2017 Draft Report to Congress on the Benefits and Costs of Federal Regulations and Agency Compliance with the Unfunded Mandates Reform Act

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OFFICE OF MANAGEMENT AND BUDGET

OFFICE OF INFORMATION AND REGULATORY AFFAIRS

2017 DRAFT REPORT TO CONGRESS
ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND AGENCY COMPLIANCE WITH THE UNFUNDED MANDATES REFORM ACT

EXECUTIVE SUMMARY

The Regulatory Right-to-Know Act calls for the Office of Management and Budget (OMB) to submit to Congress each year "an accounting statement and associated report" including:

> (A) an estimate of the total annual costs and benefits (including quantifiable and nonquantifiable effects) of Federal rules and paperwork, to the extent feasible:
>
> (1) in the aggregate;
> (2) by agency and agency program; and
> (3) by major rule;
>
> (B) an analysis of impacts of Federal regulation on State, local, and tribal government, small business, wages, and economic growth; and
>
> (C) recommendations for reform.[1]

The Regulatory Right-to-Know Act does not define "major rule." For the purposes of this Report, we define major rules to include all final rules promulgated by an Executive Branch agency that meet at least one of the following three conditions:

- Rules designated as major under 5 U.S.C. § 804(2);[2]
- Rules designated as meeting the analysis threshold under the Unfunded Mandates Reform Act of 1995 (UMRA);[3] or
- Rules designated as "economically significant" under § 3(f)(1) of Executive Order 12866.[4]

This Report covers cost and benefits through Fiscal Year (FY) 2016. Consistent with prior reports, OMB, with only a few exceptions explained clearly in this draft report, summarizes the costs and benefits as they were reported by the agencies themselves, upon publication of their final Regulatory Impact Analyses (RIAs). None of these costs reflect

[1] 31 U.S.C. § 1105 note.

[2] A major rule is defined in Subtitle E of the Small Business Regulatory Enforcement Fairness Act of 1996 as a rule that has resulted in or is likely to result in: "(A) an annual effect on the economy of $100,000,000 or more; (B) a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or (C) significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic and export markets." 5 U.S.C. § 804(2). Under the statute, agencies submit a report to each House of Congress and GAO and make available "a complete copy of the cost-benefit analysis of the rule, if any." *Id.* § 801(a)(1)(B)(i).

[3] Generally, a written statement containing a qualitative and quantitative assessment of the anticipated benefits and costs of the Federal mandate is required under Section 202(a) of the Unfunded Mandates Reform Act of 1995 for all rules that include a Federal mandate that may result in: "the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more (adjusted annually for inflation) in any 1 year . . . ." 2 U.S.C. § 1532(a).

[4] A regulatory action is considered "economically significant" under § 3(f)(1) of Executive Order 12866 if it is likely to result in a rule that may have: "an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities . . . ."

retrospective evaluation of their impacts. This applies to rules issued in FY 2016, as well as previous years covered by this Report. We are issuing this report after a change in Administration, and therefore would like to clarify that OMB's reporting of the results of these RIAs does not imply an endorsement by the current Administration of all of the assumptions made and analyses conducted at the time these regulations were finalized.

In addition, two final rules (including one from an independent agency) included in the Report for this fiscal year have been subsequently repealed by Congress under the Congressional Review Act. For this draft Report, we have chosen to include these rules in order to provide an estimated, but not necessarily realized, impact of the rules finalized during the fiscal year the Report covers.

Finally, several other rules finalized in this fiscal year may be reconsidered by the current Administration. In these cases, for the purposes of this draft Report, we have included the estimated impacts of the rules contained in the original RIAs at the time these rules were finalized. We have also attempted to indicate in the text of the report that they are being reconsidered by the current Administration.

The principal findings of this Report are as follows.

- The estimated annual benefits of major Federal regulations reviewed by OMB from October 1, 2006, to September 30, 2016,[5] for which agencies estimated and monetized both benefits and costs, are in the aggregate between $219 billion and $695 billion, while the estimated annual costs are in the aggregate between $59 billion and $88 billion, reported in 2001 dollars. In 2015 dollars, aggregate annual benefits are estimated to be between $287 and $911 billion and costs between $78 and $115 billion. These ranges reflect uncertainty in the benefits and costs of each rule at the time that it was evaluated.

- There is substantial variation across agencies in the total net benefits expected from rules. Agencies have projected that some rules are anticipated to produce far higher net benefits than others. All of these estimates reflect the challenges associated with fully capturing the relevant effects—both benefits and costs.

- During FY 2016, executive agencies promulgated 85 major rules, of which 31 were "transfer" rules—rules that primarily caused income or wealth transfers.[6] Most transfer rules implement Federal budgetary programs as required or authorized by Congress, such as rules associated with the Medicare Program and the Federal Pell Grant Program. More information about the FY 2016 major rules follows:

[5]We explain later in the Report that OMB chose a ten-year period for aggregation because pre-regulation estimates prepared for rules adopted more than ten years ago are of questionable relevance today.

[6] One rule was issued twice in FY 2016—as a final rule with request for comment and then as a more standard final rule (i.e., without request for comment). If it were only included once, the FY total would decrease by one (to 84).

- For 16 rules, we report the issuing agencies' quantification and monetization of both benefits and costs: a total of $13.6 billion to $27.3 billion in annual benefits and $3.3 billion to $4.9 billion in annual costs.
- For one rule, the issuing agency was able to quantify and monetize only benefits.
- For 32 rules, we report the issuing agencies' quantification and monetization of costs, which in some cases was only partial.
- For four rules, the issuing agencies were able to quantify and monetize neither costs nor benefits. An additional one rule is categorized in the Report as having neither monetized costs nor benefits due to lack of sufficient clarity in the baseline so as to allow for avoidance of double-counting of impacts with earlier regulations.

- The independent regulatory agencies, whose regulations are not subject to OMB review under Executive Order 12866, issued eighteen major final rules in FY 2016. The majority of rules were issued to regulate the financial sector.

It is important to emphasize that the estimates used here have limitations. These estimates reflect the current state of science and information available to agencies. Insufficient empirical information and data is a continuing challenge to agencies when assessing the likely effects of regulation. In some cases, the quantification of various effects may be speculative and may not be complete. For example, the value of particular categories of benefits (such as protection of homeland security or personal privacy) may be sizable but monetization can present significant challenges (at least, with currently-available data and methods). Careful consideration of costs and benefits is best understood as a pragmatic way of providing insights regarding the prospects for regulations to improve social welfare.

Chapter I summarizes the benefits and costs of major regulations issued between October 1, 2006 and September 30, 2016 and examines in more detail the benefits and costs of major Federal regulations issued in fiscal year 2016. It also discusses regulatory impacts on State, local, and tribal governments, small business, wages, and economic growth. Chapter II provides recommendations for reform.

This Report is being issued along with OMB's Twentieth Annual Report to Congress on Agency Compliance with the Unfunded Mandates Reform Act of 1995 (UMRA).[7] OMB reports on agency compliance with Title II of UMRA, which generally requires that each agency conduct a cost-benefit analysis, identify and consider a reasonable number of regulatory alternatives, and from those alternatives select the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule before promulgating any proposed or final rule that includes a Federal mandate that may result in expenditures of more than $100 million (adjusted for inflation) in at least one year by State, local, and tribal governments, or by the private sector. Each agency must also seek input from State, local, and tribal governments.

[7] 2 U.S.C. § 1538.

OMB is specifically requesting comment on how best to provide the information required by law in this Report. New circumstances provide an opportunity to take a fresh look at how each of these analyses is conducted, and whether OMB is providing the public with the optimal level and scope of information, given the current status of these final rules covered in this draft Report. For example, for rules that have been repealed under the Congressional Review Act, we are considering whether to follow a different convention, such as removing such rules completely, or reporting them separately. OMB is also considering whether we should adjust the reporting of the costs and benefits of revised rules, if a subsequent analysis suggests those original RIAs did not adequately analyze impacts, or if subsequent analysis suggests that the impacts are different than originally expected.

Upon publication of this draft report, OMB will also request general public comment via a *Federal Register* notice and will seek input from peer reviewers with expertise in areas related to regulatory policy or cost-benefit analysis. OMB plans to consider public and peer reviewer comments as appropriate. The final version of this report may include revisions based on those comments and will—like the draft report—be posted on the White House website.

PART I: 2017 REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS

Chapter I: The Benefits and Costs of Federal Regulations

This chapter consists of two parts: (A) the accounting statement and (B) a report on regulatory impacts on State, local, and tribal governments, small business, and wages. Part A revises the benefit-cost estimates in last year's Report by updating the estimates through the end of FY 2016 (September 30, 2016). As in previous Reports, this chapter uses a ten-year lookback. Estimates are based on the major regulations (for which the regulatory agency monetized both benefits and costs) that were reviewed by OMB from October 1, 2006 to September 30, 2016.[8] For this reason, rules reviewed from October 1, 2005 to September 30, 2006 (FY 2006) were included in the totals for the 2016 Report but are not included in this Report. A list of these FY 2006 rules can be found in Appendix B (see Table B-1). The removal of the seven FY 2006 rules from the ten-year window is accompanied by the addition of 16 FY 2016 rules.

As has been the practice for many years, all estimates presented in this chapter are agency estimates of benefits and costs, or minor modifications of agency information performed by OMB.[9] This chapter also includes a discussion of major rules issued by independent regulatory agencies, although OMB does not review these rules under Executive Order 12866.[10] This discussion is based solely on data provided by these agencies to the Government Accountability Office (GAO) under the Congressional Review Act.

In the past, we have adjusted estimates to 2001 dollars, the requested format in OMB Circular A-4. We also report most of the numbers in this chapter in 2015 dollars as well, in order to provide estimates that reflect the most recent annual GDP deflator.

Aggregating benefit and cost estimates of individual regulations may produce results that are neither precise nor complete, nor, in some cases, conceptually sound. Six points deserve emphasis.

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[8] All previous Reports are available at: http://obamawhitehouse.archives.gov/omb/inforeg_regpol_reports_congress/.

[9] OMB used agency estimates where available. We note that those estimates were typically subject to internal review (through the interagency review process) and external review (through the public comment process). The benefit and cost ranges represent lowest and highest agency estimates among all the estimates using both 3 and 7 percent discount rates. When agencies do not provide central estimates but do provide ranges for benefit and cost estimates, we take the mean of the lowest and the highest values, irrespective of the discount rates. Historically, if an agency quantified but did not monetize estimates, we used standard assumptions to monetize them, as explained in Appendix A. However, for this year's rules, agencies monetized all of the rules for which they provided quantified estimates. All amortizations are performed using discount rates of 3 and 7 percent, unless the agency has already presented annualized, monetized results using a different explicit discount rate. OMB did not independently estimate benefits or costs when agencies did not provide quantified estimates. The estimates presented here rely on the state of the science at the time the Regulatory Impact Analyses (RIAs) were published. We do not update or recalculate benefit and cost numbers based on current understanding of science generally and economics in particular.

[10] These executive orders can be found at https://www.archives.gov/files/federal-register/executive-orders/pdf/12866.pdf and https://www.gpo.gov/fdsys/pkg/FR-2011-01-21/pdf/2011-1385.pdf. Section 3(b) of Executive Order 12866 excludes "independent regulatory agencies as defined in 44 U.S.C. 3502(10)" from OMB's regulatory review purview.

1. Individual regulatory impact analyses vary in rigor and may rely on different assumptions, including baseline scenarios, methods (including models), data, and measures of welfare changes (including approximations thereof). Summing across estimates involves the aggregation of analytical results that, for reasons we describe below, are not comparable. As one example, some agencies provide information on the stream of effects whereas other agencies provide information at specific points in time. As another, all agencies draw on the existing economic literature for valuation of reductions in mortality and morbidity, but the technical literature has not converged on uniform figures, and consistent with the lack of uniformity in that literature, such valuations vary somewhat (though not dramatically) across agencies. Later in this document we provide additional discussion of the uncertainty inherent in quantifying the value of a statistical life. More generally, OMB continues to investigate possible inconsistencies and seeks to identify and to promote best practices.

2. For comparisons or aggregations to be meaningful, benefit and cost estimates should correctly account for all substantial effects of regulatory actions including implementation periods, some of which may not be reflected in the available data. In addition to unquantified benefits and costs, agency estimates reflect the uncertainties associated with the agency's assumptions and other analytic choices.

3. As we have noted, it is not always possible to quantify or to monetize relevant benefits or costs of rules in light of limits in existing information. For purposes of policy, non-monetized benefits and costs may be important. Some regulations have significant non-quantified or non-monetized benefits (such as protection of privacy, human dignity, and equity) and costs that are relevant under governing statutes and that may serve as a key factor in an agency's decision to promulgate a particular rule.

4. Prospective analysis may overestimate or underestimate both benefits and costs; retrospective analysis can be important as a corrective mechanism.[11] The implementation of Executive Orders 13771 and 13777, especially given the continued primacy of Executive Order 12866, requires such analysis, with the goal of improving relevant regulations through modification, streamlining, expansion, or repeal. The aim of retrospective analysis is to understand and improve the accuracy of prospective analysis and to provide a basis for potentially modifying rules as a result of *ex post* evaluations. Rules should be written and designed to facilitate retrospective analysis of their effects, including consideration of the data that will be needed for future evaluation of the rules' *ex post* costs and benefits.

5. The OMB Circular A-4 states that "those who bear the costs of regulation and those who enjoy its benefits often are not the same people."[12] As such, agencies are encouraged to provide separate descriptions of distributive effects. For example, energy efficiency regulations tend to adversely affect lower-income consumers more

[11] See Greenstone (2009).
[12] OMB Circular A-4 (2003), p. 14, https://georgewbush-whitehouse.archives.gov/omb/circulars/a004/a-4.html.

than those who earn a higher income.[13] If a regulation would disproportionately help or hurt particular groups of people, relevant law may require or authorize agencies to consider that fact. While analysis of these types of impacts is more limited, efforts to examine the distributive impacts of regulations is increasing. Additional analyses of this type could prove illuminating.[14]

6. The most fundamental purpose of an RIA is to inform policy options at the time a regulatory decision is being made; however, analytic approaches that serve this purpose may not readily lend themselves to aggregation. For example, suppose the Occupational Safety and Health Administration (OSHA) issues a regulation reducing the permissible exposure level (PEL) for some toxin. OSHA estimates regulatory benefits based on a projection that the affected industries will comply by changing their production processes to entirely avoid using inputs that contain the toxin. If OSHA subsequently revises the regulation and, at the time of the revision, the best available evidence shows that exposure to the toxin has not been entirely eliminated, the RIA for the new rule would appropriately calculate benefits or forgone benefits using the more recent exposure data, even though a multi-year sum of the estimated effects of OSHA rules would yield an inaccurate cumulative total as a result. For example, if the new rule further reduces the PEL, some health and longevity benefits that were already tallied in the first rule would be double counted in an aggregation of the second rule's RIA with the first rule's. Analogously, if the new rule increases the PEL, forgone benefits would be substantially overestimated if the original RIA's projection of zero exposure were carried forward into the new RIA in spite of the more recent empirical evidence.

A. Estimates of the Aggregated Annual Benefits and Costs of Regulations Reviewed by OMB over the Last Ten Years

1. Aggregated Estimates

From FY 2007 through FY 2016, Federal agencies published 36,255 final rules in the *Federal Register*.[15] OMB reviewed 2,670 of these final rules under Executive Order 12866.[16] Of these OMB-reviewed rules, 609 are considered major rules, primarily as a result of their anticipated impact on the economy (i.e., an impact of $100 million in at least one year). Many major rules are budgetary transfer rules,[17] and may not impose a significant private mandate.

[13] See Levinson (2016).
[14] See, e.g., Kahn (2001).
[15] This count includes all final and interim final rules from all Federal agencies (including independent agencies).
[16] Counts of OMB reviewed rules are available through the "review counts" and "search" tools on OIRA's regulatory information website (www.reginfo.gov). In addition, the underlying data for these counts are available for download in XML format on the website.
[17] Budgetary transfer rules are rules that primarily cause income transfers usually from taxpayers to program beneficiaries. Agencies typically do not estimate possible resulting distortionary effects on the economy.

We include in our 10-year aggregate of annualized benefits and costs of regulations rules that meet two conditions:[18] (1) each rule was estimated to generate benefits or costs of approximately $100 million, or more, in at least one year; and (2) a substantial portion of its benefits and costs were quantified and monetized by the agency or, in some cases, monetized by OMB. The estimates are therefore not a complete accounting of all the benefits and costs of all regulations issued by the Federal Government during this period.[19] Table 1-1 presents estimates of annualized benefits and costs of regulations reviewed by OMB over the ten-year period from October 1, 2006, to September 30, 2016, broken down by issuing agency.

As discussed in previous Reports, OMB chose a 10-year period for many reasons, including that many analyses choose 10-year or shorter analytic timelines, some rules are replaced by newer rules within the 10-year timeline, and economic conditions may change making the prospective estimates less informative. The estimates of the benefits and costs of Federal regulations over the period October 1, 2006, to September 30, 2016, are based on agency analyses conducted prior to issuance of the regulations and (with few exceptions) go through public notice and comment as well as OMB review under Executive Order 12866.

In assembling these tables of estimated benefits and costs, OMB applied a uniform format for the presentation to make agency estimates more closely comparable with each other (for example, annualizing benefit and cost estimates). Also, as noted above, it is OMB's practice, in certain circumstances, to monetize quantitative estimates where the agency did not do so.[20]

[18] OMB discusses, in this Report and in previous Reports, the difficulty of estimating and aggregating the benefits and costs of different regulations over long time periods and across many agencies using different methodologies for quantification and monetization as well as for addressing uncertainty. Any aggregation involves the assemblage of benefit and cost estimates that are not strictly comparable. In part to address this issue, the 2003 Report included OMB's new regulatory analysis guidance, OMB Circular A-4, which took effect on January 1, 2004, for proposed rules and January 1, 2005, for final rules. The guidance recommends what OMB defines as "best practices" in regulatory analysis, with a goal of strengthening the role of science, engineering, and economics in rulemaking. The overall goal of this guidance is a more transparent, accountable, and credible regulatory process and a more consistent regulatory environment. OMB continues to work with agencies in applying this guidance to their impact analyses.

[19] In many instances, agencies were unable to quantify all benefits and costs. We have included information about these unquantified effects on a rule-by-rule basis in the columns titled "Other Information" in Appendix A of this report. The monetized estimates we present necessarily exclude these unquantified effects.

[20] For example, for a few rulemakings issued before the ten-year window of this Report, we converted agency projections of quantified benefits, such as estimated injuries avoided per year or tons of pollutant reductions per year, to dollars using the valuation estimates discussed in Appendix B of our 2006 Report. The 2006 Report is available at http://obamawhitehouse.archives.gov/omb/inforeg_regpol_reports_congress/. We note that there are discussions regarding the scientific assumptions underlying the benefits per ton numbers that we use to monetize benefits that were not monetized by the agency. If, for instance, assumptions similar to those described at http://www.epa.gov/air/benmap/bpt.html were used, these estimates would be higher.

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules (For Which Both Benefits and Costs Have Been Estimates) by Agency, October 1, 2006 - September 30, 2016 (billions of 2001 or 2015 dollars)[21]

Agency	Number of Rules	Benefits		Costs	
		2001$	2015$	2001$	2015$
Department of Agriculture	5	0.5 to 1.1	0.6 to 1.5	0.4 to 0.9	0.5 to 1.1
Department of Energy	27	17.6 to 30.0	20.3 to 39.3	6.0 to 9.0	7.9 to 11.9
Department of Health and Human Services	18	4.5 to 24.1	5.9 to 31.6	1.4 to 4.8	1.9 to 6.3
Department of Homeland Security	4	0.4 to 1.2	0.5 to 1.6	0.4 to 0.8	0.6 to 1.0
Department of Justice	3	1.5 to 3.7	1.9 to 4.8	0.7 to 0.9	0.9 to 1.2
Department of Labor	10	7.5 to 20.8	9.8 to 27.2	2.1 to 5.0	2.7 to 6.5
Department of Transportation (DOT)[22]	27	17.0 to 31.1	22.3 to 40.8	6.5 to 11.9	8.5 to 15.7
Environmental Protection Agency (EPA)[23]	39	149.2 to 537.8	195.8 to 705.7	41.2 to 49.4	54.1 to 64.8
Joint DOT and EPA	4	34.0 to 59.3	44.6 to 77.8	8.2 to 15.1	10.7 to 19.9

Table 1-2 provides additional information on estimated aggregate benefits and costs for specific agency program offices. In order for a program to be included in Table 1-2, the program office must have finalized three or more major rules in the last ten years with monetized benefits and costs. Two of the program offices included—Department of Transportation's National Highway Traffic Safety Administration and the Environmental Protection Agency's Office of Air and Radiation—finalized four overlapping sets of rules pertaining to the control of greenhouse gas emissions from mobile sources and improved vehicle fuel economy, and these are listed separately.

[21] Benefit and cost values were converted from 2001 dollars to 2015 dollars using Gross Domestic Product implicit price deflators from the Bureau of Economic Analysis.

[22] This total excludes FMCSA's 2010 Electronic On-Board Recorders for Hours-of-Service Compliance rule. The rule was vacated on Aug. 26, 2011, by the U.S Court of Appeals for the Seventh Circuit. *Owner-Operator Indep. Drivers Ass'n v. Federal Motor Carrier Safety Admin.*, 656 F.3d 580 (7th Cir. 2011).

[23] For reasons explained in several previous Reports, this total excludes the impacts of EPA's 2005 Clean Air Interstate Rule (CAIR), but does include an attribution of the benefits and costs of equipment installed under CAIR between CAIR and the subsequently issued Cross State Air Pollution Rule (CSAPR). This total also excludes EPA's 2005 "Clean Air Mercury Rule," which was vacated in 2008.

Table 1-2: Estimates of Annual Benefits and Costs of Major Federal Rules: Selected Program Offices and Agencies, October 1, 2006 - September 30, 2016 (billions of 2001 or 2015 dollars)

Agency	Number of Rules	Benefits		Costs	
		2001$	2015$	2001$	2015$
Department of Agriculture					
Animal and Plant Health Inspection Service	3	$0.4 to $1.0	$0.6 to $1.3	$0.3 to $0.6	$0.3 to $0.8
Department of Energy					
Energy Efficiency and Renewable Energy	26	$17.5 to $29.9	$23.0 to $39.2	$6.0 to $9.0	$7.9 to $11.8
Department of Health and Human Services					
Food and Drug Administration	7	$1.1 to $10.8	$1.4 to $14.2	$0.5 to $1.0	$0.7 to $1.3
Center for Medicare and Medicaid Services	9	$3.2 to $6.7	$4.2 to $8.9	$0.8 to $3.4	$1.0 to $4.4
Department of Labor					
Occupational Safety and Health Administration	5	$0.9 to $2.3	$1.2 to $3.0	$0.3 to $0.4	$0.4 to $0.5
Employee Benefits Security Administration	3	$6.6 to $18.4	$8.6 to $24.1	$1.7 to $4.5	$2.2 to $5.9
Department of Transportation					
National Highway Traffic Safety Administration	9	$11.3 to $20.5	$14.8 to $26.9	$3.7 to $7.4	$4.8 to $9.8
Federal Aviation Administration	6	$0.4 to $2.9	$0.5 to $3.8	$0.5 to $1.1	$0.6 to $1.4
Federal Motor Carriers Safety Administration	5	$4.3 to $5.4	$5.7 to $7.1	$1.9	$2.4 to $2.5
Federal Railroad Administration	3	$0.9 to $1.0	$1.2 to $1.3	$0.7 to $1.4	$0.9 to $1.9
Environmental Protection Agency					
Office of Air and Radiation	26	$138.7 to $521.4	$182.0 to $684.1	$38.4 to $46.0	$50.4 to $60.3
Office of Solid Waste and Emergency Response	6	$0.3 to $0.9	$0.4 to $1.2	$0.2 to $0.4	$0.2 to $0.6
Office of Water	4	$0.6 to $0.9	$0.8 to $1.2	$0.8 to $1.1	$1.1 to $1.5
Department of Transportation + Environmental Protection Agency					
National Highway Traffic Safety Administration/Office of Air	4	$34.0 to $59.3	$44.6 to $77.8	$8.2 to $15.1	$10.7 to $19.9

The ranges of benefits and costs reported in Tables 1-1 and 1-2 were calculated by adding the lower bounds of agencies' estimates for each of the underlying rules to generate an aggregate lower bound, and similarly adding the upper bounds of agencies' estimates to generate an aggregate upper bound.[24] The range reported by the agency for each rule reflects a portion of the agency's uncertainty about the likely impact of the rule. In some cases, this range is a confidence interval based on a formal integration of the statistical uncertainty. Such

[24] To the extent that the estimates quantitatively incorporated uncertainty, this approach of adding ranges may overstate the uncertainty in the total benefits and costs for each agency.

analyses, however, rarely provide an integrated estimate that includes model and parameter uncertainty. Rather, when agencies do attempt to quantify such sources of uncertainty, they often conduct a component-by-component exploration of the impact of alternative assumptions and parameters. In generating this table, most entries are ranges, based on agency analyses in which input parameters were varied across a plausible range.

More generally, the ranges of benefits and costs presented in Tables 1-1 and 1-2 should be treated with some caution. Because different rules treat uncertainties differently, if at all, the ranges above should not be interpreted as reflecting significant underlying uncertainties either consistently or comprehensively. If the reasons for uncertainty differ across individual rules, aggregating high and low-end estimates can result in totals that may be misleading. The benefits and costs presented in Tables 1-1 and 1-2 are not necessarily correlated. In other words, when interpreting the meaning of these ranges, the reader should not assume that when benefits are on the low end of their range, costs will also tend to be on the low end of their range. This is because, for some rules, there are factors that affect costs that have little correlation with factors that affect benefits (and vice-versa). Accordingly, to calculate the range of net benefits (i.e., benefits minus costs), one should not simply subtract the lower bound of the benefits range from the lower bound of the cost range and similarly for the upper bound. It is possible that the true benefits are at the higher bound and that the true costs are at the lower bound, as well as vice versa.

2. EPA Air Rules

Across the Federal government, the rules with the highest estimated benefits as well as the highest estimated costs come from the Environmental Protection Agency and in particular its Office of Air and Radiation. Specifically, EPA rules account for over 80 percent of the monetized benefits and over 70 percent of the monetized costs.[25] Of these, rules that have a significant aim to improve air quality account for over 95 percent of the benefits of EPA rules. As such, we provide additional information on the estimates associated with these rules.

Of the EPA's 26 air rules, the highest estimated benefits are for the Clean Air Fine Particle Implementation Rule issued in 2007, with benefits estimates ranging from $19 billion to $167 billion per year; and the National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units ("MATS"[26]) issued in 2011, with benefits estimates ranging from $28 billion to $77 billion (2001$). While the estimated benefits of these rules far exceed the estimated costs, they are also among the costliest rules. The MATS

[25] These estimates do not include the joint EPA/DOT Corporate Average Fuel Economy (CAFE) rules as "EPA" rules.

[26] This rule is commonly known as the "Mercury and Air Toxics Standards" (MATS). In 2014, the U.S. Court of Appeals for the D.C. Circuit upheld the rule, finding that EPA is not required to take cost into consideration when evaluating whether regulation of electric utility steam generating units under § 112 of the Clean Air Act (CAA) is "appropriate and necessary" to address hazards to public health. The Supreme Court reversed and remanded the rule in 2015 on the issue of consideration of costs. EPA finalized a supplemental finding about MATS and costs in April 2016.

rule, which is estimated to be the costliest of the EPA rules, has annualized costs of about $8.2 billion (2001$).

Importantly, the large estimated benefits of EPA rules issued pursuant to the CAA are mostly attributable to the reduction in public exposure to fine particulate matter (referred to in many contexts as $PM_{2.5}$). While many of these rules monetize the estimated benefits of emissions controls designed specifically to limit particulate matter or its precursors, some rules monetize the benefits associated with the ancillary reductions in particulate matter that come from reducing emission of hazardous air pollutants which are difficulty to quantify and monetize because of data limitations. For example, in the case of the Utility MACT (or MATS), particulate matter "co-benefits,"[27] make up the majority of the monetized benefits, even though the regulation is designed to limit emissions of mercury and other hazardous air pollutants. The consideration of co-benefits, including the co-benefits associated with reduction of particulate matter, is consistent with standard accounting practices and has long been required under OMB Circular A-4. We will continue to work with agencies to ensure that they clearly communicate when such co-benefits constitute a significant share of the monetized benefits of a rule.

We note also that EPA's 2006 National Ambient Air Quality Standards (NAAQS) for particulate matter with estimated benefits ranging from $4 billion to $40 billion per year and estimated costs of $3 billion per year (2001$), is excluded from the 10-year aggregate estimates or the year-by-year estimates (and would be excluded even if it were issued in the past decade). The reason for the exclusion is to prevent double-counting: EPA finalized implementing rules, such as the Cross-State Air Pollution Rule (CSAPR), that will achieve emission reductions and impose costs that account for a major portion of the benefit and cost estimates associated with this NAAQS rule. The benefit and cost estimates from NAAQS regulations may also be dropped in the future reports to avoid double counting to the extent that EPA promulgates implementing regulations that would be designed to achieve the emissions reductions required by these NAAQS and the benefits and costs of those regulations are assessed appropriately.

3. Assumptions and Uncertainties

The largest benefits are associated with regulations that reduce risks to life. As such this section provides additional information on the assumptions underlying such quantification and valuation. While agency practice is rooted in empirical research and is not widely variable, agencies have adopted somewhat different methodologies—for example, different monetized values for effects (such as mortality and morbidity), different baselines in terms of the regulations and controls already in place, different rates of time preference, and different treatments of uncertainty. These differences are reflected in the estimates provided in Tables 1-1 and 1-2, above. And while we have generally relied on agency estimates in monetizing benefits and costs, and those estimates have generally been subject both to public and to interagency review, our reliance on those estimates in this Report should not necessarily be

[27] Co-benefits are benefits that are ancillary to the primary objectives of regulation. In estimating co-benefits, agencies are encouraged to carefully construct baselines so that double-counting of benefits is minimized. Agencies are also encouraged to give equal consideration to co-costs.

taken as an OMB endorsement of all the varied methodologies used by agencies to estimate benefits and costs.

An important source of uncertainty in the case of health and safety regulations is how to value a regulation's expected reduction in risks to life. Agencies vary in how they estimate the value of a statistical life (VSL), which is best understood not as the "valuation of life," but as the valuation of *statistical mortality risks*. For example, the average person in a population of 50,000 may value a reduction in mortality risk of 1/50,000 at $150. The value of reducing the risk of 1 *statistical* (as opposed to a known or identified) fatality in this population would be $7.5 million, representing the aggregation of the willingness to pay values held by everyone in the population. Building on an extensive literature, OMB Circular A-4 provides background and discussion of the theory and practice of calculating VSL. It concludes that a substantial majority of the studies of VSL indicate a value that varies "from roughly $1 million to $10 million per statistical life." Circular A-4 generally reports values in 2001 dollars; if we update these values to 2015 dollars the range would be $1.3-$13.1 million. In practice, agencies have tended to use a value above the mid-point of this range (i.e., greater than $7.2 million in 2015 dollars).[28] To account for the uncertainty in the appropriate value for the reduction of risk to life, agencies often use a range of plausible VSL values to construct a range of estimated benefits for rules.

A second source of uncertainty is the set of assumptions used in projecting the health impact of reducing particulate matter. These projections are based on a series of models that take into account emissions changes, resulting distributions of changes in ambient air quality, the estimated reductions in health effects from changes in exposure, and the composition of the population that will benefit from the reduced exposure. Each component includes assumptions, each with varying degrees of uncertainty. A 2002 study by the National Research Council/National Academy of Sciences entitled *Estimating the Public Health Benefits of Proposed Air Pollution Regulations* (2002) highlighted the uncertainty in the reduction of premature deaths associated with reduction in particulate matter.

The six key assumptions underpinning the particulate matter benefits estimates, and our analysis of these sources of uncertainty, are as follows:

1. Inhalation of fine particles is causally associated with premature death at concentrations near those experienced by most Americans on a daily basis.

[28] Three agencies—HHS, EPA and DOT—have developed official guidance on VSL. In its 2016 update, DOT adopted a value of $9.6 million (2015$) adjusted for income growth in later years, and requires all the components of the Department to use that value in their RIAs. See https://www.transportation.gov/office-policy/transportation-policy/revised-departmental-guidance-on-valuation-of-a-statistical-life-in-economic-analysis. EPA uses a VSL of $6.3 million (2000$) and adjusts this value for real income growth to later years. In its final rule reviewing the National Ambient Air Quality Standards for particulate matter, for example, EPA adjusted this VSL to account for a different currency year (2010$) and for income growth to 2020, which yields a VSL of $9.6 million. EPA is continuing its efforts to update this guidance, and is preparing draft guidelines in response to recommendations received from its Science Advisory Board. See "Valuing Mortality Risk Reductions for Environmental Policy: A White Paper." Dec. 10, 2010. Available at http://yosemite.epa.gov/ee/epa/eerm.nsf/vwAN/EE-0563-1.pdf/$file/EE-0563-1.pdf. In April of 2014 the Department of Homeland Security adopted DOT's VSL. Many other regulatory agencies have used a VSL in individual rulemakings.

EPA, with the endorsement of its Clean Air Scientific Advisory Committee (CASAC), has determined that the weight of available epidemiological evidence indicates that exposure to fine particles is causally related to premature death. The agency further concludes that potential biological mechanisms for this effect, while not completely understood, are also supportive of a causal determination. Although discussed qualitatively in EPA's RIAs, this assumption carries with it uncertainty that is currently not accounted for in the analysis presented in EPA's monetized benefits estimates.

2. The concentration-response function for fine particles and premature mortality is approximately linear, even for concentrations below the levels established by the NAAQS, which reflects the level determined by EPA to be protective of public health with an adequate margin of safety, taking into consideration effects on susceptible subpopulations.

> Although in 2009 CASAC[29] concluded that the evidence supports the use of a no-threshold log-linear model, they specifically recognize the uncertainty about the exact shape of the concentration-response function. EPA's *Policy Assessment*[30] for the most recent fine particulate matter NAAQS concludes that the range from the 25th to the 10th percentile of the air quality distribution observed in the epidemiological studies is a range below which we start to have appreciably less confidence in the magnitude of the associations observed in the epidemiological studies. This is consistent with the toxicological perspective on fine particulate matter concentration-response functions.
>
> In setting the 2012 particulate matter NAAQS, EPA then determined that there is no level below which it can be concluded with confidence that particulate matter effects do not occur and that the NAAQS are not zero-risk standards.[31]

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[29] U.S. Environmental Protection Agency - Science Advisory Board (U.S. EPA-SAB). 2009. Consultation on EPA's Particulate Matter National Ambient Air Quality Standards: Scope and Methods Plan for Health Risk and Exposure Assessment. EPA-COUNCIL-09-009. May. Available at http://yosemite.epa.gov/sab/SABPRODUCT.NSF/81e39f4c09954fcb85256ead006be86e/723FE644C5D758DF852575BD00763A32/$File/EPA-CASAC-09-009-unsigned.pdf. U.S. Environmental Protection Agency - Science Advisory Board (U.S. EPA-SAB). 2009. Review of EPA's Integrated Science Assessment for Particulate Matter (First External Review Draft, December 2008). EPA-COUNCIL-09-008. May. Available at http://yosemite.epa.gov/sab/SABPRODUCT.NSF/81e39f4c09954fcb85256ead006be86e/73ACCA834AB44A10852575BD0064346B/$File/EPA-CASAC-09-008-unsigned.pdf.

[30] U.S. Environmental Protection Agency (U.S. EPA). 2011. Policy Assessment for the Review of the Particulate Matter National Ambient Air Quality Standards. EPA-452/D-11-003. April. Available at http://www.epa.gov/ttnnaaqs/standards/pm/s_pm_2007_pa.html.

[31] As explained in the rule, "[h]owever, evidence- and risk-based approaches using information from epidemiological studies to inform decisions on $PM_{2.5}$ standards are complicated by the recognition that no population threshold, below which it can be concluded with confidence that $PM_{2.5}$-related effects do not occur, can be discerned from the available evidence. As a result, any general approach to reaching decisions on what standards are appropriate necessarily requires judgments about how to translate the information available from epidemiological studies into a basis for appropriate standards. This includes consideration of how to weigh the uncertainties in the reported associations across the distributions of $PM_{2.5}$ concentrations in the studies and the

However, the possibility of a *de minimis* population effect at concentrations lower than the NAAQS is consistent with the criteria for setting the NAAQS. This becomes important for understanding the extent of the uncertainty in the particulate matter benefits estimates if a significant portion of the benefits associated with more recent rules are from projected exposure reductions in areas that are already in attainment with both the 24-hour and annual NAAQS for fine particles. For example, in the MATS rule, a majority of the benefits accrue to populations who live in areas that are projected to meet the annual fine particulate standards.

In assessing the comparability of estimates over time, it is worth noting that between FY 2006 and midway through FY 2009, all EPA's primary benefits estimates explicitly included an assumption of a threshold for premature mortality effects at lower levels—that is, health benefits were not assumed for exposure reductions below a hypothetical threshold of 10 $\mu g/m^3$ (although sensitivity analyses explored alternative models). Since mid-2009, EPA's primary benefits estimates reflect a no-threshold assumption, although sensitivity analyses continue to acknowledge that some experts think there may be a threshold. As mentioned in more general terms earlier in this draft report, OMB did not make any adjustments to the analyses in order to make this assumption consistent across these time periods.

3. All fine particles, regardless of their chemical composition, are equally potent in causing premature mortality.

Although some scientific experiments have found differential toxicity among species of particulate matter, EPA, with CASAC's endorsement, has concluded that the scientific evidence is not yet sufficient to allow differentiation of benefits estimates by particle type.[32] However, some agencies and stakeholders have suggested that this research provides insight regarding potential differential toxicity among species of particulate matter. This assumption of equal toxicity contributes to the uncertainty associated with particulate matter benefits estimates because fine particles vary considerably in composition across sources. For instance, particulate matter indirectly produced via transported precursors emitted from electrical generating utilities (EGUs) may differ significantly in composition from direct particulate matter released by other industrial sources. Similarly, gasoline and diesel engine emissions differ. As such, when a given rule controls a broad range of sources, there is likely less uncertainty in the benefits estimate that if the rule controls a single type of source.

uncertainties in quantitative estimates of risk, in the context of the entire body of evidence before the Agency. Such approaches are consistent with setting standards that are either more or less stringent than necessary, recognizing that a zero-risk standard is not required by the CAA." 78 FR 3082, 3098.

[32] "[M]any constituents of $PM_{2.5}$ can be linked with multiple health effects, and the evidence is not yet sufficient to allow differentiation of those constituents or sources that are more closely related to specific outcomes." U.S. Environmental Protection Agency (U.S. EPA). 2009. Integrated Science Assessment for Particulate Matter (Final Report). EPA-600-R-08-139F. National Center for Environmental Assessment—RTP Division. December. Available at http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=216546.

4. The forecasts for future emissions and associated air quality modeling accurately predict both the baseline (state of the world absent a rule) and the air quality impacts of the rule being analyzed.

   The models used are based on up-to-date assessment tools and scientific literature that has been peer-reviewed; however, as in all models the results may be significantly influenced by assumptions, incomplete data, and/or model parameter specification. Inherent uncertainties in the overall enterprise must be recognized, even if the results are critical to projecting the benefits of air quality regulations.

5. National dollar benefit-per-ton estimates of the benefits of reducing directly emitted fine particulates and $PM_{2.5}$ precursors are applied, as a less modeling and time intensive estimation technique, in some rules that control emissions from specific source categories.

   Because these benefit-per-ton estimates are based on national-level analysis that may not reflect local variability in population density, meteorology, exposure, baseline health incidence rates, or other local factors, depending on the analysis and the location, they may not provide an accurate representation of the geographic distribution of benefits, and thus either over-estimate or under-estimate the aggregate benefits of reducing fine particulate emissions or their precursors at specific locations.

6. The value of mortality risk reduction, which is taken largely from studies of the willingness to accept risk in the labor market is an accurate reflection of what people would be willing to pay for incremental reductions in mortality risk from air pollution exposure and these values are uniform for people in different stages of life or with differing health status.

   As discussed above, there is considerable uncertainty about how to value reductions in risk to life. Agencies generally assume a uniform VSL; however, some studies indicate that willingness to pay for reductions in risk may change with age.[33] If VSLs do change with age, it would have an important impact on the size of the benefits associated with premature mortality because EPA's analysis shows that the median age of individuals experiencing reduced mortality is around 75 years old. However it is also worth noting that slightly more than half of the avoided life years occur in populations age <65 due to the fact that the younger populations would lose more life years per death than older population.[34]

[33] See Krupnick (2007) for a survey of the literature.

[34] Regulatory Impact Analysis for the Final Revisions to the National Ambient Air Quality Standards for Particulate Matter, U.S. Environmental Protection Agency, 2012. [Pages 5-75 and 5-76, Chapter 5, Benefits]. http://www.epa.gov/ttnecas1/regdata/RIAs/finalria.pdf. See OMB Circular A-4 for further discussion on

To the extent that any of these assumptions is incorrect, the benefit ranges in the tables above might be different, though the magnitude of bias is not known with certainty. We understand that additional research is currently being conducted that should help to improve our understanding in each of these areas. Moving forward, OMB has recommended that EPA begin to develop approaches to monetize and more explicitly consider the implications of these sources of uncertainty in its benefits and co-benefits analyses.

4. Quantification

We have also noted that many of these major rules have important non-quantified benefits and costs that may have been a key factor in an agency's decision to select a particular approach. In important cases, agencies have been unable to quantify the benefits of rules, simply because existing information does not permit reliable estimates. These qualitative issues are discussed in Table A-1 of Appendix A, agency rulemaking documents, and previous editions of this Report.

Finally, because these estimates exclude non-major rules and rules adopted more than ten years ago, the total benefits and costs of all Federal rules now in effect are likely to be significantly larger than the sum of the benefits and costs reported in Table 1-1. More research would be necessary to produce current estimates of total benefits and costs for all agencies and programs, though some agencies have developed valuable assessments of the benefits and costs of their programs. And as noted, it is important to consider retrospective, as opposed to *ex ante*, estimates of both benefits and costs.

5. Other Safety and Health Rules

Although rules that reduce public exposure to fine particulate matter, as well as other environmental regulations from EPA, dominate the monetized benefits and costs of federal regulation over the last ten years, other agencies have contributed to safety, health and well-being in the U.S. Table 1-3 identifies numbers of rules, areas of impact, and associated estimated benefits and costs.

International trade-related environmental and safety regulation attempts to reduce risks associated with pests and disease (e.g., mad cow disease) that may be carried by goods imported to the U.S. USDA and FDA have also issued non-trade rules that attempt to reduce foodborne illnesses and encourage better health. Patient safety rules have dealt with, among other things, reducing medical errors, and safety requirements for long term care facilities. Transportation-related safety rules attempt to reduce the risk of injury and death associated with vehicles, airplanes, and trains.

effectiveness metrics for public health and safety rulemakings such as "equivalent lives" (ELs) and "quality-adjusted life years" (QALYs).

Table 1-3: Estimates of Annual Benefits and Costs of Non-Environmental Health and Safety Rules: October 1, 2006 - September 30, 2016 (billions of 2001 and 2015 dollars)

Area of Safety and Health Regulation	Number of Rules	Estimated Benefits		Estimated Costs	
		2001$	2015$	2001$	2015$
Safety rules to govern international trade	3	$0.4 to $1.0	$0.6 to $1.3	$0.3 to $0.6	$0.3 to $0.8
Food safety and labeling	7	$1.1 to $10.7	$1.4 to $14.0	$0.5 to $1.1	$0.7 to $1.4
Patient safety	3	$0.2 to $0.3	$0.2 to $0.4	$0.1 to $0.2	$0.2
Consumer protection	3	$1.4 to $4.7	$1.9 to $6.1	$0.7 to $0.8	$1.0 to $1.1
Worker safety	7	$0.9 to $2.4	$1.2 to $3.1	$0.4 to $0.5	$0.5 to $0.6
Transportation safety	24	$12.9 to $26.5	$16.9 to $34.7	$6.0 to $10.1	$7.9 to $13.3

B. Trends in Annual Benefits and Costs of Regulations Reviewed by OMB over the Last Ten Years

Table 1-4 reports the total benefits and costs of rules issued from October 1, 2006, to September 30, 2016, by fiscal year for which monetized estimates of substantial portions of both benefits and costs are available.[35] Figure 1-1 provides similar information to Table 1-4 in graphical form. The heights of the red bars in this figure presents the annual sums of primary estimates (or midpoints of ranges if primary estimates are not available) for costs and benefits. The accompanying error bars (in blue and green) represent the ranges in values between low and high estimates for costs and benefits.

Table 1-4: Total Annual Benefits and Costs of Major Rules (For Which Both Benefits and Costs Have Been Estimated) by Fiscal Year (billions of 2001 and 2015 dollars)

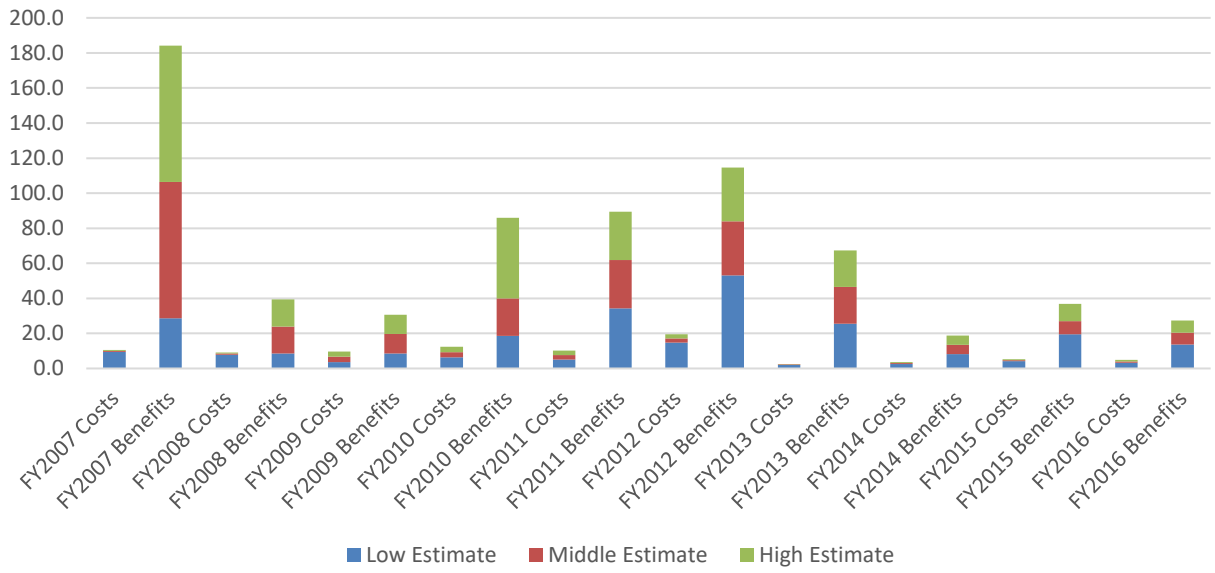
Fiscal Year	Number of Rules	Benefits		Costs	
		2001$	2015$	2001$	2015$
2007	12	$28.6 to $184.2	$37.5 to $241.6	$9.4 to $10.7	$12.3 to $14.0
2008	12	$8.5 to $39.4	$11.2 to $51.7	$7.9 to $9.2	$10.3 to $12.1
2009	16	$8.6 to $30.7	$11.3 to $40.3	$3.7 to $9.6	$4.8 to $12.6

[35] Table 1-4 includes all rules reported in Table 1-1. The ranges will not necessarily match previously reported estimates for a fiscal year in past reports as rules have been dropped over time, as described in this and past reports. See Appendix A for a complete list of rules included in these totals. In some years, the costs attributable to rules that did not have monetized benefits are relatively large when compared to the costs of rules that had both benefits and costs monetized. In order to maintain the convention we have used over many years of presenting in this table and accompanying diagram only estimates of rules for which both costs and benefits were monetized, we have not included the costs here. There are also rules that only had benefits monetized; however, their inclusion in this year's totals would have only a small impact on the overall benefits estimate. All of these additional rules are listed and summarized in Table 1-6(b) below.

Fiscal Year	Number of Rules	Benefits		Costs	
		2001$	2015$	2001$	2015$
2010	17[36]	$18.6 to $85.9	$24.4 to $112.7	$6.4 to $12.4	$8.4 to $16.2
2011	12	$34.3 to $89.5	$45.1 to $117.4	$5.0 to $10.1	$6.6 to $13.3
2012	14	$53.2 to $114.6	$69.8 to $150.4	$14.8 to $19.5	$19.4 to $25.6
2013	7	$25.6 to $67.3	$33.5 to $88.4	$2.0 to $2.5	$2.6 to $3.3
2014	13	$8.1 to $18.9	$10.7 to $24.8	$2.5 to $3.7	$3.3 to $4.9
2015[37]	21	$19.6 to $36.9	$25.7 to $48.4	$4.2 to $5.3	$5.5 to $7.0
2016	16	$13.6 to $27.3	$17.8 to $35.8	$3.3 to $4.9	$4.3 to $6.4

As demonstrated by Figure 1-1, the estimated variability in benefit estimates across fiscal years is greater than in cost estimates, but there still is considerable uncertainty in the estimation of costs.

Figure 1-1: Total Annual Costs and Benefits of Major Rules for Which Both Costs and Benefits Have Been Estimated, by Fiscal Year



The estimates we report here are prospective estimates made by agencies during the rulemaking process adjusted for vacated or superseded rules. As we have emphasized, it is possible that retrospective studies will show (as they sometimes have[38]) that the benefits and costs were either overestimated or underestimated. As discussed elsewhere in this Report (see

[36] This total excludes the impacts of DOT's 2010 Electronic On-Board Recorders for Hours-of-Service Compliance rule, which was vacated. See *supra* note 23.

[37] The estimates shown in this row reflect a categorization of certain emission reductions as negative costs, rather than as benefits. As shown in footnote 43 of the Draft 2016 Report, we have previously requested comment on this accounting practice, and we reiterate that request here.

[38] See Harrington, Morgenstern and Nelson (2000).

Appendix A) as well as previous Reports, the aggregate estimates of benefits and costs derived from estimates by different agencies and over different time periods are subject to some methodological variations and differing assumptions.[39]

C. Estimates of the Benefits and Costs of Major Rules Issued in Fiscal Year 2016

1. Major Rules Issued by Executive Departments and Agencies

In this section, we examine in more detail the estimated benefits and costs of the major final rules for which OMB concluded review during the 12-month period beginning October 1, 2015, and ending September 30, 2016.[40] (Note that 31 of the 85 major rules are transfer rules.) Major rules represent approximately one-third of the 241 final rules reviewed by OMB.[41,42]

Overall, HHS promulgated the largest number of major rules in FY 2016 (38); 19 of these rules were annual budget rules (i.e., rules that involve changes in the federal government's outlays, such as Medicare funding, or receipts, such as passport fees), largely transferring income from one group of entities to another without directly imposing significant costs on the private sector, while the other seven do have significant economic impact on the private sector. Multiple major HHS rules (sometimes rules issued jointly with the Departments of Labor and the Treasury) were issued in accordance with the Patient Protection and Affordable Care Act; relevant RINs include 0938-AS57, 0945-AA02, and 1210-AB72.

The monetized costs and benefits estimates of 16 FY 2016 rules are aggregated by agency in Table 1-5 and listed in Table 1-6(a), and most are included in the ten-year aggregates in Tables 1-1, 1-2, and 1-4.[43]

[39] This is particularly true for EPA's air pollution regulations. Caution should be used in comparing benefits and costs over time in light of several factors, including new scientific evidence regarding the relationship between pollutants and health endpoints; changes in the EPA's assumptions when uncertainty remains (e.g., regarding the shape of the concentration – response function at low levels); and differences in techniques for monetizing benefits (including changes to the value assigned to a statistical life). Aggregate estimates in the report reflect differences in approaches and assumptions over time to reflect more recent scientific evidence. Summing across time does not likely reflect how agencies would calculate the costs and benefits of prior rules today.

[40] This count excludes rules that were withdrawn from OMB review or rules that were rescinded, or vacated after publication. It also counts joint rules as a single rule, even if they were submitted to OMB separately for review.

[41] Counts of OMB-reviewed rules are available through the "review counts" and "search" tools on OIRA's regulatory information website (www.reginfo.gov).

[42] We discussed the relative contribution of major rules to the total impact of Federal regulation in detail in the "response-to-comments" section on pages 26-27 of the 2004 Report. Our evaluation of a few representative agencies found that major rules represented the vast majority of the benefits and costs of all rules promulgated by these agencies and reviewed by OMB. Based on our ongoing review of rules that are and are not major, we believe this trend is still true today.

[43] As noted in previous Reports, we include rules that provide both the benefit and cost estimates to the ten-year aggregation so that "apples-to-apples" comparison can be preserved.

Table 1-5: Estimates, by Agency, of the Total Annual Benefits and Costs of Major Rules (For Which Both Benefits and Costs Have Been Estimated): October 1, 2015 - September 30, 2016 (billions of 2001 or 2015 dollars)

Agency	Number of Rules	Benefits		Costs	
		2001$	2015$	2001$	2015$
Department of Agriculture	1	$0.0 to $0.1	$0.0 to $0.2	<$0.1	<$0.1
Department of Energy	4	$2.9 to $4.7	$3.8 to $6.2	$0.2 to $0.8	$0.3 to $1.1
Department of Health and Human Services	2	$0.7 to $7.3	$0.9 to $9.6	$0.3 to $0.7	$0.4 to $0.9
Department of Homeland Security	1	$0.1 to $0.4	$0.2 to $0.5	$0.1	$0.2
Department of Transportation	2	$2.4 to $4.0	$3.1 to $5.2	$1.4 to $1.6	$1.8 to $2.1
Environmental Protection Agency	4	$9.0 to $10.8	$11.8 to $14.2	$1.5 to $1.6	$2.0 to $2.1
Joint Department of Transportation and Environmental Protection Agency	1	$6.7 to $9.7	$8.8 to $12.8	$0.8 to $1.1	$1.1 to $1.5
Total	**16**	**$13.6 to $27.3**	**$17.8 to $35.8**	**$3.3 to $4.9**	**$4.3 to $6.4**

Thirty-one of the major rules issued in FY 2016 were "transfer rules"— rules for which the largest estimated effect were income transfers, usually to or from taxpayers to program beneficiaries. Most of these implement Federal budgetary programs as required or authorized by Congress. Rules of this kind are promulgated in response to statutes that authorize and often require them. Although rules that affect Federal budget programs are subject to Executive Order 12866 and OMB Circular A-4, and are reviewed by OMB, past Reports have focused primarily on regulations that have effects largely through private sector mandates. (For transfer rules, agencies typically report the estimated budgetary impacts.)

We recognize that markets embed distortions and that the transfers are not lump-sum, thereby changing relative prices of goods and services. Hence, transfer rules may create social benefits or costs. For example, they may impose real costs on society to the extent that they cause people to change behavior, either by directly prohibiting or mandating certain activities, or, more often, by altering prices. The costs resulting from these behavior changes are referred to as the "deadweight losses" associated with the transfer. Rules that reduce distortions may result in analogous gains. The Regulatory Right-to-Know Act requires OMB to report the costs and benefits of these rules, and OMB encourages agencies to report these costs and benefits for transfer rules; OMB will consider incorporating any such estimates into future Reports. Transfer rules can also entail direct compliance costs; where such costs have been estimated by agencies, estimates appear in Table A-1.

Tables 1-6(a), 1-6(b), 1-6(c) and 1-6(d) list each of the "non-transfer" rules and, where available, provide information on their monetized benefits and costs. Table 1-6(a) lists the 16 rules for which agencies estimated both costs and benefits, Tables 1-6(b) and 1-6(c) list the 30+ rules for which agencies at least partially estimated costs and benefits, and Table 1-6(d) lists five rules for which the agencies estimated neither costs nor benefits.

Table 1-6 (a): Major Rules Reviewed with Estimates of Both Annual Benefits and Costs, October 1, 2015 - September 30, 2016 (billions of 2001 or 2015 dollars)

Agency	RIN[44]	Title	Benefits		Costs	
			2001$	2015$	2001$	2015$
USDA/FSIS	0583-ZA10	New Performance Standards for Salmonella and Campylobacter in Not-Ready-to-Eat Comminuted Chicken and Turkey Products and Raw Chicken Parts and Changes to Related Agency Verification Procedures	$0.1 Range: $0.0-$0.1	$0.1 Range: $0.0-$0.2	<$0.1	<$0.1
HHS/SAMHSA	0930-AA22	Medication Assisted Treatment for Opioid Use Disorders Reporting Requirements	$1.4 Range: $0.1 to $6.4	$1.8 Range: $0.1 to $8.4	$0.2 Range: $0.0 to $0.4	$0.2 Range: $0.1 to $0.5
HHS/FDA	0910-AG35	Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption	$0.7 Range: $0.5 to $0.9	$0.9 Range: $0.7 to $1.2	$0.3 Range: $0.2 to $0.3	$0.4 Range: $0.3 to $0.4
DOE/EE	1904-AD11	Energy Efficiency Standards for Commercial Warm Air Furnaces	$2.7 Range: $2.7 to $4.3	$3.6 Range: $3.6 to $5.8	$0.5 Range: $0.2 to $0.8	$0.7 Range: $0.2 to $1.0
DOE/EE	1904-AC81	Energy Efficiency Standards for Residential Dehumidifiers	<$0.1	<$0.1	$0.1 Range: $0.1 to $0.2	$0.2
DOE/EE	1904-AC54	Energy Efficiency Standards for Commercial and Industrial Pumps	<$0.1	<$0.1	$0.1	$0.1
DOE/EE	1904-AC88	Energy Efficiency Standards for Residential Boilers	<$0.1	<$0.1	$0.1	$0.1
EPA/AR	2060-AS23; 2060-AM08	Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills; Standards	$0.4	$0.6	$0.1	$0.1

[44] In 2010, OMB issued a memorandum on "Increasing Openness in the Rulemaking Process – Use of the Regulation Identifier Number (RIN)" (available at: http://obamawhitehouse.archives.gov/sites/default/files/omb/assets/inforeg/IncreasingOpenness_04072010.pdf). The memorandum provides that agencies should use the RIN on all relevant documents throughout the entire "lifecycle" of a rule. We believe that this requirement helps members of the public to find regulatory information at each stage of the process and is promoting informed participation.

Agency	RIN[44]	Title	Benefits		Costs	
			2001$	2015$	2001$	2015$
		for Municipal Solid Waste Landfills				
EPA/AR + DOT/NHTSA	2060-AS16; 2127-AL52	Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2; Fuel Efficiency Standards for Medium- and Heavy-Duty Vehicles and Work Trucks: Phase 2 [45]	Range: $6.7 to $9.7	Range: $8.8 to $12.8	Range: $0.8 to $1.1	Range: $1.1 to $1.5
EPA/AR	2060-AS30	Oil and Natural Gas Sector: Emissions Standards for New and Modified Sources	$0.4	$0.5 Range: $0.5 to $0.6	$0.3	$0.4 Range: $0.4 to $0.5
EPA/OCSPP	2070-AJ44	Formaldehyde; Third-Party Certification Framework for the Formaldehyde Standards for Composite Wood Products	<$0.1 Range: $0.0 to $0.1	$0.1 Range: $0.0 to $0.2	<$0.1 Range: $0.0 to $0.1	$0.1 Range: $0.0 to $0.1
DHS/CBP	1651-AB08	Electronic Visa Update System	$0.2 Range: $0.1 to $0.4	$0.3 Range: $0.2 to $0.5	$0.1	$0.2
DOT/FMCSA	2126-AB20	Electronic Logging Devices and Hours of Service Supporting Documents (MAP-21) (RRR)	$2.3	$3.0	$1.4	$1.8
DOT/FAA	2120-AJ60	Operation and Certification of Small Unmanned Aircraft Systems	Range: $0.1 to $1.7	Range: $0.2 to $2.2	Range: $0.0 to $0.2	Range: $0.0 to $0.3

[45] This is a joint rule issued by EPA and DOT. There are both programmatic and analytical differences between the two agencies' rules. For example, EPA's rule includes some requirements for control of emissions of pollutants other than greenhouse gases. The low end of the ranges of costs and benefits reported here is DOT's estimate using a "dynamic" baseline which assumes that without the rule manufacturers will adopt some cost-effective technologies beyond what is required for the Phase 1 Heavy Duty Fuel Efficiency standards. The high end of the ranges of costs and benefits reported here is EPA's estimate using a "flat" baseline which assumes that these technologies would not be adopted in the absence of the rule. See Chapter 11 of the rules' RIA for a more detailed discussion.

Rules for which agencies monetized either benefits or costs are listed in Tables 1-6(b) and 1-6(c). In some cases, agencies lack data to fully monetize. In other cases, benefits or costs may be difficult to quantify, leading agencies to rely on qualitative measures. The rule in Table 1-6(b), DOI's Migratory Bird Hunting regulation, assessed only benefits. For thirty-two rules, we report (partially or fully) monetized costs, without monetized benefits. The potential transfer effects and non-quantified effects of rules are described in "other information" column of Table A-1.[46]

Five rules for which agencies estimated neither costs nor benefits are listed in Table 1-6(d). EPA promulgated the Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS (Update Rule) to amend the NO_x budget set by the Cross-State Air Pollution Rule (CSAPR). Although the Update Rule's RIA provides benefit and cost estimates, the analysis does not offer clear description of the baseline that was used to estimate the benefits and costs, particularly relative to the estimated benefits and costs of CSAPR. Because of this lack of clarity, the Update Rule is included in Table 1-6(d).

We continue to work with agencies to improve the quantification of the benefits and costs of these types of regulations and to make progress toward quantifying variables that have thus far been discussed only qualitatively. OMB Circular A-4 notes that "some important benefits and costs (e.g., privacy protection) may be inherently too difficult to quantify or monetize given current data and methods"[47] but encourage agencies to "carry out a careful evaluation of non-quantified benefits and costs."[48]

Table 1-6(b): Major Rules Reviewed with Estimates of Annual Costs, October 1, 2015 - September 30, 2016 (billions of 2001 or 2015 dollars)

Agency	RIN	Title	Costs	
			2001$	2015$
HHS	0945-AA02	Nondiscrimination Under the Patient Protection and Affordable Care Act	$0.1 Range: $0.1 to $0.2	$0.2
HHS	0991-AB93	2015 Edition Health Information Technology (Health IT) Certification Criteria, 2015 Base Electronic Health Record (EHR) Definition, and ONC Health IT Certification Program Modifications	$0.1 Range: $0.0 to $0.1	$0.1
HHS	0970-AC63	Head Start Performance Standards	Range: $0.4 to $0.6	Range: $0.6 to $0.8

[46] In some instances, agencies have been unable to quantify the benefits and costs of rules because existing information does not permit reliable estimates. In these cases, agencies generally have followed the guidance of Circular A-4 and have provided detailed discussions of the non-quantified benefits and costs in their analysis of rules in order to help decision-makers understand the significance of these factors. For example, DOI promulgates annual Migratory Bird Hunting regulations, which permit hunting of migratory birds. The two potential societal costs are (1) any long-run effect on the bird populations and (2) the cost associated with administering and enforcing the permit program. Evaluating the long-term population effect of annual hunting permits is difficult. Also, State governments administer and enforce the permit program; gathering relevant information is difficult.
[47] OMB Circular A-4, p. 27.
[48] OMB Circular A-4, p. 27.

Agency	RIN	Title	Costs	
			2001$	2015$
HHS	0938-AS53	Medicaid Mechanized Claims Processing and Information Retrieval Systems (CMS-2392-F)	$0.3 Range: $0.2 to $0.3	$0.4 Range: $0.3 to $0.4
HHS	0938-AQ58	Reporting and Returning of Overpayments (CMS-6037-F)	$0.1 Range: $0.1 to $0.2	$0.2 Range: $0.1 to $0.2
HHS	0938-AO91	Emergency Preparedness Requirements for Medicare and Medicaid Participating Providers and Suppliers (CMS-3178-F)	$0.1	$0.1
HHS	0938-AR61	Reform of Requirements for Long-Term Care Facilities (CMS-3260-F)	$0.6	$0.7
HHS	0910-AG64	Foreign Supplier Verification Program	$0.3 Range: $0.2 to $0.6	$0.4 Range: $0.2 to $0.8
HHS	0910-AG98	Sanitary Transportation of Human and Animal Food	$0.1	$0.1
HHS	0910-AG38	"Tobacco Products" Subject to the Federal Food, Drug, and Cosmetic Act, as Amended by the Family Smoking Prevention and Tobacco Control Act	$0.1 Range: $0.0 to $0.1	$0.1 Range: $0.0 to $0.1
HHS	0910-AF23;; 0910-AF22	Food Labeling: Serving Sizes of Foods That Can Reasonably Be Consumed At One Eating Occasion; Dual-Column Labeling; Updating, Modifying, and Establishing Certain RACCs;; Food Labeling: Revision of the Nutrition and Supplement Facts Labels	$0.3 Range: $0.1 to $0.6	$0.4 Range: $0.2 to $0.8
HHS	0910-AH40	Topical Antimicrobial Drug Products for Over-the-Counter Human Use: Final Monograph for Consumer Antiseptic Wash Products	<$0.1	<$0.1 Range: $0.0 to $0.1
HHS	0910-AG63	Focused Mitigation Strategies To Protect Food Against Intentional Adulteration	$0.3 Range: $0.2 to $0.4	$0.4 Range: $0.3 to $0.5
DoD	0790-AJ17	Transition Assistance Program (TAP) for Military Personnel	$0.1	$0.1
USDA	0584-AE09	National School Lunch and School Breakfast Programs: Nutrition Standards for All Foods Sold in School, as Required by the Healthy, Hunger-Free Kids Act of 2010	<$0.1	<$0.1
USDA	0581-AD47	Removal of Mandatory Country of Origin Labeling Requirements for Beef and Pork Muscle Cuts, Ground Beef, and Ground Pork	-$1.4	-$1.8
DOI	1014-AA11	Blowout Prevention Systems and Well Control	$0.1	$0.1
DOI	1082-AA00	Arctic Regulations	$0.2	$0.2

Agency	RIN	Title	Costs	
			2001$	2015$
Treasury	1506-AB25	Financial Crimes Enforcement Network: Customer Due Diligence Requirements for Financial Institutions	$0.2 Range: $0.1 to $0.2	$0.2 Range: $0.1 to $0.3
EPA	2060-AS22	Renewable Fuel Volume Standards 2014-2016	$0.3 Range: $0.2 to $0.4	$0.4 Range: $0.2 to $0.5
FAR Council	9000-AM81	Federal Acquisition Regulation (FAR); FAR Case 2016-007; Fair Pay and Safe Workplaces [49]	$0.3	$0.4
DOL	1210-AB72	Final Rules Under the Affordable Care Act for Grandfathered Plans, Preexisting Condition Exclusions, Lifetime and Annual Limits, Rescissions, Dependent Coverage and Patient Protections	$0.1	$0.2
DOL	1218-AB70	Occupational Exposure to Crystalline Silica	$0.8 Range: $0.7 to $0.9	$1.0 Range: $0.9 to $1.1
DOL	1210-AB32; 1210-ZA25	Definition of the Term "Fiduciary"; Conflict of Interest Rule—Retirement Investment Advice;; Best Interest Contract Exemption; Correction	$1.5 Range: $0.9 to $2.9	$2.0 Range: $1.2 to $3.8
DOL	1205-AB74	Workforce Innovation and Opportunity Act; Joint Rule with U.S. Department of Education for Combined and Unified Plans, Performance Accountability, and the One-Stop System Joint Provisions	$0.1 Range: $0.0 to $0.1	$0.1
DOL	1205-AB73	Workforce Innovation and Opportunity Act	<$0.1	<$0.1
DHS	1653-AA72	Improving and Expanding Training Opportunities for F-1 Nonimmigrant Students with STEM Degrees and Cap-Gap Relief for All Eligible F-1 Students	$0.1	$0.1
DHS	1652-AA67	Passenger Screening Using Advanced Imaging Technology	$0.2	$0.2
DOT	2137-AF17	Hazardous Materials: FAST Act Requirements for Flammable Liquids and Rail Tank Cars	<$0.1	<$0.1 Range: $0.0 to $0.1
DOT	2132-AB07	Transit Asset Management	<$0.1	<$0.1

[49] This rule has been disapproved by Congress, using its authority under the Congressional Review Act, and is therefore not in effect.

Table 1-6(c): Major Rules Reviewed with Estimates of Annual Benefits, October 1, 2015 - September 30, 2016 (billions of 2001 or 2015 dollars)

Agency	RIN	Title	Benefits	
			2001$	2015$
DOI	1018-BA70	Migratory Bird Hunting; 2016-2017 Migratory Game Bird Hunting Regulations (Early Season)	$0.3	$0.4 Range: $0.3 to $0.4

Table 1-6(d): Major Rule Reviewed Without Estimates of Annual Benefits or Costs October 1, 2015- September 30, 2016

Agency	RIN	Title	Benefits	Costs
Treasury	1515-AE03	Automated Commercial Environment (ACE) Required for Electronic Entry/Entry Summary (Cargo Release and Related Entry) Filings	Not Estimated	Not Estimated
EPA	2060-AS05	Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS	Baseline Unclear	Baseline Unclear
USDA	0583-AD36	Mandatory Inspection of Certain Fish, Including Catfish and Catfish Products	Not Estimated	Not Estimated
HHS	0938-AQ36	Face-to-Face Requirements for Home Health Services; Policy Changes and Clarification Related to Home Health (CMS-2348-F)	Not Estimated	Not Estimated
HHS	0938-AS57	CY 2017 Notice of Benefit and Payment Parameters (CMS-9937-F)	Not Estimated	Not Estimated

Table 1-7(a) lists each of 28 "budget" rules and provides information on the estimated income transfers. Unless otherwise noted, OMB simply converts to 2001 and 2015 dollars agencies' own estimates of annualized impacts. For many budget and non-budget rules, we summarize the available information on the non-monetized impacts, where available, for these regulations in the "other information" column of Table A-1 in Appendix A. Table 1-7(b) lists the three non-budget transfer rules. The primary economic impact of each of these rules is to cause transfers between parties outside the Federal Government, and the table includes agencies' estimates of these transfers, if available.

Table 1-7(a) Major Rules Implementing or Adjusting Federal Budgetary Programs, October 1, 2015 - September 30, 2015 (billions of 2001 or 2015 dollars)

Agency	RIN	Title	Transfers	
			2001$	2015$
USDA	0578-AA63	Conservation Stewardship Program	$0.4	$0.6
USDA	0570-AA85	Business and Industry (B&I) Guaranteed Loan Program	<$0.1 Range: $0.0 to $0.1	$0.1 Range: $0.0 to $0.1

Agency	RIN	Title	Transfers	
			2001$	2015$
USDA	0563-AC43	General Administrative Regulations; Catastrophic Risk Protection Endorsement; Area Risk Protection Insurance Regulations; and the Common Crop Insurance Regulations, Basic Provisions	$0.1	$0.1
ED	1840-AD18	REPAYE	$1.4 Range: $1.3 to $1.4	$1.8 Range: $1.6 to $1.8
DOL	1290-AA31	Department of Labor Inflation Adjustment Act	$0.1	$0.1
HHS	0938-AS58; 0938-AS26	Electronic Health Record Incentive Program--Modifications to Meaningful Use in 2015 through 2017 (CMS-3311-F); Electronic Health Record Incentive Program--Stage 3 and Modifications to Meaningful Use in 2015 through 2017 (CMS-3310-F)	$0.8 Range: $0.7 to $0.8	$1.0 Range: $0.9 to $1.0
HHS	0938-AS42	CY 2016 Hospital Outpatient PPS Policy Changes and Payment Rates and Ambulatory Surgical Center Payment System Policy Changes and Payment Rates (CMS-1633-FC)	($0.1)	($0.1)
HHS	0938-AS46	CY 2016 Home Health Prospective Payment System Refinements and Rate Update (CMS-1625-F)	($0.2)	($0.3)
HHS	0938-AS40	CY 2016 Revisions to Payment Policies Under the Physician Fee Schedule and Other Revisions to Medicare Part B (CMS-1631-FC)	$0.9	$1.2
HHS	0938-AS64	Comprehensive Care for Joint Replacement (CMS-5516-F)	(<$0.1)	($0.1)
HHS	0938-AQ41	Covered Outpatient Drugs (CMS-2345-FC)	($0.2)	($0.3)
HHS	0938-AR85	Prior Authorization Process for Certain Durable Medical Equipment, Prosthetics, Orthotics, and Supplies (DMEPOS) Items (CMS-6050-F)	(<$0.1) Range: ($0.0) to ($0.1)	($0.1) Range: ($0.0) to ($0.1)
HHS	0938-AS24	Mental Health Parity and Addiction Equity Act of 2008; Application of Mental Health Parity Requirements to Medicaid Managed Care Organizations, CHIP, and Alternative Benefit Plans (CMS-2333-F)	$0.1	$0.1
HHS	0938-AS25	Medicaid Managed Care, CHIP Delivered in Managed Care, Medicaid and CHIP Comprehensive Quality Strategies, and Revisions related to Third Party Liability (CMS-2390-F)	Range: $0.3 to ($1.0)	Range: $0.4 to ($1.3)
HHS	0938-AS67	Medicare Shared Savings Program; Accountable Care Organizations	(<$0.1)	(<$0.1)

Agency	RIN	Title	Transfers	
			2001$	2015$
		(ACOs)--Revised Benchmark Rebasing Methodology (CMS-1644-F)	Range: $0.1 to ($0.1)	Range: $0.1 to ($0.2)
HHS	0938-AS33	Medicare Clinical Diagnostic Laboratory Test Payment System (CMS-1621-F)	($0.3)	($0.4)
HHS	0938-AS75	FY 2017 Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities (CMS-1645-F)	$0.7	$0.9
HHS	0938-AS79	FY 2017 Hospice Rate Update (CMS-1652-F)	$0.3	$0.3
HHS	0938-AS78	FY 2017 Inpatient Rehabilitation Facility Prospective Payment System (CMS-1647-F)	$0.1	$0.1
HHS	0938-AS77	Hospital Inpatient Prospective Payment System for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System and FY 2017 Rates (CMS-1655-F)	$0.3	$0.4
HHS	0938-AS36	CY 2016 Inpatient Hospital Deductible and Hospital and Extended Care Services Coinsurance Amounts (CMS-8059-N)	($0.5)	($0.6)
HHS	0938-AS38	CY 2016 Part B Monthly Actuarial Rates, Monthly Premium Rates, and Annual Deductible (CMS-8061-N)	($2.6)	($3.4)
HHS	0938-AS76	FY 2017 Inpatient Psychiatric Facilities Prospective Payment System--Rate Update (CMS-1650-N)	$0.1	$0.1
DOJ	1105-AB49	James Zadroga 9/11 Victim Compensation Fund Reauthorization Act	See Table A-1	
Treasury	1505-AC44	Restore Act Program	$0.5	$0.7
VA	2900-AP24	Expanded Access to Non-VA Care through the Veterans Choice Program	Range: $0.6 to $4.3	Range: $0.9 to $5.6
VA	2900-AP60	Expanded Access to Non-VA Care through the Veterans Choice Program	Range: $0.1 to $0.6	Range: $0.1 to $0.9

( ) indicates a budget savings

Table 1-7(b): Non-Budget Transfer Rules, October 1, 2015 - September 30, 2016 (billions of 2001 or 2015 dollars)

Agency	RIN	Title	Transfers	
			2001$	2015$
DOL	1235-AA11	Defining and Delimiting the Exemptions for Executive, Administrative, Professional, Outside Sales, and Computer Employees	$0.9 Range: $0.4 to $0.9	$1.2 Range: $0.5 to $1.2
DOL	1235-AA13	Establishing Paid Sick Leave for Contractors, Executive Order 13706	$0.3	$0.3 Range: $0.3 to $0.4
HHS	0970-AC67	Child Care and Development Block Grant Act Reauthorization Implementation	$0.6	$0.8

2. Major Rules Issued by Independent Agencies

The Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA)[50] requires the Government Accountability Office (GAO) to submit to Congress reports on major rules, including rules issued by agencies not subject to Executive Order 12866. In preparing this Report, we reviewed the information contained in GAO reports on benefits and costs of major rules issued by independent agencies for the period of October 1, 2015 to September 30, 2016.[51] GAO reported that 11 agencies issued a total of 18 major rules during this period. (Rules by independent agencies are not subject to OMB review under Executive Order 12866.)

Table 1-10 lists each of these major rules and the extent to which GAO reported benefit and cost estimates for the rule. The majority of rules were issued to regulate the financial sector.

Fourteen of the 18 rules provided some information on the benefits and costs of the regulation. The independent agencies still have challenges in providing monetized estimates of benefits and costs of regulation. Six rules included analyses that monetized costs of some provisions. The costs associated with disclosure related provisions have been largely monetized because of the requirements of the Paperwork Reduction Act; the costs associated with provisions that change how the markets are regulated are not generally monetized. No rule presents any monetized benefit estimates. In light of the limited information provided by the GAO, the Office of Management and Budget does not know whether the rigor of the analyses conducted by these agencies is similar to that of the analyses performed by agencies subject to OMB review.

[50] Pub. L. No. 104-121.

[51] In practice, a rule was considered "major" for the purposes of the report if (a) it was estimated to have either annual costs or benefits of $100 million or more or (b) it was likely to have a significant impact on the economy.

The agencies in question are independent under the law; existing Executive Orders generally do not require independent agencies to submit their regulations for review or to engage in analysis of costs and benefits. We emphasize, however, that for the purposes of informing the public and obtaining a full accounting, it would be highly desirable to obtain better information on the benefits and costs of the rules issued by independent agencies. The absence of such information is a continued obstacle to transparency, and it might also have adverse effects on public policy. Consideration of costs and benefits is a pragmatic instrument for ensuring that regulations will improve social welfare; an absence of information on costs and benefits can lead to inferior decisions.

OMB provides in Appendix C of this Report a summary of the information available on the regulatory analyses for major rules by the independent agencies over the past ten years. This summary is similar to the ten-year lookback for regulation included in recent Reports. It examines the number of major rules promulgated by independent agencies as reported to the GAO from 2007 through 2016, which are presented in Tables C-1 and C-2.[52]

Table 1-10: Major Rules Issued by Independent Regulatory Agencies, October 1, 2015 - September 30, 2016

Agency	Rule	Information on Benefits or Costs	Monetized Benefits	Monetized Costs
Consumer Financial Protection Bureau	Operations in Rural Areas under the Truth in Lending Act (Regulation Z); Interim Final Rule (81 FR 16074)	Yes	No	No
Commodity Futures Trading Commission	Margin Requirements for Uncleared Swaps for Swap Dealers ad Major Swap Participants—Cross Border Application of the Margin Requirements; Interim Final and Final Rules (81 FR 636, 81 FR 34818)	Yes	No	No
Department of Energy, Federal Energy Regulatory Commission	Revised Critical Infrastructure Protection Reliability Standards (81 FR 4177)	No	No	No
Department of Treasury, Office of the Comptroller of the Currency; Federal Reserve System; Federal Deposit Insurance Corporation; Farm Credit Administration; Federal Housing Finance Agency	Margin and Capital Requirements for Covered Swap Entities (80 FR 74840)	Yes	No	No

[52] OMB reconstructed the estimates for this period based on GAO reports. Prior to the 2003 Report, OMB did not report on independent agency major rules on a fiscal year basis, but rather on an April-March cycle. Similar to last year, OMB is reporting all of the rules from 2007 through 2016 on a fiscal year basis (see Table C-1). The number of rules presented in earlier Reports may therefore not match the number of rules presented here.

Agency	Rule	Information on Benefits or Costs	Monetized Benefits	Monetized Costs
Department of Treasury, Office of the Comptroller of the Currency; Federal Reserve System; Federal Deposit Insurance Corporation; Farm Credit Administration; Federal Housing Finance Agency	Margin and Capital Requirements for Covered Swap Entities; Interim and Final Rules (80 FR 74916, 81 FR 50605)[53]	Yes	No	No
Department of Treasury, Office of the Comptroller of the Currency	OCC Guidelines Establishing Standards for Recovery Planning By Certain Large Insured National Banks, Insured Federal Savings Associations, And Insured Federal Branches: Technical Amendments (81 FR 66791)	Yes	No	No
Federal Deposit Insurance Corporations	Assessments (81 FR 16059)	Yes	No	Yes
Federal Reserve System	Extensions of Credit by Federal Reserve Banks (80 FR 78959)	No	No	No
Federal Reserve System	Federal Reserve Bank Capital Stock (81 FR 9082)	No	No	No
National Credit Union Administration	Member Business Loans; Commercial Lending (81 FR 13530)	No	No	No
Nuclear Regulatory Commission	Revision of Fee Schedules; Fee Recovery for Fiscal Year 2016 (81 FR 41171)	Yes	No	No
Securities and Exchange Commission	Amendments to the Commission's Rules of Practice (81 FR 50212)	Yes	No	No
Securities and Exchange Commission	Business Conduct Standards for Security-Based Swap Dealers and Major Security-Based Swap Participants (81 FR 29960)	Yes	No	Yes
Securities and Exchange Commission	Crowdfunding (80 FR 71388)	Yes	No	No
Securities and Exchange Commission	Disclosure of Payments by Resource Extraction Issuers (81 FR 49360) [54]	Yes	No	Yes

[53] These interim and final rules provide for some exemptions from the margin requirements established in the identically named rule listed in the row above.

[54] This rule has been disapproved by Congress, using its authority under the Congressional Review Act, and is therefore not in effect.

Agency	Rule	Information on Benefits or Costs	Monetized Benefits	Monetized Costs
Securities and Exchange Commission	Security-Based Swap Transactions Connected with a Non-U.S. Person's Dealing Activity that are Arranged, Negotiated, or Executed by Personnel Located in a U.S. Branch or Office or in a U.S. Branch or Office of an Agent; Security-Based Swap Dealer De Minimis Exception (81 FR 8598)	Yes	No	Yes
Securities and Exchange Commission	Simplification of Disclosure Requirements for Emerging Growth Companies and Forward Incorporation by Reference on Form S-1 for Smaller Reporting Companies; Interim Final Rule (81 FR 2743)	Yes	No	Yes
Securities and Exchange Commission	Standards for Covered Clearing Agencies (81 FR 70786)	Yes	No	Yes

Chapter II: The Impact of Federal Regulation on State, Local, and Tribal Governments, Small Business, Wages and Employment, and Economic Growth

Section 624(a)(2) of the Regulatory Right-to-Know Act requires OMB to present an analysis of the impacts of Federal regulation on State, local, and tribal governments, small business, wages, and economic growth.

Measuring these and other impacts of regulatory actions involves measuring the value of behavior changes that will otherwise occur as a result of compliance. For example, if the regulated entities are required to install pollution abatement equipment which they would not have installed in the absence of a regulation, the behavioral change is the installation and operation of the pollution abatement equipment. If the regulated entities are required to stop selling some of their products, the behavioral change is the suspension of the sale of the regulated products. As stated in OMB Circular A-4, "the use of any resource has an opportunity cost regardless of whether the resource is already owned or has to be purchased. That opportunity cost is equal to the net benefit the resource would have provided in the absence of the requirement." [55]

If the effect of a regulatory action is limited to small markets with limited availability of substitute or complementary goods, it may be sufficient to analyze the effect in the regulated market using partial equilibrium analysis. If the regulatory action affects multiple goods or sectors of the market, the effects may be analyzed using partial equilibrium analysis linking the affected sectors. If the regulatory action affects the entire economy or significant portions of the economy, general equilibrium analysis would be suitable to analyze the costs.

A. Impacts on State, Local, and Tribal Governments

In the United States, State and local governments have the primary role in providing domestic public services, such as public education, law enforcement, road building and maintenance, water supply, and sewage treatment. The Federal Government contributes to that role by promoting a healthy economy and by providing grants, loans, and tax subsidies to State and local governments. However, State, local, and tribal governments can have difficulty complying with Federal mandates without additional Federal resources.

In response, Congress passed the Unfunded Mandates Reform Act of 1995 (UMRA, or "the Act"). Title II of this Act, which addresses the Executive Branch, begins with a general directive for agencies to assess, unless otherwise prohibited by law, the effects of their rules on other levels of government and on the private sector. Title II also describes specific analyses and consultations that agencies must undertake for rules that may result in expenditures of over $100 million (adjusted annually for inflation) in any year by State, local, and tribal governments in the aggregate, or by the private sector.

[55] https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/regulatory_matters_pdf/a-4.pdf

Over the past ten years, the following rules have imposed costs of more than $100 million per year (1995$) on State, local, and tribal governments and have been classified as public sector mandates under the Act:[56]

- *DHS's Chemical Facility Anti-Terrorism Standards Rule* (2007): This rule establishes risk-based performance standards for the security of our nation's chemical facilities. It requires covered chemical facilities to prepare Security Vulnerability Assessments (SVAs), which identify facility security vulnerabilities, and to develop and implement Site Security Plans (SSPs), which include measures that satisfy the identified risk-based performance standards. The rule also provides DHS with the authority to seek compliance through the issuance of Orders, including Orders Assessing Civil Penalty and Orders for the Cessation of Operations. DHS has determined that this rule constitutes an unfunded mandate on the private sector. In the regulatory impact assessment published with this rule, DHS estimates that there are 1,500 to 6,500 covered chemical facilities. DHS also assumes that this rule may require certain municipalities that own and/or operate power generating facilities to purchase security enhancements. Although DHS is unable to determine if this rule will impose an enforceable duty upon State, local, and tribal governments of $100 million (adjusted annually for inflation) or more in any one year, it has been included in this list for the sake of completeness.

- *EPA's National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards for Performance for Electric Utility Steam Generating Units [MATS] (2011)*: The MATS rule will reduce emissions of hazardous air pollutants (HAP), including mercury, from public and private fossil fuel-powered electric power generating units, by setting maximum achievable control technology standards. The annualized estimated cost is $9.6 billion (2007$, using discount rates of 3% and 7%). The lower annualized estimated benefit is $33 billion (2007$, 7% discount rate); the higher $90 billion (2007$, 3% discount rate). The annualized net compliance cost to state, local, and tribal government entities is approximately $294 million in 2015.

- *USDA's Nutrition Standards in the National School Lunch and School Breakfast Programs (2012)*: This rule updates the meal patterns and nutrition standards for the National School Lunch and School Breakfast Programs to align them with the Dietary Guidelines for Americans. This rule requires most schools to: (1) increase the availability of fruits, vegetables, whole grains, and fat-free and low-fat fluid milk in school meals; (2) reduce the levels of sodium, saturated fat and *trans* fat in meals; and (3) meet the nutrition needs of school children within their calorie requirements.

[56] We note that EPA's 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 of compliance with Section 202 must be conducted "unless otherwise prohibited by law." 2 U.S.C. § 1532 (a). 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." H.R. Conf. Rep. No. 104-76 at 39 (1995). EPA has stated, and the courts have affirmed, that under the Clean Air Act, the criteria air pollutant ambient air quality standards are health-based and EPA is not to consider costs in setting the standards.

USDA estimates $479 million in annual costs for the Local School Food Authorities and training, technical assistance, monitoring, and compliance costs for the State Education Agencies.

- *CMS's Patient Protection and Affordable Care Act; Benefit and Payment Parameters for 2014 (issued FY2013), for 2015 (issued FY2014), for 2016 (issued FY2015), for 2017 (issued FY2016)*: These final rules provide detail and parameters related to various aspect of Affordable Care Act implementation, including: the risk adjustment, reinsurance, and risk corridors programs; cost-sharing reductions; user fees for Federally-facilitated Exchanges; advance payments of the premium tax credit; the Federally-facilitated Small Business Health Option Program; and the medical loss ratio program. Although HHS has not been able to quantify the user fees that will be associated with these rules, the combined administrative cost and user fee impact may be high enough to constitute a State, local, or Tribal government mandate under UMRA.

- *DOL's Defining and Delimiting the Exemptions for Executive, Administrative, Professional, Outside Sales and Computer Employees (2016)*: The Department of Labor divides salaried workers into three categories: low-paid workers who must be paid overtime (1.5 times the standard hourly pay rate for any hours over 40 worked in a week) under all conditions; highly compensated workers who are never subject to overtime requirements; and those in the middle who are exempt from overtime if their duties are executive, administrative or professional, and non-exempt otherwise. DOL's 2016 final rule revises the salary thresholds that separate the three categories—at the low end, raising it from $23,660 to $47,476 per year, and at the high end, raising it from $100,000 to $134,004—and newly requires that the thresholds be indexed every three years to account for inflation. Employee remuneration impacts and compliance costs are estimated to be well over $100 million annually. In addition to certain private sector industries, some local government entities will be substantially affected by the rulemaking.[57]

Although these rules were the only ones over the past ten-year period to require public sector mandates under UMRA on State, local, and tribal governments exceeding $100 million (adjusted for inflation), they were not the only rules with impacts on other levels of governments. For example, many rules had monetary impacts lower than the $100 million threshold, and agencies are also required to consider the federalism implications of rulemakings under Executive Order 13132.

B. Impact on Small Business

The need to be sensitive to the impact of regulations and paperwork on small business was recognized in Executive Order 12866 and the Regulatory Right-to-Know Act calls for an analysis of the effects of regulations on small business. The Executive Order directs agencies to tailor their regulations by business size in order to impose the least burden on society, consistent

[57] In late 2016, a federal judge issued a preliminary injunction blocking implementation of the rule.

with the achievement of regulatory objectives. It also calls for the development of short, or more simplified, forms and other efficient regulatory approaches for small businesses and other entities.

In the findings section of SBREFA, Congress states that "small businesses bear a disproportionate share of regulatory costs and burdens."[58] When relevant regulations are issued, each firm must determine whether a regulation applies, how to comply, and whether it is in compliance. For small businesses, making that determination may impose significant costs. As firms increase in size, fixed costs of regulatory compliance are spread over a larger revenue and employee base, which may result in lower regulatory costs per unit of output.

In recognition of these principles, many statutes and regulations explicitly attempt to reduce burdens on small businesses, in part to promote economic growth and in part to mitigate against unnecessary or unjustified costs and adverse effects on employment and wages. For example, agencies frequently tailor regulations to limit the costs imposed on small businesses and to offer regulatory relief, including explicit exemptions for small businesses and slower phase-in schedules, allowing adequate periods of transition. Moreover, the Regulatory Flexibility Act (RFA) requires agencies to assess the effect of regulations on small businesses.[59] Generally, under the RFA, whenever an agency concludes that a particular regulation, if promulgated, will have a significant economic effect on a substantial number of small entities and the agency is or was required by law to publish a notice of proposed rulemaking, the agency must prepare both an initial and final regulatory flexibility analysis. This analysis must include (among other things) an assessment of the likely burden of the rule on small entities and an analysis of alternatives that may afford relief to small entities while achieving the regulatory goals. OMB works closely with agencies to promote compliance with the RFA and to encourage agencies to tailor regulations to reduce unjustified costs and to include appropriate flexibilities. Such flexibilities may include delayed compliance dates, simplified reporting requirements, and partial or total exemptions.

Chelius and Smith lay out a conceptual framework to analyze the potential effect of regulation on firms of different sizes.[60] The first effect is "compliance effect," where the effect measures the "cost of output of meeting the regulatory standard."[61] As discussed above, many statutes and regulations recognize that small businesses don't have larger output, revenue or employee base to spread the compliance costs, thereby resulting in higher per unit cost of compliance. The second effect is "enforcement effect," where regulatory agencies may choose to implement and enforce their regulations differently across firm sizes, and firms of different sizes may engage in political process.[62]

The empirical evidence of the effects of regulation on small businesses remains less than clear. In previous Reports, we have cited research by the Small Business Administration (SBA) Office of Advocacy, suggesting that small entities disproportionately shoulder regulatory and

[58] Section 202(2) of Pub. L. No. 104-121.
[59] 5 U.S.C. §§ 601-612.
[60] Chelius and Smith (1987).
[61] Chelius and Smith (1987), p. 193.
[62] Chelius and Smith (1987), p. 193.

paperwork burdens. The Office of Advocacy has sponsored at least five studies that estimate the burden of regulation on small businesses.[63] For example, a study by Dean, et al., concludes that environmental regulations act as barriers to entry for small firms.[64]

Thomas finds that FDA regulations adversely affected research productivities for smaller pharmaceutical companies as compared to largest pharmaceutical companies.[65] Using R&D expenditures as a proxy for firm size and using three split samples, the larger pharmaceutical companies appear to achieve higher sales of new drugs relative to smaller pharmaceutical companies from 1963 through 1980, although this effect becomes not statistically significant when the split samples are pooled.[66] Thomas attributes the changes in sales of new drugs to FDA regulations.

Chelius and Smith examine the cost differential across differently sized firms' required purchase of commercially available workers' compensation insurance.[67] One of the aims of mandated workers' compensation insurance purchase by firms is to internalize the costs of occupational injuries and illnesses.[68] The paper concludes that the "very smallest firms face the highest workers' compensation costs per dollar of loss, but that this cost differential reflects the relatively high overhead costs of serving them"[69] and "the ratio of premiums to losses (P/L) is U-shaped across firm-size groups."[70]

Although the focus of the research wasn't solely on the effect of regulation on small business, Deily and Gray find some evidence that for steel plants during the 1980s, EPA enforcement was less for plants owned by larger firms and more profitable firms and the opposite was true to OSHA inspections.[71]

Other studies have found more mixed results. Becker examined the effect of air pollution regulation on firms of various sizes and found that although "progressively larger facilities had progressively higher unit abatement costs, ceteris paribus,"[72] the relationship between firm size and pollution abatement costs varies depending on the regulated pollutant. For troposphere ozone, the regulatory burden seems to fall substantially on the smallest three quartiles of plants. For SO_x, the relationship between regulatory burden and the firm size seems to be U-shaped. For total suspended particles, new multi-unit emitting plants in the smallest size class had $265 more capital expenditure (per $10,000 of value added) in non-attainment counties than similar plants in attainment counties, while "those in the larger size classes had an additional $511-687 in expenditure…though the rise was not monotonic."[73] More recent work by Becker, Pasurka and Shadbegian, which focuses on the relationship between establishment

[63] See Hopkins (1995); Dean, et al. (2000); Crain and Hopkins (2001); Crain (2005); and Crain and Crain (2010).
[64] Dean, et al. (2000).
[65] Thomas (1990).
[66] Thomas (1990), p. 511.
[67] Chelius and Smith (1987).
[68] Chelius and Smith (1987), p. 194.
[69] Chelius and Smith (1987), p. 201.
[70] Chelius and Smith (1987), p. 201.
[71] Deily and Gray (2007), p. 703.
[72] Becker (2005), p. 163.
[73] *Id*., p. 165.

size and spending on pollution abatement, finds that "spending on pollution abatement operating costs per unit of output increases with establishment size."[74] In particular, they find that the very largest establishments (with 1000+ employees) spend between $1.92 and $5.61 more on pollution abatement operating costs per $1000 of output than the establishments with 1-19 employees.

The evidence in the literature remains preliminary, inconclusive, and mixed. OMB continues to investigate the evolving literature on the relevant questions in order to obtain a more precise picture. It is clear, however, that some regulations are likely to have significant adverse effects on small business and that it is appropriate to take steps to create flexibility in the event that those adverse effects cannot be justified by commensurate benefits. Agencies should specifically explain any refusal to take such steps, especially in light of the importance of small businesses and startups for economic growth and job creation.

C. Impact on Wages and Employment

Regulation of many different markets and areas of activity can ultimately affect labor markets, producing changes in wages and employment levels. Some regulations can have adverse effects on one or both dimensions, other regulations might produce benefits, and some regulations may contribute to wage and/or employment losses in one sector but gains in other sectors. The relevant effects can be quite complex, since in general equilibrium, regulation in one area can have ripple effects across many markets, making it difficult to predict or measure aggregate effects.

Executive Order 12866 states that regulatory impact analyses should include assessments of regulations' effects on the functioning of the economy and on employment. OMB continues to believe that it is important for regulatory agencies to attempt, to the extent feasible, to consider the employment effects (whether negative or positive) of their regulations. However, when assessing the effects of regulations on employment and applying those assessments to policy decisions, there are several potential pitfalls:

- Expecting a precise, measurable impact from most individual regulations. Only a small fraction of individual regulations or agency actions will have a large enough effect to allow for measurement of changes in gross domestic product (GDP) or national employment. It is the cumulative sum over time of many small changes that is much more likely to be significant in these areas.

- Ignoring long-run or indirect impacts. Many regulatory actions have direct, short-run effects that are mitigated by long-run market adjustments. For example, businesses sometimes shut down as a result of a regulation; because jobs are temporarily lost, a short-run, industry-specific job-counting model would give the impression that regulation reduces employment. Alternatively, firms may need to hire new workers to perform activities necessary for coming into compliance with a regulation; in this case, the same job-counting model would give an impression that regulation increases employment. In addition, firms that produce goods or services that are substitutes for

[74] Becker, Pasurka and Shadbegian (2013), p. 535.

the outputs from regulated firms may increase employment to an extent that significantly offsets employment losses for regulated firms. Apparent reductions or increases in employment often will, in the medium or long run, turn out to be shifts in employment between economic sectors.[75]

- Ignoring the importance of timing. With employment-related policy goals, timing is often essential; spurring job creation is much more desirable during an economic downturn than during expansionary portions of the business cycle. Regulatory development, meanwhile, typically involves years of assessing evidence on the need for and effect of regulation; also, once issued, many regulations will remain effective indefinitely. Given their development and effectiveness timeframes, very few regulations that were originally motivated by policy goals unrelated to employment will be well-suited to targeting job creation when it is most needed.[76]

We discuss below the effect of labor market regulations, environmental regulations, and economic regulations on wages and employment. OMB continues to investigate the possibility that certain kinds of regulations can have adverse effects on job creation in particular, and is interested both in empirical work and in taking steps to reduce or eliminate such adverse effects.

1. Labor market regulations.

There are many different types of labor market regulations, aiming to address certain market failures, e.g., information asymmetries and externalities, and equity concerns. Perhaps the most obvious types of labor market regulation are direct price controls, such as minimum wage laws and regulations. Other types of labor market regulations mandate employer-provided benefits, protect worker health and safety, prohibit worker discrimination, or govern the ability of workers or firms to bargain collectively.

Labor markets are driven by many dynamic, simultaneous economic forces, therefore the employment and wage effects of any single regulation are quite difficult to disentangle, even for those regulations directly focused on labor markets. Economic theory provides a framework for analyzing the potential impacts of labor market regulation on employment and wages. In the basic theory framework, labor markets are assumed to function perfectly: labor supply and demand are equal at the market wage, without externalities, frictions or adjustment costs, or missing or imperfect information. Summers (1989) presents a standard theoretic approach for evaluating the economics of mandated employer benefits. This standard supply and demand model can be extended to address more complicated features of labor markets.

Using a standard price-theoretic model, mandatory workplace safety regulation will shift the labor supply curve down by the amount that workers value the increase in safety, so that workers are willing to supply more labor for a given wage than in the absence of the regulation.[77] Because it imposes compliance costs on employers, the regulation also shifts the

[75] Examples may be seen in a variety of areas, including tobacco (Warner et al., 1996), water resource investment (Haveman and Krutilla, 1967) and many others.
[76] See Ferris and McGartland (2013) for further discussion of the difficulty of projecting the timing of effects.
[77] Summers (1989).

labor demand curve down by the amount of the compliance cost. If workers value the mandated benefit at more than it costs employers to provide the benefit, then both the employment level and monetary compensation plus the value of non-monetary benefits such as safety will rise. Under standard assumptions, employers have incentives to provide such benefits, but various market failures may result in suboptimal provision of such benefits. Conversely, if workers value the mandated benefit at less than its cost, then the employment level and net wages will fall. This simple model assumes that wages can indeed perfectly adjust downwards in response to the mandated benefits—but if wages are sticky (more likely to be the case in the short-run), then the regulation could result in a decrease in employment levels and an increase in monetary compensation plus the value of non-monetary benefits.

2. Environmental regulation.

New or more stringent environmental regulations may raise production costs thereby reducing production, which in turn leads to lower employment ("output effect"). However, it is also conceivable that the new regulation will require more labor input – this will depend on the extent to which the required abatement activities and labor are substitutes or compliments ("abatement activity" effect).[78] Thus, the effects of environmental regulation on the labor market can be difficult to assess. Isolating the effect of environmental regulation on employment is further complicated by the fact that changes in other economic conditions (e.g., recessions, import competition, tax policy) also affect employment over time and across sectors and therefore must be taken into consideration. Moreover, estimating changes in net employment is complicated by the fact that they are comprised of changes in employment in different sectors and while some changes represent potential decreases in employment (i.e., the directly regulated sector and upstream and downstream sectors[79]) some of these changes represent increases in employment (e.g., pollution abatement sector[80]). Therefore, the underlying questions regarding the effect of environmental regulations on labor markets requires careful and continuing conceptual analysis and empirical study, and OMB is following new developments in both areas. In this section we summarize some of the leading articles that are often cited in the academic literature.

Pollution abatement activities can be divided into two basic categories: end-of-pipe (EOP) controls, which remove pollutants from the discharge stream after they are produced (e.g., electrostatic precipitators removing particulates or a waste water treatment plant removing total suspended solids) and change-in-production-process (CIPP) techniques which reduce the amount of waste produced during production (e.g., switching from high to low sulfur coal or increasing the efficiency of boilers). EOP controls will require labor to install them and to operate them, so in this case labor and abatement activities are likely to be complements. On the other hand, CIPP techniques may reduce the amount of labor to operate the plant due to an

[78] See Berman and Bui (2001).

[79] Upstream sectors supply inputs to the regulated sector (e.g., coal mines supplying coal to power plants) and downstream sectors purchase output from the regulated sector (e.g., manufacturing plants purchasing electricity from power plants).

[80] In 2008 the pollution abatement sector, according to the U.S. Department of Commerce (2010), consisted of 119,000 environmental technology (ET) firms which produced roughly $300 billion in domestic revenues (approximately 2% of GDP), and produced exports worth $43.8 billion (roughly 2% of total export).

increase in the capital-labor ratio caused by technological change. Thus the abatement activity effect is ambiguous and therefore standard microeconomic analysis cannot predict a priori whether or not environmental regulations have a negative effect on labor demand in the directly regulated sector. Determining the sign and magnitude of the effect of environmental regulation on labor demand in the directly regulated sector will require empirical studies.

To estimate the net employment impacts of an environmental regulation requires the additional step of estimating the employment impacts of regulation in the upstream and downstream sectors as well as the pollution abatement sector. In many instances environmental regulations generate increased demand by regulated facilities for pollution control equipment and services to bring them into compliance with the regulation. In turn this higher demand could increase employment in the pollution abatement sector, especially in time of high unemployment.[81] On the other hand, while increased employment in the pollution abatement sector is positive for that industry, it represents costs to the directly regulated sector, potentially leading to lower production and associated employment, so determining the net effect is difficult.

There is a broad empirical literature analyzing the effect of environmental regulations on various economic outcomes including productivity, investment, competitiveness as well as environmental performance. On the other hand, there are only a few papers that examine the impact of environmental regulation on employment, but this literature has been growing. Studies that examine the effect of environmental regulation on employment include Berman and Bui,[82] Greenstone,[83] Walker,[84] Gray and Shadbegian,[85] Gray et al.,[86] and Ferris, Shadbegian and Wolverton.[87,88]

Berman and Bui,[89] using plant-level data, estimate the impact of some of the most stringent air quality regulations in the United States enacted by the South Coast Air Quality Management District around Los Angeles from 1979 to 1992. They find that even though regulations impose large costs on plants they only have a very small insignificant effect on employment. According to Berman and Bui, the likely explanation for the small effects is that the regulations disproportionately affect capital-intensive plants with relatively low levels of employment, which sold output mostly to local markets where their competition faced the same level of regulation. Furthermore, they surmised that pollution abatement inputs and employment were complements.

[81] Schmalansee and Stavins (2011).
[82] Berman and Bui (2001).
[83] Greenstone (2002).
[84] Walker (2011).
[85] Gray and Shadbegian (2013).
[86] Gray, et al (2014).
[87] Ferris, Shadbegian, and Wolverton (2014).
[88] All of these studies examine the impact of regulations in the directly regulated sector and do not estimate employment effects in either the upstream, or downstream industries or the pollution abatement sector.
[89] Berman and Bui (2001).

Gray, et al.[90] and Ferris, Shadbegian and Wolverton[91] both use plant-level data to examine the effect of environmental regulations on employment as well. Gray, et al. examine the employment effect of EPA's 1998 Cluster Rule, which regulated both air and water emissions at pulp and paper mills. They find that plants that needed to comply with both the air and water regulations experienced relatively small (3%-7%), but not always statistically significant, decreases in employment. Ferris, Shadbegian and Wolverton estimate the impact of the Phase I of the Title IV SO2 Trading Program on employment at fossil-fired power plants. They find little evidence that fossil-fuel fired power plants experienced significant declines in employment under the Phase I Program compared to non-Phase I power plants. This finding is robust to modeling compliance decisions at the plant- or owning utility-level. Gray and Shadbegian[92] use 4-digit SIC industry level data to examine the impact of environmental regulation, proxied by the percent of output spent on pollution abatement operating costs, on employment in U.S. manufacturing (1973-1994). They find that in most cases more stringent regulations have a statistically significant yet quantitatively small negative effect on employment, with slightly larger effects in the most highly regulated industries.

Aldy and Pizer examine the effects of regulating the electricity sector on the gross employment and competitiveness of 400 manufacturing industries using data from 1986 through 1994.[93] They find no statistically significant relationship between the electricity price and gross employment for low energy intensity manufacturing industries. For industries that are more energy intensive, the gross employment elasticity with respect to electric prices range from -0.2 to -0.3. They also find the employment elasticity due to competitiveness effect ranges between -0.05 and -0.1 for the upper 20% of energy intensive industries. They use the results of their empirical model to simulate the impacts of a power-sector carbon pricing policy. They estimate that a $15 per ton CO_2 price in the power sector would have employment effects of about 0.2 percent for the total manufacturing sector and 1 to 2 percent for energy-intensive manufacturing.

Greenstone[94] examines the difference in employment growth between counties that are designated as being in nonattainment for one or more of the criteria pollutants (particulate matter, sulfur dioxide, ozone and carbon monoxide) and counties in attainment. Regulators impose more stringent regulations on plants in non-attainment areas relative to attainment areas to help bring those areas into compliance. Greenstone finds that these more stringent regulations cause a loss of approximately 590,000 jobs in non-attainment areas relative to attainment areas between 1972 and 1987. Walker finds that employment at plants in newly designated non-attainment areas due to the 1990 Clean Air Act Amendments is 15% lower relative to plants in attainment areas. It's important to note that these findings are related to relative growth rate of employment in some sectors. Additional controls for geographic reallocation of economic activity from non-attainment to attainment areas are needed to refine this research. List et al.

[90] Gray, et al (2014).
[91] Ferris, Shadbegian, and Wolverton (2014).
[92] Gray and Shadbegian (2013).
[93] Aldy and Pizer (2013).
[94] Greenstone (2002).

find that new pollution-intensive plants are less likely to open in non-attainment areas implying that this geographic relocation is most likely occurring.[95]

Environmental regulations may also have a less visible effect on employment, by lowering investment in the U.S. by multinational corporations. Using 17-year panel data, Keller and Levinson find the stringency of environmental regulation (expressed in pollution abatement costs) has "small deterrent effects" on states competing for foreign direct investment.[96] Xing and Kolstad find "using instruments for the unobserved variables, the statistical results show that the laxity of environmental regulations in a host country is a significant determinant of F[oreign] D[irect] I[nvestment] from the U.S. for heavily polluting industries and is insignificant for less polluting industries."[97]

A recent study by Hanna measured the response of U.S.-based multinationals foreign direct investment decisions to the Clean Air Act Amendments using a panel of firm-level data over the period 1966-1999.[98] Consistent with the theory that regulation causes firms to substitute foreign for domestic production, the authors find that in the environmental area, domestic regulation has led U.S.-based multinational companies "to increase their foreign assets in polluting industries by 5.3 percent and their foreign output by 9 percent."[99] The authors also find that these results are more robust for firms that manufactured within an industry for which imports had historically accounted for a large percentage of U.S. consumption (see also Greenstone discussed above). Brunnermeier and Levinson, also using panel data, also find "statistically significant pollution haven effects of reasonable magnitude."[100] Levinson and Taylor's results in examining trade flows and environmental regulation are consistent with these other studies.[101] However, Levinson finds in a recent study that air emissions have been reduced from U.S. manufacturers over the period 1990-2008 without movement of these manufacturers abroad or from reduced production of U.S. manufactured goods.[102]

The evidence on the effect of environmental regulation on employment is both suggestive and mixed. In their review of the literature on the effect of environmental regulation on the manufacturing sector, Jaffe et al. find that "although the long-run social costs of environmental regulation may be significant, including adverse effects on productivity, studies attempting to measure the effect of environmental regulation on net exports, overall trade flows, and plant-location decisions have produced estimates that are either small, statistically insignificant, or not robust to tests of model specification."[103] Additional work is needed in this area, and Ferris and McGartland suggest a program of conceptual research on how to

[95] List et al. (2003).
[96] Keller and Levinson (2002), p. 691.
[97] Xing and Kolstad (2002), p. 1.
[98] Hanna (2010).
[99] Hanna (2010), p. 160.
[100] Brunnermeier and Levinson (2004), p. 6.
[101] Levinson and Taylor (2008).
[102] Levinson (2015).
[103] Jaffe et al. (1995), p. 157-158.

incorporate employment assessment into benefit-cost framework and empirical research based on the conceptual research.[104]

3. Economic regulation.

Rate regulations and restrictions on entry in product markets—commonly referred to as "economic regulation"—can have important effects on labor markets. As emphasized by Peoples,[105] restrictions on entry into an industry can make unionization of the industry easier because as a result the industry is dominated by a few large firms, which lowers the cost of organizing workers. The resulting high unionization rates give unions in the regulated industries substantial bargaining power, and as a result wages in regulated industries, which historically include trucking, electricity, and airlines, are higher. Moreover, rate regulations that allow firms in these industries to pass costs on to customers may make it easier for unions to bargain for relatively high wages.

To the extent that economic regulation also results in higher prices in the product market, consumers, including workers, will of course have to pay those prices. Blanchard and Giavazzi show in theoretical terms that the increased markups in the product market caused by widespread economic regulation can result in both lower real wages of workers, measured in terms of purchasing power, and lower employment levels.[106] The theoretical negative effect of entry regulation on employment was supported empirically by Bertrand and Kramarz,[107] who examine entry restrictions in the French retail industry and find that they have reduced employment growth in France. Using individual worker information from Current Population Survey files from 1973 through 1988, Peoples and Saunders show that deregulation of the trucking industry led to significant real wage reduction for white drivers.[108]

D. Impact on Economic Growth

Measuring the effects of regulation on economic growth is a complex task. Some forms of national regulation may have a positive effect on growth when they correct market failures as identified by Executive Order 12866 by promoting stable and efficient operation of various markets by improving the availability and symmetry of information, by providing public goods such as improving education, by promoting innovation through funding of basic scientific research, or by upgrading the operation of the transportation system.

Excessive and unnecessary regulations can place undue burdens on companies, consumers, and workers, and may cause growth and overall productivity to slow. While the evidence remains less than entirely clear, some evidence suggests that domestic environmental regulation has led some U.S. firms to invest in other countries, and in that sense, such regulation may have an adverse effect on domestic growth.[109] At the same time, the direct impacts of particular regulations, or categories of regulations, on the overall economy may be difficult to

[104] Ferris and McGartland (2013).
[105] Peoples (1998).
[106] Blanchard and Giavazzi (2003).
[107] Bertrand and Kramarz (2002).
[108] Peoples and Saunders (1993).
[109] See Brunnermeier and Levinson (2004), Levinson and Taylor (2008).

establish because causal chains are difficult to ascertain and because it is hard to control for confounding variables.

If they are not carefully designed, regulations can impose significant costs on businesses, potentially dampening economic competition and capital investment. Djankov et al. find that increased regulations on entry into markets—such as licensing and fees—create higher costs of entry and thus adversely affect economic outcomes.[110] Ardagna and Lusardi, using micro data sets from 40 countries, examine the effects of entry regulation in product markets, regulation of contract enforcement and labor market regulation on entrepreneurs' decisions to start new businesses.[111] For all measures of regulation examined, they find that regulation deters entrepreneurship. By contrast, van Stel et al. find that entry regulations actually have little impact on entrepreneurship, but that regulations creating greater labor rigidity have a discernible negative impact.[112]

Relatively few studies attempt to measure the economic impact of regulations in the aggregate; the literature focuses instead on particular regulatory arenas.[113] The literature examining the effects of environmental regulations in particular is extensive. Here are a few examples:[114]

- Jaffe and Palmer[115] find that increases in compliance costs generated by environmental regulations lead to a lagged effect of increases in research and development expenditures, as measured by patents of new environmental technologies. Other studies provide similar findings. [116] These studies suggest that there may be positive economic effects related to technological innovation in the years following increased environmental regulatory compliance costs. As Jaffe and Palmer argue, "in the aggregate, the disincentives for R&D attributed to a command-

[110] Djankov et al. (2002).
[111] Ardagna and Lusardi (2009)
[112] van Stel et al. (2007). They also find that regulations improving access to credit have a positive impact on entrepreneurship.
[113] One of the few such studies is an analysis by Hahn and Hird (1991), which estimates the net costs of regulations on the economy to be $46 billion in 1988 dollars, with aggregate annual transfer payments between $172.1 and $209.5 billion. But the authors note that their estimates have a wide range of uncertainty due to difficulties in estimation methods and available data. Further, this study is likely to be outdated due to major policy and economic developments in the years since its publication. Dawson and Seater (2013) estimated the effects of regulation by examining the effects on growth of output and total factor productivity (TFP). They conclude that the regulation has substantial and negative effects on output and TFP. EPA (2011) conducted an analysis to examine the macroeconomic effects of the Clean Air Act Amendments using a computable general equilibrium model. They find that output of goods and services decrease as a result of regulations associated with the Clean Air Act Amendments but these decreases are offset by increases in welfare resulting from reductions in medical expenditures and other welfare improvements associated with reduced air pollution-related morbidity and mortality.
[114] Albec et al. (2013) provide a helpful summary of some of this literature. It should be recalled that many environmental regulations affect provision of non-market goods that are not explicitly reflected in standard measures of economic activity. Thus, in addition to the direct economic costs imposed by environmental regulations, these same regulations have social welfare and other non-market impacts that are not captured in these studies.
[115] Jaffe and Palmer (1997).
[116] See Lanoie et al. (2008).

and-control approach to environmental regulation may be overcome by the high returns that regulation creates for new pollution-control technology."[117] These results, however, are noted to be sensitive to the definitions of the time lag and difficulties in specifying research and development models, coding patent types, and linking research and development to overall economic growth.

- Gray and Shadbegian examine the investment activity of paper mills from 1979 to 1990,[118] and they find that "plants with relatively high pollution abatement capital expenditures over the period invest less in productive capital. The reduction in productive investment is greater than the increase in abatement investment, leading to lower total investment at high abatement cost plants. The magnitude of this impact is quite large, suggesting that a dollar of pollution abatement investment reduces productive investment by $1.88 at that plant. This seems to reflect both environmental investment crowding out productive investment within a plant and firms shifting investment towards plants facing less stringent abatement requirements. Estimates placing less weight on within-firm reallocation of investment indicate approximate dollar-for-dollar ($0.99) crowding out of productive investment."[119]
- Becker and Henderson[120] find that in response to ground-level ozone regulation, in polluting industries "birth [of plants] fall dramatically in nonattainment counties, compared to attainment counties…This shift in birth patterns induces a reallocation of stocks of plants toward attainment areas. Depending on the interpretation of reduced-form coefficients, net present value for a typical new plant in a nonattainment area could fall by 13-22 percent."[121]
- Berman and Bui find that during a period of aggressive environmental regulation, productivity *increased* among the petroleum refineries located in the Los Angeles from 1987 to 1992, suggesting that "[a]batement costs may severely overstate the true cost of environmental regulation"[122] and that "abatement associated with the SCAQMD regulations was productivity enhancing."[123]
- Greenstone[124] finds that "in the first 15 years after the [Clean Air Act Amendments] became law (1972-1987, nonattainment counties (relative to attainment ones) lost approximately $37 billion in capital stock and $75 billion (1987 dollars) of output in polluting industries)" through reduced growth of pollution intensive industries.[125] However, Greenstone notes that these impacts remain modest in comparison to the size of the national manufacturing sector. Further, these results indicate statistically significant economic costs associated with carbon monoxide regulations but not with

[117] Jaffe & Palmer (1997), at 618.
[118] Gray & Shadbegian (1998).
[119] *Id.* at 254-255.
[120] Becker & Henderson (2000).
[121] *Id.* at 414-415.
[122] Berman and Bui (2001a), at 509.
[123] *Id.* at 499. SCAQMD is South Coast Air Quality Management District.
[124] Greenstone (2002).
[125] *Id.* at 1213.

ozone or sulfur dioxide regulations.

- List, et al., examined the effects of air quality regulation stringency and location decisions of new plants in New York State from 1980 to 1990, and found that regulatory stringency and the decision to locate is negatively correlated, and the current parametric estimates of this negative correlation may be understated.[126]
- As noted above, Hanna[127] finds that domestic environmental regulation has had an effect in increasing the outbound foreign direct investment of U.S.-based multinational firms. The results include an increase in foreign investments in polluting industries by 5.3 percent and in foreign output by 9 percent; the results are concentrated in manufacturing.
- Greenstone, List, and Syverson[128] analyze plant-level production data to estimate the effects of environmental regulations on manufacturing plants' total factor productivity (TFP) levels. Using the Clean Air Act Amendments' division of counties into pollutant-specific nonattainment and attainment categories, they find that among surviving polluting plants, a nonattainment designation is associated with a roughly 2.6 percent decline in TFP.

Outside of the context of environmental regulation, a number of studies find that some regulations have promoted economic growth and otherwise had desirable economic effects. For example, Carpenter finds that certain approaches to entry regulation – such as the discretionary approval regimes used by the Food and Drug Administration – can actually increase economic activity by establishing credible expectations of fairness and product safety.[129] Similarly, Greenstone et al.[130] find that disclosure rules in the securities industry can reduce the adverse effects of informational asymmetries and increase market confidence. Their study finds that the 1964 Securities Act Amendments generated $3-6 billion of asset value for shareholders as a result of increased investment activity. According to their evidence, higher levels of investor protection and disclosure requirements are associated with the higher valuation of equities.[131]

OMB continues to investigate the underlying question of how regulations impact economic growth; no clear consensus has emerged. Further work of the sort outlined here might ultimately make it possible to connect regulatory initiatives to changes in GDP and also to changes in well-being under various measures.

[126] List et al. (2003).
[127] Hanna (2010).
[128] Greenstone, List and Syverson (2011).
[129] Carpenter (2009). For more historical and formal modeling approaches to this same argument, see, e.g., Carpenter (2004) and Carpenter & Ting (2007).
[130] Greenstone, et al. (2006).
[131] *Id.* See also La Porta et al. (1999).

Chapter III: Recommendations for Reform

The Regulatory Right-to-Know Act charges OMB with making "recommendations to reform inefficient or ineffective regulatory programs." This year's set of recommendations focuses on Executive Order (EO) 13771, "Reducing Regulation and Controlling Regulatory Costs," and EO 13777, "Presidential Executive Order on Enforcing the Regulatory Reform Agenda."[132] EO 13771 sets forth the following requirements:

- "Unless prohibited by law, whenever an executive department or agency . . . publicly proposes for notice and comment or otherwise promulgates a new regulation, it shall identify at least two existing regulations to be repealed." Sec. 2(a).
- "For fiscal year 2017 . . . the heads of all agencies are directed that the total incremental cost of all new regulations, including repealed regulations, to be finalized this year shall be no greater than zero, unless otherwise required by law or consistent with advice provided in writing by the Director of the Office of Management and Budget . . . ." Sec. 2(b).
- "In furtherance of the requirement of subsection (a) of this section, any new incremental costs associated with new regulations shall, to the extent permitted by law, be offset by the elimination of existing costs associated with at least two prior regulations." Sec. 2(c).

Beginning with FY 2018, Section 3(d) requires the Director of OMB to identify to agencies a total amount of incremental costs (or "regulatory cap" as stated in Section 2) for all deregulatory and regulatory actions finalized during the fiscal year. The total incremental cost imposed by each agency should not exceed the agency's allowance for that fiscal year, unless required by law or approved by the Director. The total incremental cost allowance may be an increase or reduction in total regulatory cost, and will be informed by agencies' draft submissions for the *Regulatory Plan*.[133]

EO 13777 provides direction for agencies regarding how to select which existing requirements to repeal or revise. EO 13777 establishes Regulatory Reform Task Forces in agencies, and directs those task forces to prioritize revising regulations that:

- Eliminate jobs, or inhibit job creation;
- Are outdated, unnecessary, or ineffective;
- Impose costs that exceed benefits;
- Create a serious inconsistency or otherwise interfere with regulatory reform initiatives and policies;
- Are inconsistent with the requirements of section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note), or the guidance issued pursuant to that provision, in particular those regulations that rely in whole or in part

[132] https://www.federalregister.gov/documents/2017/02/03/2017-02451/reducing-regulation-and-controlling-regulatory-costs and https://www.gpo.gov/fdsys/pkg/FR-2017-03-01/pdf/2017-04107.pdf

[133] Reporting on agencies' success at meeting their cost allowances may appear in future editions of this chapter.

on data, information, or methods that are not publicly available or that are insufficiently transparent to meet the standard for reproducibility; or
- Derive from or implement EOs or other Presidential directives that have been subsequently rescinded or substantially modified.

EO 13777 further directs each Regulatory Reform Task Force to seek input and other assistance, as permitted by law, from entities significantly affected by Federal regulations, including State, local, and tribal governments, small businesses, consumers, non-governmental organizations, and trade associations. Input from such public engagement may be used to prioritize recommendations to repeal or revise.

Finally, where the costs of a regulatory action will be incurred entirely or to a large degree by a certain sector or geographic area, EO 13771 directs agencies to prioritize deregulatory actions that affect the same sector or geographic area, to the extent feasible and permitted by law.

Previous Regulatory Lookback Efforts

EOs 13771 and 13777 together set out a new implementation approach for an idea that has been recognized for several decades—the need to reassess regulations that were issued in the past. Even though multiple statutes and executive orders require agencies to analyze draft regulations' expected future costs and benefits, such prospective analyses can never fully capture all uncertainties and future changes in the regulated industries and communities. Therefore, estimated impacts may either under- or overstate the actual costs and benefits of regulations.

Presidential Administrations as far back as the late 1970s have called on federal agencies to carefully reassess regulatory costs and benefits to determine whether regulation is warranted in its original form despite changing circumstances. Two of the most notable calls for such regulatory lookback appear in EO 12866, issued in 1993, and EO 13563, issued in 2011. However, in spite of this emphasis on retrospective review, some commentators have deemed the results "superficial" and called for offset requirements, such as the ones later encompassed in EO 13771, as a means of achieving more meaningful regulatory reform.[134]

Continued Commitment to Regulatory Cost-Benefit Analysis, as Required Under EO 12866

While EOs 13771 and 13777 govern regulatory reform efforts, cost-benefit analysis as required by EO 12866 remains the primary analytical tool to inform specific regulatory decisions. Accordingly, except where prohibited by law, agencies must continue to assess and consider both the benefits and costs of regulatory and deregulatory actions, and issue such actions only upon a reasoned determination that benefits justify costs.

[134] Dudley, Susan. "A Retrospective Review of Retrospective Review," The George Washington University Regulatory Studies Center, May 7, 2013, https://regulatorystudies.columbian.gwu.edu/sites/regulatorystudies.columbian.gwu.edu/files/downloads/20130507-a-retrospective-review-of-retrospective-review.pdf.

Although the cost-benefit analysis of a deregulatory action will share many methods and inputs with the analysis conducted at the time of issuance of the regulation that is being revised or repealed, there are also differences. As noted in OMB's EO 13771 implementation guidance, one such difference is that only cost changes occurring after the effective date of a regulatory revision should be the basis for the deregulatory action's cost savings estimate (i.e., agencies should not count sunk costs of the original regulation).[135]

For benefits, methods of estimation may also change. Unlike cost quantification, which often has as its key inputs goods and services whose market prices are observable, benefits quantification frequently relies upon monetization techniques that are less direct. Monetization approaches can reflect either willingness-to-pay (WTP)—the amount that individuals would choose to pay to obtain some improvement over what they would otherwise experience—or willingness-to-accept (WTA)—the amount that individuals would accept in exchange for allowing some harm relative to what they would otherwise experience. Prospective analyses are typically applied to policies meant to improve conditions for consumers, workers or other individuals, thus making WTP the most suitable measure; indeed, OMB Circular A-4, which is primarily a guide to performing prospective analysis, emphasizes WTP over WTA.[136] For certain deregulatory actions, however, willingness-to-accept estimates, if available, may be more appropriate.

Request for Comments

This Administration will continue to place an emphasis on deregulation. OMB specifically requests comment on whether and how this Report could be used to further explain and provide information to the public about those efforts, including agency efforts under Executive Orders 13771 and 13777. Among other things, we are considering whether and how to use this regulatory reform section to update the public, in a systematic way, on the impacts and outcomes of agency reform efforts.

[135] https://www.whitehouse.gov/the-press-office/2017/04/05/memorandum-implementing-executive-order-13771-titled-reducing-regulation

[136] https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/regulatory_matters_pdf/a-4.pdf

PART II: TWENTIETH ANNUAL REPORT TO CONGRESS ON AGENCY COMPLIANCE WITH THE UNFUNDED MANDATES REFORM ACT

Introduction

This report represents OMB's twentieth annual submission to Congress on agency compliance with the Unfunded Mandates Reform Act of 1995 (UMRA). This report on agency compliance with the Act covers the period of October 2015 through September 2016; rules published before October 2015 are described in previous years' reports.

Since 2001, this report has been included in our final Report to Congress on the Benefits and Costs of Federal Regulations. This is done because the two reports together address many of the same issues. Both reports also highlight the need for regulating in a responsible manner, accounting for benefits and costs and taking into consideration the interests of our intergovernmental partners.

State and local governments have a vital constitutional role in providing government services. They have the primary role in providing domestic public services, such as public education, law enforcement, road building and maintenance, water supply, and sewage treatment. The Federal Government contributes to that role by promoting a healthy economy and by providing grants, loans, and tax subsidies to State and local governments. However, State, local, and tribal governments have expressed concerns about the difficulty of complying with Federal mandates without additional Federal resources.

In response, Congress passed the Unfunded Mandates Reform Act of 1995 (UMRA, or "the Act"). Title I of the Act focuses on the Legislative Branch, addressing the processes Congress should follow before enactment of any statutory unfunded mandates. Title II addresses the Executive Branch. It begins with a general directive for agencies to assess, unless otherwise prohibited by law, the effects of their rules on the other levels of government and on the private sector (Section 201). Title II also describes specific analyses and consultations that agencies must undertake for rules that may result in expenditures of over $100 million (adjusted annually for inflation) in any year by State, local, and tribal governments in the aggregate, or by the private sector.

Specifically, Section 202 requires an agency to prepare a written statement for intergovernmental mandates that describes in detail the required analyses and consultations on the unfunded mandate. Section 205 requires that for all rules subject to Section 202, agencies must identify and consider a reasonable number of regulatory alternatives, and then generally select the least costly, most cost-effective, or least burdensome option that achieves the objectives of the rule. Section 205 does not apply if the agency head explains in the final rule why such a selection was not made or if such a selection would be inconsistent with law.

Title II requires agencies to "develop an effective process" for obtaining "meaningful and timely input" from State, local and tribal governments in developing rules that contain significant intergovernmental mandates (Section 204). Title II also singles out small

governments for particular attention (Section 203). OMB's guidelines assist Federal agencies in complying with the Act and are based upon the following general principles:[137]

- Intergovernmental consultations should take place as early as possible, beginning before issuance of a proposed rule and continuing through the final rule stage, and be integrated explicitly into the rulemaking process;
- Agencies should consult with a wide variety of State, local, and tribal officials;
- Agencies should prepare an estimate of direct benefits and costs for use in the consultation process;
- The scope of consultation should reflect the cost and significance of the mandate being considered;
- Effective consultation requires trust and significant and sustained attention so that all who participate can enjoy frank discussion and focus on key priorities; and
- Agencies should seek out State, local, and tribal views on costs, benefits, risks, and alternative methods of compliance and whether the Federal rule will harmonize with and not duplicate similar laws in other levels of government.

Federal agencies have been actively consulting with states, localities, and tribal governments in order to ensure that regulatory activities were conducted consistent with the requirements of UMRA (a description of agency consultation activities will be included in the final version of this Report).

The remainder of this report lists and briefly discusses the regulations issued from October 1, 2015, to September 30, 2016, which impose expenditures meeting the Title II threshold. Whether these regulations are subject to Sections 202 and 205 of the Act is contingent upon how a key exemption of UMRA is interpreted. More specifically, under UMRA, enforceable duties "arising from participation in a voluntary Federal program" do not qualify as mandates triggering Sections 202 and 205. In several instances, UMRA refers to Federal programs that provide funding to state, local or tribal governments, so a narrow interpretation of this exemption would equate "Federal program" with "Federal financial assistance program." However, the Act does not provide a formal definition, so "Federal program" could be interpreted more broadly; for example, if federal contracting is a "Federal program," then major regulations that apply only to federal contractors would not be subject to UMRA due to the voluntary nature of participation in contracting. Below, we note a number of FY 2016 regulations for which UMRA status is contingent upon interpretation of the "Federal program" exemption.

In FY 2016, Federal agencies issued 28 final rules that were subject to Sections 202 and 205 of the Unfunded Mandate Reform Act of 1995 (UMRA), as they required expenditures by State, local or tribal governments, in the aggregate, or by the private sector, of at least $100

[137] OMB, Memorandum for the Heads of Executive Departments and Agencies, M-95-09, "Guidance for Implementing Title II of S.1," 1995, available at http://obamawhitehouse.archives.gov/sites/default/files/omb/memoranda/m95-09.pdf.

million in at least one year (adjusted annually for inflation). The Environmental Protection Agency published three on its own and one in conjunction with the Department of Transportation, the Department of Energy published four, the Department of Health and Human Services published ten, the Department of Agriculture published one, the Department of Labor published four, the Department of the Treasury published one, the Department of the Interior published one, the Federal Acquisition Regulation Council published one, and the Department of Transportation published one on its own and one in conjunction with the Environmental Protection Agency.[138]

OMB worked with the agencies in applying the requirements of Title II of the Act to their selection of the regulatory options for these rules. Descriptions of the rules are included in the following section.

Environmental Protection Agency

Renewable Fuel Standards, 2014-2016

This rule specifies the annual volume requirements for renewable fuels under the Renewable Fuel Standard program. The overall impact on the private sector exceeds the $100 million threshold in the aggregate. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Formaldehyde Emission Standards for Composite Wood Products

This rule implements statutory formaldehyde emission standards for hardwood plywood, medium-density fiberboard, and particleboard sold, supplied, offered for sale, or manufactured (including imported) in the United States and establishes an associated Third-Party Certification Program. The overall impact on the private sector exceeds the $100 million threshold in the aggregate. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2

The Environmental Protection Agency and the Department of Transportation, in coordination with the California Air Resources Board, are developing a National Program for Medium- and Heavy-Duty Vehicle Greenhouse Gas Emission and Fuel Efficiency Standards for model years beyond 2018. The implementing regulation's overall impact on the private sector exceeds the $100 million threshold in the aggregate. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

[138] Interim final rules were not included in this chapter because "Section 202 [of the Unfunded Mandates Reform Act]... does not apply to interim final rules or non-notice rules issued under the 'good cause' exemption in 5 U.S.C. 553(b)(B)." See OMB, Memorandum for the Heads of Executive Departments and Agencies, M-95-09, "Guidance for Implementing Title II of S.1," 1995, available at http://obamawhitehouse.archives.gov/sites/default/files/omb/memoranda/m95-09.pdf.

Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources

This final rule established new standards for the oil and natural gas source category for both greenhouse gases and volatile organic compounds. EPA estimates the costs exceed the $100 million threshold. This rule constitutes a private sector mandate under UMRA.

Department of Energy

Energy Efficiency Standards for Commercial and Industrial Pumps

This final rule prescribes energy conservation standards for commercial and industrial pumps. DOE has concluded that this final rule would likely require expenditures of $100 million or more by the private sector. Such expenditures may include: (1) investment in research and development and in capital expenditures by manufacturers, and (2) incremental additional expenditures by consumers.

Energy Conservation Standards for Residential Boilers

This final rule prescribes energy conservation standards for residential boilers. DOE has concluded that this final rule would likely require expenditures of $100 million or more by the private sector. Such expenditures may include: (1) investment in research and development and in capital expenditures by manufacturers, and (2) incremental additional expenditures by consumers.

Energy Efficiency Standards for Commercial Warm Air Furnaces

This final rule prescribes energy conservation standards for commercial warm air furnaces. DOE has concluded that this final rule would likely require expenditures of $100 million or more by the private sector. Such expenditures may include: (1) investment in research and development and in capital expenditures by manufacturers, and (2) incremental additional expenditures by consumers.

Energy Conservation Standards for Residential Dehumidifiers

This final rule prescribes energy conservation standards for residential dehumidifiers. DOE has concluded that this final rule would likely require expenditures of $100 million or more by the private sector. Such expenditures may include: (1) investment in research and development and in capital expenditures by manufacturers, and (2) incremental additional expenditures by consumers.

Department of Health and Human Services

Foreign Supplier Verification Program

This rule describes what a food importer must do to verify that its foreign suppliers produce food that is as safe as food produced in the United States. FDA estimates associated

private costs of over $100 million annually. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Standards for the Growing, Harvesting, Packing and Holding of Produce for Human Consumption

This rule establishes minimum standards for the production and harvesting of those types of fruits and vegetables that are raw agricultural commodities for which the Secretary has determined that such standards minimize the risk of serious adverse health consequences or death. FDA estimates associated private costs of well over $100 million annually. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

"Tobacco Products" Subject to the Federal Food, Drug and Cosmetic Act, as Amended by the Family Smoking Prevention and Tobacco Control Act

This rule deems products meeting the statutory definition of "tobacco product" (additional to those specifically listed in the Family Smoking Prevention and Tobacco Control Act) to be subject to the federal Food, Drug and Cosmetic Act, and specifies additional restrictions. FDA estimates associated private costs of well over $100 million in at least one year. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Sanitary Transportation of Human and Animal Food

This rule establishes requirements for parties including shippers, carriers by motor vehicle or rail vehicle, and receivers engaged in the transportation of food, including food for animals, to use sanitary transportation practices. FDA estimates associated private costs of over $100 million in at least one year. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Focused Mitigation Strategies to Protect Food Against Intentional Adulteration

With the goal of preventing intentional adulteration from acts intended to cause wide-scale harm to public health, including acts of terrorism targeting the food supply, this rule requires mitigation (risk-reducing) strategies for processed at certain registered food facilities. FDA estimates associated private costs of over $100 million annually. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Food Labeling: Serving Sizes of Foods that Can Reasonably Be Consumed at One Eating Occasion; Dual-Column Labeling; Updating, Modifying and Establishing Certain RACCs

This rule amends labeling regulations for foods to update, modify and establish Reference Amounts Customarily Consumed (RACCs) for certain food categories. Additionally, FDA is amending the definitions of single-serving containers; amending the label serving size for breath mints; providing for dual-column labeling under certain circumstances; and making

technical amendments. FDA estimates associated private costs of over $100 million annually. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Food Labeling: Revision of the Nutrition and Supplement Facts Labels

This rule amends the nutrition information found on the Nutrition Facts label, as well as the format and appearance of the label. FDA estimates associated private costs of over $100 million annually. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Reform of Requirements for Long-Term Care Facilities

With the goal of reflecting advances that have been made in the theory and practice of service delivery and patient safety, this rule revises the requirements that long-term care facilities must meet to participate in Medicare or Medicaid programs. CMS estimates associated private costs of over $100 million annually. Presumably reflecting an assumption that Medicare participation does not constitute voluntary participation in a "Federal program," the regulatory preamble states that the provisions of this rule constitute a private sector mandate under UMRA.

CY 2017 Notice of Benefit and Payment Parameters

This final rule sets forth payment parameters and provisions related to various aspect of Affordable Care Act implementation, including: risk adjustment; cost sharing parameters and cost-sharing reductions; user fees for Federally-facilitated exchanges. Although HHS has not been able to quantify the impacts that will be associated with this rule, the combined administrative cost and user fee impact may be high enough to constitute a State, local, or Tribal government or private sector mandate under UMRA.

Nondiscrimination Under the Patient Protection and Affordable Care Act

This final rule implements prohibitions against discrimination on the basis of race, color, national origin, sex, age, and disability as provided in section 1557 of the Affordable Care Act. HHS estimates costs in excess of the $100 million threshold. This rule constitutes a private sector mandate under UMRA.

Department of Agriculture

National School Lunch and School Breakfast Program: Nutrition Standards for All Foods Sold in School, As Required by the Healthy, Hunger-Free Kids Act of 2010

This rule finalize requires, as a condition of participation in the national school lunch and school breakfast programs, that all foods sold to children in school during the school day meet certain macronutrient and food group standards. Although USDA has been unable to fully quantify the costs, benefits and distributional effects of the rule, the impacts may be of a nature and magnitude to constitute a State, local or Tribal government or private sector mandate under UMRA.

Department of Labor

Occupational Exposure to Crystalline Silica

This final rule sets permissible exposure limits for respirable crystalline silica and establishes exposure monitoring, training and medical surveillance requirements. Compliance costs are estimated to be well over $100 million annually. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Conflict of Interest Rule—Investment Advice

This final rule amends the regulatory definition of the term "fiduciary" to more broadly define as fiduciaries those persons who, for a fee, render investment advice to employee benefits plans and individual retirement accounts. For this final rule and its accompanying prohibited transaction exemptions, DOL estimates private expenditures of well over $100 million annually. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Defining and Delimiting the Exemptions for Executive, Administrative, Professional, Outside Sales, and Computer Employees

The Department of Labor divides salaried workers into three categories: low-paid workers who must be paid overtime (1.5 times the standard hourly pay rate for any hours over 40 worked in a week) under all conditions; highly compensated workers who are never subject to overtime requirements; and those in the middle who are exempt from overtime if their duties are executive, administrative or professional, and non-exempt otherwise. DOL's 2016 final rule revises the salary thresholds that separate the three categories—at the low end, raising it from $23,660 to $47,476 per year, and at the high end, raising it from $100,000 to $134,004—and newly requires that the thresholds be indexed every three years to account for inflation. Employee remuneration impacts and compliance costs are estimated to be well over $100 million annually.[139] Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Establishing Paid Sick Leave for Contractors

This final rule implements Executive Order 13706, which requires that employees of federal contractors, subcontractors, and holders of contract-like instruments be granted no less than one hour of paid sick leave for every 30 hours worked. Most contracts covered by this final rule are paid through appropriated funds, but how Congress and agencies respond to rising bids is subject to political processes whose unpredictability limited the Department's ability to project how much of the regulatory burden would fall on affected entities and how much would be passed through to taxpayers. Therefore, if participation in federal contracting does not constitute voluntary participation in a "Federal program," this final rule may yield private sector effects that make it subject to UMRA requirements.

[139] In late 2016, a federal judge issued a nation-wide preliminary injunction blocking the rule's implementation.

Department of Transportation

Electronic Logging Devices and Hours of Service Supporting Documents (MAP-21)

This final rule establishes: minimum performance and design standards for hours-of-service electronic logging devices; requirements for the mandatory use of these devices by drivers currently required to prepare hours-of-service records of duty status; requirements concerning hours-of-service supporting documents; and measures to address concerns about harassment resulting from the mandatory use of electronic logging devices. DOT estimates private expenditures of well over $100 million annually. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles: Phase 2

The Department of Transportation and the Environmental Protection Agency, in coordination with the California Air Resources Board, are developing a National Program for Medium- and Heavy-Duty Vehicle Greenhouse Gas Emission and Fuel Efficiency Standards for model years beyond 2018. The implementing regulation's overall impact on the private sector exceeds the $100 million threshold in the aggregate. Consequently, the provisions of this rule constitute a private sector mandate under UMRA.

Department of the Treasury

Financial Crimes Enforcement Network: Customer Due Diligence Requirements for Financial Institutions

This final rule contains explicit customer due diligence requirements and includes a new requirement to identify and verify the identity of beneficial owners of legal entity customers, subject to certain exclusions. The Department of the Treasury estimates costs in excess of the $100 million threshold. This rule constitutes a private sector mandate under UMRA.

Department of the Interior

Oil and Gas and Sulfur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf

This final rule revises and adds new requirements for exploratory drilling and related operations on the Outer Continental Shelf seaward of the State of Alaska. The Department of the Interior estimates costs in excess of the $100 million threshold. This rule constitutes a private sector mandate under UMRA.

Federal Acquisition Regulation (FAR) Council

Fair Pay and Safe Workplaces

This final rule would have required business entities competing for new federal contracts or subcontracts to disclose their labor law violations and would have required agencies (and

prime contractors) to consider the disclosures when evaluating offers. The rule also would have precluded use of pre-dispute arbitration agreements on certain contracts and required that contract workers receive wage statements.[140] Cost estimates for the rule were in excess of the $100 million threshold, so if participation in federal contracting does not constitute voluntary participation in a "Federal program," this rule would constitute a private sector mandate under UMRA.

[140] This rule has been disapproved by Congress, using its authority under the Congressional Review Act, and is therefore not in effect.

APPENDIX A: CALCULATION OF BENEFITS AND COSTS

Chapter I presents estimates of the annual benefits and costs of selected major final regulations reviewed by OMB between October 1, 2006 and September 30, 2016. OMB presents more detailed explanation of these regulations in several documents.

- Rules from October 1, 2006 to September 30, 2007: Tables 1-4 and A-1 of the 2008 Report.
- Rules from October 1, 2007 to September 30, 2008: Tables 1-4 and A-1 of the 2009 Report.
- Rules from October 1, 2008 to September 30, 2009: Tables 1-4 and A-1 of the 2010 Report.
- Rules from October 1, 2009 to September 30, 2010: Tables 1-5(a) and A-1 of the 2011 Report.
- Rules from October 1, 2010 to September 30, 2011: Tables 1-5(a) and A-1 of the 2012 Report.
- Rules from October 1, 2011 to September 30, 2012: Tables 1-6(a) and A-1 of the 2013 Report.
- Rules from October 1, 2012 to September 30, 2013: Tables 1-6(a) and A-1 of the 2014 Report.
- Rules from October 1, 2013 to September 30, 2014: Tables 1-6(a) and A-1 of the 2015 Report.
- Rules from October 1, 2014 to September 30, 2015: Tables 1-6(a) and A-1 of the 2016 Report.
- Rules from October 1, 2015 to September 30, 2016: Tables 1-6(a) and A-1 of this Report.

In assembling estimates of benefits and costs presented in this Report, OMB has:

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, annualizing benefit and cost estimates); and
2. Monetized quantitative estimates where the agency has not done so (for example, converting agency projections of quantified benefits, such as estimated injuries avoided per year or tons of pollutant reductions per year, to dollars using the valuation estimates discussed below).

All benefit and cost estimates are adjusted to 2001 dollars using the latest Gross Domestic Product (GDP) deflator, available from the Bureau of Economic Analysis at the

Department of Commerce.[141] In instances where the nominal dollar values the agencies use for their benefits and costs is unclear, we assume the benefits and costs are presented in nominal dollar values of the year before the rule is finalized. In periods of low inflation such as the past few years, this assumption does not affect the overall totals. All amortizations are performed using discount rates of 3 and 7 percent unless the agency has already presented annualized, monetized results using a different explicit discount rate.

OMB discusses, in this Report and in previous Reports, the difficulty of estimating and aggregating the benefits and costs of different regulations over long time periods and across many agencies. In addition, where OMB has monetized quantitative estimates where the agency has not done so, we have attempted to be faithful to the respective agency approaches. The adoption of a uniform format for annualizing agency estimates allows, at least for purposes of illustration, the aggregation of benefit and cost estimates across rules; however, agencies have used different methodologies and valuations in quantifying and monetizing effects. Thus, an aggregation involves the assemblage of benefit and cost estimates that are not strictly comparable.

To address this issue in part, the 2003 Report included OMB's regulatory analysis guidance, also released as OMB Circular A-4, which took effect on January 1, 2004 for proposed rules and January 1, 2005 for final rules. The guidance recommends what OMB considers to be "best practices" in regulatory analysis, with a goal of strengthening the role of science, engineering, and economics in rulemaking. The overall goal of this guidance is a more competent and credible regulatory process and a more consistent regulatory environment. OMB expects that as more agencies adopt and refine these recommended best practices, the benefits and costs presented in future Reports will become more comparable across agencies and programs. The 2006 Report was the first report that included final rules subject to OMB Circular A-4. OMB will continue to work with the agencies in applying the guidance to their impact analyses.

Table A-1 below presents the unmodified information on the impacts of 85 major rules reviewed by OMB from October 1, 2015 through September 30, 2016, and includes additional explanatory text on the impacts for these rulemakings. The estimates presented in Table A-1 are annualized impacts in 2001 dollars, which is the requested format in OMB Circular A-4.

Table 1-6(a) in Chapter I of this Report presents the adjusted impact estimates for the thirteen rules finalized in FY2016 that were added to the Chapter 1 accounting statement totals. Table A-2 below presents the benefits and costs of previously reported major rules reviewed by OMB from October 1, 2006 through September 30, 2015 that are also included in the Chapter I accounting statement totals.

[141] See *National Income and Product Accounts*, http://www.bea.gov.

Table A-1: Summary of Agency Estimates for Final Rules October 1, 2015 - September 30, 2016, As of Date OMB Concluded Review (Millions of $2001)[142]

RIN	Title	Benefits	Costs	Transfers	Notes (Other Information)
Department of Agriculture					
0583-AD36	Mandatory Inspection of Certain Fish, Including Catfish and Catfish Products [80 FR 75590]	not estimated	not estimated	not estimated	The RIA is included in the preamble: https://www.regulations.gov/document?D=FSIS-2008-0031-0337
0584-AE09	National School Lunch and School Breakfast Programs: Nutrition Standards for All Foods Sold in School, as Required by the Healthy, Hunger-Free Kids Act of 2010 [81 FR 50132]	not estimated	$17.8 Range: $17.8-$18.5	not estimated	This action finalizes an earlier interim final rule. Additional costs (not estimated) include the potential higher costs to schools and to industry of acquiring or producing healthier competitive foods, the extra costs incurred by students to purchase higher priced competitive foods, the costs incurred by students (including travel costs) in purchasing competitive foods off campus, and net utility losses to students who lose access to favorite competitive foods and must switch to less preferred foods. Also not quantified are changes in student expenditures on competitive foods (sold by school food authorities and non-SFA school groups) and changes in the extent to which students purchase and consume reimbursable school meals, resulting in changes in amounts transferred from students to school food authorities, and from USDA to school food authorities, for reduced price and paid meals. The RIA can be found at the following link: https://www.regulations.gov/document?D=FNS-2011-0019-5228
0578-AA63	Conservation Stewardship Program [81 FR 12573]	not estimated	not estimated	$423.6 Range: $423.6-$425.1	Transfers are from the federal government to agricultural producers. The RIA can be found at the following link: https://www.regulations.gov/document?D=NRCS-2014-0008-0003
0570-AA85	Business and Industry (B&I) Guaranteed Loan Program [81 FR 59843	not estimated	not estimated	$44.0 Range: $28.5-$58.4	Transfers are from the federal government to lenders. The RIA can be found at the following link: https://www.regulations.gov/document?D=RBS-16-BUSINESS-0021-0002
0581-AD47	Removal of Mandatory Country of Origin Labeling Requirements for Beef and Pork Muscle Cuts, Ground	not estimated	-$1,373.7	not estimated	Cost savings result from the rescinding of beef and pork provisions of COOL regulations issued in 2009 and 2013. If any of the costs of those provisions were sunk, then the cost savings estimates are upper bounds on the savings that will actually be realized as a result of this rule. The RIA is included in the preamble: https://www.regulations.gov/document?D=AMS-LPS-16-0002-0001

[142] Please note that for budgetary transfer rules, benefits and costs are generally not estimated because agencies typically estimate budgetary impacts instead.

	Beef, and Ground Pork [81 FR 10755]				
0563-AC43	General Administrative Regulations; Catastrophic Risk Protection Endorsement; Area Risk Protection Insurance Regulations; and the Common Crop Insurance Regulations, Basic Provisions [81 FR 42453]	not estimated	not estimated	$72.0 Range: $72.0-$75.4	Transfers are from the federal government to producers and approved insurance entities; the estimates account for premium subsidies. The RIA can be found at the following link: https://www.regulations.gov/document?D=FCIC-14-0005-0025
0583-ZA10	New Performance Standards for Salmonella and Campylobacter in Not-Ready-to-Eat Comminuted Chicken and Turkey Products and Raw Chicken Parts and Changes to Related Agency Verification Procedures [81 FR 7285]	$65.9 Range: $21.7-$141.7	$16.8 Range: $8.3-$24.7	not estimated	The RIA is included in the notice: https://www.regulations.gov/document?D=FSIS-2014-0023-0020
Department of Defense					
0790-AJ17	Transition Assistance Program (TAP) for Military Personnel [81 FR 41803]	not estimated	$75.0	not estimated	The RIA is included in the preamble: https://www.regulations.gov/document?D=DOD-2013-OS-0236-0001
Department of Education					
1840-AD18	REPAYE [80 FR 67204]	not estimated	not estimated	$1,390.2 Range: $1,252.2-$1,390.2	Transfers are from the federal government to borrowers who make reduced payments. The RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2015-10-30/pdf/2015-27143.pdf#page=2
Department of Energy					
1904-AD11	Energy Efficiency Standards for Commercial Warm Air Furnaces [81 FR 2420]	$2,703.8 Range: $2,639.3-$4,333.2	$533.1 Range: $175.5-$774.6	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=EERE-2013-BT-STD-0021-0050
1904-AC81	Energy Efficiency Standards for	$129.7	$8.2	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=EERE-2012-BT-STD-0027-0046

	Residential Dehumidifiers [81 FR 38338]	Range: $125.2-$159.7	Range: $7.5-$9.0		
1904-AC54	Energy Efficiency Standards for Commercial and Industrial Pumps [81 FR 4368]	$68.2 Range: $62.2-$104.2	$12.7 Range: $12.7-$15.0	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=EERE-2011-BT-STD-0031-0056
1904-AC88	Energy Efficiency Standards for Residential Boilers [81 FR 2320]	$64.1 Range: $61.6-$115.2	$13.0 Range: $10.4-$15.2	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=EERE-2012-BT-STD-0047-0070
Department of Health and Human Services					
0945-AA02	Nondiscrimination Under the Patient Protection and Affordable Care Act [81 FR 31375]	not estimated	$148.3 Range: 136.0-$160.6	not estimated	In addition to the costs at left, there will be approx. $17.8 million (2014$) in training and enforcement costs borne by state and local governments. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/05/18/2016-11458/nondiscrimination-in-health-programs-and-activities
0991-AB93	2015 Edition Health Information Technology (Health IT) Certification Criteria, 2015 Base Electronic Health Record (EHR) Definition, and ONC Health IT Certification Program Modifications [80 FR 62601]	not estimated	$62.1 Range: $48.8-$75.6	not estimated	The RIA is included in the preamble: https://www.federalregister.gov/documents/2015/10/16/2015-25597/2015-edition-health-information-technology-health-it-certification-criteria-2015-edition-base
0970-AC63	Head Start Performance Standards [81 FR 61293]	not estimated	Range: $449.1-$628.3	-$31.9	In addition to the costs at left, there will be approx. $41 million (2016$) in transfers from Head Start to IDEA. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/09/06/2016-19748/head-start-performance-standards
0970-AC67	Child Care and Development Block Grant Act Reauthorization Implementation [81 FR 67438]	not estimated	$218.5 Range: $218.5-$220.7	$589.4 Range: $589.4-$629.2	Transfer estimates at left omit effects on Territories and Tribes (approx. $30 million, in 2016$, annualized). The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/09/30/2016-22986/child-care-and-development-fund-ccdf-program
0938-AS58; 0938-AS26	Electronic Health Record Incentive Program--Modifications to Meaningful Use in	Range: $39.6-$51.7	$358.5 Range: $358.5-$358.7	$750.1 Range: $683.5-$750.1	The RIA is included in the preamble: https://www.federalregister.gov/documents/2015/10/16/2015-25595/medicare-and-medicaid-programs-electronic-health-record-incentive-program-stage-3-and-modifications

	2015 through 2017 (CMS-3311-F); Electronic Health Record Incentive Program--Stage 3 and Modifications to Meaningful Use in 2015 through 2017 (CMS-3310-F) [80 FR 62761]				
0938-AS42	CY 2016 Hospital Outpatient PPS Policy Changes and Payment Rates and Ambulatory Surgical Center Payment System Policy Changes and Payment Rates (CMS-1633-FC) [80 FR 70297]	not estimated	not estimated	-$92.2	Transfers are from the federal government to Medicare hospitals and providers. The RIA is included in the preamble: https://www.federalregister.gov/documents/2015/11/13/2015-27943/medicare-program-hospital-outpatient-prospective-payment-and-ambulatory-surgical-center-payment
0938-AS46	CY 2016 Home Health Prospective Payment System Refinements and Rate Update (CMS-1625-F) [80 FR 68623]	not estimated	not estimated	$195.0	Transfers are from home health Medicare providers to the federal government. The RIA is included in the preamble: https://www.federalregister.gov/documents/2015/11/05/2015-27931/medicare-and-medicaid-programs-cy-2016-home-health-prospective-payment-system-rate-update-home
0938-AS40	CY 2016 Revisions to Payment Policies Under the Physician Fee Schedule and Other Revisions to Medicare Part B (CMS-1631-FC) [80 FR 70885]	not estimated	not estimated	$932.0	Transfers are from the federal government to eligible Medicare providers. The RIA is included in the preamble: https://www.federalregister.gov/documents/2015/11/16/2015-28005/medicare-program-revisions-to-payment-policies-under-the-physician-fee-schedule-and-other-revisions
0938-AS64	Comprehensive Care for Joint Replacement (CMS-5516-F) [80 FR 73273]	not estimated	not estimated	-$47.2 Range: -$47.2 to -$48.7	Transfers are from the federal government to hospitals. The RIA is included in the preamble: https://www.federalregister.gov/documents/2015/11/24/2015-29438/medicare-program-comprehensive-care-for-joint-replacement-payment-model-for-acute-care-hospitals
0938-AS53	Medicaid Mechanized Claims Processing and Information Retrieval Systems (CMS-2392-F) [80 FR 75817]	not estimated	$272.3 Range: $198.3-$272.3	not estimated	The RIA is included in the preamble: https://www.federalregister.gov/documents/2015/12/04/2015-30591/medicaid-program-mechanized-claims-processing-and-information-retrieval-systems-9010
0938-AQ41	Covered Outpatient Drugs (CMS-2345-FC) [81 FR 5169]	not estimated	$71.2 Range: $67.5-$71.2	-$237.6 Range: -$237.6 to -$239.8	An approx. -$320 million (2015$) transfer is from the federal government to state governments, and an approx. -$220 million (2015$) transfer is from state governments to pharmacies and drug manufacturers. During FY 2016, this rule was issued as both a final rule with comment and a final rule, but in the regulation tallies appearing in this report, it is only counted once.

					The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/02/01/2016-01274/medicaid-program-covered-outpatient-drugs
0938-AR85	Prior Authorization Process for Certain Durable Medical Equipment, Prosthetics, Orthotics, and Supplies (DMEPOS) Items (CMS-6050-F) [80 FR 81673]	not estimated	not estimated	-$40.1 Range: -$7.5 to -$58.7	Transfers are from the federal government to Medicare providers and consist of savings to the Medicare program associated with reductions in unnecessary utilization, fraud, waste and abuse. The RIA is included in the preamble: https://www.federalregister.gov/documents/2015/12/30/2015-32506/medicare-program-prior-authorization-process-for-certain-durable-medical-equipment-prosthetics
0938-AQ36	Face-to-Face Requirements for Home Health Services; Policy Changes and Clarifications Related to Home Health (CMS-2348-F) [81 FR 5529]	not estimated	not estimated	not estimated	The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/02/02/2016-01585/medicaid-program-face-to-face-requirements-for-home-health-services-policy-changes-and
0938-AQ58	Reporting and Returning of Overpayments (CMS-6037-F) [81 FR 7653]	not estimated	$120.8 Range: $90.6-$151.0	not estimated	The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/02/12/2016-02789/medicare-program-reporting-and-returning-of-overpayments
0938-AS57	CY 2017 Notice of Benefit and Payment Parameters (CMS-9937-F) [81 FR 12203]	not estimated	not estimated	not estimated	The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/03/08/2016-04439/patient-protection-and-affordable-care-act-hhs-notice-of-benefit-and-payment-parameters-for-2017
0938-AS24	Mental Health Parity and Addiction Equity Act of 2008; Application of Mental Health Parity Requirements to Medicaid Managed Care Organizations, CHIP, and Alternative Benefit Plans (CMS-2333-F) [81 FR 18389]	not estimated	not estimated	$94.9 Range: $94.9-$95.1	Transfers are from federal and state governments to Medicaid providers. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/03/30/2016-06876/medicaid-and-childrens-health-insurance-programs-mental-health-parity-and-addiction-equity-act-of
0938-AS25	Medicaid Managed Care, CHIP Delivered in Managed Care, Medicaid and CHIP Comprehensive Quality Strategies, and Revisions related to	not estimated	$95.1 Range: $95.1-$95.5	Range: -$321.4 to $1,001.1	Transfers are from medical industry entities to federal and state governments. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/05/06/2016-09581/medicaid-and-childrens-health-insurance-program-chip-programs-medicaid-managed-care-chip-delivered

	Third Party Liability (CMS-2390-F) [81 FR 27497]				
0938-AS67	Medicare Shared Savings Program; Accountable Care Organizations (ACOs)--Revised Benchmark Rebasing Methodology (CMS-1644-F) [81 FR 37949]	not estimated	not estimated	-$27.1 Range: $58.9 to -$118.6	Negative values reflect reduction in federal net cost resulting from care management by accountable care organizations. Estimates may be a combination of benefits and transfers. To the extent that the incentives created by Medicare payments change the amount of resources society uses in providing medical care, the more accurate categorization of effects would be as costs (positive values) or benefits/cost savings (negative values), rather than as transfers. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/06/10/2016-13651/medicare-program-medicare-shared-savings-program-accountable-care-organizations-revised-benchmark
0938-AS33	Medicare Clinical Diagnostic Laboratory Test Payment System (CMS-1621-F) [81 FR 41035]	not estimated	not estimated	-$280.4 Range: -$280.4 to -$288.7	Transfers are from the federal government to entities that receive payments under the Medicare Clinical Diagnostic Laboratory Fee Schedule. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/06/23/2016-14531/medicare-program-medicare-clinical-diagnostic-laboratory-tests-payment-system
0938-AS75	FY 2017 Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities (CMS-1645-F) [81 FR 51969]	not estimated	not estimated	$689.8	Transfers are from the federal government to Medicare skilled nursing facility providers. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/08/05/2016-18113/medicare-program-prospective-payment-system-and-consolidated-billing-for-skilled-nursing-facilities
0938-AS79	FY 2017 Hospice Rate Update (CMS-1652-F) [81 FR 52143]	not estimated	not estimated	$262.4	Transfers are from the federal government to Medicare hospice providers. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/08/05/2016-18221/medicare-program-fy-2017-hospice-wage-index-and-payment-rate-update-and-hospice-quality-reporting
0938-AS78	FY 2017 Inpatient Rehabilitation Facility Prospective Payment System (CMS-1647-F) [81 FR 52055]	not estimated	not estimated	$108.7	Transfers are from the federal government to Medicare inpatient rehabilitation facility providers. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/08/05/2016-18196/medicare-program-inpatient-rehabilitation-facility-prospective-payment-system-for-federal-fiscal
0938-AS77	Hospital Inpatient Prospective Payment System for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System and FY 2017 Rates (CMS-1655-F) [81 FR 56761]	not estimated	not estimated	$287.2	Transfers are from the federal government to providers. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/10/05/2016-24042/medicare-program-hospital-inpatient-prospective-payment-systems-for-acute-care-hospitals-and-the

0938-AO91	Emergency Preparedness Requirements for Medicare and Medicaid Participating Providers and Suppliers (CMS-3178-F) [81 FR 63859]	not estimated	$78.2 Range: $74.1-$78.2	not estimated	The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/09/16/2016-21404/medicare-and-medicaid-programs-emergency-preparedness-requirements-for-medicare-and-medicaid
0938-AR61	Reform of Requirements for Long-Term Care Facilities (CMS-3260-F) [81 FR 68688]	not estimated	$568.1 Range: $566.9-$568.1	not estimated	Unquantified possible cost associated with the toilet requirement. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/10/04/2016-23503/medicare-and-medicaid-programs-reform-of-requirements-for-long-term-care-facilities
0938-AS36	CY 2016 Inpatient Hospital Deductible and Hospital and Extended Care Services Coinsurance Amounts (CMS-8059-N) [80 FR 70808]	not estimated	not estimated	$464.9	The estimated transfers, from beneficiaries to the federal government, are due to the increase in the deductible and coinsurance amounts and the increase in the number of deductibles and daily coinsurance amounts paid. The RIA is included in the preamble: https://www.federalregister.gov/documents/2015/11/16/2015-29207/medicare-program-cy-2016-inpatient-hospital-deductible-and-hospital-and-extended-care-services
0938-AS38	CY 2016 Part B Monthly Actuarial Rates, Monthly Premium Rates, and Annual Deductible (CMS-8061-N) [80 FR 70811]	not estimated	not estimated	$2,591.1	Federal budget transfers are from beneficiaries to the federal government; other transfers are from states and beneficiaries to the federal government and providers. The RIA is included in the preamble: https://www.federalregister.gov/documents/2015/11/16/2015-29181/medicare-program-medicare-part-b-monthly-actuarial-rates-premium-rate-and-annual-deductible
0938-AS76	FY 2017 Inpatient Psychiatric Facilities Prospective Payment System--Rate Update (CMS-1650-N) [81 FR 50502]	not estimated	not estimated	$75.0	Transfers are from the federal government to Medicare IPF providers. The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/08/01/2016-17982/medicare-program-fy-2017-inpatient-psychiatric-facilities-prospective-payment-system-rate-update
0930-AA22	Medication Assisted Treatment for Opioid Use Disorders Reporting Requirements [81 FR 66191]	$1,406.2 Range: $123.7-$6,430.4	$174.7 Range: $45.0-$389.2	not estimated	The RIA is included in the preamble: https://www.federalregister.gov/documents/2016/09/27/2016-23277/medication-assisted-treatment-for-opioid-use-disorders-reporting-requirements
0910-AG64	Foreign Supplier Verification Program [81 FR 25326]	not estimated	$326.2 Range: $156.7-$587.9	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=FDA-2011-N-0143-0387

0910-AG35	Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption [81 FR 26466]	$693.6 Range: $532.4-$896.0	$274.4 Range: $225.7-$318.7	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=FDA-2011-N-0921-18701
0910-AG98	Sanitary Transportation of Human and Animal Food [81 FR 20091]	not estimated	$87.4 Range: $84.4-$87.4	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=FDA-2013-N-0013-0198
0910-AG38	"Tobacco Products" Subject to the Federal Food, Drug, and Cosmetic Act, as Amended by the Family Smoking Prevention and Tobacco Control Act [81 FR 28973]	not estimated	$57.8 Range: $36.4-$76.9	not estimated	Unquantified costs include some consumer costs for users of the newly deemed products due to loss of product variety or higher prices; recordkeeping costs for exporters of deemed tobacco products; compliance costs for components and parts other than complete pipes, water pipes, and ENDS delivery systems; the cost of testing and reporting for harmful and potentially harmful constituents; the cost of any clinical testing that may potentially be conducted to support substantial equivalence reports; market adjustment (friction) costs and lost producer surplus associated with product consolidation, exit of manufacturers (including some vape shops currently engaged in manufacturing activities), and the switch to pure retailing among retailers such as vape shops who currently engage in manufacturing activities. The RIA can be found at the following link: https://www.regulations.gov/document?D=FDA-2014-N-0189-83108
0910-AF23; 0910-AF22	Food Labeling: Serving Sizes of Foods That Can Reasonably Be Consumed At One Eating Occasion; Dual-Column Labeling; Updating, Modifying, and Establishing Certain RACCs;; Food Labeling: Revision of the Nutrition and Supplement Facts Labels [81 FR 34000; 81 FR 33741	see notes	$321.7 Range: $117.0-$586.4	not estimated	Joint RIA. FDA describes its attempts at benefits estimation thus: "We extrapolated from the welfare effects estimated in a retrospective study on the impact of the Nutrition Labeling and Education Act of 1990 (NLEA) [but] we lack direct evidence with which to scale… estimates of the effect of NLEA in a manner that precisely reflects the impacts of other changes in nutrition labels." The RIA can be found at the following link: https://www.regulations.gov/document?D=FDA-2012-N-1210-0884
0910-AH40	Topical Antimicrobial Drug Products for Over-the-Counter Human Use: Final Monograph for Consumer Antiseptic Wash Products [81 FR 61106]	not estimated	$21.3 Range: $9.2-$41.3	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=FDA-1975-N-0012-0730

0910-AG63	Focused Mitigation Strategies To Protect Food Against Intentional Adulteration [81 FR 34165]	not estimated	$281.9 Range: $200.2-$365.9	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=FDA-2013-N-1425-0160
Department of Homeland Security					
1652-AA67	Passenger Screening Using Advanced Imaging Technology [81 HR 41803]	not estimated	$153.4 Range: $153.4-$157.8	not estimated	Benefits include reduction of security risks through the deployment of AIT capable of detecting non-metallic weapons and explosives. The RIA can be found at the following link: https://www.regulations.gov/document?D=TSA-2013-0004-5583
1653-AA72	Improving and Expanding Training Opportunities for F-1 Nonimmigrant Students with STEM Degrees and Cap-Gap Relief for All Eligible F-1 Students [81 FR 13040]	not estimated	$62.8 Range: $56.8-$83.1	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=ICEB-2015-0002-43169
1651-AB08	Electronic Visa Information Update System [81 FR 72481]	$224.6 Range: $130.2-$361.6	$126.6 Range: $117.3-$142.1	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=USCBP-2016-0046-0002
Department of the Interior					
1018-BA70	Migratory Bird Hunting; 2016-2017 Migratory Game Bird Hunting Regulations [81 FR 17302]	$276.2 Range: $238.4-$314.2	not estimated	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=FWS-HQ-MB-2015-0034-0002
1014-AA11	Blowout Prevention Systems and Well Control [81 FR 25888]	not estimated	$73.3 Range: $69.5-$73.3	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=BSEE-2015-0002-0208
1082-AA00	Arctic Regulations [81 FR 46478]	not estimated	$185.7 Range: $180.0-$185.7	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=BSEE-2013-0011-1306
Department of Labor					
1210-AB72	Final Rules Under the Affordable Care Act for Grandfathered Plans, Preexisting Condition	not estimated	$127.4	$40.1	Due to the risk pooling nature of health insurance these patient protections and other requirements create a transfer from those paying premiums to those individuals and families now obtaining increased protections, coverage and services.

	Exclusions, Lifetime and Annual Limits, Rescissions, Dependent Coverage and Patient Protections [80 FR 72192]				The RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2015-11-18/pdf/2015-29294.pdf#page=2
1218-AB70	Occupational Exposure to Crystalline Silica [81 FR 16286]	see notes	$791.9 Range: $674.4-$879.6	not estimated	OSHA describes its attempts at benefits estimation thus: "The effects of baseline respirator use on risk are ignored" ... "for 45 years of exposure to the action level (25 µg/m3), there would be an estimated 4 deaths from silicosis and 21 cases of silicosis (with chest X-ray ILO category of 2/1 or greater) per 1,000 workers; at the previous PEL (100 µg/m3), there would be an estimated 11 deaths from silicosis and 301 cases of silicosis per 1,000 workers. In other words, nearly 20 percent of silicosis cases are estimated to be fatal at the relatively low exposure of 25 µg/m3 but only about 4 percent are estimated to be fatal at the relatively high exposure of 100 µg/m3" ... "OSHA ... lacks any persuasive evidence in this rulemaking record that this rulemaking would affect compliance with the preceding PEL." A summary of the RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2016-03-25/pdf/2016-04800.pdf#page=1
1210-AB32;; 1210-ZA25	Definition of the Term "Fiduciary"; Conflict of Interest Rule—Retirement Investment Advice;; Best Interest Contract Exemption; Correction [81 FR 20946, 81 FR 44773]	not estimated	$1,469.6 Range: $878.8-$2,884.5	$54.7	Compliance costs incurred by mutual funds or other asset providers have not been estimated. Transfers are from insured service providers without claims to insured service providers with claims - funded from a portion of the increased insurance premiums. Potential gains to retirement investors have been partially quantified: up to $3.1 or $3.4 billion (annualized over April '17 – April '27 with a 7% discount rate) or up to $3.8 or $4.2 billion (annualized over April '17- April '27 with a 3% discount rate). These estimates account for only a fraction of potential conflicts, associated losses, and affected retirement assets (specifically, how load shares paid to brokers affect the size of loads IRA investors holding load funds pay and the returns they achieve). These estimates assume that the rule will eliminate (rather than just reduce) underperformance. If, however, the rule's effectiveness in reducing underperformance is substantially below 100 percent, these estimates will overstate these gains to investors in the front-end-load mutual fund segment of the IRA market. The potential gains to investors estimates include both economic efficiency benefits and transfers from the financial services industry to IRA holders. The RIA can be found at the following link: https://www.dol.gov/sites/default/files/ebsa/laws-and-regulations/rules-and-regulations/completed-rulemaking/1210-AB32-2/conflict-of-interest-ria.pdf
1235-AA11	Defining and Delimiting the Exemptions for Executive, Administrative, Professional, Outside Sales, and Computer Employees [81 FR 32391]	not estimated	$228.1 Range: $222.9-$254.8	$891.6 Range: $378.7-$901.0	Transfers may be intrapersonal (if pay increases are accompanied by increases in hours worked or via changes in other work characteristics, such as reductions in bonuses or fringe benefits or conversion from salaried to hourly status), from employers, from consumers (via price increases or reductions in quality of products), or from other workers (e.g., those who remain salaried working more without being paid more). The RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2016-05-23/pdf/2016-11754.pdf#page=1
1205-AB74	Workforce Innovation and Opportunity Act;	not estimated	$52.9	not estimated	The RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2016-08-19/pdf/2016-15977.pdf#page=2

	Joint Rule with U.S. Department of Education for Combined and Unified State Plans, Performance Accountability, and the One-Stop System Joint Provisions [81 FR 55792]		Range: $49.1-$52.9		
1205-AB73	Workforce Innovation and Opportunity Act [81 FR 56072]	not estimated	$29.8 Range: $27.7-$29.8	$10.3 Range: $10.0-$10.3	Transfers are from youth to federal, state and local governments. The RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2016-08-19/pdf/2016-15975.pdf#page=2
1290-AA31	Department of Labor Inflation Adjustment Act [81 FR 43430]	not estimated	not estimated	$104.8	Transfers are from regulated employers to the federal government and OSHA state plans. The RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2016-07-01/pdf/2016-15378.pdf#page=1
1235-AA13	Establishing Paid Sick Leave for Contractors, Executive Order 13706 [81 FR 67598]	not estimated	$21.0 Range: $19.3-$21.0	$262.1 Range: $262.1-$273.0	This policy was partially implemented by, and a portion of impacts are attributable to, a FAR Council interim final rule (RIN 9000-AN27). The RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2016-09-30/pdf/2016-22964.pdf#page=1
Department of Transportation					
2126-AB20	Electronic Logging Devices and Hours of Service Supporting Documents (MAP-21) (RRR) [80 FR 78292]	$2,256.9 Range: $2,256.9-$2,275.7	$1,376.7 Range: $1,376.7-$1,387.9	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=FMCSA-2010-0167-2281
2132-AB07	Transit Asset Management [81 FR 48890]	not estimated	$17.4 Range: $17.1-$33.4	not estimated	Estimated costs are only a portion of the costs of the rule. Unquantified costs include additional asset maintenance, rehabilitation and replacement. Unquantified benefits include reduced operation and maintenance costs, reduced lifecycle costs of asset ownership, fewer mechanical breakdowns, and other improvements in transit system performance and safety. The RIA can be found at the following link: https://www.regulations.gov/document?D=FTA-2014-0020-0130
2120-AJ60	Operation and Certification of Small Unmanned Aircraft Systems [81 FR 42064]	Range: $143.1-$1,702.1	Range: $33.1-$196.1	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=FAA-2015-0150-4717
2137-AF17	Hazardous Materials: FAST Act Requirements for Flammable Liquids and	not estimated	$36.8 Range: $36.8-$38.4	not estimated	Unquantified benefits include reduced risk of fire and spills because improved puncture resistance, increased thermal survivability, and enhanced top fittings protections. The RIA can be found at the following link: https://www.regulations.gov/document?D=PHMSA-2016-0011-0001

	Rail Tank Cars [81 FR 53935]				
2127-AL52	Fuel Efficiency Standards for Medium- and Heavy-Duty Vehicles and Work Trucks: Phase 2 [81 FR 73478]	Range: $6,674.1 to $9,747.6	Range: $845.8 to $1,124.7	not estimated	Joint rule and RIA with EPA's Heavy Duty rule (2060-AS16). The RIA can be found at the following link: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/phase-2-hd-fuel-efficiency-ghg-final-ria.pdf
Federal Acquisitions Regulation Council					
9000-AM81	Federal Acquisition Regulation (FAR); FAR Case 2016-007; Fair Pay and Safe Workplaces [81 FR 58562]	not estimated	$308.9 Range: $307.1 to $308.9	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=FAR-2014-0025-0933. This rule has been disapproved by Congress, using its authority under the Congressional Review Act, and is therefore not in effect.
Department of Justice					
1105-AB49	James Zadroga 9/11 Victim Compensation Fund Reauthorization Act [81 FR 38936; 81 FR 60617]	not estimated	not estimated		Transfers are from the Federal government to victims of the 9/11 attacks, first responders, and their families. A total fund of $7.7375 billion will be available for claims made before Dec. 2020. The RIAs can be found at the following links: interim final rule--https://www.gpo.gov/fdsys/pkg/FR-2016-06-15/pdf/2016-14259.pdf; final rule--https://www.gpo.gov/fdsys/pkg/FR-2016-09-02/pdf/2016-21216.pdf
Environmental Protection Agency					
2060-AS23; 2060-AM08	Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills NSPS; Standards for Municipal Solid Waste Landfills [81 FR 59276; 81 FR 59332]	$422.1 Range: $422.1-$446.1	$75.7 Range: $73.5-$75.7	not estimated	Joint RIA. The RIA can be found at the following link: https://www.regulations.gov/document?D=EPA-HQ-OAR-2014-0451-0225
2060-AS16	Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2 [81 FR 73478]	Range: $6,674.1 to $9,747.6	Range: $845.8 to $1,124.7	not estimated	Joint rule and RIA with DOT's Heavy Duty rule (2127-AL52). The RIA can be found at the following link: https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf#page=1
2060-AS30	Oil and Natural Gas Sector: Emissions Standards for New and	$381.7 Range: $381.7-$420.6	$317.2 Range: $317.2-$343.4	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0505-7630

	Modified Sources [81 FR 35824]				
2060-AS22	Renewable Fuel Volume Standards 2014-2016 [80 FR 77420]	not estimated	$285.3 Range: $177.0-$384.7	not estimated	The RIA can be found in the preamble: https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0111-3535
2060-AS05	Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS [81 FR 74504]	baseline unclear	baseline unclear	not estimated	To avoid double-counting, the benefit and cost estimates presented in the RIA should not be added to earlier CSAPR estimates. The RIA can be found at the following link: https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0500-0580
2070-AJ44	Formaldehyde; Third-Party Certification Framework for the Formaldehyde Standards for Composite Wood Products [81 FR 89674]	$39.4 Range: $19.5-$139.5	$45.4 Range: $28.5-$62.2	not estimated	The RIA can be found at the following link: https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0461-0037
Department of the Treasury					
1506-AB25	Financial Crimes Enforcement Network: Customer Due Diligence Requirements for Financial Institutions [81 FR 29398]	not estimated	$165.0 Range: $111.0-$215.2	not estimated	The RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2016-05-11/pdf/2016-10567.pdf#page=2
1515-AE03	Automated Commercial Environment (ACE) Required for Electronic Entry/Entry Summary (Cargo Release and Related Entry) Filings [80 FR 61278]	not estimated	not estimated	not estimated	The RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2015-10-13/pdf/2015-25729.pdf#page=1
1505-AC44	Restore Act Program [80 FR 77239]	not estimated	not estimated	$503.2	This action finalizes an earlier interim final rule. Transfers are from the federal government to affected states and counties. The RIA is included in the preamble: https://www.gpo.gov/fdsys/pkg/FR-2015-12-14/pdf/2015-31431.pdf#page=1
Department of Veterans Affairs					
2900-AP24	Expanded Access to Non-VA Care through the Veterans Choice	not estimated	not estimated	Range: $647.8-$4,273.9	This action finalizes an earlier interim final rule. Transfers are from the federal government to eligible veterans.

	Program [80 FR 66419]				The RIA can be found at the following link: https://www.regulations.gov/document?D=VA-2014-VHA-0022-0057
2900-AP60	Expanded Access to Non-VA Care through the Veterans Choice Program [80 FR 74991]	not estimated	not estimated	Range: $110.2-$658.3	Transfers are from the federal government to eligible veterans. The RIA can be found at the following link: https://www.regulations.gov/document?D=VA-2015-VHA-0029-0002

Table A-2: Estimates of Annual Benefits and Costs of Major Final Rules, October 1, 2006 - September 30, 2015[143]

(millions of 2001 dollars)

RIN	Title	Completed	Published	Benefits	Costs	Source of Estimates
Department of Agriculture						
0579-AC01	Bovine Spongiform Encephalopathy; Minimal-Risk Regions and Importation of Commodities	9/14/07	9/18/07	169-340	98-194	2008 Report: Table 1-4
0583-AC88	Prohibition of the Use of Specified Risk Materials for Human Food and Requirements for the Disposition of Non-Ambulatory Disabled Cattle	6/29/07	7/13/07	0	87-221	2008 Report: Table 1-4
0579-AD41	Importation of Beef From a Region in Brazil	6/26/15	7/2/15	146-484	93-306	2016 Report: Table A-1
0579-AD92	Importation of Beef From a Region in Argentina	6/26/15	7/2/15	120-178	76-113	2016 Report: Table A-1
Department of Energy						
1904-AA78	Energy Efficiency Standards for Residential Furnaces and Boilers	11/6/07	11/19/07	120-182	33-38	2009 Report: Table 1-4
1904-AA89	Energy Efficiency Standards for Clothes Dryers and Room Air Conditioners	4/8/11	4/21/11	169-310	129-182	2012 Report: Table 1-5(a)
1904-AA90	Energy Efficiency Standards for Pool Heaters and Direct Heating Equipment and Water Heaters [75 FR 20112]	3/30/10	4/16/10	1,274-1,817	975-1,122	2011 Report: Table A-1
1904-AA92	Energy Efficiency Standards for General Service Fluorescent Lamps and Incandescent Lamps	6/26/09	7/14/09	1,111-2,886	192-657	2010 Report: Table 1-4
1904-AB08	Energy Efficiency Standards for Electric Distribution Transformers	9/27/07	10/12/07	490-865	381-426	2008 Report: Table 1-4
1904-AB50	Energy Efficiency Standards for Fluorescent Lamp Ballasts	10/28/2011	11/14/2011	760-1,556	179-153	2013 Report: Table 1-6(a)
1904-AB59	Energy Efficiency Standards for Commercial Refrigeration Equipment	12/18/08	1/9/09	186-224	69-81	2010 Report: Table 1-4
1904-AB70	Energy Conservation Standards for Small Electric Motors [75 FR 10874]	2/25/10	3/9/10	688-827	218	2011 Report: Table A-1
1904-AB79	Energy Efficiency Standards for Residential Refrigerators, Refrigerator-Freezers, and Freezers	8/25/11	9/15/11	1,660-3,034	803-1.281	2012 Report: Table 1-5(a)

[143] Based on date of completion of OMB review.

RIN	Title	Completed	Published	Benefits	Costs	Source of Estimates
1904-AB90	Energy Conservation Standards for Residential Clothes Washers	4/26/12	5/31/12	1,010-1,802	151-253	2013 Report: Table 1-6(a)
1904-AC06	Energy Efficiency Standards for Residential Furnaces, Central Air Conditioners and Heat Pumps	6/6/11	6/27/11	719-1,766	475-724	2012 Report: Table 1-5(a)
1904-AB93	Energy Efficiency Standards for Commercial Clothes Washers [75 FR 1122]	12/23/09	1/8/10	46-67	17-21	2011 Report: Table A-1
1904-AC04	Energy Efficiency Standards for Distribution Transformers	4/8/13	4/18/13	653-1,017	209-264	2014 Report: Table 1-6(a)
1904-AC07	Energy Efficiency Standards for Microwave Ovens (Standby and Off Mode)	5/31/13	6/17/13	177-266	47-55	2014 Report: Table 1-6(a)
1904-AB57	Energy Efficiency Standards for External Power Supplies	1/31/14	2/10/14	294-346	75-129	2015 Report: Table A-1
1904-AB86	Energy Conservation Standards for Walk-In Coolers and Walk-In Freezers	5/8/14	6/3/14	909-1,116	393-425	2015 Report: Table A-1
1904-AC00	Energy Efficiency Standards for Metal Halide Lamp Fixtures	1/24/14	2/10/14	91-134	32-41	2015 Report: Table A-1
1904-AC19	Energy Conservation Standards for Commercial Refrigeration Equipment	2/27/14	3/28/14	746-956	199-216	2015 Report: Table A-1
1904-AC22	Energy Conservation Standards for Residential Furnace Fans	6/12/14	7/3/14	1,129-2,238	239-329	2015 Report: Table A-1
1904-AC28	Energy Efficiency Standards for Certain Commercial and Industrial Electric Motors	5/8/14	5/29/14	1,322-2,566	395-547	2015 Report: Table A-1
1904-AC39	Energy Efficiency Standards for Automatic Commercial Ice Makers	12/31/14	1/28/15	64-80	16-19	2016 Report: Table A-1
1904-AC43	Energy Conservation Standards for General Service Fluorescent Lamps and Incandescent Reflector Lamps	12/30/14	1/26/15	1,042-1,089	567-691	2016 Report: Table A-1
1994-AA02	Assistance to Foreign Atomic Energy Activities	2/5/15	2/23/15	16-95	8-52	2016 Report: Table A-1
Department of Health and Human Services						
0910-AB76	CGMPs for Blood and Blood Components: Notification of Consignees and Transfusion Recipients Receiving Blood and Blood Components at Increased Risk of Transmitting HCV Infection (Lookback)	8/14/07	8/24/07	28-130	11	2008 Report: Table 1-4
0910-AB88	Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Dietary Ingredients and Dietary Supplements	5/8/07	6/25/07	10-79	87-293	2008 Report: Table 1-4

RIN	Title	Completed	Published	Benefits	Costs	Source of Estimates
0910-AC14	Prevention of Salmonella Enteritidis in Shell Eggs	7/2/09	7/9/09	206-8,583	48-106	2010 Report: Table 1-4
0910-AG84	Food Labeling; Gluten-Free Labeling of Foods	7/31/13	8/5/13	16-247	5-6	2014 Report: Table 1-6(a)
0919-AA01	Patient Safety and Quality Improvement Act of 2005 Rules	11/14/08	11/21/08	69-136	87-121	2010 Report: Table 1-4
0938-AM50	Updates to Electronic Transactions (Version 5010) (CMS-0009-F)	1/9/09	1/16/09	1,114-3,194	661-1,449	2010 Report: Table 1-4
0938-AN25	Revisions to HIPAA Code Sets (CMS-0013-F)	1/9/09	1/16/09	77-261	44-238	2010 Report: Table 1-4
0910-AG57	Food Labeling: Nutrition Labeling of Standard Menu Items in Restaurants and Similar Retail Food Establishments	11/24/14	12/1/14	267-750	38-93	2016 Report: Table A-1
0910-AG10	Current Good Manufacturing Practice and Hazard Analysis and Risk-Based Preventive Controls for Food for Animals	8/31/15	9/17/15	8-108	106-134	2016 Report: Table A-1
0938-AS06	Medicare Shared Savings Program; Accountable Care Organizations (CMS-1461-F)	6/3/15	6/9/15	184-434	143-154	2016 Report: Table A-1
0938-AN79	Fire Safety Requirements for Long-Term Care Facilities: Sprinkler Systems (CMS-3191-F)	8/6/08	8/13/08	53-56	45-56	2009 Report: Table 1-4
0938-AQ11	Administrative Simplification: Adoption of Standards for Electronic Funds Transfer (EFT) (CMS-0024-IFC)	1/6/12	1/10/12	223-332	2-3	2013 Report: Table 1-6a)
0938-AQ12	Administrative Simplification: Adoption of Authoring Organizations for Operating Rules and Adoption of Operating Rules for Eligibility and Claims Status (CMS-0032-IFC)	6/30/11	7/8/11	930-1,138	260-616	2012 Report: Table 1-5(a)
0938-AQ13	Administrative Simplification: Standard Unique Identifier for Health Plans and ICD-10 Compliance Date Delay (CMS-0040-F)	8/27/12	9/5/12	425-1,017	150-758	2013 Report: Table 1-6(a)
0938-AR49	Part II--Regulatory Provisions To Promote Program Efficiency, Transparency, and Burden Reduction (CMS-3267-F)	5/5/14	5/12/14	0	(178)-(642)	2015 Report: Table A-1

RIN	Title	Completed	Published	Benefits	Costs	Source of Estimates
0938-AQ12	Administrative Simplification: Adoption of Authoring Organizations for Operating Rules and Adoption of Operating Rules for Eligibility and Claims Status (CMS-0032-IFC)	6/30/11	7/8/11	1,034	438	2012 Report: Table D-3
Department of Homeland Security						
1625-AA32	Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters	2/23/12	3/23/12	4-442	77-152	2013 Report: Table 1-6(a)
1651-AA72	Changes to the Visa Waiver Program To Implement the Electronic System for Travel Authorization (ESTA) Program	5/30/08	6/9/08	20-29	13-99	2009 Report: Table 1-4
1651-AA72	Changes to the Visa Waiver Program To Implement the Electronic System for Travel Authorization (ESTA) Program	5/21/15	6/8/15	241-369	224-363	2016 Report: Table A-1
Department of Housing and Urban Development						
2502-AI61	Real Estate Settlement Procedures Act (RESPA); To Simplify and Improve the Process of Obtaining Mortgages and Reduce Consumer Costs (FR-5180)	11/7/08	11/17/08	2,303	884	2010 Report: Table 1-4
Department of Justice						
1117-AA61	Electronic Prescriptions for Controlled Substances [75 FR 16236]	3/10/10	3/31/10	348-1,320	35-36	2011 Report: Table A-1
1190-AA44	Nondiscrimination on the Basis of Disability in Public Accommodations and Commercial Facilities [75 FR 56164]	7/22/10	9/15/10	980-2,056	549-719	2011 Report: Table A-1
1190-AA46	Nondiscrimination on the Basis of Disability in State and Local Government Services [75 FR 56236]	7/22/10	9/15/10	151-304	122-172	2011 Report: Table A-1
Department of Labor						
1210-AB06	Revision of the Form 5500 Series and Implementing Regulations	8/30/07	11/16/07	0	(83)	2008 Report: Table 1-4
1210-AB07	Improved Fee Disclosure for Pension Plan Participants	10/5/10	10/20/10	780-3,255	217-362	2012 Report: Table 1-5(a)
1210-AB35	Statutory Exemption for Provision of Investment Advice	9/29/11	10/25/11	5,789-15,134	1,571-4,218	2012 Report: Table 1-5(a)
1218-AB47	Confined Spaces in Construction	4/3/15	5/4/15	up to 77	50-51	2016 Report: Table A-1
1218-AB77	Employer Payment for Personal Protective Equipment	11/2/07	11/15/07	40-336	2-20	2009 Report: Table 1-4

RIN	Title	Completed	Published	Benefits	Costs	Source of Estimates
1218-AC20	Hazard Communication	2/21/12	3/26/12	517-1,584	132-164	2013 Report: Table 1-6(a)
1219-AB46	Emergency Mine Evacuation	12/5/06	12/8/06	10	41	2008 Report: Table 1-4
1218-AC01	Cranes and Derricks in Construction [75 FR 47906]	6/22/10	8/9/10	172	123-126	2011 Report: Table A-1
1218-AB67	Electric Power Transmission and Distribution; Electrical Protective Equipment	12/20/13	4/11/14	150	39-42	2015 Report: Table A-1
1219-AB64	Lowering Miners' Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors	4/21/14	5/1/14	15-42	23-29	2015 Report: Table A-1
Department of Transportation						
2120-AI17	Washington, DC, Metropolitan Area Special Flight Rules Area	12/3/08	12/16/08	10-839	89-382	2010 Report: Table 1-4
2120-AI23	Transport Airplane Fuel Tank Flammability Reduction	7/9/08	7/21/08	21-66	60-67	2009 Report: Table 1-4
2126-AB46	Inspection, Repair, and Maintenance; Driver-Vehicle Inspection Report (RRR)	12/8/14	12/18/14	0	-1,357	2016 Report: Table A-1
2127-AK43	Federal Motor Vehicle Safety Standard No. 111, Rearview Mirrors	3/31/14	4/7/14	223-510	458-790	2015 Report: Table A-1
2127-AK56	Require Installation of Seat Belts on Motorcoaches, FMVSS No. 208 (MAP-21)	11/20/13	11/25/13	18-134	5-6	2015 Report: Table A-1
2120-AI92	Automatic Dependent Surveillance--Broadcast (ADS-B) Equipage Mandate to Support Air Traffic Control Service [75 FR 30160]	5/20/10	5/28/10	144-189	148-284	Internal database[144]
2120-AJ01	Part 121 Pilot Age Limit	6/8/09	7/15/09	30-35	4	2010 Report: Table 1-4
2120-AJ67	Pilot Certification and Qualification Requirements (Formerly First Officer Qualification Requirements) (HR 5900)	7/9/13	7/15/13	13-29	122-153	2014 Report: Table 1-6(a)
2125-AF19	Real-Time System Management Information Program	10/13/10	11/8/10	152-166	132-137	2012 Report: Table 1-5(a)
2126-AA59	New Entrant Safety Assurance Process	11/26/08	12/16/08	472-602	60-72	2010 Report: Table 1-4

[144] The benefits and costs of this rule were misreported in Table A-1 of the *2011 Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on State, Local and Tribal Entities.* The correct estimates are drawn from the OMB internal database, "ROCIS."

RIN	Title	Completed	Published	Benefits	Costs	Source of Estimates
2126-AA89	Electronic On-Board Recorders for Hours-of-Service Compliance[145]	3/18/10	4/5/10	Not Included	Not Included	2011 Report: Table A-1
2126-AA97	National Registry of Certified Medical Examiners	4/4/12	4/20/12	58-180	25-28	2013 Report: Table 1-6(a)
2126-AB14	Hours of Service of Drivers[146]	11/13/08	11/19/08	Not included	Not included	2010 Report: Table 1-4
2126-AB26	Hours of Service	12/20/12	12/27/12	182-1,025	389	2013 Report: Table 1-6(a)
2127-AG51	Roof Crush Resistance	4/30/09	5/12/09	374-1,160	748-1,189	2010 Report: Table 1-4
2127-AJ10	Side Impact Protection Upgrade--FMVSS No. 214	8/28/07	9/11/07	736-1,058	401-1,051	2008 Report: Table 1-4
2127-AJ37	Reduced Stopping Distance Requirements for Truck Tractors	7/16/09	7/27/09	1,250-1,520	23-164	2010 Report: Table 1-4
2127-AK97	Electronic Stability Control Systems for Heavy Vehicles (MAP-21)	5/21/15	6/23/15	327-532	36	2016 Report: Table A-1
2137-AE91	Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains	5/1/15	5/8/15	66-223	159-179	2016 Report: Table A-1
2127-AJ77	Electronic Stability Control (ESC)	3/23/07	4/6/07	5,987-11,282	913-917	2008 Report: Table 1-4
2127-AK23	Ejection Mitigation	12/23/10	1/19/11	1,500-2,375	419-1,373	2012 Report: Table 1-5(a)
2127-AK29	Passenger Car and Light Truck Corporate Average Fuel Economy Model Year 2011	3/24/09	3/30/09	857-1,905	650-1,910	2010 Report: Table 1-4
2130-AC03	Positive Train Control [75 FR 2597]	12/30/09	1/15/10	34-37	519-1,264	2011 Report: Table A-1
2130-AC27	Positive Train Control Systems Amendments (RRR)	5/9/12	5/14/12	34-65	1-3	2013 Report: Table 1-6(a)
2137-AE15	Pipeline Safety: Distribution Integrity Management [74 FR 63906]	11/6/09	12/4/09	97-145	92-97	2011 Report: Table A-1
2137-AE25	Pipeline Safety: Standards for Increasing the Maximum Allowable Operating Pressure for Gas Transmission Pipelines	10/2/08	10/17/08	85-89	13-14	2010 Report: Table 1-4
2130-AB84	Regulatory Relief for Electronically Controlled Pneumatic Brake System Implementation	8/29/08	10/16/08	828-884	130-145	2009 Report: Table 1-4
Department of Transportation and Environmental Protection Agency						

[145] This rule was vacated on Aug. 26, 2011, by the U.S Court of Appeals for the Seventh Circuit. (Benefits: $165-170 million; Costs: $126-129 million)

[146] As explained in the 2010 Report, the benefits and costs of this rule are not included in the benefit and cost totals for the 10-year aggregate.

RIN	Title	Completed	Published	Benefits	Costs	Source of Estimates
2127-AK50: 2060-AP58	Light-Duty Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards [75 FR 25323]	3/31/10	5/7/10	3.9-18.2 thousand	1.7-4.7 thousand	2011 Report: Table 1-5(a)
2127-AK74; 2060-AP61	Commercial Medium- and Heavy-Duty On-Highway Vehicles and Work Truck Fuel Efficiency Standards	8/8/11	9/15/11	2,150-2,564	331-496	2012 Report: Table 1-5(a)
2127-AK79; 2060-AQ54	Joint Rulemaking to Establish 2017 and Later Model Year Light Duty Vehicle GHG Emissions and CAFE Standards	8/27/12	10/15/12	21,220-28,822	5,305-8,828	2013 Report: Table 1-6(a)
Environmental Protection Agency						
2040-AF14	Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category	9/29/15	11/3/15	303-443	369-376	2016 Report: Table A-1
2040-AF30	Clean Water Rule: Definition of "Waters of the United States"	5/26/15	6/29/15	261-441	122-358	2016 Report: Table A-1
2050-AE81	Standards for the Management of Coal Combustion Residuals Generated by Commercial Electric Power Producers	12/19/14	4/17/15	182-226	399-576	2016 Report: Table A-1
2050-AG46	Revising Underground Storage Tank Regulations - Revisions to Existing Requirements and New Requirements for Secondary Containment and Operator Training	4/29/15	7/15/15	96-422	105-127	2016 Report: Table A-1
2060-AP38	Review of the National Ambient Air Quality Standards for Ozone	9/30/15	10/26/15	1,159-2,724	559	2016 Report: Table A-1
2060-AP69	NESHAP for Brick and Structural Clay Products Manufacturing and NESHAP for Clay Ceramics Manufacturing	9/23/15	10/26/15	61-154	23	2016 Report: Table A-1
2060-AP93	Standards of Performance for New Residential Wood Heaters and New Residential Hydronic Heaters and Forced-Air Furnaces	2/2/15	3/16/15	2,428-5,953	31-36	2016 Report: Table A-1
2040-AF11	Water Quality Standards (Numeric Nutrient Criteria) for Florida's Lakes and Flowing Waters	11/18/10	12/6/10	23	111-169	2012 Report: Table 1-5(a)

RIN	Title	Completed	Published	Benefits	Costs	Source of Estimates
2050-AG16	Revisions to the Spill Prevention, Control, and Countermeasure (SPCC) Rule [74 FR 58784]	10/23/09	11/13/09	0	(78-85)	2011 Report: Table A-1
2050-AG23	Oil Pollution Prevention; Spill Prevention, Control, and Countermeasure (SPCC) Requirements--Amendments	11/15/06	12/26/06	0	(86-148)	2008 Report: Table 1-4
2050-AG31	Definition of Solid Wastes Revisions	9/17/08	10/30/08	16-285	14	2009 Report: Table 1-4
2050-AG50	Oil Pollution Prevention: Spill Prevention, Control, and Countermeasure Rule Requirements - Amendments for Milk Containers	4/8/11	4/18/11	0	(118-121)	2012 Report: Table 1-5(a)
2060-AK70	Control of Hazardous Air Pollutants From Mobile Sources	2/8/07	2/26/07	2,310-2,983	298-346	2008 Report: Table 1-4
2060-AK74	Clean Air Fine Particle Implementation Rule	3/28/07	4/25/07	18,833-167,408	7,324	2008 Report: Table 1-4
2060-AM06	Control of Emissions from New Locomotives and New Marine Diesel Engines Less Than 30 Liters per Cylinder	2/14/08	5/6/08	4,145-14,550	295-392	2009 Report: Table 1-4
2060-AM34	Control of Emissions From Nonroad Spark-Ignition Engines and Equipment	8/18/08	10/8/08	899-4,762	196-200	2009 Report: Table 1-4
2060-AR33	Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units	8/2/15	10/23/15	12,738-22,094	2,480-2,642	2016 Report: Table A-1
2060-AN24	Review of the National Ambient Air Quality Standards for Ozone	3/12/08	3/27/08	1,581-14,934	6,676-7,730	2009 Report: Table 1-4
2060-AN72	Petroleum Refineries--New Source Performance Standards (NSPS)--Subpart J	4/30/08	6/24/08	176-1,669	27	2009 Report: Table 1-4
2060-AN72	Petroleum Refineries--New Source Performance Standards (NSPS)--Subparts J and Ja	5/7/12	9/12/12	240-580	(79)	
2060-AN83	Review of the National Ambient Air Quality Standards for Lead	10/15/08	11/12/08	455-5,203	113-2,241	2010 Report: Table A-1
2060-AO15	National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants [75 FR 54970]	8/6/10	9/9/10	6,074-16,317	839-861	2011 Report: Table A-1
2060-AO47	Review of the National Ambient Air Quality Standards for Particulate Matter	12/14/12	1/15/13	2,980-7,532	44-290	2014 Report: Table 1-6(a)

RIN	Title	Completed	Published	Benefits	Costs	Source of Estimates
2060-AO48	Review of the National Ambient Air Quality Standards for Sulfur Dioxide [75 FR 35519]	6/2/10	6/22/10	2,809-38,628	334-2,019	2011 Report: Table A-1
2060-AP36	National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (Diesel) [75 FR 9647]	2/17/10	3/3/10	709-1,920	296-311	2011 Report: Table A-1
2060-AP50	Cross State Air Pollution Rule (CAIR Replacement Rule)	7/1/11	8/8/11	20,467-59,697	691	2012 Report: Table 1-5(a)
2060-AP52	National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Electric Utility Steam Generating Units	12/16/11	2/16/12	28,143-76,753	8,187	2013 Report: Table 1-6(a)
2060-AP76	Oil and Natural Gas Sector--New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants	4/17/12	8/16/12	155	142	2013 Report: Table 1-6(a)
2060-AQ13	National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines--Existing Stationary Spark Ignition (Gas-Fired) [75 FR 51569]	8/10/10	8/20/10	380-992	202-209	2011 Report: Table A-1
2060-AQ58	Reconsideration of Final National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines	1/14/13	1/30/13	617-1,697	404	2014 Report: Table 1-6(a)
2060-AR13	National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule	12/20/12	1/31/13	21.103-56,555	1,182-1,351	2014 Report: Table 1-6(a)
2070-AC83	Lead-Based Paint; Amendments for Renovation, Repair and Painting	3/28/08	4/22/08	618-1,612	366-400	2009 Report: Table 1-4
2070-AJ55	Lead; Amendment to the Opt-out and Recordkeeping Provisions in the Renovation, Repair, and Painting Program [75 FR 24802]	4/22/10	5/6/10	785-2,953	267-290	2011 Report: Table A-1
2040-AE95	Criteria and Standards for Cooling Water Intake Structures	5/19/14	8/15/14	24-27	223-241	2015 Report: Table A-1

RIN	Title	Completed	Published	Benefits	Costs	Source of Estimates
2060-AQ86	Control of Air Pollution From Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards	3/3/14	4/28/14	3,199-10,638	1,063	2015 Report: Table A-1

( ) indicates negative.

APPENDIX B: THE BENEFITS AND COSTS OF FISCAL YEAR 2006 MAJOR RULES

Table B-1 lists rules that were omitted from the ten-year running totals presented in Chapter I of our Report to Congress. Rules for which OMB concluded review between October 1, 2005, and September 30, 2006, were included in Chapter I of the 2016 Report as part of the ten-year totals, but are not included in the 2017 Report.

While we limit the Chapter I accounting statement to regulations issued over the previous ten years, we have included in this Appendix the benefits and cost estimates provided for the economically significant rulemakings that have been covered in the previous year's Report in order to provide transparency.

Table B-1: Estimates of Annual Benefits and Costs of Major Federal Rules
October 1, 2005 - September 30, 2006
(millions of 2001 dollars)

Agency	RIN	Title	OMB Review Completed	Benefits	Costs
HHS	0938-AN49	Electronic Prescribing Standards (CMS-0011-F)	11/1/05	196-660	82-274
DOL	1218-AB45	Occupational Exposure to Hexavalent Chromium (Preventing Occupational Illness: Chromium)	2/17/06	35-862	263-271
DOT	2120-AI51	Congestion and Delay Reduction at Chicago O'Hare International Airport	8/18/06	153-164	0
DOT	2127-AJ61	Light Truck Average Fuel Economy Standards, Model Year 2008 and Possibly Beyond	3/28/06	847-1,035	666-754
EPA	2040-AD38	National Primary Drinking Water Regulations: Stage 2 Disinfectants and Disinfection Byproducts Rule	11/23/05	598-1,473	74-76
EPA	2060-AM82	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	6/28/06	679-757	56
EPA	2060-AI44	Review of the National Ambient Air Quality Standards for Particulate Matter[147]	9/21/06	not included	not included

[147] Although promulgated in 2006, this rule was removed from recent 10-year aggregate estimates to avoid double-counting benefits and costs with implementing regulations. (Benefits: $3,837-39,879: Costs: 2,590-2,833.)

APPENDIX C: INFORMATION ON THE REGULATORY ANALYSES FOR MAJOR RULES BY INDEPENDENT AGENCIES

Table C-1: Total Number of Major Rules Promulgated by Independent Agencies, October 1, 2006 – September 30, 2016

Agency	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Consumer Financial Protection Bureau (CFPB)	--	--	--	--	--	2	4	1	--	1
Commodity Futures Trading Commission (CFTC)	--	--	--	--	1	13[148]	2	4[149]	--	1
Consumer Product Safety Commission (CPSC)	--	--	--	--	1	1	--	--	--	--
Department of Treasury, Office of the Comptroller of the Currency (OCC)	--	--	--	--	--	1[150]	--	3[151]	2[152]	3[153]
Farm Credit Administration	--	--	--	--	--	--	--	--	1[154]	2[155]
Federal Communications Commission (FCC)	2	4	--	--	--	--	1	1	1	--
Federal Deposit Insurance Corporation (FDIC)	--	--	--	--	--	1[156]	1	4[157]	2[158]	3[159]

[148] Three of these rules are joint rules with SEC.
[149] One of these rules is a joint rule with OCC, Federal Reserve System, FDIC and SEC.
[150] This is a joint rule with FDIC and the Federal Reserve System.
[151] All of these rules are joint rules with CFTC, Federal Reserve System, FDIC and SEC.
[152] One rule is a joint rule with the Federal Reserve System, FDIC, Farm Credit Administration, and NCUA. The other rule is a joint rule with the Federal Reserve System, FDIC, Federal Housing Finance Agency, SEC, and HUD.
[153] Two of these rules are joint rules with the Federal Reserve System, FDIC, Farm Credit Administration, and Federal Housing Finance Agency.
[154] This is a joint rule with OCC, Federal Reserve System, FDIC, and NCUA.
[155] These are joint rules with the OCC, Federal Reserve System, FDIC, and Federal Housing Finance Agency.
[156] This is a joint rule with OCC and the Federal Reserve System.
[157] Three of these rules are joint rules with CFTC, OCC, Federal Reserve System and SEC.
[158] One rule is a joint rule with OCC, Federal Reserve System, Farm Credit Administration and NCUA. The other rule is a joint rule with OCC, Federal Reserve System, Federal Housing Finance Agency, SEC and HUD.
[159] Two of these rules are joint rules with OCC, Federal Reserve System, Farm Credit Administration, and Federal Housing Finance Agency.

Federal Energy Regulatory Commission (FERC)	--	1	--	--	--	--	--	1[160]	--	1[161]
Federal Housing Finance Agency	--	--	--	--	--	--	--	--	1[162]	2[163]
Federal Reserve System	--	--	3	7	4	1[164]	1	5[165]	3[166]	4[167]
Federal Trade Commission (FTC)	--	--	--	1	--	--	--	--	--	--
National Credit Union Administration (NCUA)	--	--	--	--	--	--	--	1	1[168]	1
Nuclear Regulatory Commission (NRC)	1	2	2	1	1	1	4	1	1	1
Securities and Exchange Commission (SEC)	7	4	8	9	10	8[169]	5	6[170]	6[171]	7
Total	10	11	13	17	17	23	18	19	10	18

[160] This is a joint rule with DOE.
[161] This is a joint rule with DOE.
[162] This is a joint rule with OCC, Federal Reserve System, FDIC, SEC and HUD.
[163] These are joint rules with OCC, Federal Reserve System, FDIC, and Farm Credit Administration.
[164] This is a joint rule with OCC and FDIC.
[165] Four of these rules are joint rules with CFTC, OCC, FDIC and SEC.
[166] Two rules are joint rules with other agencies including OCC, FDIC, Federal Housing Finance Agency, SEC, Farm Credit Administration, NCUA and HUD.
[167] Two of these rules are joint rules with OCC, FDIC, Farm Credit Administration, and Federal Housing Finance Agency.
[168] This is a joint rule with OCC, Federal Reserve System, FDIC, and Farm Credit Administration.
[169] Three of these rules are joint rules with CFTC.
[170] Two of these rules are joint rules CFTC, OCC, Federal Reserve System, and FDIC.
[171] One rule is a joint rule with OCC, Federal Reserve System, FDIC, Federal Housing Finance Agency and HUD.

Table C-2: Total Number of Major Rules with Some Information on Benefits or Costs Promulgated by Independent Agencies, October 1, 2006- September 30, 2016[172]

Agency	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Consumer Financial Protection Bureau (CFPB)	--	--	--	--	--	2	4	1	--	1
Commodity Futures Trading Commission (CFTC)	--	--	--	--	1	9[173]	1	2	--	1
Consumer Product Safety Commission (CPSC)	--	--	--	--	0	0	--	--	--	--
Department of Treasury, Office of the Comptroller of the Currency (OCC)	--	--	--	--	--	0	--	1[174]	2	3[175]
Farm Credit Administration	--	--	--	--	--	--	--	--	0	2[176]
Federal Communications Commission (FCC)	0	0	--	--	--	--	0	0	0	--
Federal Deposit Insurance Corporation (FDIC)	--	--	--	--	--	0	1	1[177]	1	1
Federal Energy Regulatory Commission (FERC)	--	1	--	--	--	--	--	0	--	0
Federal Housing Finance Agency	--	--	--	--	--	--	--	--	1	2[178]
Federal Reserve System	--	--	0	2	0	0	0	2[179]	2	2[180]
Federal Trade Commission (FTC)	--	--	--	1	--	--	--	--	--	--
National Credit Union Administration (NCUA)	--	--	--	--	--	--	--	0	0	0
Nuclear Regulatory Commission (NRC)	--	1	1	--	--	--	1	--	--	1
Securities and Exchange Commission (SEC)	7	4	8	9	9	7[181]	5	4	5	7[182]
Total	7	6	8	11	10	16	7	11	9	14

[172] Table C-2 excludes all fee assessment rules promulgated by independent agencies. FCC promulgated six fee assessment rules from 1997 through 2002. NRC promulgated statutorily mandated fee assessment rules from 1997 through 2015.
[173] Two of these rules are joint rules with SEC.
[174] This rule is a joint rule with FDIC and Federal Reserve System.
[175] Two of these rules are joint rules with the Federal Reserve System, FDIC, Farm Credit Administration, and Federal Housing Finance Agency.
[176] These are joint rules with OCC, Federal Reserve System, FDIC, and Federal Housing Finance Agency
[177] This rule is a joint rule with OCC and Federal Reserve System.
[178] These are joint rules with OCC, Federal Reserve System, FDIC, and Farm Credit Administration.
[179] These rules are joint rules with OCC, and FDIC.
[180] Federal Reserve System promulgated two rules and two joint rules with OCC, FDIC, Farm Credit Administration and Federal Housing Finance Agency. The joint rules are the ones for which some information on cost or benefits were provided.
[181] Two of these rules are joint rules with CFTC.
[182] One of these rules has been disapproved by Congress, using its authority under the Congressional Review Act, and is therefore not in effect.

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