0**	**0**	**0**
Securities and Exchange Commission (SEC)	**6**	**5**	**2**	**1**
Nuclear Regulatory Commission (NRC)	**2**	**1**	**0**	**0**
National Credit Union Administration	**1**	**0**	**0**	**0**
Total	**24**	**6**	**2**	**1**

In comparison to the agencies subject to E.O. 12866, the independent agencies provided relatively little quantitative information on the costs and benefits of

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the major rules. As Table 7 indicates, six of the twenty-four rules included some discussion of benefits and costs. Only two of the twenty-four regulations had any monetized cost information; only one regulation monetized the benefits associated with the regulation.

The one rule that estimated both benefits and costs was ''Registration Form Used by Open-Ended Management Investment Companies and New Disclosure Option for Open-Ended Management Investment Companies'' by the Securities and Exchange Commission (SEC). This regulation updated the Form N–1A that is used by mutual funds to register under the Investment Company Act of 1940 and to offer their shares under the Securities Act of 1933 [63 FR 13916]. SEC estimated the cost associated with the regulation to be approximately $175 million. The estimated benefits for the small funds was $1.8 million. This was the only rule in which the monetized cost exceeded $100 million.

SEC also estimated the cost associated with a regulation amending Rule 17a–5 to require broker-dealers to report their processes for preparing for the Year 2000. The cost was about $66 million. With respect to the remaining regulations, the twenty-two GAO reports contain no information useful for estimating the aggregate costs and benefits.

Chapter III: Estimates of Benefits and Costs of ''Economically Significant'' Rules, April 1995—March 1999

This chapter presents the available benefit and cost estimates for individual rules from April 1, 1995 through March 31, 1999. The summary of agency estimates for final rules from the current year (April 1, 1998 to March 31, 1999) is presented in Chapter II, Table 6. The summary of agency estimates for final rules from the preceding three years (April 1, 1995 to March 31, 1998) is presented in Tables 15 through 17 in the Appendix. In this chapter, we also aggregate benefit and cost estimates for those Federal rules with significant quantified benefit and cost estimates.

In assembling agency estimates of benefits and costs, we have:

(1) Applied a uniform format for the presentation of benefit and cost estimates in order to make agency estimates more closely comparable with each other (for example, providing the benefit and cost streams over time and annualizing benefit and cost estimates); and

(2) Monetized quantitative estimates where the agency has not done so (for example, converting tons of pollutant per year to dollars).

Adopting a format that presents agency estimates so that they are more closely comparable also allows, at least for purposes of illustration, the aggregation of benefit and cost estimates across rules. While we have attempted to be faithful to the respective agency approaches, we caution the reader that agencies have used different methodologies and valuations in quantifying and monetizing effects.

As noted in Chapters I and II, the substantial limitations of available data on the benefits and costs for this set of rules raise significant obstacles to the development of a meaningful aggregate estimate of benefits and costs for even a single year's regulations. For example in many cases, agencies identified important benefits of their rules that were not quantifiable. In such cases, we necessarily excluded them from the monetized estimates we develop in this Chapter. To the extent that these benefits are substantial, the monetized estimates will understate the total value of the benefits. The discussion below addresses other limitations in the data and outlines the steps we have taken in an effort to overcome some of them.

I. Monetized Benefit and Cost Estimates for Individual Rules

We have included in this Chapter only those major rules with quantified estimates of both benefits and costs. These include six rules from the 1995/96 period, 15 rules from the 1996/97 period, 13 rules from 1997/98 period, and 14 from 1998/99. We have excluded 17 rules without quantified estimates of either benefits or costs. (See Table 8.)

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Table 8:
Major Rules Issued Between April 1, 1995 and March 31, 1999
Without Quantified Estimates of Either Benefits or Costs

USDA	1996 Farm Bill Farm Program Karnal Bunt, 1996-1997 Solid Wood Packing Material from China Pseudorabies in Swine
DOC	Endangered and Threatened Species of Salmonids
HHS	Substances Prohibited in Animal Feed, 1997-1998
DOI	Migratory Bird Hunting (Early Season), 1995-1996 Migratory Bird Hunting (Fall Season), 1995-1996 Migratory Bird Hunting (Early Season), 1996-1997 Migratory Bird Hunting (Fall Season), 1996-1997 Migratory Bird Hunting (Early Season), 1997-1998 Migratory Bird Hunting (Fall Season), 1997-1998
EPA	Phase III Land Disposal Restrictions
DOT	Light Truck CAFE, 1995-1996 Light Truck CAFE, 1996-1997 Light Truck CAFE, 1997-1998 Light Truck CAFE, 1998-1999

Ten additional rules listed in Table 9 have also been excluded from further discussion because only quantified cost estimates were available and/or there were only relatively small benefit and cost estimates.

Table 9: Small or Missing Estimates, Not Evaluated for Aggregate Estimate	
USDA	Use of the Term "Fresh" for Poultry Labeling Importation of Sonoran Pork Importation of Argentine Beef
DOC	Encryption Items Transferred from U.S. Munitions List to the Commerce Control List
HHS/DOL/Treasury	Group Health Plans Under the Newborns' and Mothers' Health Protection Act
DOI	Migratory Bird Hunting (Early Season), 1998-1999 Migratory Bird Hunting (Fall Season), 1998-1999
EPA	Lead-Based Paint Activities in Target Housing Toxic Release Inventory: Facility Expansion Petroleum Refining Process Waste

For some of the remaining rules, significant effects but did not assign a agencies quantified estimates of monetized value to these effects. Some

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of the quantified effects—for example, small changes in the risk of premature death or serious injury—are identified as outcomes for a variety of rules. In a number of instances, agencies did assign monetized estimates to these outcomes.

Differences in valuation across rules are often critical, particularly in comparisons of individual rules or programs. The different approaches in the quantification and monetization of these effects across agencies can also result in an ''apples and oranges'' problem in aggregating estimates. Indeed, where effects have been quantified, but not monetized, the different quantitative effects cannot be aggregated because they are not expressed in common units. In order to address this problem, this section takes the additional step of assigning a monetized value in order to provide a more consistent set of estimates in those cases where agencies only quantified significant effects. We have not, however, attempted to quantify or monetize any qualitative effects identified by agencies where the agency did not at least quantify them.

As in the past, agencies continue to take different approaches toward rules that affect small risks of premature death. In some cases, such as FDA's tobacco rule, agencies have quantified and monetized these effects in terms of ''quality-adjusted statistical life years.'' In other cases, such as FRA's roadway worker protection rule, agencies have quantified and monetized these effects in terms of statistical lives. In still other cases, such as DOL's industrial truck operator rule and NHTSA's child restraint rule, agencies have quantified risks of death in terms of life-years or lives, but have not monetized them. Finally, in some cases, such as FDA's animal feed rule, the agency did not develop any quantified estimate of the rule's mortality effects.

Estimates for the value of a statistical life varied across agencies. For the tobacco rule, FDA estimated benefits based on a value of $2.5 million per statistical life. For the roadway worker rule, FRA used $2.7 million per statistical life. For the upper-bound estimates of EPA's ozone and PM NAAQS rules, the agency used $4.8 million per statistical life. For its mammography rule, FDA used $5 million per statistical life.[23] Similarly, agency estimates for the value of a statistical life-year have also varied. FDA used $116,500 per life-year for its tobacco rule. EPA used $120,000 per life-year to produce its lower-bound estimates of benefits in its ozone and PM NAAQS rules. FDA used $368,000 per life-year in its mammography rule. As a general matter, we have deferred to the individual agencies' judgment in this area. In cases where the agency both quantified and monetized fatality risks, we have made no adjustments to the agency's estimate.

In cases where the agency provided only a quantified estimate of fatality risk, but did not monetize it, we have monetized these estimates in order to convert these effects into a common unit. For example, in the case of HHS's organ donor rule, the agency estimated, but did not monetize, statistical life-years saved (although it discussed its use of $116,500 per life-year in other contexts). We valued those life-years at $116,500 each. For NHTSA's child restraint rule, we used a value of $2.7 million per statistical life.

In cases where agencies have not adopted estimates of the value of reducing these risks, we used estimates supported by the relevant academic literature. For DOL's industrial truck operator rule, for example, we used $5 million per statistical life.[24] We did not attempt to quantify or monetize fatality risk reductions in cases where the agency did not at least quantify them. As a practical matter, the aggregate benefit and cost estimates are relatively insensitive to the values we have assigned for these rules because the aggregate estimates are dominated by the FDA tobacco rule and EPA's rules revising the ozone and PM primary NAAQS.

II. Valuation Estimates for Other Regulatory Effects

The following is a brief discussion of our valuation estimates for other types of effects which agencies identified and quantified, but did not monetize.

- Injury. For the child restraint rule, we adopted the Department of Transportation approach of converting injuries to ''equivalent fatalities.'' These ratios are based on DOT's estimates of the value individuals place on reducing the risk of injury of varying severity relative to that of reducing risk of death. For the OSHA industrial truck operator rule, we did not monetize injury benefits beyond OSHA's estimate of the direct cost of lost workday injuries.
- Change in Gasoline Fuel Consumption. We valued reduced gasoline consumption at $.80 per gallon pre-tax.
- Reduction in Barrels of Crude Oil Spilled. We valued each barrel prevented from being spilled at $2,000. This reflects double the sum of the most likely estimates of environmental damages plus cleanup costs contained in a recent published journal article (Brown and Savage, 1996).
- Change in Emissions of Air Pollutants. We used estimates of the benefits per ton for reductions in hydrocarbon, nitrogen oxide (NO_X), sulfur dioxide (SO_2), and fine particulate matter (PM) derived from EPA's Pulp and Paper cluster rule (October, 1997). These estimates were obtained from the RIA prepared for EPA's July, 1997 rules revising the primary NAAQS for ozone and fine PM. We note that in this area, as in others, the academic literature offers a number of methodologies and underlying studies to quantify the benefits. There remain considerable uncertainties with each of these approaches. In particular, the derivation and application of per-ton coefficients to value reductions in these pollutants requires significant simplifying assumptions. This is particularly true with respect to the relationship between changes in emitted precursors pollutants and changes in the ambient pollutant concentrations which yield actual benefits. As a result of these simplifying assumptions, the monetary benefit estimates obtained by multiplying tons reduced by benefit estimates per-ton, which we derive from analyses of other rules, should be considered highly uncertain. For each of these pollutants, we used the following values (all in 1996$) for changes in emissions:[25]

Hydrocarbons: $519 to $2,360/ton;
Nitrogen Oxides: $519 to $2,360/ton;
Particulate Matter: $11,539/ton; and
Sulfur Dioxide: $3,768 to $11,539/ton.

EPA has recently recommended that we use an average value of $7,999/ton for nitrogen oxides. EPA based this estimate on the benefits estimate associated with its recent ''Tier 2/gasoline sulfur'' final rule (FR cite, when available). We will be considering whether we should use this or some other value instead of the range we currently use and would welcome comment on the subject.

[23] There is a relatively rich body of academic literature on this subject. The methodologies used and the resulting estimates vary substantially across the academic studies. Based on this literature, agencies have each developed estimates they believe are appropriate for their particular regulatory circumstances.

[24] As a result of OSHA's interpretation of the Supreme Court's decision in the ''Cotton Dust'' case, American Textile Manufacturers Institute v. Donovan, 452 U.S. 491 (1981), OSHA does not conduct cost-benefit analysis or assign monetary values to human lives and suffering.

[25] Where applicable, the lower (higher) end of the value ranges in all of the tables throughout this report reflect the lower (higher) values in these ranges.

In order to make agency estimates more consistent, we developed benefit and cost time streams for each of the rules. Where agency analyses provide annual or annualized estimates of benefits and costs, we used these estimates in developing streams of benefits and costs over time. Where the agency estimate only provided annual benefits and costs for specific years, we used a linear interpolation to represent benefits and costs in the intervening years.[26]

Agency estimates of benefits and costs cover widely varying time periods. While HHS analyzed the effects of providing transplant-related data from 1999 through 2004, other agencies generally examined the effects of their regulations over longer time periods. HHS used a 10-year period for its over-the counter drug labeling rule; DOL also used a 10-year period for its truck operator training rule. EPA's analyses on disinfection and enhanced water treatment rules evaluated the effects over a twenty-year period. The differences in the time frames used for the various rules evaluated generally reflect the specific characteristics of individual rules such as expected capital depreciation periods or time to full realization of benefits.

In order for comparisons or aggregation to be meaningful, benefit and cost estimates should correctly account for all substantial effects of regulatory actions, including potentially offsetting effects, which may or may not be reflected in the available data. We have not made any changes to agency monetized estimates. To the extent that agencies have adopted different monetized values for effects, for example, different values for a statistical life, or different discounting methods, these differences remain embedded in Tables 10 through 14. Any comparison or aggregation across rules should also consider a number of factors which the presentation in tables 10 through 14 does not address. For example, these rules may use baselines in regulations and controls already in place. In addition, these rules may well treat uncertainty in different ways. In some cases, agencies may have developed alternative estimates reflecting upper- and lower-bound estimates. In other cases, the agencies may offer a midpoint estimate of benefits and costs. In still other cases the agency estimates may reflect only upper-bound estimates of the likely benefits and costs.

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[26] In other words, if hypothetically we had costs of $200 million in 2000 and $400 million in 2020, we would assume costs would be $250 million in 2005, $300 million in 2010, and so forth.

Table 10:
Agency Monetized Benefit/Cost Estimates for Final Rules
April 1, 1995 to March 31, 1996
(Millions of $1996, Rounded to Two Significant Digits)

Agency	Rule	Category	2000	2005	2010	2015	Annualized Value	Net Present Value
Department of Health and Human Services (HHS)								
	Hazard Analysis and Critical Control Points (HACCP): Seafood	Benefits	$ 110- 190	$ 110- 190	$ 110- 190	$ 110- 190	$ 110- 200	$ 1,600- 2,800
		Costs	$ 50- 110	$ 50- 110	$ 50- 110	$ 50- 110	$ 50- 120	$ 740- 1,600
Department of Transportation (DOT)								
	Head Impact Protection	Benefits	$ 480- 540	$1,900-2,200	$1,900-2,200	$1,900-2,200	$1,600-1,800	$22,000-25,000
		Costs	$ 170	$ 690	$ 690	$ 690	$ 580	$ 8,000
	Vessel Response Plans	Benefits	$ 40	$ 40	$ 40	$ 40	$ 40	$ 330
		Costs	$ 260	$ 260	$ 260	$ 260	$ 280	$ 3,900
Environmental Protection Agency (EPA)								
	Marine Tank Vessel Loading and Petroleum Refining NESHAP	Benefits	$ 170- 760	$ 170- 760	$ 170- 760	$ 170- 760	$ 170- 760	$ 2,900-10,000
		Costs	$ 120- 160	$ 120- 160	$ 120- 160	$ 120- 160	$ 120- 160	$ 1,700- 2,200
	Air Emissions from Municipal Solid Waste Landfills	Benefits	$ 50- 200	$ 60- 220	$ 70- 230	$ 70- 230	$ 60- 210	$ 820- 2,900
		Costs	$ 90	$ 105	$ 110	$ 110	$ 100	$ 1,400
	Municipal Waste Combustors	Benefits	$ 220- 570	$ 220- 570	$ 220- 570	$ 220- 570	$ 240- 620	$ 3,300- 8,600
		Costs	$ 300	$ 300	$ 300	$ 300	$ 320	$ 4,400

Table 11:
Agency Monetized Benefit/Cost Estimates for Final Rules
April 1, 1996 to March 31, 1997
(Millions of 1996$, Rounded to Two Significant Digits)

Agency	Rule	Category	2000	2005	2010	2015	Annualized Value	Net Present Value
Department of Agriculture (USDA)								
	Conservation Reserve Program	Benefits	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,200	$ 30,000
		Costs	$ 900	$ 900	$ 900	$ 900	$ 970	$ 13,000
	Hazard Analysis and Critical Control Points (HAACP): Meat and Poultry	Benefits	$ 70- 2,600	$ 70- 2,600	$ 70- 2,600	$ 70- 2,600	$ 70- 2,800	$ 1,000- 38,000
		Costs	$ 90- 110	$ 90- 110	$ 90- 110	$ 90- 110	$ 100- 120	$ 1,400- 1,700
Department of Health and Human Services (HHS)								
	Food Nutrition Labeling: Small Business Exemption	Benefits	$ 275- 360	$ 275- 360	$ 275- 360	$ 275- 360	$ 300- 390	$ 4,100- 5,400
		Costs	$ 3	$ 2	$ 1	$ 1	$ 2	$ 30
	Restriction on the Sale and Distribution of Tobacco	Benefits	$9,200-10,000	$9,200-10,000	$9,200-10,400	$9,200-10,000	$9,900-11,000	$140,000-150,000
		Costs	$ 180	$ 180	$ 180	$ 180	$ 180	$ 2,500
	Medical Devices: Quality Regulations	Benefits	$ 270- 280	$ 270- 280	$ 270 -280	$ 270- 280	$ 290- 310	$ 4,100- 4,200
		Costs	$ 80	$ 80	$ 80	$ 80	$ 90	$ 1,200
Department of Labor (DOL)								
	Exposure to Methylene Chloride	Benefits	$ 40	$ 40	$ 40	$ 40	$ 90	$ 1,200
		Costs	$ 100	$ 100	$ 100	$ 100	$ 110	$ 1,500

Table 11:
Agency Monetized Benefit/Cost Estimates for Final Rules
April 1, 1996 to March 31, 1997
(Millions of 1996$, Rounded to Two Significant Digits)

Agency	Rule	Category	2000	2005	2010	2015	Annualized Value	Net Present Value
Department of Transportation (DOT)								
	Airbag Depowering	Benefits	$ 540- 860	$ 0	$ 0	$ 0	$ 170- 270	$ 2,400- 3,800
		Costs	$ 340- 1,600	$ 0	$ 0	$ 0	$ 110- 500	$ 1,500- 7,000
	Roadway Worker Protection	Benefits	$ 30	$ 30	$ 30	$ 30	$ 40	$ 490
		Costs	$ 30	$ 30	$ 30	$ 30	$ 40	$ 480
Environmental Protection Agency (EPA)								
	Accidental Release Prevention	Benefits	$ 170	$ 170	$ 170	$ 170	$ 170	$ 2,400
		Costs	$ 100	$ 100	$ 100	$ 100	$ 100	$ 1,500
	Financial Assurance for Municipal Solid Waste Landfills	Benefits	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
		Costs	-$ 100	-$ 100	-$ 100	-$ 100	-$ 110	-$ 1,500
	Deposit Control Gasoline	Benefits	$ 120- 350	$ 120- 350	$ 120- 350	$ 120- 350	$ 120- 350	$ 1,700- 5,200
		Costs	$ 140	$ 140	$ 140	$ 140	$ 150	$ 2,000
	Acid Rain Phase II NO_x Controls	Benefits	$ 460- 2,100	$ 460- 2,100	$ 460- 2,100	$ 460- 2,100	$ 430- 2,000	$ 6,000- 27,000
		Costs	$ 200	$ 200	$ 200	$ 200	$ 190	$ 2,600
	Federal Test Procedure Revisions	Benefits	$ 140- 820	$ 140- 820	$ 140- 820	$ 140- 820	$ 130- 760	$ 1,700- 11,000
		Costs	$ 200- 250	$ 200- 250	$ 200- 250	$ 200- 250	$ 200- 250	$ 2,600- 3,200

Table 11:
Agency Monetized Benefit/Cost Estimates for Final Rules
April 1, 1996 to March 31, 1997
(Millions of 1996$, Rounded to Two Significant Digits)

Agency	Rule	Category	2000	2005	2010	2015	Annualized Value	Net Present Value
Environmental Protection Agency (EPA), continued								
	Voluntary Standards for Light-Duty Vehicles (NLEV)	Benefits	$ 50- 220	$ 130- 590	$ 260- 1,200	$ 380- 1,800	$ 230- 1,000	$ 3,100- 14,000
		Costs	$ 600	$ 600	$ 600	$ 600	$ 640	$ 8,920
	Emission Standards for Marine Engines	Benefits	$ 10- 50	$ 90- 390	$ 180- 810	$ 240- 1,100	$ 150- 680	$ 2,100- 9,400
		Costs	$ 50	$ 310	$ 360	$ 320	$ 270	$ 3,760

Table 12:
Agency Monetized Benefit/Cost Estimates for Final Rules
April 1, 1997 to March 31, 1998
(Millions of 1996$, Rounded to Two Significant Digits)

Agency	Rule	Category	2000	2005	2010	2015	Annualized Value	Net Present Value
Department of Agriculture (USDA)								
Environmental Quality Incentives Program (EQIP)		Benefits	$ 270	$ 270	$ 270	$ 270	$ 290	$ 4,000
		Costs	$ 180	$ 180	$ 180	$ 180	$ 200	$ 2,700
Department of Health and Human Services (HHS)								
Organ Procurement and Transplantation Network		Benefits	$ 30- 410	$ 30- 410	$ 30- 410	$ 30- 410	$ 40- 440	$ 510- 6,100
		Costs	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Quality Mammography Standards		Benefits	$ 180- 260	$ 180- 260	$ 180- 260	$ 180- 260	$ 200- 280	$ 2,800- 3,900
		Costs	$ 40	$ 40	$ 40	$ 40	$ 40	$ 570
Department of Labor (DOL)								
Respiratory Protection		Benefits	$ 140- 560	$ 140- 560	$ 140- 560	$ 140- 560	$ 590- 2,700	$ 8,200- 37,000
		Costs	$ 110	$ 110	$ 110	$ 110	$ 120	$ 1,700

Table 12:
Agency Monetized Benefit/Cost Estimates for Final Rules
April 1, 1997 to March 31, 1998
(Millions of 1996$, Rounded to Two Significant Digits)

Agency	Rule	Category	2000	2005	2010	2015	Annualized Value	Net Present Value
Department of Energy (DOE)								
	Energy Conservation Standards for Refrigerators	Benefits	$ 610	$ 680- 710	$ 790- 860	$ 890- 990	$ 700- 760	$ 9,700- 11,000
		Costs	$ 280	$ 280	$ 280	$ 280	$ 260	$ 3,600
	Energy Conservation Standards for Room Air Conditioners	Benefits	$ 60	$ 70	$ 80	$ 80	$ 80	$ 930- 1,000
		Costs	$ 20	$ 20	$ 20	$ 20	$ 20	$ 300
Environmental Protection Agency (EPA)								
	Emission Standards for New Locomotives	Benefits	$ 250- 970	$ 250- 970	$ 250- 970	$ 250- 970	$ 230- 900	$ 3,200- 13,000
		Costs	$ 90	$ 90	$ 90	$ 90	$ 80	$ 1,900
	Emission Standards for New Highway Heavy-Duty Engines	Benefits	$ 0	$ 310-1,400	$ 310- 1,400	$ 310- 1,400	$ 220- 990	$ 3,000- 14,000
		Costs	$ 0	$ 200	$ 200	$ 200	$ 140	$ 1,900
	Pulp and Paper: Effluent Guidelines	Benefits	$ 10- 160	$ 10- 160	$ 10- 160	$ 10- 160	$ 10- 250	$ 150- 3,400
		Costs	$ 160	$ 160	$ 160	$ 160	$ 250	$ 3,400

Table 12:
Agency Monetized Benefit/Cost Estimates for Final Rules
April 1, 1997 to March 31, 1998
(Millions of 1996$, Rounded to Two Significant Digits)

Agency	Rule	Category	2000	2005	2010	2015	Annualized Value	Net Present Value
Environmental Protection Agency (EPA), continued								
	Pulp and Paper: National Emission Standards for Hazardous Air Pollutants (NESHAP)	Benefits	-$ 1,000-1,000	-$1,000-1,000	-$ 1,000- 1,000	-$ 1,000- 1,000	-$ 970- 1,100	-$ 13,000- 14,000
		Costs	$ 80	$ 80	$ 80	$ 80	$ 120	$ 1,600
	National Ambient Air Quality Standards (NAAQS): Ozone	Benefits	$ 0	$ 235- 710	$ 470- 2,500	$ 1,800- 10,000	$ 770- 4,300	$ 11,000- 59,000
		Costs	$ 0	$ 470	$ 1,310	$ 11,000	$ 4,500	$ 62,000
	National Ambient Air Quality Standards (NAAQS): Particulate Matter	Benefits	$ 0	$ 0	$22,000-123,000	$24,000-130,000	$11,000-59,000	$148,000-816,000
		Costs	$ 0	$ 0	$ 10,000	$ 44,000	$ 17,000	$ 230,000
	Disposal of Plychlorinated Biphenyls (PCBs)	Benefits	$ 150- 740	$ 150- 740	$ 150- 740	$ 150- 740	$ 160- 790	$ 2,200- 11,000
		Costs	$ 14	$ 14	$ 14	$ 14	$ 14	$ 210

Table 13:
Agency Monetized Benefit/Cost Estimates for Final Rules
April 1, 1998 to March 31, 1999
(Millions of 1996$, Rounded to Two Significant Digits)

Agency	Rule	Category	2000	2005	2010	2015	Annualized Value	Net Present Value
Department of Education								
	Education of Children with Disabilities and Early Intervention Program	Benefits	$ 580 - 720	$ 580 - 720	$ 580 - 720	$ 580 - 720	$ 580 - 720	$8,000 - 10,000
		Costs	$ 320 - 540	$ 320 - 540	$ 320 - 540	$ 320 - 540	$ 320 - 540	$ 4,500 - 7,500
Department of Health and Human Services (HHS)								
	Safety and Effectiveness of New Drugs in Pediatric Patients	Benefits	$ 74	$ 74	$ 74	$ 74	$ 74	$ 1,000
		Costs	$ 45	$ 45	$ 45	$ 45	$ 45	$ 630
	Over-the-Counter Drub Labeling	Benefits	$ 60 - 78	$ 60 - 78	$ 60 - 78	$ 60 - 78	$ 60 - 78	$ 820 - 1,070
		Costs	$ 18	$ 18	$ 18	$ 18	$ 18	$ 250
	Provision of Transplant-Related Data	Benefits	$ 1,100	$ 1,100	$ 1,100	$ 1,100	$ 1,100	$ 15,000
		Costs	$ 270	$ 270	$ 270	$ 270	$ 270	$ 3,800
Department of Labor (DOL)								
	Powered Industrial Truck Operator Training	Benefits	$ 210	$ 210	$ 210	$ 210	$ 210	$ 2,800
		Costs	$ 18	$ 18	$ 18	$ 18	$ 18	$ 250

Table 13:
Agency Monetized Benefit/Cost Estimates for Final Rules
April 1, 1998 to March 31, 1999
(Millions of 1996$, Rounded to Two Significant Digits)

Agency	Rule	Category	2000	2005	2010	2015	Annualized Value	Net Present Value
Department of Transportation (DOT)								
	Lighting Devices, Reflectors, and Electrical Equipment	Benefits	$ 53	$ 53	$ 53	$ 53	$ 53	$ 680
		Costs	$ 34	$ 34	$ 34	$ 34	$ 34	$ 430
	Child Restraint Anchorage Systems/Child Restraint System	Benefits	$ 110 - 190	$ 110 - 190	$ 110 - 190	$ 110 - 190	$ 110 - 190	$ 1,500-2,700
		Costs	$ 150	$ 150	$ 150	$ 150	$ 150	$ 2,100
Environmental Protection Agency (EPA)								
	Stage 1 Disinfectants/ Disinfection Byproducts	Benefits	$ 0 - 3,700	$ 0 - 3,700	$ 0 - 3,700	$ 0 - 3,700	$ 0 - 3,700	$ 0- 51,000
		Costs	$ 600 - 670	$ 600 - 670	$ 600 - 670	$ 600 - 670	$ 600 - 670	$ 8,200 - 9,200
	Enhanced Surface Water Treatment	Benefits	$330 - 1,500	$330 - 1,500	$330 - 1,500	$330 - 1,500	$330 - 1,500	$ 4,600- 21,000
		Costs	$ 280-300	$ 280-300	$ 280-300	$ 280-300	$ 280-300	$ 3,800 - 4,000
	Nitrogen Oxide Emission from New Fossil-Fuel-Fired Steam Generating Units	Benefits	$ 24 - 110	$ 24 - 110	$ 24 - 110	$ 24 - 110	$ 24 - 110	$ 330 - 1,500
		Costs	$ 81	$ 81	$ 81	$ 81	$ 81	$ 1,100
	Volatile Organic Compound Emission Standards for Architectural Coatings	Benefits	$ 33 - 300	$ 33 - 300	$ 33 - 300	$ 33 - 300	$ 33 - 300	$ 920 - 4,200
		Costs	$ 29	$ 29	$ 29	$ 29	$ 29	$ 400
	Non-Road Diesel Engines	Benefits	$1,500-3,100	$1,500-3,100	$1,500-3,100	$1,500-3,100	$1,500-3,100	$ 20,000-42,000
		Costs	$ 300	$ 300	$ 300	$ 300	$ 300	$ 4,100

Table 14:
Estimates of the Total Annual Monetized Costs and Monetized Benefits of Social Regulations by Year, 1995 to March 1999
($ millions)

	2000	2005	2010	2015	Annualized	Net Present Value
1995-96						
Benefits	$ 1,100- 2,300	$ 2,500- 3,900	$ 2,500- 3,900	$ 2,500- 3,900	$ 2,200- 3,600	$ 31,000- 50,000
Costs	$ 1,300- 1,400	$ 1,800- 1,900	$ 1,800- 1,900	$ 1,800- 1,900	$ 1,700- 1,800	$ 23,000- 25,000
1996-97						
Benefits	$13,000-20,000	$13,000-20,000	$13,000- 21,000	$13,000- 22,000	$ 14,000-22,000	$200,000- 310,000
Costs	$ 2,900- 4,200	$ 2,800- 2,900	$ 2,900- 2,900	$ 2,800- 2,900	$ 3,000- 3,500	$ 42,000- 48,000
1997-98						
Benefits	$ 750- 5,100	$ 1,400- 7,300	$24,000-130,190	$27,000-150,000	$ 13,000-71,000	$180,000- 990,000
Costs	$ 980	$ 1,600	$ 13,000	$ 56,000	$ 23,000	$ 310,000
1998-99						
Benefits	$ 5,700-17,000	$ 5,700-17,000	$ 5,700-17,000	$ 5,700-17,000	$ 5,700-17,000	$ 77,000 - 230,000
Costs	$ 4,300-4,600	$ 4,300-4,600	$ 4,300-4,600	$ 4,300-4,600	$ 4,300-4,600	$ 58,000 - 62,000
Total						
Benefits	$21,000-45,000	$23,000-48,000	$46,000-180,000	$49,000-190,000	$36,000-110,000	$490,000-1,500,000
Costs	$10,000-11,000	$10,600-11,000	$21,000- 22,000	$64,000- 66,000	$ 32,000-33,000	$440,000- 450,000

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III. Aggregation of Benefit and Cost Estimates Across Rules

In Table 14, we aggregated the estimates for individual rules from Tables 10 through 13 by year. This approach yields prospective estimates of the benefits and costs that Federal agencies expected before they issued major rules over the last three years.

We have several important observations to offer on these aggregate estimates. First, the 1996 HHS rule placing restrictions on the sale of tobacco and EPA's 1997 rules revising the NAAQS for ozone and particulate matter dominate the annualized and present value aggregates presented in Table 13. Changes in estimation methodology for these rules, as reflected by the ''plausible range'' adopted by the analysis for the EPANAAQS rules for ozone and particulate matter, will have a marked effect on the aggregated benefit and cost estimates for the rules published over the period from April 1, 1995 to March 31, 1998. By the same token, the aggregate estimates are not very sensitive to different approaches for the remaining rules.

The presentation of these aggregates as annualized benefit and cost streams or as net present value estimates may obscure the actual timing of benefits and costs. In the case of the tobacco rule, for example, the annualized benefit estimates were estimated to be $9 to $10 billion per year. The health benefits associated with successfully reducing the number of young tobacco users, however, will not begin to be realized until after 2015 because of the lag in the noticeable, adverse effects associated with tobacco use. In the case of OSHA's methylene chloride standard, our estimate assumes that the reduction in cancer deaths among exposed workers will not occur until the year 2017, based on an average 20 year lag from exposure to death from cancer.[27]

Similarly, the benefits and costs of the revised ozone and particulate matter NAAQS will only be recognized in the years after 2005. These estimates of ''out-year'' benefits and costs are not certain. EPA will complete its next periodic review of the particulate matter NAAQS, scheduled for 2002, before it begins implementation of the revised particulate matter NAAQS. If this review yields a ''mid-course'' change in the standard, the estimates of benefits and costs could change. EPA has also expressed a continuing concern with the uncertainty of the full attainment cost estimates because EPA believes technological change over the next decade will yield lower-cost approaches that will achieve the revised NAAQS.

As noted above, there are significant methodological issues that need to be confronted when aggregating estimates from a set of individual rules (as presented in tables 10 through 13) in an effort to obtain an estimate of the total benefits and costs of Federal regulation. These issues include:

(1) Adoption of a reasonable, consistent baseline (it is difficult to patch together a sensible baseline from the differing baseline scenarios adopted across rules).

(2) The use of prospective estimates (versus retrospective estimates) of the benefits and costs of regulation, for example, the reliance on prospective estimates may well fail to reflect important changes in taste, innovation by the private sector, or changes in Federal/State/local regulation.

(3) The ''apples and oranges'' problem associated with combining estimates from different studies, including different measures of benefits and costs, double-counting of benefits and costs across related rules, differing approaches to uncertainty such as the use of upper- and lower-bound estimates versus the use of an upper-bound only estimate, and different discount rates.

A final reason that any regulatory accounting effort has limits is the lack of information on the effects of regulations on distribution or equity. None of the analyses addressed in this report provides quantitative information on the distribution of benefits or costs by income category, geographic region, or any other equity-related factor. As a result, there is no basis for quantifying distributional or equity impacts.

Chapter IV: Ten Recommendations for Reform

Sec. 638(a)(3) of the Act requires OMB to submit with its report on the costs and benefits and impacts of Federal regulation ''recommendations for reform.'' In seeking to reform and make more efficient the regulatory process, OMB provides guidance to the agencies in regulatory planning and reviews individual regulations as provided by Executive Order 12866. In so doing, we coordinate policy concerns among the agencies and make numerous recommendations to the agencies to ensure that regulations are consistent with applicable law, the President's priorities, and the regulatory reform principles of Executive Order 12866. The results of those recommendations and their consideration by the agencies during the regulatory decisionmaking process are reflected in final regulations and represent the Administration's regulatory reform efforts.

The most comprehensive accounting of the recommendations and regulations that agencies currently have under consideration is published annually in the Administration's Regulatory Plan. The Regulatory Plan contains a description of the most significant regulatory and deregulatory actions that the agencies plan to issue in either proposed or final form during the next fiscal year. The latest Regulatory Plan was published in the **Federal Register** on November 22, 1999 (64 FR 63883). This year, the Regulatory Plan contains 164 entries from 28 agencies.

The 164 regulations under development in the Regulatory Plan may be viewed as specific recommendations for regulatory improvement or reform based on statutory mandates and the Administration's priorities. Four agencies—USDA, HHS, DOL, and EPA—account for 100 of the 164 initiatives. The following is a sample of the Administration's specific regulatory reform efforts that either increase the regulated entities' flexibility, reduce paperwork burden, clarify the regulated entities' responsibilities with plain language, or substitute performance standards for command-and-control:

- The Food Safety and Inspection Service (FSIS) of USDA is reforming its regulations on imported livestock and poultry products by replacing command-and-control regulations with performance standards, which should benefit consumers and producers and expand international trade.
- FSIS also is reforming its egg product inspection regulations to move from a command-and-control and prior approval systems to a performance standard approach based on the Hazard Analysis and Critical Control Point (HACCP) system and pathogen reduction goals.
- The Food and Drug Administration of HHS is also developing a performance-based HACCP program and a labeling system rather than specifying good manufacturing practices to reduce food-borne pathogens in fruit and vegetable juices.
- HUD is developing four year performance goals for Fannie Mae and Freddie Mac requiring them to purchase mortgages for low and moderate-income housing, special affordable housing, and housing in under served areas. This will increase the number of affordable housing units without significantly

[27] OSHA believes that this assumption is unrealistic and that many workers will avoid incurring cancer before 2017 as a result of the reduction in their methylene exposures brought about by the standard.

crowding out traditional portfolio lending.

• The Bureau of Land Management of the Department of the Interior is revising its Federal oil and gas leasing operations regulations. It will use plain language to improve understanding of the rule. The rule will rely on performance standards, rather than prescriptive requirements, to allow greater flexibility to deal with unique geological or engineering circumstances.

• The Office of Federal Contract Compliance Programs of DOL is reforming its nondiscrimination and affirmative action obligations for government contractors under Executive Order 11246. It plans to reduce paperwork burdens, eliminate unnecessary regulations, and simplify and clarify regulations while improving the efficiency and effectiveness of the contract compliance program.

• The Occupational Safety and Health Administration of DOL is revising its injury and illness reporting and recordkeeping requirements to improve the quality and utility of the data, clarify and simplify guidance, and exempt small businesses in low hazard industries.

• The Federal Railroad Administration of DOT is developing a rule using careful analysis weighing the benefits of reduced collision probabilities with the costs imposed on society to determine when and how train whistles must be sounded at grade crossings.

• EPA is streamlining its requirements for revising operating permits issued by State and local permitting authorities for major sources of air pollution under the Clean Air Act. It will simplify the process for minor new source review actions that have little or no environmental impact.

• EPA is streamlining its public notification regulations for violations of drinking water regulations by public water systems. It will seek to give consumers better and more timely notification of the potential health risks from drinking water when violations occur.

These reforms, as well as many other efforts underway, are significantly improving the lives, health, and well-being of the American public.

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APPENDIX: TABLE 15: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/95 - 3/31/96

(As reported by the agency as of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
USDA	Use of the Term "Fresh" on the Labeling of Raw Poultry Products	Not estimated	$7 million/yr	USDA estimated transfers from producers to consumers of $75 - 125 million/yr due to potential price decreases of $.04 - .10/lb. The qualitative benefits of the rule are that consumers would be assured that poultry products are not labeled in a misleading or false manner.
HHS	Hazard Analysis and Critical Control Points (HACCP): Seafood ("Safe and Sanitary Processing and Importation of Seafood")	$1.44 - 2.56 billion (present value)	$677 million - $1,490 million (present value)	FDA believes that there may be ``re-engineering" types of benefits associated with these regulations. For both seafood and other foods for which HACCP has been implemented, FDA has received information that firms have found cost-saving innovations in other areas as they implement HACCP. These innovations are considered trade secrets by firms and thus, their description (actual process innovations) and quantification is impossible as firms have not released this data into the public domain. This phenomenon involves unexpected savings and efficiencies as a result of establishing a new system in a processing operation. The majority of firms that have previously instituted HACCP reported that they believed that the advantages they derived from HACCP were worth the costs to them in terms of better control over their operations, better sanitation, and greater efficiencies, such as reduced waste. Virtually all foresaw long-term benefits from operating under HACCP.
DOI	Migratory Bird Hunting (Early Season Frameworks)	Not Estimated	Not Estimated	DOI reports that duck hunters spend an estimated $416 million/yr; unquantified economic stimulus benefits derived from spending on duck hunting; unquantified benefit of value to hunters (consumer surplus) from more than 11 million hunting days per year; unquantified benefit to bird population by reducing overcrowding and ensuring continued use of resource in future.

APPENDIX: TABLE 15: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/95 - 3/31/96

(As reported by the agency as of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
DOI	Migratory Bird Hunting (Late Season Frameworks)	Not Estimated	Not Estimated	DOI reports that duck hunters spend an estimated $416 million/yr; unquantified economic stimulus benefits derived from spending on duck hunting; unquantified benefit of value to hunters (consumer surplus) from more than 11 million hunting days per year; unquantified benefit to bird population by reducing overcrowding and ensuring continued use of resource in future.
DOT	Light Truck CAFE Model-Year 1998	Not Estimated	Not Estimated	None reported
DOT	Head Impact Protection	873 - 1,045 fatalities prevented/yr; 675 - 768 serious head injuries prevented/yr	$640 million/yr	None reported
DOT	Vessel Response Plans	22,000 bbls oil prevented from being spilled/yr	$260 million/yr	The U.S. Coast Guard also stated that there are additional benefits which are not quantifiable. Effectiveness of response operations is enhanced both by the training of citizens and hatchery employees so they may assist in nearshore and onshore operations, and by prepositioning containment and cleanup equipment near where it would be utilized. Also, area drills are expected to improve the proficiency of operations.

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AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
EPA	Land Disposal Restrictions Phase III	Not Estimated	$30 - 220 million/yr	Qualitative discussion, including possible reduction in individual cancer risks; EPA did not provide quantified estimates of benefits because it was not able to identify the magnitude of the exposed population. The RIA reports that benefits would range from very small to zero.
EPA	Marine Tank Vessel Loading and Unloading Operations	40,000 t HC/yr	$60 - 100 million/yr	EPA also reports a reduction of 4,600 tons per year in emissions of toxic pollutants.
EPA	Petroleum Refinery NESHAP	250,000 t HC/yr	$80-100 million/yr	
EPA	Air Emissions from Municipal Solid Waste Landfills	83,000 t HC/yr; 4,250 Kt methane/yr	$100 million/yr	
EPA	Municipal Waste Combustors	20,000 t SO_2/yr; 3,000 t PM/yr; 20,000 t NO_x/yr; 60 t Hg/yr; 800 grams TCDD TEQ /yr	$320 million/yr	
	ABBREVIATIONS: bbls = barrels, CO = carbon monoxide, HC = hydrocarbons, Hg = mercury, kg = kilograms, Kt = kilotons, NO_x = nitrogen oxides, PM = particulate matter, SO_2 = sulfur dioxide, t = tons, TCDD TEQ = 2,3,7,8 tetrachlorodibenzo-p-dioxin toxicity equivalent.			

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(As reported by the agency as of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
TRANSFER RULES				
Dept. of Agriculture (USDA)				
1995 Upland Cotton Program				
1995 Rice Acreage Reduction Program				
Disaster Payment Program for 1990 and Subsequent Crops - - Tree Assistance Program				
1995 Wheat, Feed Grain, and Oilseed Programs				
General Crop Insurance Regulations (Hybrid Sorghum Seed and Rice)				
Utility Reimbursement Exclusion				
Dept. of Health and Human Services (HHS)				
Changes to Hospital Inpatient Prospective Payment System FY 1996				
Dept. of Justice (DOJ)				
Charging of Fees for Services at Land Border Ports-of-Entry				

APPENDIX: TABLE 16: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/96 - 3/31/97
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
USDA	1996 Farm Bill Farm Program	Not Estimated	Not Estimated	"Net farm income (including crop and livestock sectors) during the 1996-2002 calendar years is expected to be about $15 billion higher under the 1996 Act than under the FY 1997 President's Budget baseline. This largely reflects higher Government payments to farmers under the 1996 Act as production flexibility contract payments exceed projected deficiency payments. Additionally, changes in the timing of payments to farmers provide an additional boost to farm income in the first year of the program--pushing 1996 net income up about $4 billion. However, net farm income is up by less than the increase in Government payments due to changes in the dairy and peanut programs. Crop sector receipts are down slightly under the 1996 Act due to lower plantings and production of the eight major commodities. Livestock sector receipts are lower due primarily to lower dairy sector receipts. Cash production expenses are up slightly due to increases in net cash rents, which offset lower crop production expenses from lower plantings. "Farmland values are higher under the 1996 Act compared with the FY 1997 President's Budget, reflecting the capitalized value of higher income. Land values average about 3 percent higher under the 1996 Act compared with FY 1997 President's Budget estimates. "Consumer costs are expected to be only slightly lower under the 1996 Act. Because grain prices, on average, are expected to be essentially unaffected, no appreciable change in grain-based food product costs, such as cereal and meat products, is expected." 61 FR 37544-5. "Alternatively, the 1996 Act can be compared to a 'no program" baseline. Under the 1996 Act, contract commodity payments represent a large portion of the benefits received by producers and there are few planting restrictions. The major differences between a no-program scenario (if the CRP and export programs were continued) and the 1996 Act are that producers would no longer receive contract commodity payments of about $35.9 billion and would no longer be subject to farm conservation and wetland protection requirements. The loss in farm income would likely entail substantial short-term adjustments and financial stress. However, over the longer term, a no-program scenario is expected to have little or no impact on supply, demand, and prices compared with the 1996 Act for most commodities except for peanuts, sugar, and, in the initial years of the period, dairy.

APPENDIX: TABLE 16: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/96 - 3/31/97
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
USDA	Conservation Reserve Program	$2 billion/yr, 1997- 2002	$900 million/yr, 1997 - 2002	Other miscellaneous (unquantified) benefits: swimming, boating, wetland conservation, human health impacts, and reduced nutrients in habitats; $5.8 billion/yr in transfers from consumers and taxpayers to farmers.
USDA	Karnal Bunt	Not Estimated	Not Estimated	"This rule is being published on an emergency basis in order to give affected growers the opportunity to make planting decisions for the 1996-97 crop season on a timely basis...This rule may have a significant economic impact on a substantial number of small entities. If we determine this is so, then we will discuss the issues raised by section 604 of the Regulatory Flexibility Act in our Final Regulatory Flexibility Analysis, which we will publish in a future Federal Register." 61 FR 52206.

APPENDIX: TABLE 16: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/96 - 3/31/97
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
USDA	Hazard Analysis and Critical Control Points: Meat and Poultry	$0.71-$26.59 billion present value discounted over 20 years	$0.97-1.16 billion present value discounted over 20 years	"The benefits are based on reducing the risk of foodborne illness due to Campylobacter jejuni/coli, Escherichia coli 0157:H7, Listeria monocytogenes and Salmonella. ... these four pathogens are the cause of 1.4 to 4.2 million cases of foodborne illness per year. FSIS has estimated that 90 percent of these cases are caused by contamination occurring at the manufacturing stage that can be addressed by improved process control. This addressable foodborne illness costs society from $0.99 to $3.69 billion, annually. The high and low range occurs because of the current uncertainty in the estimates of the number of cases of foodborne illness and death attributable to the four pathogens. Being without the knowledge to predict the effectiveness of the requirements in the rule to reduce foodborne illness, the Department has calculated projected health benefits for a range of effectiveness levels, where effectiveness refers to the percentage of pathogens eliminated at the manufacturing stage..." 61 FR 38956. "The link between regulatory effectiveness and health benefits is the assumption that a reduction in pathogens leads to a proportional reduction in foodborne illness. FSIS has presented the proportional reduction calculation as a mathematical expression that facilitates the calculation of a quantified benefit estimate for the purposes of this final RIA. FSIS has not viewed proportional reduction as a risk model that would have important underlying assumptions that merit discussion or explanation. For a mathematical expression to be a risk model, it must have some basis or credence in the scientific community. That is not the case here. FSIS has acknowledged that very little is known about the relationship between pathogen levels at the manufacturing stage and dose, i.e., the level of pathogens consumed." 61 FR 38945-6.

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(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
DOC	Encryption Items Transferred from the U.S. Munitions List to the Commerce Control List	Not Estimated	$834,000 (govt admin cost FY97), $591,850 (paperwork burden costs)	Unquantified benefits in terms of improved national security, law enforcement and public safety benefits, and economic benefits for industry: "This initiative will support the growth of electronic commerce; increase the security of the global information infrastructure; protect privacy, intellectual property and other valuable information; and sustain the economic competitiveness of U.S. encryption product manufacturers during the transition to a key management infrastructure. 61 FR 68573.
HHS	Food Labeling/ Nutrition Labeling: Small Business Exemption	$275-360 million/yr	$4 million in first year, expected to decline thereafter	None reported.
HHS	Restriction on the Sale and Distribution of Cigarettes and Smokeless Tobacco	$9.2-10.4 billion/yr at 7% discount rate; $28.1-43.2 billion/yr at 3% discount rate	$180 million/yr at 7% discount rate	Unspecified costs of mandatory consumer education program. "These totals do not include the benefits expected from fewer fires (over $160 million annually), reduced passive smoking, or infant death and morbidity associated with mothers' smoking...." "In addition, while FDA could not quantify the benefits that will result from the projected decline in the use of smokeless tobacco, they would be considerable." 61 FR 44396ff.

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HHS	Medical Devices: Quality Systems Regulation	$29 million/yr; 44 deaths avoided/yr; 484 to 677 serious injuries avoided/yr;	$82 million/yr	"The medical device industry would gain substantial economic benefits from the proposed changes to the [Comprehensive Good Manufacturing Practices, "CGMP"] regulation in three ways: Cost savings from fewer recalls, productivity gains from improved designs, and efficiency gains for export-oriented manufacturers who would now need to comply with only one set of quality standards. "These estimates of the public health benefits from fewer design-related deaths and serious injuries represent FDA's best projections, given the limitations and uncertainties of the data and assumptions. The above numbers, however, do not capture the quality of life losses to patients who experience less severe injuries than those reported in [medical device recalls, "MDR's"], who experience anxiety as a result of treatment with an unreliable medical device, or who experience inconvenience and additional medical costs because of device failure. "Medical device malfunctions are substantially more numerous than deaths or injuries from device failures and also represent a cost to society. Malfunctions represent a loss of product and an inconvenience to users and/or patients. Additionally, medical device malfunctions burden medical personnel with additional tasks, such as repeating treatments, replacing devices, returning and seeking reimbursement for failed devices, and providing reports on the circumstances of medical device failures. No attempt was made to quantify these additional costs." 61 FR 52602ff.
DOI	Migratory Bird Hunting (Early Season Frameworks)	Not Estimated	Not Estimated	DOI reports that duck hunters spend an estimated $416 million/yr; unquantified economic stimulus benefits derived from spending on duck hunting; unquantified benefit of value to hunters (consumer surplus) from more than 11 million hunting days per year; unquantified benefit to bird population by reducing overcrowding and ensuring continued use of resource in future.
DOI	Migratory Bird Hunting (Late Season Frameworks)	Not Estimated	Not Estimated	DOI reports that duck hunters spend an estimated $416 million/yr; unquantified economic stimulus benefits derived from spending on duck hunting; unquantified benefit of value to hunters (consumer surplus) from more than 11 million hunting days per year; unquantified benefit to bird population by reducing overcrowding and ensuring continued use of resource in future.

APPENDIX: TABLE 16: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/96 - 3/31/97
(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
DOL	Exposure to Methylene Chloride (MC)	31 cancer cases/yr avoided; 3 deaths/yr avoided from acute central nervous system effects and carboxyhemo-globinemia	$101 million/yr	"MC exposures above the level at which the final rule's STEL is set--125 ppm--are also associated with acute central nervous system effects, such as dizziness, staggered gait, and diminished alertness, all effects that can lead to workplace accidents. OSHA estimates that as many as 30,000 to 54,000 workers will be protected by the final rule's STEL from experiencing CNS effects and episodes of carboxyhemoglobinemia every year. Moreover, exposure to the liquid or vapor forms of MC can lead to eye, skin, and mucous membrane irritation, and these material impairments will also be averted by compliance with the final rule. Finally, contact of the skin with MC can lead to percutaneous absorption and systemic toxicity and thus lead to additional cases of cancer that have not been taken into account in the benefits assessment. " 62 FR 1567-68.
DOT	Airbag Depowering	83-101 fewer fatalities, 5,100 - 8,800 fewer serious injuries over lifetime of one full model-year's vehicles	$0	50 - 431 more fatalities and 171 - 553 more serious/severe chest injuries over lifetime of one full model-year's vehicles; substantial unquantified reduction in minor/moderate injuries.
DOT	Light Truck CAFE Model-Year 1999	Not Estimated	Not Estimated	None reported.
DOT	Roadway Worker Protection	$240 million present value discounted over 10 years	$229 million present value discounted over 10 years	Possible increased capacity of rail lines and improved morale.
EPA	Accidental Release Prevention	$174 million/yr	$97 million/yr	Unspecified value of information made available through disclosure/reporting requirements; efficiency gains, increased technology transfer, indirect cost savings, and increased goodwill; possible damage reductions attributable to offsite consequence analysis and to a reduction in routine emissions.

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(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
EPA	Financial Assurance for Municipal Solid Waste Landfills	$105 million/yr	$0	None reported.
EPA	Deposit Control Gasoline	AVG EMISSION REDUCTIONS PER YEAR, 1997-2001: 25,000 t HC, 474,000 t CO, 95,000 t NOx	AVG COST/YR, 1997 - 2000: $138 million/yr	Fuel economy benefits are also expected as a result of the detergent program, amounting to nearly 450 million gallons during the 1995-2001 period. The savings associated with this fuel economy benefit are expected to partially offset the costs of the program. This rule should result in increased sales and business opportunities within the fuel additive industry. EPA anticipates that this program may result in significant vehicle maintenance benefits. However, due to uncertainties in their magnitude, and for other reasons, they were not considered quantitatively in the analysis.
EPA	Acid Rain Phase II Nitrogen Oxides Emission Controls	EMISSION REDUCTIONS PER YEAR: 890,000 t NOx	$204 million/yr	None reported.
EPA	Federal Test Procedure Revisions	EMISSION REDUCTIONS: In 2005: 30,994 t NMHC 1,937,114 t CO 164,112 t NOx In 2010: 54,892 t NMHC 3,430,769 t CO 290,655 t NOx In 2015: 72,025 t NMHC	$199-245 million/yr	Analysis does not include potential fuel savings of $13.45 discounted over the lifetime of the average vehicle, or about $202 million/yr.

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(As of date of completion of OMB review)

AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
EPA	Voluntary Standards for Light-Duty Vehicles	EMISSION REDUCTIONS (tons/ozone season- weekday): In 2005: 279 t NMOG, 3,756 t CO, 400 t NOx In 2007: 399 t NMOG, 5,302 t CO, 600 t NOx In 2015: 778 t NMOG, 9,723 t CO, 1,249 t NOx	$600 million/yr	None reported.
EPA	Lead-Based Paint Activities in Target Housing	Not Estimated	$1.114 billion present value over 50 years discounted at 3%	Will provide consumers with greater assurance that they will be able to purchase abatement services of reliable quality.

ABBREVIATIONS: CO = carbon monoxide, HC = hydrocarbons, Kt = kilotons, NMHC = non-methane hydrocarbons, NMOG= non-methane organic gases, NOx = nitrogen oxides, t = tons.

APPENDIX TABLE 17: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/97 - 3/31/98
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AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
USDA	Environmental Quality Incentives Program (EQIP)	$2.41 billion (present value) 1997 - 2012	$1.65 billion (present value) 1997 - 2012	"The analysis estimates EQIP will have a beneficial impact on the adoption of conservation practices and, when installed or applied to technical standards, will increase net farm income. In addition, benefits would accrue to society for long-term productivity, maintenance of the resource base, non-point source pollution damage reductions, and wildlife enhancements. As a voluntary program, EQIP will not impose any obligation or burden upon agricultural producers that choose not to participate. The off-farm public benefits associated with on-farm conservation efforts are directly dependent upon the on-farm treatment needs and associated benefits. In the case of non-point source pollution from agricultural sources, for instance, public benefits are not achieved until private land user behavior changes and on-site conservation measures are applied. Some of the off-site benefits are attributable to improvements made to enhance freshwater and marine water quality and fish habitat, improved aquatic recreation opportunities, reduced sedimentation of reservoirs, streams, and drainage channels, and reduced flood damages. Additional benefits are from reduced pollution of surface and groundwater from agrochemical management, improvements in air quality by reducing wind erosion, and enhancements to wildlife habitat. EQIP encourages participants to adopt a comprehensive approach to solving natural resource and environmental concerns. Off-site benefits for pasture and rangeland and total benefits for animal waste management were not estimated due to unavailability of data." [62 FR 28258-9]

APPENDIX TABLE 17: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/97 - 3/31/98
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AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
USDA	Importation of Pork from Sonora, Mexico	$0	$0	"Low-impact scenario: 67k hogs (0.02%), assuming supply elasticity = 0.15 and demand elasticity = -0.44. *Economic impacts on farrow-to-finish swine operators:* output decline≈10k-17k hogs (≤0.02%); price decline≈ $0.05/hundredweight liveweight equivalent.; producers' receipts decline ≈ $10.7 million/yr (0.02%) and are transferred to consumers (as consumer surplus) and Mexican producers (as producer surplus). *Economic Impacts on live-hog dealers/transporters:* 86 trips. High-impact scenario: 134.1k hogs (0.02%), assuming supply elasticity = 0.075 and demand elasticity = -0.44. *Economic impacts on farrow-to-finish swine operators:* output decline≈20k-34k hogs (≤0.02%); price decline≈ $0.11/hundredweight liveweight equivalent; producers' receipts decline≈ $24.5 million/yr (0.2%) and are transferred to consumers (as consumer surplus) and Mexican producers (as producer surplus). *Economic impacts on live-hog dealers/transporters:* 125 trips." [62 FR 25441-15443]

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AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
USDA	Importation of Beef from Argentina	$49 million/yr (net of transfers from producers)	$0	"Average wholesale U.S. beef prices estimated to decline by $8.27/MT (from $4,402.17/MT to $4,393.9/MT), less than 0.02%. *Effects on U.S. livestock sector:* producers' receipts decline ≈ $40.15 million/yr and are transferred to consumers (as consumer surplus) and Argentine producers (as producer surplus)." [62 FR 34889-34391] "If Argentina were able to fill its 20 KT quota to the U.S.'s uncooked beef market with nonfed beef product, consumer welfare gains of around $90 million annually are possible. These consumer gains, as well as the likely producer welfare losses, would depend on the type of beef and total quantities received in the U.S. from Argentina. The 20 KT of imports will likely consist mainly of nonfed beef. Consumers would enjoy both lower prices and greater supplies, while producers realize lower returns from lower prices, but not lower quantities produced. These gains, even after taking into account the likely producer losses ... produce a net social welfare gain to the United States of $48.7 million ... "...In the aggregate, producer welfare losses of $40.45 million are distributed between the dairy and beef sectors, the latter sector being composed of cow-calf, feedlot and slaughter operations." [62 FR 34392]

APPENDIX TABLE 17: SUMMARY OF AGENCY ESTIMATES FOR FINAL RULES 4/1/97 - 3/31/98
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AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
HHS	Substances Prohibited in Animal Feed	Not estimated	$53 million/yr	"FDA estimated that, if BSE were to occur in this country, the disease would be associated with approximately $3.8 billion in losses due to the destruction of BSE-exposed livestock and the taking of other measures needed to prevent continued BSE proliferation. While FDA could not quantify the expected additional costs to consumers and producers in the United States that would result from the loss of consumer confidence following a BSE outbreak, the agency found that plausible scenarios indicated that the likely drop in the demand for cattle and beef products could cause billions of dollars in lost market values. In addition, FDA noted, but did not attempt to quantify, the value of the human lives that might be lost or the associated medical treatment costs that might follow a domestic outbreak of BSE." [62 FR 30967] "Additional [benefits] that could not be quantified include the lost human lives and medical treatment costs that could result from BSE-related disease, as well as the consumer and producer losses that would result from the expected decrease in the sales and consumption of beef. Sales of medical products and cosmetics containing cattle-derived components could also be affected." [62 FR 30968]

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HHS	Organ Procurement and Transplantation Network	297-1,306 additional "life-years"/yr	$0	HHS recognizes in its analysis the difficulty of quantifying the costs and the benefits of the rule. The rule discusses the current costs of transplantation and the analysis concludes that the final rule will not substantially increase the costs. Regarding benefits, HHS discusses difficulties associated with assigning value to a statistical life when quantifying the benefits for this rule. The rule also discusses the benefits that arise from public oversight and accountability of the organ transplant system, which will preserve public trust and confidence. Also, a system of patient-oriented information of transplant performance will allow easier comparison of transplant center performance and the use of performance goals will create equity in the system.
HHS	Quality Mammography Standards	$182-263 million/yr	$38 million/yr (annualized over 10 years)	FDA states that it is difficult to determine the increase in the quality of mammograms which the final rule will cause. However, FDA calculates the following benefits assuming a 5-percent improvement. This degree of improvement would prevent 75 women per year from dying of breast cancer within a 20-year period. At $5 million per life saved, the discounted value of this outcome would be $234 million per year. In addition, fewer false-positive screens and decreased treatment costs add about $29 million in annual benefits. FDA points out that an improvement of quality as low as 2 percent would result in the benefits outweighing the costs of the final rule.
HHS/ DOL/ Treasury	Mental Health Parity	Not estimated	$464 million/yr	None reported.

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DOI	Migratory Bird Hunting (Early Season Frameworks)	Not Estimated	Not Estimated	DOI reports that duck hunters spend an estimated $416 million/yr; unquantified economic stimulus benefits derived from spending on duck hunting; unquantified benefit of value to hunters (consumer surplus) from more than 11 million hunting days per year; unquantified benefit to bird population by reducing overcrowding and ensuring continued use of resource in future.
DOI	Migratory Bird Hunting (Late Season Frameworks)	Not Estimated	Not Estimated	DOI reports that duck hunters spend an estimated $416 million/yr; unquantified economic stimulus benefits derived from spending on duck hunting; unquantified benefit of value to hunters (consumer surplus) from more than 11 million hunting days per year; unquantified benefit to bird population by reducing overcrowding and ensuring continued use of resource in future.

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DOL	Respiratory Protection	4,046 injuries and illnesses/yr avoided; 932 deaths/yr avoided	$111 million/yr	"The Agency estimates that the standard will avert between 843 and 9,282 work-related injuries and illnesses annually, with a best estimate (expected value) of 4,046 averted illnesses and injuries annually. This reduction is estimated to save $18.8 to $218 million per year, with a best estimate of $93.9 million per year. In addition, the standard is estimated to prevent between 351 and 1,626 deaths annually from cancer and many other chronic diseases, including cardiovascular disease, with a best estimate (expected value) of 932 averted deaths from these causes." [63 FR 1173]
DOE	Energy Conservation Standards for Refrigerators and Freezers	$7.62 billion (present value) in energy savings for purchases between years 2000 - 2030	$3.44 billion (present value) for purchases between years 2000 - 2030	"The estimated environmental benefits from today's final rule (based on the 1997 AEO fuel prices) are, over the period from 2000 to 2030, a reduction in emissions of NO_X by 1,362 thousand tons (1,501 thousand short tons), a reduction in emissions of CO_2 by 465 Mt (513 million short tons) and a reduction in the cost of the emission controls roughly equivalent to the cost of reducing SO_2 emissions by 1,545 kt (1,703 thousand short tons)." [62 FR 23110-11]
DOE	Energy Conservation Standards for Room Air Conditioners	$740 million (present value) in energy savings for purchases between years 2000 - 2030	$290 million (present value) for purchases between years 2000 - 2030	"The Department projects the standards to save 0.64 quad of energy through 2030, which is likely to result in a cumulative reduction of emissions of approximately 95,000 tons of nitrogen dioxide and 54 million tons of carbon dioxide." [62 FR 50122]
DOT	Light Truck CAFE Model-Year 2000	Not Estimated	Not Estimated	None reported

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EPA	Emission Standards for New Locomotives	385,000 tons of nitrogen oxides; 6,000 tons of hydrocarbons; and 4,000 tons of particulate matter annualized emission reductions (2000 - 2040)	$90 million/yr annualized cost (2000 - 2040)	None reported
EPA	Emission Standards for New Highway Heavy-Duty Engines	593,000 tons of nitrogen oxides annualized emission reductions (2004 - 2023)	$196 million/yr annualized cost (2004 - 2023)	None reported

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EPA	Pulp and Paper: National Emission Standard for Hazardous Air Pollutants (NESHAP)	-$1.04 - 1.05 billion/yr	$125 million/yr	Benefit estimate includes benefits ranging from $24 - $1,055 million/yr for reductions in emissions of volatile organic compounds and disbenefits ranging from $1 - $1,065 million/yr for increases in emissions of sulfur dioxide and particulate matter. Other quantified (but not monetized) benefits include annual reductions of 139,000 tons of hazardous air pollutants and 79, 000 tons of Total Reduced Sulfur. Other quantified (but not monetized) disbenefits include annual increases of 5,200 tons of nitrogen oxides and 8,700 tons of carbon monoxide. All estimates are for existing sources only; no benefits or costs were estimated for new sources.
EPA	Pulp and Paper Effluent Guidelines	$12 - 57 million/yr	$263 million/yr	Other quantified (but not monetized) annual benefits include lifting of 19 dioxin/furan-related fish consumption advisories; elimination of 3 exceedences of human health ambient water quality concentration standards (AWQC); and elimination of 19 exceedences of aquatic life AWQCs. Unquantified benefits include non-cancer human health effects and improvements in fish and wildlife habitats. All estimates are for existing sources only; no benefits or costs were estimated for new sources.
EPA	Medical Waste Incinerators	$7 million/yr for particulate matter reductions only	$71 - 146 million/yr	EPA states that it cannot quantify or monetize many of the benefits, such as the reduction in the emission of hazardous air pollutants which include cadmium, hydrogen chloride, lead, mercury, and dioxin/furan. In addition, reductions in emissions of sulfur dioxide, carbon monoxide, and nitrogen oxides are expected.

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AGENCY	RULE	BENEFITS	COSTS	OTHER INFORMATION
EPA	National Ambient Air Quality Standards (NAAQS): Ozone	$0.4 - 2.1 billion in 2010 (partial attainment) ---------- - $1.5 - 8.5 billion in 2010 (full attainment)	$1.1 billion in 2010 (partial attainment) ---------- - $9.6 billion in 2010 (full attainment)	Benefit estimates do not include anticipated reductions in harmful effects in the following human health areas: airway responsiveness, pulmonary inflammation, increases susceptibility to respiratory infection, acute inflammation and respiratory cell damage, and chronic respiratory damage/premature aging of the lungs. Benefits also do not include effects in the following welfare areas: ecosystem effects in "Class I" areas (e.g., national parks), damage to urban ornamentals, reduced forestry yields, damage to ecosystems, materials damage, nitrates in drinking water, and brown clouds.
EPA	National Ambient Air Quality Standards (NAAQS): Particulate Matter	$19 - 104 billion in 2010 (partial attainment) ---------- $20 - 110 billion/yr (full attainment)	$8.6 billion in 2010 (partial attainment) ---------- $37 billion/yr (full attainment)	Benefit estimates do not include anticipated reductions in harmful effects in the following human health areas: pulmonary function, morphological changes, altered host defense mechanisms, cancer, other chronic respiratory diseases, infant mortality, and mercury emissions. Benefits also do not include effects in the following welfare areas: materials damage (other than cleaning costs), damage to ecosystems, nitrates in water, and brown clouds.
EPA	Toxic Release Reporting ("Community Right-to-Know")	Not estimated	$226 million in the first year and $143 million/yr in subsequent years	This rule will make available to the public information on releases and transfers from these additional facilities of chemicals listed under the Toxic Release Inventory Program.
EPA	Disposal of Polychlorinated Biphenyls (PCBs)	Net cost savings of $150 - $740 million/yr	$14 million/yr	None reported.

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TRANSFER RULES				
Dept. of Agriculture (USDA)				
Improved Targeting of Day Care Home Reimbursements				
Peanut Poundage Quota Regulations				
Dept. of Health and Human Services (HHS)				
Coverage of Personal Care Services				
Inpatient Prospective Payment Systems for 1998				
Physician Fee Schedule for 1998				
Limit on the Valuation of a Depreciable Capital Asset				
Salary Equivalency Guidelines for Physical Therapy				
Limitations on Home Health Agency Costs				
State Allotments for Payment of Medicare Part B Premiums for 1998				
Dept. of Justice (DOJ)				
Affidavits of Support on Behalf of Immigrants				
Dept. of Veterans Affairs (DVA)				
Schedule for Rating Disabilities, The Cardiovascular System				

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