



## OMB 2014 Draft Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities

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Attention: Administrator Howard Shelanski, Office of Information and Regulatory Affairs, Office of Management and Budget

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Dear Administrator Shelanski,

Thank you for the opportunity to comment on the Office of Management and Budget's (OMB) Draft 2014 Annual Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities. This annual report offers an important glimpse into a regulatory system that has profound effects on the well-being and opportunities of the American people. It is important that the costs and benefits of the US regulatory system are transparent and that progress is made each year toward improving our regulatory system such that it achieves important societal goals at a reasonable cost.

The Regulatory Studies Program of the Mercatus Center at George Mason University is dedicated to advancing knowledge about the effects of regulation on society. As part of its mission, the program conducts careful and independent analyses that employ contemporary economic scholarship to assess regulations and their effects on the economic opportunities and the social well-being available to all members of American society. This comment addresses the OMB's annual Report to Congress on the Benefits and Costs of Federal Regulations from an economic point of view by more closely examining the societal goals the report intends to achieve and whether this report will successfully achieve those goals, including the goals of the Regulatory Right-to-Know Act, which requires this annual report to Congress.<sup>1</sup>

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1. Regulatory Right-to-Know Act, 31 U.S.C. § 1105 (2000).

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This year's report makes several important improvements over reports from previous years. However, there are still a number of ways in which this report can be made more useful if it is to be a meaningful representation to Congress and the American public of the effects of the regulatory system in the United States. Further, there is a great deal more the Office of Information and Regulatory Affairs (OIRA) can do to use the report as a tool to spur improvement in the quality of regulatory analysis and decision-making at federal agencies. This comment is designed to help OIRA achieve the agency's mandate to ensure compliance with Executive Orders 12866 and 13563 and to make the report a more meaningful representation of what we know, and don't know, about the effects of federal regulations on society.

The OMB stated in the final version of its 2013 report that "improving future analyses would likely be facilitated by having high-quality examples readily available for agency analysts to learn from, build on, or otherwise emulate."<sup>2</sup> In response, this comment includes as appendix A a partial list of best and worst practices from agency regulatory analysis. These examples have been identified using findings from the Mercatus Regulatory Report Card project.<sup>3</sup> The Regulatory Report Card is an in-depth analysis of the quality and use of agency regulatory impact analysis that uses criteria set forth in Executive Order 12866 and OMB *Circular A-4* to evaluate the degree to which regulatory analysis is compliant with federal guidelines.<sup>4</sup> Multiple academic studies that rely on the Report Card's methodology have already been published in peer-reviewed journals.<sup>5</sup>

The remainder of this comment is structured as follows:

- improvements in this year's report
- the incomplete nature of the OMB's report
- retrospective review & analysis of regulations
- precautionary regulation of new technologies
- private benefits & global benefits
- agency use of discount rates
- co-benefits and co-costs
- distributional analysis of regulations
- independent agencies
- uncertainty surrounding benefits estimates from Environmental Protection Agency (EPA) air regulations
- identifying how politics influences the OMB's report
- further considerations

Specific recommendations appear throughout this comment and will be highlighted using bullet points at the end of each section.

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2. Office of Management and Budget, *2013 OMB Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities* (May 2014): 126.

3. For information on the Regulatory Report Card, visit <http://www.mercatus.org/reportcard>.

4. Exec. Order No. 12866, 3 C.F.R. 76 (1993); Office of Management and Budget, *Circular A-4: Regulatory Analysis*, (2003).

5. For example, see Patrick McLaughlin, Jerry Ellig, and John Morrall, "Continuity, Change, and Priorities: The Quality and Use of Regulatory Analysis Across US Administrations," *Regulation and Governance* 7, no. 2 (June 2013): 153-73; and Jerry Ellig and Patrick McLaughlin, "The Quality and Use of Regulatory Analysis in 2008," *Risk Analysis* 32, no. 5 (May 2013): 855-80.

## IMPROVEMENTS IN THIS YEAR'S REPORT

Several key improvements have been made to both the final version of the 2013 Report to Congress and the draft version of the 2014 Report that bear mentioning. Specifically, the following improvements are worth highlighting:

- Mercatus has identified problems with estimates of benefits from regulations aimed at reducing fine particulate matter (PM), or that use “private benefits” as a component of benefits estimates.<sup>6</sup> The OMB is showing improved transparency in both of these areas. Relating to the benefits from EPA regulations aimed at reducing PM, the OMB now clearly highlights the key assumptions that underlie the EPA’s calculation of benefits.<sup>7</sup> The inherent uncertainty in these estimates is now far clearer than in prior OMB reports to Congress or in previous EPA analyses. The OMB has also chosen to highlight the use of “private benefits” in agency analysis. As the administrator knows, there is still considerable debate about whether these “benefits” should be counted in agency analysis. The OMB should be commended for transparently breaking these benefits out in a separate table so that the public can see the contribution this analytical method is adding to the overall estimate of benefits.<sup>8</sup>
- The OMB removed a troublesome graph between the draft version of the 2013 Report to Congress and the version that was eventually finalized. This graph, Figure 2-1(1), appeared on page 63 of the draft report and attributed benefits and costs of various rulemakings to different presidential administrations. Due to the complex nature of rulemaking, including the fact that rules often take many years to promulgate and cross multiple presidential administrations, this chart added an unnecessary political dimension to the report that should not be present if the report is to be taken seriously as an objective assessment of the impacts of the US regulatory system. The OMB should be commended for removing this chart from the final 2013 report.
- Several pages of text have been removed that appeared in previous years’ reports related to agencies incorporating well-being analysis into rulemaking. While research using well-being surveys is increasingly popular in the academic realm, its practical implications for policy use are uncertain, at best. The OMB should not be recommending agencies incorporate this type of analysis until the methods for evaluating well-being changes as a result of public policies are more clearly understood. As it now stands, the use of well-being analysis for public policy is seriously problematic.<sup>9</sup>

While these improvements are commendable, this remainder of this comment will focus on ways to further improve the report.

## INCOMPLETE NATURE OF THE OMB’S REPORT

Like previous years’ reports, this year’s report lacks a holistic view of how the regulatory system affects the US economy. This year, the OMB’s report provided monetized estimates of both benefits and costs for only seven regulations out of the thousands finalized this past fiscal year. This number compares with 14 such regulations the previous fiscal year, a decline of 50 percent in a single year. While the report claims as much as \$862.5 billion (2001\$) in benefits from 116 regulations finalized since FY 2004,<sup>10</sup> it is difficult to believe this number is representative of

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6. For example, see W. Kip Viscusi and Ted Gayer, “Overriding Consumer Preferences with Energy Regulations” (Working Paper No. 12-21, Mercatus Center at George Mason University, Arlington, VA, July 2012); and Richard Williams, “Comment on OMB’s Draft 2013 Report to Congress on the Benefits and Costs of Federal Regulations” (Public Interest Comment, Mercatus Center at George Mason University, Arlington, VA, July 2013).

7. Office of Management and Budget, *2014 Draft Report*, 15–18.

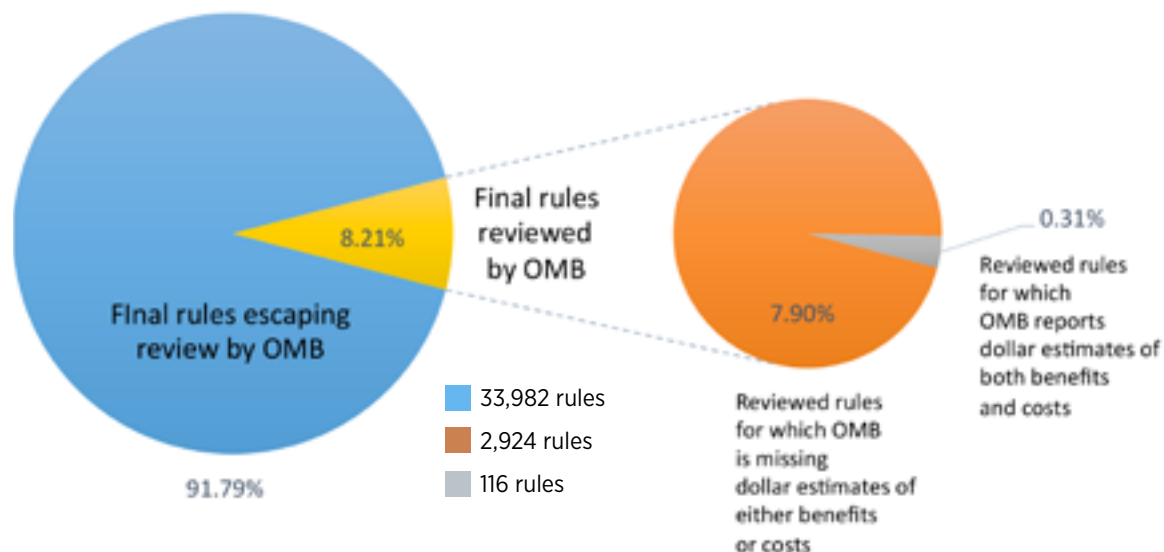
8. OMB, *2014 Draft Report*, 32.

9. For descriptions of problems associated with using well-being analysis for public policy purposes, see “...and the Pursuit of Happiness: Wellbeing and the Role of Government,” edited by Philip Booth, The Institute for Economic Affairs (2012); or Kip Viscusi, “The Benefits of Mortality Risk Reduction: Happiness Surveys vs. the Value of a Statistical Life,” *Duke Law Journal* 62 (2013): 1735–45.

10. OMB, *2014 Draft Report*, Table 1-1

the entire regulatory system, given the limited scope of the report. Out of 37,022 regulations finalized from fiscal year 2004 through 2013, the OMB only reports dollar estimates of both benefits and costs for 116 rules. Using analysis from these rules, the OMB derives the estimate of benefits mentioned above. But as shown in figure 1 below, these rules represent less than one-third of one percent of all rules.

Figure 1. Final rules, FY 2004–FY 2013.



In the last decade, 33,982 rules issued by agencies escaped OMB review altogether, leaving roughly 92 percent of the regulatory system completely outside of the OMB’s purview. Of the 3,040 rules the OMB reviewed, slightly less than 4 percent (116 rules) have dollar estimates of both benefits and costs appearing in the OMB’s report. It is difficult to take the figures about benefits and costs seriously when such a tiny fraction of rules are included in the report. The OMB should explicitly state in its report that it can’t say for certain whether benefits exceed costs during the time frame analyzed or in any particular year. It is also problematic that the number of rules for which the OMB reports dollar estimates of benefits and costs is not increasing over time. Figure 2 on the next page displays the trend over the last decade.<sup>11</sup>

The seven rules in FY 2013 make it the second-lowest year for rules where OMB reported dollar estimates of costs and benefits in the last decade. Furthermore, the rules included here do not necessarily reflect the rules that are most important to the American public. For example, the OMB reports dollar estimates of benefits and costs for a rule that defined “gluten-free” for the purposes of labeling foods that are gluten-free.<sup>12</sup> At the same time, four FY 2013 regulations from the Affordable Care Act<sup>13</sup> do not have *any* dollar estimates of benefits *or* costs in the OMB’s report.<sup>14</sup> Zero regulations emanating from Independent Regulatory Commissions have dollar estimates of both benefits and costs. Many of these agencies are financial regulators tasked with implementing the Dodd-Frank Act.<sup>15</sup> These examples suggest that agency priorities are not aligned with the public’s concerns.

While the OMB asserts that such a small sample of rules should not be a major concern, this claim is not convincing. The OMB states, “Our evaluation of a few representative agencies found that major rules represented the vast

11. OMB, *2014 Draft Report*, Table 1-4.

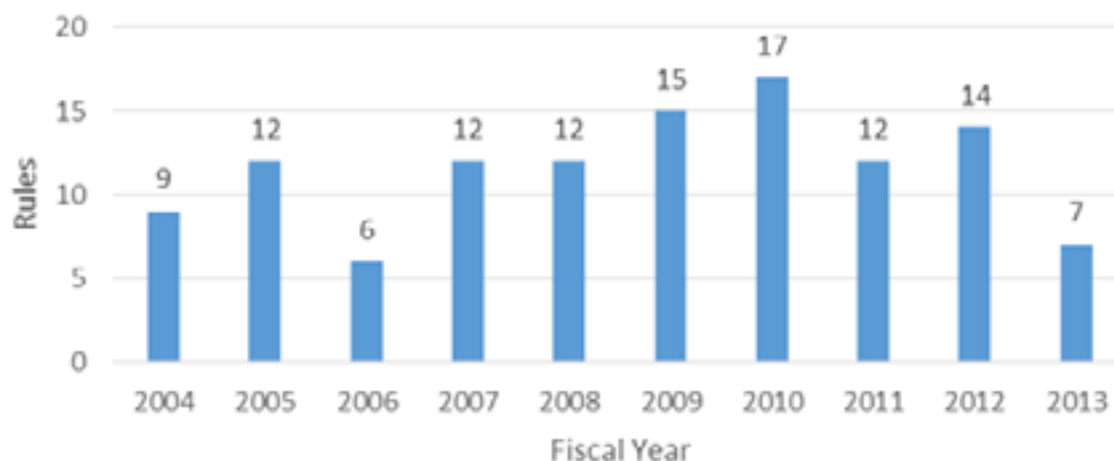
12. OMB, *2014 Draft Report*, 24.

13. Patient Protection and Affordable Care Act, H.R. 3590, 111th Cong. (2010).

14. OMB, *2014 Draft Report*, Table 1-6(c), 27.

15. Dodd–Frank Wall Street Reform and Consumer Protection Act, H.R. 4173, 111th Congress (2010).

Figure 2. Numbers of rules included in OMB report for which both benefit and cost estimates are presented, by fiscal year, 2004-2013.



majority of the benefits and costs of all rules promulgated by these agencies *and reviewed by OMB.*<sup>16</sup> In the 2004 report that the OMB cites to support its claim, the OMB looked only at three agencies: Occupational Safety and Health Administration (OSHA), the Food and Drug Administration (FDA), and the National Highway Traffic Safety Administration (NHTSA). These agencies were chosen “because they are more likely to have estimated quantified costs and benefits for non-major rules,”<sup>17</sup> not because they are likely to be representative of all agencies. While the OMB may be able to gain some insights from an analysis of the rules for which the most data is available, the OMB does not have any basis for claiming that a subset of rules chosen in this manner is a representative sample from which the OMB can draw general conclusions about all rules. Further, the OMB is only claiming that major rules constitute the vast majority of benefits and costs of rules “reviewed by the OMB.” But as was demonstrated above, the OMB only reviews about 8 percent of all rules. As a result, the benefits and costs figures included in the OMB’s report are unlikely to be representative of the regulatory system as a whole. The OMB should acknowledge as much and include information on the number of rules that are missing cost and benefit information in its report, as well as information on rules that escape OMB review each fiscal year.

#### Recommendations

- The OMB does not know with certainty that benefits exceed costs in each year going back to FY 2004. Figure 1-1 is particularly misleading as it gives the appearance that the OMB does know this. The OMB should explicitly state in its report that it can’t say for certain whether benefits exceed costs during the time frame analyzed or in any particular year.
- The OMB should report information on the number of rules that are missing cost and benefit information in its report and on rules that escape OMB review each fiscal year.
- The OMB should acknowledge the benefits and costs figures included its report are unlikely to be representative of the regulatory system as a whole.

16. OMB, *2014 Draft Report*, 22n33, emphasis added.

17. OMB, *2014 Report to Congress*, 26.

## RETROSPECTIVE REVIEW & ANALYSIS OF REGULATIONS

A central theme in this year's report is the OMB's desire to encourage more widespread use of retrospective analysis by federal agencies. The OMB's commitment to retrospective review and analysis should be commended, in particular for the recommendation that agencies "commit themselves in the regulatory text to conduct a retrospective review of regulation."<sup>18</sup>

Unfortunately, this type of commitment rarely occurs. The Mercatus Center Regulatory Report Card includes one criterion for evaluation that asks,

Does the proposed rule establish measures and goals that can be used to track the regulation's results in the future?<sup>19</sup>

This question often scores among the lowest of the criteria the Report Card evaluates. The average score on this criterion for 108 prescriptive regulations that were proposed between 2008 and 2012 was just 1.3 out of five points. This is equivalent to having almost no relevant content on the topic.<sup>20</sup> A score of one means that the regulatory impact analysis had some material that could be used to develop goals and measures, but no goals and measures were actually proposed.

It appears agencies have very little incentive to conduct quality retrospective analysis of their regulatory programs. Regulators are rewarded for issuing new rules, not removing old ones.<sup>21</sup> Furthermore, legislators who are supposed to oversee agency activities often show little interest in assessing whether the laws they pass actually achieve objectives.<sup>22</sup> Similar perverse incentives face the regulatory analysts themselves. Analysts and agency managers "are typically rewarded according to whether the political leadership at such agencies views their analyses as useful in supporting their policy goals, which may (or may not) include the use of careful analytic methods."<sup>23</sup> Unfortunately, little current research evaluates the quality of agency retrospective analysis efforts. The research that exists provides evidence that agency analysis is often seriously incomplete, lacking estimates of both benefits and costs, or estimating only compliance costs or estimates of cost-effectiveness, which is inferior to benefit-cost analysis.<sup>24</sup>

Without explicit orders to agencies in the form of legislation or an executive order, it is unlikely agencies will begin committing to conduct retrospective analysis at the time of proposed rulemakings. President Carter's Executive Order 12044 included a requirement that the agency head could not approve a regulation unless the agency had a plan for retrospective analysis of the regulation, but this requirement was dropped in subsequent executive orders.<sup>25</sup> The OMB could make progress in this regard by explicitly recommending agencies be required to make this sort of commitment. Such a recommendation would be sensible, given the OMB's mandate to recommend regulatory reforms under the Regulatory Right-to-Know Act.<sup>26</sup>

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18. OMB, *2014 Draft Report*, 54.

19. Mercatus Center at George Mason University, Regulatory Report Card, Question 11, <http://mercatus.org/reportcards>.

20. This average excludes budget regulations, which tend to score even lower on this criterion.

21. Patrick McLaughlin and Richard Williams, "The Consequences of Regulatory Accumulation and a Proposed Solution" (Regulatory Studies Working Paper 14-03, Mercatus Center at George Mason University, Arlington, VA, 2014), 36-37, [http://mercatus.org/sites/default/files/McLaughlin\\_RegulatoryAccumulation\\_v2.pdf](http://mercatus.org/sites/default/files/McLaughlin_RegulatoryAccumulation_v2.pdf).

22. S. E. Dudley and G. M. Gray, "Improving the Use of Science to Inform Environmental Regulation," in *Institutions and Incentives in Regulatory Science*, ed. J. S. Johnson (New York: Lexington Books, 2012), 171.

23. Randall Lutter, "Regulatory Policy: What Role for Retrospective Analysis and Review?," *Journal of Benefit-Cost Analysis* 4, no. 1 (2013): 17-38, doi: 10.1515/jbca-2012-0012.

24. *Ibid.*

25. Exec. Order No. 12044, 43 Fed. Reg. 12,661, § 2(d)(8) (March 24, 1978).

26. Regulatory Right-to-Know Act, 31 U.S.C. § 1105 (2000).

In addition, the OMB could create a retrospective review checklist, much like the regulatory analysis checklist it already has.<sup>27</sup> The checklist could require that agencies

- identify the specific outcomes of value to the public that the regulation is supposed to produce;
- explain how these outcomes are related to the agency's mission and one or more strategic goals in the agency's strategic plan;
- identify what indicators the agency will use to measure progress toward these outcomes;
- estimate ex ante marginal benefits of proposed and final rules that measure, in terms of outcomes, how much of a goal each regulatory option is expected to achieve;
- determine what kinds of retrospective program evaluations will be necessary to identify how the regulation has affected outcomes;
- identify and make provisions for gathering the data necessary to track a regulation's ex post benefits and costs; and
- track and report the annual progress toward achieving a given goal and the social costs expended toward achieving that goal.<sup>28</sup>

The OMB should also consider including a section about the retrospective review plans that agencies are implementing as part of Executive Order 13563.<sup>29</sup> It is difficult to monitor how successful these efforts have been, but what we know so far is discouraging.<sup>30</sup> Further, even though the *Federal Register* has set up a website outlining the retrospective review efforts of agencies, it is difficult to rigorously determine how well agencies are responding to the new requirements.<sup>31</sup> The OMB could help by summarizing agency retrospective review and analysis efforts and offering recommendations for reform in its annual report. The OMB did something similar to in its 1998 Report to Congress.<sup>32</sup>

## Recommendations

- The OMB should recommend that agencies be required to commit to retrospective analysis at the rule-proposal stage.
- The OMB should create a retrospective analysis checklist to educate agencies on how to commit to reevaluate rules and programs at the rule-proposal stage.
- The OMB should include a section in its report describing retrospective review plans by agencies implemented in response to Executive Order 13563, including recommendations for reform.

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27. OMB, *Agency Checklist: Regulatory Impact Analysis*, 2012, [http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/RIA\\_Checklist.pdf](http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/RIA_Checklist.pdf).

28. This list comes from Richard Williams, Jerry Ellig, and John Morrall, "Public Interest Comment on the Draft 2010 Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities" (Mercatus Center at George Mason University, Arlington, VA, July 6, 2010), 8–9.

29. Exec. Order No. 13563, 3 C.F.R. 58 (2011).

30. Lutter, "Regulatory Policy," 2013.

31. "Retrospective Review Documents & Agency Plans," *Federal Register*, <https://www.federalregister.gov/blog/learn/regulatory-improvement/retrospective-review-documents>.

32. OMB, *Report to Congress on the Costs and Benefits of Federal Regulations* (January 1999): 24–43.

## PRECAUTIONARY REGULATION OF NEW TECHNOLOGIES

Mercatus research has shown that agencies often regulate before determining whether a serious problem actually exists that merits intervention.<sup>33</sup> Given this tendency to “regulate first, ask questions later,” the OMB can facilitate sound decision-making at agencies by setting forth principles to avoid overly precautionary regulation. These principles are especially important when it comes to new technologies that pose new risks to the public, but have uncertain, and potentially enormous, benefits.

The precautionary principle says that when uncertainty exists surrounding the risks posed by an activity, the burden of proof should rest on those who wish to allow the activity. One definition of the precautionary principle is the following:

When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not established scientifically. . . . In this context the proponent of the activity, rather than the public, should bear the burden of proof.<sup>34</sup>

Although this logic is intuitively appealing, the precautionary principle poses serious challenges, especially when it comes to new technologies. For instance, the principle ignores whatever benefits might result from the new technology. In fact, former OIRA administrator Cass Sunstein once referred to it as “The Paralyzing Principle.”<sup>35</sup> Precautionary regulation can stifle innovation that would provide vast net benefits to society, even if some social costs also result.

The OMB should consider including in its annual report “Principles for Regulation of New Technologies in the Face of Uncertainty.” These principles, described below, will help agencies avoid choking off promising innovations, while still working to protect public welfare.<sup>36</sup>

**Principle 1: Regulations should not interfere with new technology unless there is a compelling case to do so.** “Experimentation with new technologies and business models should generally be permitted by default. Unless a compelling case can be made that a new invention will bring serious harm to society, innovation should be allowed to continue unabated and problems, if they develop at all, can be addressed later.”<sup>37</sup>

**Principle 2: Just as analysts consider the option value of environmental and ecological resources, so too they should consider the option value of new technologies.** “When commercial uses of an important resource or technology are arbitrarily prohibited or curtailed, the opportunity costs of such exclusion may not always be immediately evident. Nonetheless, those ‘unseen’ effects are very real and have profound consequences for individuals, the economy, and society. In the case of the Internet, a huge opportunity cost was associated with the initial limitations on its use and its commercial development. Only when this mistake was corrected in the early 1990s, through the commercial opening of the Net, did the true opportunity costs of the original restrictions become evident. As soon as the Net was commercialized, social and economic activity flourished.”<sup>38</sup>

**Principle 3: Where possible, use ex-post enforcement, particularly when there are observable outcomes that can be measured.** “How harms are addressed matters deeply. We should exhaust all other potential nonregulatory remedies first—education, empowerment, transparency, etc.—before resorting to preemptive controls on new forms of innovation. In other words, *ex post* (or after the fact) solutions should generally trump *ex ante* (preemptive) controls.”<sup>39</sup>

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33. Jerry Ellig and James Broughel, “Regulation: What’s the Problem?” (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, June 22, 2012), <http://mercatus.org/publication/regulation-whats-problem>.

34. Carolyn Raffensberger and Joel Ticknet, eds., *Protecting Public Health and the Environment: Implementing the Precautionary Principle* (Washington: Island Press, 1999), 8.

35. Cass Sunstein, “The Paralyzing Principle,” *Regulation Magazine*, Cato Institute (Winter 2002–03).

36. These principles are drawn from Adam Thierer, *Permissionless Innovation: The Continuing Case for Comprehensive Technological Freedom* (Arlington, VA: Mercatus Center at George Mason University, 2014).

37. *Ibid.*, vii.

38. *Ibid.*, 4.

39. *Ibid.*, 44.



## Recommendation

- The OMB should include a section on “Principles for Regulation of New Technologies in the Face of Uncertainty” in its annual report.

### PRIVATE BENEFITS & GLOBAL BENEFITS

The section of the OMB’s report related to “private benefits” resulting from agency rules, while much improved, still suffers shortcomings. For instance, while the OMB should be applauded for separating private benefits from social benefits in a separate table on page 32 of the OMB report,<sup>40</sup> it would be useful if the table also included rules from previous years (FY 2004–13).

Next, the discussion of the Allcott and Greenstone paper on page 32 of the report is misleading. The OMB cites this study to provide reasons why consumers might undervalue savings that accrue from improvements in the energy efficiency of appliances and other products. While the study does include speculation about why consumers might forgo such energy savings, leading to a so-called energy efficiency gap, the discussion in the OMB report does not discuss the main conclusions of the Allcott and Greenstone study. These include the following:

- “Although there is a long literature assessing investment inefficiencies related to energy efficiency, this body of evidence frequently does not meet modern standards for credibility. A basic problem is that much of the evidence on the energy cost savings from energy efficiency comes from engineering analyses or observational studies that can suffer from a set of well-known biases.”
- “When one tallies up the available empirical evidence from different contexts, it is difficult to substantiate claims of a pervasive Energy Efficiency Gap.”
- “Because consumers are quite heterogeneous in the degree of their investment inefficiencies, it is crucial to design targeted policies. . . . Targeted policies have the potential to generate larger welfare gains than general subsidies or mandates.”<sup>41</sup>

Allcott and Greenstone are skeptical that there is a serious problem in these markets, meaning the “private benefits” agencies report are highly suspect since most are drawn from supposed cost savings to consumers resulting from energy and fuel efficiency rules. The first bullet point above criticizes exactly the types of engineering analyses that agencies like the Department of Energy and Department of Transportation perform in order to calculate the private benefits of their energy and fuel efficiency rules. The last point criticizes the type of one-size-fits-all blanket mandates (i.e., bans) that these same agencies issue, which completely ignore heterogeneous consumer preferences. It is therefore odd that the OMB would cite this study for the purposes of defending private benefits, when a reader of this study is likely to conclude that private benefits resulting from these policies are largely fiction.

There are further problems with this section of the OMB’s report. Many of the “social benefits” that result from energy and fuel efficiency regulations are benefits to foreigners and not people residing in the United States. By combining foreign and domestic benefits together in Table 1-8, the OMB is violating its own standards, which are clearly stated in OMB *Circular A-4*:

Your analysis should focus on benefits and costs that accrue to citizens and residents of the United States. Where you choose to evaluate a regulation that is likely to have effects beyond the borders of the United States, these effects should be reported separately.<sup>42</sup>

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40. OMB, *2014 Draft Report*, Table 1-8, 32.

41. Hunt Allcott and Michael Greenstone, “Is There an Energy Efficiency Gap?,” *Journal of Economic Perspectives* 26, no. 1 (2012): 3–28.

42. OMB, *Circular A-4*, 15.

Vanderbilt Law professor Kip Viscusi and Brookings Institution scholar Ted Gayer agree that counting benefits to people outside of the United States is problematic.<sup>43</sup> Imagine if national defense policy were conducted in such a way as to prioritize the interests of foreigners over those of citizens of the United States. This also raises serious transparency issues. Regardless of how policymakers decide to prioritize the interests of US citizens compared to everyone else on the planet, a transparent analysis will make it clear who is receiving what benefits.

## Recommendations

- The OMB should include estimates of private benefits from previous years in table 1-8.
- The OMB should provide a more accurate account of the findings of the Allcott/Greenstone paper cited in its report.
- The OMB should be more explicit about the extent to which benefits from energy and fuel efficiency rules will accrue to people living in foreign countries, while the costs will be borne by Americans. The OMB can do this by removing benefits to foreigners from table 1-8 and presenting these estimates in a separate table.

## AGENCY USE OF DISCOUNT RATES

A further problem exists with these same energy and fuel efficiency rules. Agencies are violating OMB guidelines, which require estimates of benefits and costs that occur at different points in time to be calculated with a 7 percent “base case” discount rate.<sup>44</sup> Agencies have been ignoring this guidance and using a 5 percent, 3 percent, and 2.5 percent discount rate for some of the social benefits of these rules, while often failing to use a 7 percent discount rate.<sup>45</sup>

This is problematic for two reasons. First, almost all of these regulations affect business investment decisions. According to the OMB, the 7 percent discount rate “approximates the opportunity cost of capital, and it is the appropriate discount rate whenever the main effect of a regulation is to displace or alter the use of capital in the private sector.”<sup>46</sup> Therefore, a 7 percent rate is an appropriate discount rate to use.

Second, while some might argue that lower discount rates are relevant for benefits and costs that have intergenerational effects,<sup>47</sup> this argument is not relevant to analyses that estimate costs and benefits only as far out as several decades from now.

Failing to use a 7 percent discount rate leads to confusion as agencies attempt to add together costs and benefits that occur in the same years but are calculated using different discount rates. A recent article in *Science* magazine written by Nobel laureate Kenneth Arrow, among others, criticizes the EPA and the DOT for inappropriate addition of benefits that were calculated using different discount rates.<sup>48</sup> A recent Government Accountability Office (GAO) report found similar problems in the analysis of regulations emanating from the EPA.<sup>49</sup>

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43. Ted Gayer and W. Kip Viscusi, “Determining the Proper Scope of Climate Change Benefits” (Economics Studies Working Paper, Brookings Institution, Washington, DC, 2014), <http://www.brookings.edu/research/papers/2014/06/04-determining-proper-scope-climate-change-benefits-gayer>.

44. OMB, *Circular A-4*, 33.

45. For one example of this phenomenon, see James Broughel, “Energy Conservation Program: Energy Conservation Standards for Metal Halide Lamp Fixtures” (Mercatus Center Public Interest Comment, Mercatus Center at George Mason University, Arlington, VA, October 2013).

46. OMB, *Circular A-4*, 33.

47. For discussion of intergenerational discounting, see OMB, *Circular A-4*, 35.

48. K. Arrow et al., “Environmental economics. Determining Benefits and Costs for Future Generations,” *Science* 341, no. 6144 (July 2013): 349–50.

49. Government Accountability Office, *EPA Should Improve Adherence to Guidance for Selected Elements of Regulatory Impact Analyses*, July 2014, 25–26.

## Recommendation

- The OMB should enforce *Circular A-4's* requirement that agency analysis use a consistent 7 percent discount rate for costs and benefits that occur in future years.

## CO-BENEFITS AND CO-COSTS

Another category of benefits that should be displayed in a more transparent manner is co-benefits. Similar to beneficial side effects, these are benefits that result in addition to the primary objective a regulation is trying to achieve. In principle, co-benefits are like any other benefit of a regulation, as long as the agency has identified a relevant market failure the correction of which would lead to these co-benefits. Co-benefits should be added to the list of other benefits that agencies identify, and they should be used to calculate the net benefits of a regulatory action.

Unfortunately, there are problems with co-benefits being used incorrectly. First, the most important co-benefit contributing to total benefits is PM<sub>2.5</sub>. As will be explained in more detail below, this is a serious problem because these benefits are so uncertain and because PM is also regulated separately under the National Ambient Air Quality Standards (NAAQS). The EPA recently finalized a new NAAQS standard for PM.<sup>50</sup> If the OMB and the EPA believe the current NAAQS standard is too high for the purposes of protecting public health, both agencies should say so since this is implicit in the claim that PM-related rules produce such large benefits. If the current NAAQS for PM is set at the level that adequately protects public health, then there can be no additional co-benefits from reducing PM via other regulations.

The next problem with inclusion of co-benefits in the OMB's report is that agencies do not make similar attempts to measure co-costs. Co-costs can be substantial and should be included for the same reason co-benefits are included: to take into account all costs and benefits when evaluating a proposed regulation. For example, post-9/11 airport security regulations are estimated to have increased highway deaths by 129 in a single three-month period.<sup>51</sup> Similarly, Corporate Average Fuel Economy (CAFE) standards have been estimated to increase highway fatalities by thousands.<sup>52</sup>

Another cost that is routinely left out of agency analysis is the opportunity cost of resources used to comply with regulations. Unless agencies include estimates of co-costs and opportunity costs, in addition to co-benefits, RIAs are going to be biased toward making rules look more efficient than they really are. The OMB should identify costs that are routinely ignored in agency analysis, such as opportunity costs and co-costs, and present this list in its annual report.

The OMB should also include a separate table outlining the extent to which co-benefits are contributing to agency benefits estimates. Since co-benefits represent such a large portion of total benefits estimated for all regulations, and co-costs are rarely being considered by agencies, the OMB report is biased toward producing net benefits. The OMB should explain that since agencies are calculating co-benefits in many instances, and not co-costs, estimates of net benefits in the OMB's report are likely overstated.

## Recommendations

- The OMB should include a separate table outlining the extent to which co-benefits are contributing to agency benefits estimates.

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50. "National Ambient Air Quality Standards for Particulate Matter; Final Rule," 78 Fed. Reg. 10 (January 15, 2013), <http://www.gpo.gov/fdsys/pkg/FR-2013-01-15/pdf/2012-30946.pdf>.

51. Garrick Blalock, Vrinda Kadiyali, and Daniel H. Simon, "The Impact of Post-9/11 Airport Security Measures on the Demand for Air Travel," *Journal of Law and Economics* 50, no. 4 (November 2007): 731-55, <http://www.jstor.org.mutex.gmu.edu/stable/10.1086/519816?>

52. Robert W. Crandall and John D. Graham, "The Effect of Fuel Economy Standards on Automobile Safety," *Journal of Law and Economics* 32, no. 1 (April 1989): 97-118.

- The OMB should identify costs that are routinely left out of agency analysis, such as opportunity costs and co-costs, and present this list in its report.
- The OMB should explain that since agencies are calculating co-benefits in many instances, and not co-costs, estimates of net benefits in the OMB’s report are likely overstated.

## DISTRIBUTIONAL ANALYSIS OF REGULATIONS

OMB *Circular A-4* clearly states that the distribution of costs and benefits is an important component of regulatory impact analysis.<sup>53</sup> Executive Orders 12866 and 13563 also identify “distributive impacts” as important information to consider when promulgating regulations.<sup>54</sup> Unfortunately, recent academic research has found that agencies rarely do an adequate job assessing the distributional effects of regulations.<sup>55</sup> This is consistent with findings from the Mercatus Center Regulatory Report Card, which has two questions related to distribution of costs and benefits:

- Does the analysis identify all parties who would bear costs and assess the incidence of costs?
- Does the analysis identify all parties who would receive benefits and assess the incidence of benefits?

Thirty-three percent of rules evaluated from 2008–12 received a score of two or below for the first question, and 51 percent of rules received a score of two or below for the second question. A score of two or below indicates seriously incomplete analysis.

Failure to do distributional analysis is a problem because regulations are likely to be regressive in many cases.<sup>56</sup> This is true for several reasons. First, costs of regulations tend to represent a larger fraction of a low-income person’s budget than a high-income person’s budget. Second, higher-income individuals are usually willing to pay more for regulatory benefits. Thus, regulations often cater more to the preferences of the wealthy than the poor.

The OMB should work closely with agency economists to ensure that distributional impacts of rules are being estimated. A well-done distributional analysis is especially important in situations when regulations raise the prices of items that poor individuals purchase, such as electricity, housing, food, fuel, or other items. In addition, the benefits of regulation often do not fall across society equally. To properly estimate how low-income individuals are benefiting from regulations, the OMB should train agency economists to use a value of a statistical life (VSL) that varies by income when conducting distributional analysis. Regulatory experts have explained elsewhere how VSL likely varies with income level.<sup>57</sup> Ignoring this empirical reality may lead agencies to inflate the degree to which the poor benefit from regulations.<sup>58</sup>

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53. OMB, *Circular A-4*, 14.

54. Exec. Order No. 13563, 3 C.F.R. 58 (2011), <http://www.gpo.gov/fdsys/pkg/FR-2011-01-21/pdf/2011-1385.pdf>; Exec. Order No. 12866, 3 C.F.R. 76 (1993), <http://www.archives.gov/federal-register/executive-orders/pdf/12866.pdf>.

55. For example, see Lisa A. Robinson, James K. Hammitt, and Richard Zeckhauser, “The Role of Distribution in Regulatory Analysis and Decision Making” (Regulatory Policy Program Working Paper RPP-2014-03, Mossavar-Rahmani Center for Business and Government, Harvard Kennedy School, Harvard University, Cambridge, MA, 2014).

56. See Diana Thomas, “Regressive Effects of Regulation” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, 2012); and Robinson, Hammitt, and Zeckhauser, “Role of Distribution,” 3.

57. Robinson, Hammitt, and Zeckhauser, “Role of Distribution,” 2014, 9. See also W. Kip Viscusi, “The Benefits of Mortality Risk Reduction: Happiness Surveys vs. the Value of a Statistical Life,” *Duke Law Journal* 62, no. 8 (2013).

58. For explanation why, see James Broughel, “Improving Measures of Environmental Justice in EPA Regulatory Analysis,” Statement before the EPA Science Advisory Board Environmental Justice Technical Guidance Review Panel, Mercatus Center at George Mason University (January 30, 2014).

One way to mitigate the regressive effects of regulation is to expect significant regulations to pass a non-regressivity test. Former OIRA administrator John Graham made this recommendation in a law review article in 2008.<sup>59</sup>

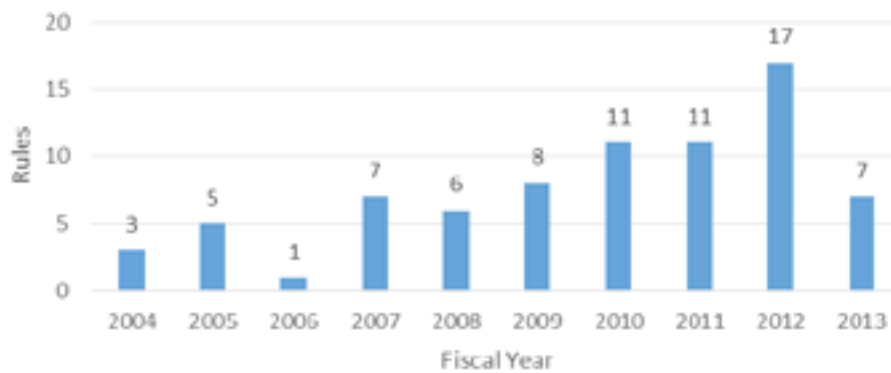
## Recommendations

- The OMB should work with agency analysts to emphasize the importance of distributional analysis for regulations and train them to conduct this analysis.
- The OMB should educate agencies how to use income-varying VSLs in RIAs that include distributional analysis.
- The OMB should recommend that rules pass a non-regressivity test or explain under what circumstances allowing regressive regulations may be necessary.

## INDEPENDENT AGENCIES

According to the GAO, independent Regulatory Commissions and Government Corporations (IRCs and GCs) published 838 final regulations in the *Federal Register* between October 1, 2012, and September 30, 2013.<sup>60</sup> Yet the OMB includes only seven independent agency rules with any information on benefits or costs in its FY 2013 report. The GAO further estimates 7,137 rules were finalized by IRCs and GCs from October 1, 2004, to September 30, 2013.<sup>61</sup> Therefore, the 76 independent agency rules from the last decade with some information on benefits or costs represent approximately 1 percent of all rules finalized by IRCs and GCs during that period.<sup>62</sup> Figure 3 demonstrates this phenomenon over time.<sup>63</sup>

Figure 3. Major rules with some information on benefits or costs promulgated by independent agencies, October 1, 2004–September 30, 2013



Some of these regulations were promulgated by federal financial regulators. With a recent report by the Dallas Federal Reserve Bank concluding that the costs of the 2007–09 financial crisis were estimated at \$6 trillion to \$14

59. John D. Graham, “Saving Lives through Administrative Law and Economics,” *University of Pennsylvania Law Review* 157, no. 395 (2008).

60. GAO, Congressional Review Act Reports, accessed June 21, 2014, <http://www.gao.gov/legal/congressact/fedrule.html>.

61. *Ibid.*

62. There is good reason to believe the GAO’s numbers are underestimating the number of final rules issued by independent agencies, meaning the estimate presented here of the percent of independent agency rules with information on cost or benefits is likely overestimated. Recent research has highlighted that many final rules are not being reported to the GAO, as is required under the Congressional Review Act. See Curtis Copeland, “Congressional Review Act: Many Recent Final Rules Were Not Submitted to GAO and Congress,” *Washington Post*, July 15, 2014, <http://www.washingtonpost.com/r/2010-2019/WashingtonPost/2014/07/25/National-Politics/Advance/Graphics/CRA%20Report%200725.pdf>.

63. OMB, *2014 Draft Report*, Table C-2, 89.

trillion in lost output, or between \$50,000 and \$120,000 for every US household,<sup>64</sup> one has to wonder whether the consistently incomplete analysis of federal financial regulators contributed to the regulatory failures seen leading up to the financial crisis.

Empirical research finds that OIRA review is associated with higher-quality RIAs and better explanation of how the agency used the RIA to inform its decisions. The quality and use of regulatory analysis is also positively correlated with the length of OIRA review time.<sup>65</sup> OIRA's influence in the administration (measured by whether the administrator is a political appointee or acting administrator) is positively correlated with claimed use of regulatory analysis.<sup>66</sup> Prescriptive regulations, whose RIAs receive more intensive OIRA review, tend to have higher-quality RIAs.<sup>67</sup> Since independent agencies are not subject to OIRA review, the OMB should recommend that independent agencies be brought under Executive Order 12866 and be subject to OIRA review, as is the standard practice for executive branch regulatory agencies.

## Recommendation

- The OMB should recommend that independent agencies be brought under Executive Order 12866 and be subject to OMB review.

## UNCERTAINTY SURROUNDING BENEFITS FROM EPA AIR REGULATIONS

According to the OMB, “EPA rules account for 63 to 82 percent of the monetized benefits and 46 to 56 percent of the monetized costs”<sup>68</sup> of the 116 regulations for which the OMB reports dollar estimates of both benefits and costs. These percentages exclude regulations jointly issued by the EPA and the DOT that set fuel efficiency standards for automobiles and that also have large estimates of both benefits and costs. Of the rules issued solely by the EPA, “rules that have as either a primary or significant aim to improve air quality account for 98 to 99 percent of the benefits of EPA rules.”<sup>69</sup> And “the large estimated benefits of EPA rules issued pursuant to the Clean Air Act are mostly attributable to the reduction in public exposure to a single air pollutant: fine particulate matter.”<sup>70</sup> For transparency purposes, and because these rules constitute such a large component of total benefits in the OMB Report, the OMB should present PM benefits in an individual table, much as the OMB did for private benefits, so the public is aware of the extent to which PM benefits contribute to the claimed \$862.5 billion in total benefits.

As the OIRA administrator knows, there is a great deal of uncertainty surrounding the benefits estimates for these EPA regulations. The OMB should be lauded for laying out uncertainties in such a transparent manner. The new section entitled “Assumptions and Uncertainties” is a valuable addition to the 2013 and 2014 reports and is far more transparent about underlying assumptions than previous OMB reports or the regulatory impact analyses for the EPA PM-related regulations themselves.<sup>71</sup> The OMB describes six key assumptions underpinning the PM benefits in the EPA's analyses. The four assumptions addressed by this comment follow:

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64. David Luttrell, Tyler Atkinson, and Harvey Rosenblum, “Assessing the Costs and Consequences of the 2007–09 Financial Crisis and Its Aftermath,” Dallas Federal Reserve Bank, *Economic Letter* 8, no. 7 (September 2013).

65. Jerry Ellig and Rosemarie Fike, “Regulatory Process, Regulatory Reform, and the Quality of Regulatory Impact Analysis” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington VA, July 30, 2013); Stuart Shapiro and John F. Morrall III, “Does Haste Make Waste? How Long Does It Take to Do a Good Regulatory Impact Analysis,” *Administration and Society* 20, no. 1 (2013).

66. Ellig and Fike, “Regulatory Process,” 2013.

67. Patrick A. McLaughlin and Jerry Ellig, “Does OIRA Review Improve the Quality of Regulatory Impact Analysis? Evidence from the Final Year of the Bush II Administration,” special issue, *Administrative Law Review* 63, no. 179 (2011).

68. OMB, *2014 Draft Report*, 13.

69. *Ibid.*

70. *Ibid.*

71. Similar information often appeared in the middle of EPA RIAs that were hundreds of pages. As an example, see Environmental Protection Agency, *Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards Final Rule, Regulatory Impact Analysis* (March 2014): 8–37, where the agency discusses its assumption of a linear no-threshold concentration response function for PM.

- Inhalation of fine particles is causally associated with premature death at concentrations near those experienced by most Americans on a daily basis;
- The concentration-response function (C-R) for fine particles and premature mortality is approximately linear;
- 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 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.<sup>72</sup>

Should any of these key assumptions prove to be incorrect, the benefits numbers in the OMB's report could change dramatically. As such, it is worth exploring each assumption more carefully.

### Causation

While it is true that the Clean Air Scientific Advisory Committee (CASAC) endorsed the EPA's determination that PM is causally associated with premature deaths, there are several reasons to doubt this determination. The first reason is that epidemiological evidence CASAC relied on looks at *association in rates of change* between PM levels and mortality. However, studies conducted since CASAC last met in 2009 have used causality tests to determine whether a causal relationship can be inferred from the data. To test causality, one should measure not an *association in the rate of change*, but instead an *association in the change of the rate of change* (i.e., a change in the slope) of mortality reductions after PM regulations were implemented.

One such study found that “a true value of zero for the PM<sub>2.5</sub> mortality causal coefficient is not excluded from the available data.”<sup>73</sup> Another study found that using a nonlinear regression approach reduces the correlation coefficient and in some cases even turns it negative.<sup>74</sup> If causality is absent, as these studies suggest is a real possibility, one explanation for the correlation often found between PM and premature death may be that temperature is a confounding variable. PM emissions are likely correlated with temperature swings because of changes in energy usage that take place when temperature changes (e.g., increased use of heating and air conditioning). When temperature is controlled for, the PM-mortality relationship often becomes insignificant.<sup>75</sup>

Unfortunately, scientists sometimes misinterpret statistical C-R coefficients (which estimate correlations between ambient PM<sub>2.5</sub> concentrations and adverse health effects) as if they are causal coefficients.<sup>76</sup> But correlation is not causation, and should not be interpreted as such. If we relax the assumption that a causal relationship exists and extend a more rigorous analysis of uncertainties to other areas in the EPA's analysis, it is quite possible that the costs of recent Clean Air Act regulations exceed their benefits.<sup>77</sup>

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72. OMB, *2014 Draft Report*, 15–18.

73. L. A. Cox Jr., “Miscommunicating Risk, Uncertainty, and Causation: Fine Particulate Air Pollution and Mortality Risk as an Example,” *Risk Analysis* 32, no. 5 (2012): 765–67; author reply 768–70, doi: 10.1111/j.1539-6924.2012.01806.x.

74. L. A. Cox Jr., “Caveats for Causal Interpretations of Linear Regression Coefficients for Fine Particulate (PM<sub>2.5</sub>) Air Pollution Health Effects,” *Risk Analysis* 33, no. 12 (2013).

75. Two recent studies came to similar findings when controlling for temperature in studying PM-related health effects: L. A. Cox Jr., D. A. Popken, and P. F. Ricci, “Warmer Is Healthier: Effects on Mortality Rates of Changes in Average Fine Particulate Matter (PM<sub>2.5</sub>) Concentrations and Temperatures in 100 US Cities,” *Regulatory Toxicology and Pharmacology* 66, no. 3 (August 2013): 336–46; and F. Dominici, C. Sunstein, and M. Greenstone, “Particulate Matter Matters,” *Science* 344, no. 6181 (April 18, 2014): 257–59.

76. L. A. Cox Jr., “Improving Causal Inference in Risk Analysis,” *Risk Analysis* 33, no. 10 (2013).

77. L. A. Cox Jr., “Reassessing the Human Health Benefits from Cleaner Air,” *Risk Analysis* 32, no. 5 (2012): 816–29.

Louis Anthony Cox, editor of the peer-reviewed journal *Risk Analysis*, has studied air pollution closely. In recent testimony before Congress, he stated that “although levels of air pollution are significantly associated with levels of elderly mortality rates (and both are associated with cold winter days), there is no evidence that reductions in air pollution levels have caused any reductions in mortality rates.”<sup>78</sup>

Beyond the scientific reasons for questioning the causal relationship between PM and mortality, CASAC findings may not be reliable for other reasons. For example, CASAC did not have time to adequately weigh information in public comments, nor was the committee allowed to consider adverse consequences resulting from measures to control PM.<sup>79</sup> EPA air standards are set to protect human health “with an ample margin of safety,” which limits the ability of CASAC and the EPA to consider adverse effects of PM-related air regulations.<sup>80</sup>

Conflicts of interest may also have affected the ability of CASAC panel members to present objective findings to the EPA. Such conflicts have been found on other CASAC panels, such as the Ozone Review Panel, where 70 percent of panel members received EPA grants that totaled more than \$120 million.<sup>81</sup>

Together, these findings suggest that the determination of causality by the CASAC may be suspect. As recommended earlier, the OMB should present PM benefits in a separate table. When doing this, the OMB should also present what these benefits would look like under alternative plausible scenarios, such as if causation is absent.

## CONCENTRATION-RESPONSE FUNCTION FOR PM

One assumption that is new in the EPA analysis since 2009 is that the C-R function for PM is approximately linear at the low doses.<sup>82</sup> This assumption means that even at the lowest levels of PM exposure, all the way down to “one hit,” a person will experience adverse health consequences. Before 2009, the EPA assumed a C-R function with a threshold, below which no adverse health effects would occur. This change is problematic for several reasons. First, risk assessors generally assume a threshold for toxins that are not known carcinogens,<sup>83</sup> and the EPA does not provide methods and practices for determining when noncarcinogens should be treated as exceptions that deviate from this practice.<sup>84</sup> Second, some evidence exists that suggests the C-R relationship may be hormetic, meaning at low doses PM produces beneficial health responses.<sup>85</sup> Lastly, the implications of this change reach levels of absurdity. For instance, under the linear-no-threshold (LNT) assumption, 25 percent of all deaths in the United States as recently as 1980 were related to concentrations of PM<sub>2.5</sub>.<sup>86</sup> This assumption also requires believing that 130,000 to 320,000 of the US deaths in 2005 were hastened by breathing ambient PM<sub>2.5</sub>,<sup>87</sup> numbers that seem implausibly high.

The choice of C-R function would best be described as a default option rather than objective science. Default options “are used in the absence of convincing scientific knowledge on which of several competing models and theories is correct.”<sup>88</sup> Default options are policy choices, not scientific choices. As one scholar put it, “an extrapolatory model

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78. Louis Anthony Cox Jr., “Ensuring Open Science at EPA,” Testimony Before the US House Science Committee, Subcommittee on Environment, February 11, 2014.

79. Robert Phalen, “The CASAC-PM Committee-Setting Air Quality Standards,” Testimony Before House Subcommittee on Energy and Environment, September 29, 2011.

80. Clean Air Act of 1970, § 112.

81. Letter to EPA Administrator Gina McCarthy from Rep. Lamar Smith, Chairman of the House Committee on Science, Space and Technology (March 19, 2014).

82. EPA, *Integrated Science Assessment for Particulate Matter* (Final Report) (US Environmental Protection Agency, Washington, DC, EPA/600/R-08/139F, 2009).

83. National Research Council, *Science and Decisions: Advancing Risk Assessment* (The National Academies Press, Washington, DC, 2009), 128.

84. National Research Council, *Science and Decisions*, 2009, 131–32.

85. L. A. Cox Jr., “Hormesis for Fine Particulate Matter (PM<sub>2.5</sub>),” *Dose-Response* 10, no. 2 (2012): 209–18.

86. Anne Smith, “An Evaluation of the PM<sub>2.5</sub> Health Benefits Estimates in Regulatory Impact Analyses for Recent Air Regulations,” *NERA Economic Consulting* (2011).

87. *Ibid.*

88. National Research Council, “Models, Methods, and Data,” *Science and Judgment in Risk Assessment* (The National Academies Press, Washington, DC, 1994).



must be selected that will predict low-dose effects on animals based solely on high-dose data. Although there are several scientifically plausible extrapolatory models . . . the choice of one model over another cannot be resolved by science and thus must be determined by policy factors.”<sup>89</sup> The National Research Council has similarly agreed that the choice of dose-response model is a policy choice.

The dose-response step involves considerable uncertainty, because the shape of the dose-response curve at low doses is not derived from empirical observation, but must be inferred from theories that predict the shape of the curve at the low doses anticipated for human exposure. The adoption of linear models is based largely on the *science-policy choice* that calls for caution in the face of scientific uncertainty.<sup>90</sup>

For transparency purposes, policy choices that drive large amounts of benefits in the OMB’s report should be made more explicit. If the OMB presents PM benefits in a separate table, the agency should also present what these benefits would look like under alternative plausible scenarios, including if the EPA returns to the threshold C-R function the agency used before 2009.

## Baselines

The EPA is known to have had problems calculating baselines in the past. In a 1997 retrospective analysis of the Clean Air Act, the EPA claimed trillions in health benefits as a result of regulations put in place under the Act.<sup>91</sup> This estimate has been widely criticized, including by the OMB, as resulting largely from a flawed baseline analysis.<sup>92</sup>

This is only one example of a flawed EPA baseline and does not demonstrate that the EPA *always* uses flawed baselines analysis; however, it is especially concerning since that analysis also related to Clean Air Act regulations and was a comprehensive study of several decades of regulations.

For further discussion of EPA baseline practices in economic analysis, see appendix A of this comment, which includes examples of best and worst practices in baseline analysis. Several examples come from EPA regulations regulating to air quality. The OMB should work with agencies to educate analysts on best practices in baseline analysis.

## AGE-VARYING VSLs

The EPA assumes in its analysis of air regulations that the willingness to pay to reduce mortality risks (sometimes referred to as the value of a statistical life [VSL]) does not vary by age. This is crucial because the “EPA’s analysis shows that the median age of individuals experiencing reduced mortality is around 75 years old.”<sup>93</sup> Oddly, the OMB does not cite an important study by Kip Viscusi of Vanderbilt and Joseph Aldy of Harvard that found VSLs vary significantly by age:

First, it is clear that VSL does vary with age. . . . Second, the popular perception that the VSL must be less for a 60-year-old than for a 20-year-old because of the differences in life expectancy is not borne out. . . . Third, the assumption of a constant value per year of life that underlies the VSLY [value of a statistical life-year] approach can be rejected. . . . Finally . . . VSLs have little impact on total under-65 mortality risk reduction benefits, but have a substantial influence on the benefits for the 65 and older population.<sup>94</sup>

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89. Wendy Wagner, “The Science Charade in Toxic Risk Regulation,” *Columbia Law Review* 95, no. 7 (1995): 1613–723, doi: 10.2307/1123193.

90. National Research Council, *Science and Judgment*, 1994, 65, emphasis added.

91. EPA, *Benefits and Costs of the Clean Air Act*, 1997, <http://www.epa.gov/air/sect812/index.html>.

92. See Lutter, “Regulatory Policy;” and OMB, *Report to Congress on the Costs and Benefits of Federal Regulations*, OIRA, 1998, 26.

93. EPA, *Regulatory Impact Analysis for the Final Revisions to the National Ambient Air Quality Standards for Particulate Matter*, 2012, 5–76, <http://www.epa.gov/ttnecas1/regdata/RIAs/finalria.pdf>.

94. J. E. Aldy and W. K. Viscusi, “Age Differences in the Value of Statistical Life: Revealed Preference Evidence,” *Review of Environmental Economics and Policy* 1, no. 2 (2007): 241–60.

The authors of this study also found that applying an age-varying VSL to the EPA Clear Skies initiative analysis produced large changes in estimated benefits. Using evidence in the academic literature, the OMB should provide its own estimate of age-varying VSLs for agency use in future analyses or train agency economists to come up with these estimates.<sup>95</sup>

## Recommendations

- The OMB should present PM benefits in an individual table, much as the OMB did for private benefits, so the public is aware of the extent to which PM benefits contribute to the claimed \$862.5 billion in total benefits.
- The OMB should display what PM benefits would look like under alternative plausible scenarios, such as if causation is absent, or if the EPA returns to the threshold C-R model used before 2009.
- The OMB should educate agency analysts on best practices in baseline analysis.
- The OMB should provide estimates of VSLs that vary by age, or train agency economists to estimate their own age-varying VSLs.

## IDENTIFYING HOW POLITICS INFLUENCES THE OMB'S REPORT

The OMB was commended earlier for removing a politically charged chart from the final version of the OMB 2013 report. The chart purported to attribute benefits and costs of various rulemakings to specific presidential administrations. As the final version of the 2013 OMB report rightly states,

We acknowledge that the comparisons across administrations are complicated due to several factors. For example, regulations may be proposed in one administration but finalized in another. Also, both whether a rule is issued, and whether it has net benefits or costs, may be due to factors beyond a particular administration's control, such as statutory constraints. Finally, all comparisons of prospective analyses across time become more difficult as rulemakings are modified or remanded due to court rulings, modified in response to new information or circumstances, or simply don't have the impacts projected before the rule was issued.<sup>96</sup>

Despite this acknowledgment, the OMB makes a similar, although less glaring, mistake in this year's report when it attributes approximately \$200 billion in annual net benefits to the current presidential administration.<sup>97</sup> This claim suffers the same problems as those identified in the 2013 report. Further, because the statement appears on page 2 of the report, it is likely to be read by laypersons or journalists who won't read the entire 107-page report. This paragraph should be removed.

In addition, there are other reasons to be skeptical of the numbers presented in this report and to believe political factors may be preventing the OMB from providing an accurate picture of the American regulatory system. For example, even in cases where analysis may appear relatively complete, agencies often use tactics to inflate benefits estimates and make rules look more efficient than they likely are.<sup>98</sup> Additionally, the science underlying agency estimates of benefits is often highly speculative and better classified as science policy than as objective science. Former OIRA

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95. Age-varying VSLs should not be confused with the "value of a statistical life-year" approach, the use of which has been controversial in the past.

96. OMB, *2013 Report to Congress*, 119.

97. OMB, *2014 Draft Report*, 2, final bullet point.

98. For a discussion of how agencies are able to do this, see Sherzod Abdukadirov and Dima Yazji Shamoun, "Inflated Benefits in Agencies' Economic Analysis" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, August 21, 2013), <http://mercatus.org/publication/inflated-benefits-agencies-economic-analysis>.

administrator Susan Dudley and director of the Center for Risk Science and Public Health at George Washington University George Gray refer to political choices found throughout agency risks assessments as “science policy choices.”<sup>99</sup> Whereas science is largely the process of collecting and analyzing data, “in risk assessment, science policy choices include which science is considered, how individual studies are weighed and combined, when competing theories are considered appropriately supported for inclusion, which models to use, and in general, what to do in the face of scientific uncertainty.”<sup>100</sup>

Many of the benefits in the OMB’s report, including large amounts of the benefits estimated from EPA air regulations, result from science policy choices and not science. These include some key assumptions that the EPA relies on to justify its air benefits, such as the assumption that PM<sub>2.5</sub> is causally associated with mortality effects and the assumption that PM<sub>2.5</sub> has a linear C-R function at low doses. The EPA acknowledges science policy choices are an inevitable part of risk assessment in its 2001 risk characterization handbook when it states that “risk characterization is not just about science. It makes clear that science doesn’t tell us certain things and that science policy choices must be made.”<sup>101</sup>

Unless the OMB presents this information more carefully, it runs the risk of engaging in what professor Wendy Wagner once dubbed the “science charade,” whereby political debates are fought on a battleground of competing scientific analyses that appear objective but are actually full of political decisions. The danger of engaging in the science charade is that it runs the risk of “undermining the scientific credibility of agency assessments.”<sup>102</sup> To avoid this problem, the OMB should include a section in its report on policy decisions in economic analysis and risk assessments that influence estimates of benefits and costs. This section could be included in the section of the OMB’s report on “Assumptions & Uncertainties.” The OMB should include information on how policy choices shape estimates of benefits of EPA air regulations (described above), as well as how politics may play a role in explaining omissions. For instance, the absence of cost and benefit information in agency analysis may reflect political considerations—either a decision not to estimate benefits or costs because it would reflect badly on the agency or because politics dictated that the regulation be rushed. Recent research has found evidence that politics played a role in low-quality interim final rules rushed during the Bush and Obama administrations.<sup>103</sup> Political influence in regulatory analysis may be an institutional problem not related to one political party or the other.

## Recommendations

- The OMB should strike the passage from the report that attributes \$200 billion in net benefits to the present presidential administration.
- The OMB should include a section on policy decisions that influence agency benefit and cost estimates. This section could be part of the OMB’s “Assumptions & Uncertainties.” Policy decisions worth mentioning include assumptions underlying EPA PM benefits (such as the assumption of causality and the assumption of a linear C-R function), as well as omissions from the report.

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99. S. E. Dudley and G. M. Gray, “Improving the Use of Science to Inform Environmental Regulation,” in *Institutions and Incentives in Regulatory Science*, ed. J. S. Johnson (New York: Lexington Books, 2012).

100. *Ibid.*

101. John Fowle III and Kerry Dearfield, *U.S. Environmental Protection Agency Risk Characterization Handbook* (Washington, DC: EPA Science Policy Council, 2000).

102. Dudley and Gray, “Improving the Use of Science.”

103. See Jerry Ellig and Chris Conover, “Beware the Rush to Presumption, Part B: Substandard Regulatory Analysis for the Affordable Care Act’s Interim Final Rules” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, January 9, 2012). The authors discuss specific health care and homeland security regulations where politics likely dictated that regulations were rushed, leading to low-quality analysis.

## FURTHER CONSIDERATIONS

Below are miscellaneous recommendations to improve the OMB Report:

- The OMB never states how many regulations were finalized in FY 2013. This information should be presented for both independent agencies and executive branch agencies.
- In bullet 3 on page 7, the OMB discusses how costs and benefits are difficult to monetize in some instances. The OMB discusses specific benefits that are hard to monetize (privacy, human dignity, and equity) but not specific costs. There are many costs that are similarly difficult to monetize, such as impacts on liberty, individual choice, privacy, human dignity, equity, and fairness. Opportunity cost is another cost that is difficult to monetize. The OMB should mention these costs so as not to imply that only benefits are hard to monetize.
- The OMB excludes rules from its report that were finalized more than 10 years in the past. Information on costs and benefits of these rules could be useful to researchers and should be included. In the 2005 report, the OMB presented data on costs of rules going back to 1981 and benefits of rules going back to 1992. This data could appear in an appendix to the OMB report.
- In the section of the OMB's report titled "Impact on Economic Growth" on page 47, the OMB should include a citation to an important study that was published in 2013 in the *Journal of Regulatory Economics*.<sup>104</sup> This study found that regulations cumulatively impose significant costs in terms of lost output and lower total factor productivity. The authors of the study estimate that US economic growth was reduced by an average of 2 percent per year from 1949–2005 as a result of the federal regulatory burden.
- The Regulatory Right-to-Know Act requires that the OMB provide an annual report including costs and benefits of referral rules and paperwork.<sup>105</sup> Therefore, it is odd that so little information on paperwork burden is included in the OMB report. Further, OIRA's web page titled "Government-Wide Totals for Active Information Collections" is not very informative.<sup>106</sup> Currently, the site says that paperwork burdens require over 10 billion hours to comply with and cost over \$70 billion each year. Without being able to assess how these numbers are changing over time, these numbers offer little meaningful information. The OMB should present information on which regulatory agencies and programs create the greatest paperwork burdens and how these burdens are evolving over time.
- To date, the OMB has not used its Regulatory Checklist to publicly evaluate the quality of RIAs. It would be helpful if the OMB presented information on which major rules from this fiscal year had RIAs that satisfied criteria from the checklist. This way, scholars can assign weights to cost and benefit figures since the quality of RIAs varies greatly. It would be interesting to know, for example, in Table 1-1, whether options selected for individual regulations were economically efficient (i.e., maximized net benefits or had benefits that at least exceeded costs) or if the agency failed to identify a market or government failure that justifies regulatory intervention. To assist the OMB in this endeavor, appendix B presents a table that crosswalks the criteria in the OMB Regulatory Checklist with corresponding questions in the Mercatus Center's Regulatory Report Card. In lieu of presenting its own assessment using the Regulatory Checklist, the OMB report could include the crosswalk table and refer readers to the Regulatory Report Card evaluations at [www.mercatus.org/reportcard](http://www.mercatus.org/reportcard).

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104. John Dawson and John Seater, "Federal Regulation and Aggregate Economic Growth," *Journal of Economic Growth* 18, no. 2 (2013): 137–77, doi: 10.1007/s10887-013-9088-y.

105. Regulatory Right-to-Know Act, 31 U.S.C. § 1105 (2000).

106. OIRA, "Reginfo.gov," accessed July 29, 2014, <http://www.reginfo.gov/public/do/PRARReport?operation=11>.

## CONCLUSION

Executive Order 13563 emphasizes the importance of agency use of “the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible.” Regulatory impact analysis is one state-of-the-art tool that can be used to improve decision-making at agencies and lead to outcomes that ultimately improve citizens’ quality of life.<sup>107</sup> Ensuring agencies produce quality analysis is vital to guaranteeing that the American people have a government that is working in their best interests. Unfortunately, as a result of the incompleteness of this report, the OMB cannot say with confidence that the US regulatory system is improving net social welfare.

To improve this situation, the OMB should work closely with agency experts to ensure quality analysis is produced by analysts and that the analysis is used to inform important policy decisions. The OMB should provide analysts with examples of best and worst practices in agency analyses. To assist the OMB in this endeavor, appendix A to this report includes examples of best and worst practices for some, but by no means all, topics that should be covered in a good RIA. This appendix is based on previous research from the Mercatus Center.

Thank you for the opportunity to comment on this year’s Draft Report to Congress on the Benefits and Costs of Federal Regulations.

Sincerely,

James Broughel

*Program Manager, Regulatory Studies Program  
Mercatus Center at George Mason University*

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107. John Morrall III and James Broughel, *The Role of Regulatory Impact Analysis in Federal Rulemaking* (Arlington, VA: Mercatus Center at George Mason University, 2014), [http://mercatus.org/sites/default/files/Morrall\\_RoleofRIAs\\_v1.pdf](http://mercatus.org/sites/default/files/Morrall_RoleofRIAs_v1.pdf).

## Some Best and Worst Practices in Agency Economic Analysis

The 2013 OMB Report to Congress reported that “improving future analyses would likely be facilitated by having high-quality examples readily available for agency analysts to learn from, build on, or otherwise emulate.”<sup>108</sup> In response to this, the Mercatus Center has compiled a list of best and worst practices on some topics in RIAs so that agency analysts may learn from these examples. These examples are drawn from Mercatus policy papers and the Mercatus Regulatory Report Card project. Since 2008, the report card has evaluated the quality and use of agency economic analysis for economically significant proposed regulations. Information on the regulatory report card, including scoring methodology, can be found at <http://www.mercatus.org/reportcard>.

### IDENTIFICATION OF THE NEED FOR REGULATION<sup>109</sup>

Does the agency identify a market failure or other systemic problem?

**Best practice: Identify a clear market failure or government failure.** A rule that scored well on this criterion was the yearly migratory bird hunting rule that the Department of Interior issues to set hunting seasons and bag limits. The rule’s RIA identifies a clear public goods problem: because no property rights are assigned in migratory birds, each hunter has an incentive to overhunt. Overhunting will occur and deplete birds. The analysis refers to this as an externality in which one hunter imposes costs on another. An international treaty responds to this problem by banning hunting unless governments impose limits. Therefore, the rule is necessary to allow hunting while preventing overhunting.

**Worst practice: Simply cite the law that authorizes the regulation.** Examples of this practice include the 2008 Health and Human Services (HHS) Medicaid program premiums and cost sharing rule, which states that changes to a prior rule occurred because legislation directed HHS to do so. Another example is a 2009 EPA rule implementing changes to the EPA’s renewable fuels program. The notice of proposed rulemaking simply states that the Energy Independence and Security Act requires the regulation to implement changes to the program. While a law may authorize or require an agency to implement a rule, it should at least identify and evaluate evidence of the problem that Congress thought the regulation would solve, even if an agency has little discretion.

Does the analysis contain a coherent and testable theory explaining why the problem is systemic rather than anecdotal?

**Best practice: Identify a problem and offer a theory to explain how the problem came to exist.** The 2008 Housing and Urban Development (HUD) rule revising home mortgage disclosures identified failures of both market and government institutions and offered a theory to explain these failures. HUD’s analysis suggested that the complexity of real estate transactions and some borrowers’ lack of information allowed mortgage providers to collect higher fees from less informed or less sophisticated borrowers. “Information asymmetry” is a classic market failure, and information disclosure can be a sensible remedy. But current disclosures actually exacerbated the problem by confusing borrowers, so HUD proposed to revise the disclosures.

**Worst practice: Identify a potential problem, but fail to explain why the problem is systemic in nature and why voluntary decisions will not bring about a solution.** In the analysis for the DOT’s 2009 “ejection mitigation”

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108. OMB, *2013 OMB Report to Congress*, 126.

109. Examples for this section are drawn from Jerry Ellig and James Broughel, “Regulation: What’s the Problem?” (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, 2011), [http://mercatus.org/sites/default/files/Ellig\\_broughel\\_Regulationwhatstheproblem.pdf](http://mercatus.org/sites/default/files/Ellig_broughel_Regulationwhatstheproblem.pdf).

standards for automobile side windows, data on injuries and deaths from side-window ejections suggest a problem exists. But the analysis does not trace the problem to its root cause by explaining why car buyers and automakers underinvest in safety. One might expect that consumers would be willing to pay for improvements in safety that are actually effective, and thus automakers would be willing to supply the improvements. In fact, the DOT describes how some car companies already took steps voluntarily to make their vehicles safer, such as improved glazing that makes windows stronger and rollover sensors. This suggests that private markets may already be moving toward a solution to the problem. Since the analysis fails to identify a root cause of the safety problem, it is impossible to tell from the DOT's analysis whether this rule is necessary or how much of the problem the rule might eliminate.

Does the analysis present credible empirical support for the theory?

**Best practice: Provide data-driven, empirical evidence that shows the problem exists and the agency's hypothesis about the root cause is true.** The 2009 EPA rule controlling emissions from marine compression-ignition engines seeks to reduce pollution from ships traveling in US oceans and lakes. Studies show these emissions have a significant impact on ambient air quality far inland. Additionally, further studies suggest certain types of emissions are shown to be associated with serious public health problems, such as premature mortality and chronic bronchitis. These added costs to society are not reflected in the costs of providing the transportation services, which suggests the emissions are a classic externality.

**Worst practice: Propose a theory, but provide no evidence to support it.** In the 2008 federal acquisition regulation requiring government contractors to use the E-Verify system to determine employees' immigration status, some theories are presented. Firms might be tempted to hire less costly illegal workers in a tight labor market, and the likelihood of a workforce enforcement action may not be high enough to justify the effort required to use E-Verify. But no empirical evidence is presented to support such theories, so the reader cannot tell if requiring E-Verify is necessary or the most effective solution.

Does the analysis adequately address uncertainty about the existence or size of the problem?

**Best practice: Perform a "sensitivity analysis" to assess likely uncertainties about the existence or size of the problem.** In the 2008 DOT rule on railroad tank car transportation of hazardous materials, the RIA examines uncertainty surrounding crash severity, which has a large effect on the size of the problem the regulation seeks to solve. It performs a sensitivity analysis to assess the effects of uncertainty about the consequences of releasing hazardous materials resulting from train accidents. DOT concludes that construction standards and speed restrictions would create substantial benefits regardless of this uncertainty.

**Worst practice: No discussion at all.** Twenty-nine regulations in 2008 and 26 in 2009 failed to discuss uncertainty about the existence or size of the problems or explain why there is no uncertainty. These regulations scored a zero on this question, making it one of the most commonly overlooked areas in regulatory analysis. The typical rule either made no reference to uncertainty about the problem or acknowledged some uncertainty but did not elaborate on the degree of uncertainty. Cases where agencies attempted to measure uncertainty about the problem were the exception rather than the rule.

## CONSIDERATION OF REGULATORY ALTERNATIVES<sup>110</sup>

Does the analysis enumerate alternatives to address the problem?

**Best practice: Consider numerous alternatives.** Naming alternatives is not in and of itself a best practice, but when agencies seriously consider a large number of varying approaches, this is a good start. The DOE's 2008

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110. Examples for this section are drawn from Jerry Ellig and James Broughel, "Regulatory Alternatives: Best and Worst Practices" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, 2012), <http://mercatus.org/publication/regulatory-alternatives>.

energy-conservation standards for general-service fluorescent lamps and incandescent reflector lamps considered nine alternatives, including nonregulatory alternatives.

**Worst practice: Consider no serious alternatives to the proposed rule.** Seven regulations out of 87 scored a zero on this criterion in 2008 and 2009, meaning they did not identify any alternatives to the proposed regulation. The 2009 Department of Education rule on investing in innovation states that it considered a wide variety of alternatives, but it never lists them. The 2008 HHS Medicaid program premiums and cost-sharing rule simply states that Congress required this specific regulation; therefore, no alternatives were considered.

Is the range of alternatives considered narrow or broad?

**Best practice: Present a wide variety of alternatives, including nonfederal options and nonregulatory actions.** The RIAs for the DOE's energy-efficiency regulations regularly consider a wide variety of alternatives. For example, when proposing standards for pool heaters and water heaters in 2009, the department considered eight alternatives to the proposed regulation:

- no new regulatory action
- consumer rebates
- consumer tax credits
- manufacturer tax credits
- voluntary energy-efficiency targets
- early replacement subsidies (similar to “cash for clunkers”)
- bulk government purchases
- allowing states to incorporate requirements for high-efficiency storage water heaters in their building codes

**Worst practice: Consider only no action or the proposed rule.** The Department of the Interior's 2008 abandoned mine land program considered only the proposed rule or no regulatory action. The DOT's 2008 regulation establishing new maximum operating pressures for gas pipelines considered only its proposed rule and delaying the proposed rule. While it is advisable to consider the impact of no new regulation, agencies should consider further alternatives.

Does the analysis evaluate how alternative approaches would affect the amount of the outcome achieved?

**Best practice: Describe outcomes for each alternative and monetize them to facilitate comparison.** The RIA for the EPA's 2008 effluent limitations guidelines for construction sites shows how different alternatives will affect the amount of outcome achieved. The agency estimates the reductions in costs for dredging sediment and treatment of drinking water under each alternative. Evidence is presented in the text as well as in a table. Outcomes are presented in physical and monetized form and discounted at multiple discount rates.

**Worst practice: Dismiss alternatives without evidence to support the decision.** The analysis for the Department of Labor's 2008 regulations for the use of cranes and derricks in construction mentions several alternatives but dismisses them. Firms with unsafe practices may find that they have to pay compensating differentials in wages or higher insurance premiums, but the agency summarily dismisses the effects of these market-based incentives. The agency acknowledges that some states have safety plans approved by the Occupational Safety and Health Administration, but it does not consider whether any states already address crane and derrick safety. No empirical evidence or scholarly literature is cited to support dismissing the alternatives.



Does the analysis identify and quantify incremental costs of all alternatives considered?

**Best practice: Identify all costs, both direct and indirect, for each alternative.** The analysis for the 2008 EPA effluent limitations guidelines for construction sites breaks down costs borne by firms and the government, as well as increases in the cost of single-family housing under each alternative. The EPA estimates the direct costs to industry under each alternative, as well as economy-wide effects on consumers.

**Worst practice: Consider no costs at all, or only the cost of the alternative chosen.** RIAs almost always contain some information about the cost of the proposed regulation. However, many fail to include a thorough cost analysis of the alternatives, if alternatives are considered. This conveys the impression that the RIA's main purpose is to justify a decision already made, rather than to inform decisions as they are being made.

Does the analysis identify the alternative that maximizes net benefits?

**Best practice: Calculate the net benefits associated with each alternative.** Table A1 shows a best practice for presenting information on net benefits. After monetizing the costs and benefits, the EPA calculates net benefits for each alternative. (Estimated net benefits are negative because the EPA notes several significant benefits were not monetized.)

**Worst practice: Do not compare net benefits of alternatives.** Twenty-one regulations scored a zero on this question in 2008 and 13 scored a zero in 2009. This is nearly 40 percent of all regulations evaluated for the Mercatus Regulatory Report Card. These RIAs had no content related to identifying alternatives that maximize net benefits.

Does the analysis identify the cost-effectiveness of each alternative considered?

**Best practice: Calculate cost-effectiveness, defined as outcomes divided by total costs, for each alternative.** A 2009 Department of Agriculture meat-labeling rule includes a cost-effectiveness analysis showing costs-per-life-saved of the various alternatives. These costs vary from \$291,000 to \$2.2 million, depending on the estimated effectiveness of the alternatives. The department deserves credit for calculating the cost-effectiveness as well as the net benefits of each alternative and for accounting for uncertainty about the success rates of each alternative.

Table A: EPA comparison of social costs and benefits for 2008 effluent limitations guidelines (millions of 2008\$).

	Option 1	Option 2	Option 3
<b>Social Costs*</b>			
Resource Cost of Compliance (adjusted for market-effect in C&D industry)	\$132.3	\$1,882.6	\$3,780.2
Government Administrative Cost	\$0.0	\$0.7	\$1.2
Deadweight Loss to Society	\$0.0	\$3.5	\$8.2
<b>Total Social Cost of the Regulation</b>	<b>\$132.4</b>	<b>\$1,886.8</b>	<b>\$3,789.6</b>
<b>Monetized Benefits*</b>			
Benefits to Navigation <sup>b</sup>	\$1.0	\$12.9	\$27.2
Benefits to Water Storage	\$0.6	\$17.6	\$30.6
Benefits to Drinking Water Treatment	\$0.2	\$7.4	\$13.1
Water Quality Benefits	\$16.6	\$295.0	\$398.5
<b>Total Monetized Benefits<sup>b</sup></b>	<b>\$18.4</b>	<b>\$332.9</b>	<b>\$469.5</b>
<b>Net Benefits (Benefits Minus Costs)</b>	<b>-\$114</b>	<b>-\$1,553.9</b>	<b>-3,320.1</b>

\* Totals may not sum due to rounding

<sup>b</sup> Based on a 3% social discount rate

Source: EPA Estimates

**Worst practice: Do not compare cost-effectiveness of alternatives.** Seventeen regulations scored a zero on this question in 2008 and 21 scored a zero in 2009, meaning more than 43 percent of regulations scored for the Mercatus Regulatory Report Card failed to assess the cost-effectiveness of alternatives.

## IDENTIFICATION OF A BASELINE<sup>111</sup>

**Best practice.** An example of a well-done baseline comes from a 2011 rule proposed by the DOT that required electronic on-board recording devices on certain commercial motor vehicles. The DOT considered three baselines in its analysis and compared each alternative rule under consideration to each of the three different baselines. The RIA adjusted the baseline level of noncompliance for factors such as inflation, a decline in violations that preceded the mandate for electronic on-board recorder use, and the decline in commercial motor vehicle-related crashes.

Using the first baseline, the DOT estimated benefits, costs, and net benefits for the proposed rule. The two other baselines considered the likely state of the world under various alternatives considered in connection with another regulation the DOT proposed around the same time. These baselines incorporated the interaction of the proposed rule with multiple versions of the other regulation proposed by the DOT. The DOT then calculated net benefits of each alternative relative to each baseline and displayed the results in several easy-to-read charts, one of which is reproduced below (see figure A1).

Figure A1 shows how regulatory alternatives can be compared against multiple baselines. In this case, costs and benefits were calculated for each of three options the agency considered. Net benefits were then calculated against three different baselines. The analysis shows that option 1 has the highest net benefits under any of the three baselines. This is important because it informs the agency that, by choosing option 1, it may provide the greatest benefits to citizens relative to the costs that are also imposed by the regulatory option. If a different option had higher net benefits under one baseline scenario than under others, the DOT might have made a different decision—perhaps choosing the option that maximized net benefits under the most likely baseline or perhaps waiting until it first made decisions on the other regulations.

Another example of a best practice occurs in the RIA for a 2012 EPA rule that sets performance standards for greenhouse gas emissions from new coal-fired electric utility generating units. For this regulation, the agency claims that the rule will have neither costs nor benefits, owing to the fact that the agency does not believe any new coal-fired power plants will be built in the time period analyzed.

The EPA was correct to state that there would be no benefits or costs associated with the regulation since the marketplace is already moving in that direction anyway. This is an example of good analysis by the agency's economists, since they did not confuse benefits and costs of the rule they are issuing with changes in behavior that are already occurring in the absence of a regulation.

**Good analysis vs. good decision-making.** This last example gets at a separate issue, however, which is whether good analysis performed by an agency's experts helps inform the decision to issue a regulation. If a baseline indicates that a problem is going away or that market conditions are already working to solve the problem, why issue a regulation at all?

Baselines should not be used just for the sake of estimating the benefits and costs of alternatives; they should also be used to help inform decisionmakers about whether or not regulating makes sense in the first place.

**Examples of substandard analysis.** One example of poor baseline analysis accompanied a 2010 rule proposed by the Department of Labor that sought to lower miners' exposure to respirable coal mine dust. While this is certainly a worthy goal, the baseline the agency used assumed that the number of citations for violating the rule in the future would remain as they were in the previous year. While it is possible that this baseline was realistic, no evidence was cited to support the use of a figure from just one prior year as the baseline. In addition, there was no consideration of uncertainty surrounding this baseline. Instead, the agency assumed its baseline was correct with certainty, with no discussion of what trends could be expected if the Mine Safety and Health Administration did not take this action. A more accurate method would be to examine a

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111. Examples for this section are drawn from Jerry Ellig and James Broughel, "Baselines: A Fundamental Element of Regulatory Impact Analysis" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, 2012), <http://mercatus.org/publication/baselines>.

Figure A1: Department of transportation analysis of annualized costs and benefits for 2011 electronic on-board recorders rule (2008\$ millions).

	Option 1: RODS	Option 2: RODS+	Option 3: All
<b>EOBR Costs</b>	<b>\$1,586</b>	<b>\$1,643</b>	<b>\$1,939</b>
<b>HOS Compliance</b>	<b>\$398</b>	<b>\$404</b>	<b>\$438</b>
<b>Total Costs</b>	<b>\$1,984</b>	<b>\$2,047</b>	<b>\$2,377</b>
<b>Paperwork Savings</b>	<b>\$1,965</b>	<b>\$1,965</b>	<b>\$1,965</b>
<b>Safety Benefits</b>	<b>\$734</b>	<b>\$736</b>	<b>\$746</b>
<b>Total Benefits</b>	<b>\$2,699</b>	<b>\$2,701</b>	<b>\$2,711</b>
<b>Net Benefits</b>	<b>\$715</b>	<b>\$654</b>	<b>\$334</b>
<b>Baseline 2 Net Benefits</b>	<b>\$799</b>	<b>\$738</b>	<b>\$418</b>
<b>Baseline 3 Net Benefits</b>	<b>\$859</b>	<b>\$798</b>	<b>478</b>

Option 1 would require Electronic On-Board Recording devices (EOBRs) for all drivers currently using paper records of duty status (RODS).

Option 2 (RODS+) expands Option 1 to include nearly all passenger-carrying commercial motor vehicles regardless of whether the drivers use paper RODS or are exempted from doing so.

Option 3 (all) would include all commercial motor vehicle operations subject to hours-of-service (HOS) requirements.

The first baseline reflects the level of noncompliance under current regulations. This is calculated by updating 2003 compliance data to reflect changes created by more recent regulations. The baseline also includes predictions of voluntary adoption, which is not counted as an effect of the rule. The two alternative baselines depend on which hours-of-service regulation DOT adopts in another ongoing proceeding.

series of prior years (not just one), identify trends that might continue, and consider factors that might alter those trends.

One egregious example of a flawed baseline occurred in a 1997 EPA retrospective analysis of the costs and benefits of the Clean Air Act. As a recent Mercatus Center study pointed out, “In its baseline scenario of air quality without the 1970 Clean Air Act, six metropolitan areas would have been worse than Bombay, two would have been worse than Manila, and one would have been worse than Delhi, one of the world’s most polluted cities.”<sup>112</sup>

This simply is not a realistic scenario. The agency ignored air quality improvements that may have been attributable to factors other than the Clean Air Act. Yet using this unrealistic baseline, the agency claimed that the benefits of Clean Air Act rules lay in the range of \$6 trillion to \$50 trillion, when in fact the real figure was undoubtedly much lower.

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112. Lutter, “Regulatory Policy.”

## USING REGULATORY IMPACT ANALYSIS TO INFORM DECISION-MAKING<sup>113</sup>

**Best practice: any use of analysis.** In 2011, the Department of Justice (DOJ) proposed a regulation intended to reduce the incidence of rape in America's prisons. The regulation emerged as a result of the Prison Rape Elimination Act of 2003. The legislation established a commission to study the effects of prison rape and to recommend improvements to prevent it. The law also mandated that the DOJ avoid national standards "that would impose substantial additional costs compared to the costs presently expended by federal, state, and local prison authorities." The department commissioned an independent contractor to perform a cost analysis of the commission's recommended standards.

In the RIA for the rule, the DOJ did not estimate how much its proposed standards would reduce prison rape. However, the department performed a breakeven analysis that began by estimating the value to society of reducing the prevalence of prison rape and sexual abuse by 1 percent. The department did this by estimating the monetary benefit of avoiding prison rape, a number determined by consulting relevant literature on the costs of prison rape. Costs of the proposed regulation were then compared to theoretical reductions in order to determine what level of reduction would justify the costs.

As a result of the breakeven analysis, the DOJ estimated the standards would only have to yield a small percentage reduction from the baseline level of prison rape in any given year, without even considering benefits that were unquantifiable, in order to justify the regulation. The DOJ found its proposal to be more cost-effective than the commission's recommendations, for which the agency also did a cost-effectiveness analysis. While analysis of net benefits was absent in the RIA, the agency still made good use of the information it had available and clearly referenced the economic analysis as a reason for modifying some of the commission's recommendations to carry out the law's directives.

**Best practice: maximizing net benefits.** Also in 2011, the DOT issued a regulation mandating use of electronic on-board recorders on commercial motor vehicles. In the RIA for the rule, the DOT explicitly stated that it chose the alternative that maximized net benefits. The DOT analyzed three alternatives against multiple baselines and chose the alternative that produced the highest net benefits against each of the baselines. The first baseline reflected the level of noncompliance under current regulations, while the alternative baselines reflected proposals considered under another rule the DOT was considering simultaneously.

Unfortunately, the range of alternatives considered was not very broad since the alternatives differed only with respect to who is subject to the regulation. Each option required the use of electronic on-board recorders on certain commercial motor vehicles. The options only varied in terms of which vehicles would be subject to the regulation. Thus, it is not clear whether the regulation maximized net benefits compared to all possible alternatives, but the DOT clearly indicated how the net benefit calculations affected the choice among the alternatives that were considered.

**Best practice: explaining factors other than net benefits.** In 2012, the Department of Agriculture (USDA) proposed a regulation to modernize its system of poultry slaughter inspection. The rulemaking came as a result of President Obama's Executive Order 13563 requiring executive branch agencies to review existing rules. The goal was to have agencies assess "rules that may be outmoded, ineffective, insufficient, or excessively burdensome, and to modify, streamline, expand, or repeal them in accordance with what has been learned." In response to this executive order, the USDA reviewed its poultry slaughter inspection system to see if it could identify ways to increase efficiency and improve safety.

Shortly thereafter, the USDA completed a qualitative risk assessment measuring how different inspection procedures affect the prevalence of human illnesses associated with tainted poultry.

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113. Examples for this section are drawn from Jerry Ellig and James Broughel, "How Well Do Agencies Use Regulatory Impact Analysis?" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, 2013).

The USDA determined that its resources could be better used if it let establishments sort out more potentially tainted birds prior to inspections, allowing the USDA to concentrate more of its own resources on verifying compliance and sanitation standards.

Using information garnered from the risk assessment, the USDA conducted a benefit-cost analysis for several alternative ways of modernizing its poultry inspection system. One of the striking aspects of this RIA is the small difference in the net benefits between the alternatives. One alternative with slightly greater net benefits than the alternative that was ultimately chosen in the proposed rule was rejected due to the disproportionate impact it would have on small businesses relative to larger firms. The USDA determined the alternative embraced by the proposed rule would not affect small business in a disproportionate way. Another alternative was dismissed even though it had higher net benefits than the proposed rule because the USDA determined the alternative selected in the proposed rule had additional, unquantified benefits.

**Worst practice: the black hole.** All too often, the worst practice is a complete absence of content. For a majority of regulations in the sample, agencies made no claim to use the analysis and there is no evidence in the NPRM that the agency took the analysis into account. Numerous regulations also lacked information on the net benefits of multiple alternatives—or any information on net benefits at all.

APPENDIX B

## OMB RIA Checklist Crosswalked to the Mercatus Report Card

OMB Checklist	Report Card Evaluation Criteria
Does the RIA include a reasonably detailed description of the need for the regulatory action?	Criterion 6: How well does the analysis demonstrate the existence of a market failure or other systemic problem the regulation is supposed to solve?
Does the RIA include an explanation of how the regulatory action will meet that need?	Criterion 5: How well does the analysis identify the desired outcomes and demonstrate that the regulation will achieve them?
Does the RIA use an appropriate baseline (i.e., best assessment of how the world would look in the absence of the proposed action)?	Criterion 7, question D: Does the analysis adequately assess the baseline—what the state of the world is likely to be in the absence of further federal action?
Is the information in the RIA based on the best reasonably obtainable scientific, technical, and economic information and is it presented in an accurate, clear, complete, and unbiased manner?	<p>Criterion 2: How verifiable are the data used in the analysis?</p> <p>Criterion 3: How verifiable are the models or assumptions used in the analysis?</p> <p>Criterion 4: Was the analysis comprehensible to an informed layperson?</p> <p><i>Criterion 3 includes an assessment of whether the models and assumptions are based on peer-reviewed or otherwise reliable publications. However, the evaluation does not assess the quality of the underlying science.</i></p>
Are the data, sources, and methods used in the RIA provided to the public on the Internet so that a qualified person can reproduce the analysis?	<p>Criterion 1 takes the first step by assessing how easily the RIA itself can be found on the Internet.</p> <p>Criteria 3 and 4 include an assessment of how easily the reader could find the underlying data, sources, and methods from information or links provided in the RIA or the <i>Federal Register</i> notice.</p>
To the extent feasible, does the RIA quantify and monetize the anticipated benefits from the regulatory action?	Criterion 5, question 2: How well does the analysis identify how the outcomes are to be measured?

Source: Jerry Ellig and Patrick A. McLaughlin, "The Quality and Use of Regulatory Analysis in 2008," *Risk Analysis* 32, no. 255 (2012).