

Comments on the 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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My perspective comes from reviewing the RIAs for rules published in calendar years 2011-2013. All of the rules reviewed estimate lifesavings; consequently, most of them were promulgated by DOT and EPA.

I found the OMB report generally informative and well-written, and the qualifications appropriate and nicely-stated, e.g., about the health effects of air regulations, and the comparability of information across agencies. I have a few specific editorial comments but in the main, I want to emphasize a particular reason why the annual estimates in different RIAs might not be giving the same information, reinforcing the qualification in the OMB report itself about aggregating benefit-cost evaluations across agencies.

The issue I have in mind is the fact that regulations have differing implementation periods, so that the timing of operational periods differ, and agencies have different ways of handling this situation. For example, the greenhouse gas emissions and fuel efficiency standards for MD-HD trucks/engines (2011; 2060-AP61, 2127-AK74) apply fully starting with 2017 model years, and the stock of trucks does not turn over until 2030. So 2030 defines the beginning of the operational period when all trucks on the road will meet the new standards. In the DOT rule requiring the certification of Part 23 turbofan- and turbojet-powered airplanes (2011; 2120-AJ22), the stock does not turnover for 57 years.¹ Of course, process/procedures that apply to new technology or sources, like new source performance standards, or new fuel consumption standards, will have a longer phase-in period than other kinds of rules. Operational requirements, like hours of service rules that have recently been issued by DOT, offer the limiting bound in the other direction – they apply to the whole industry and become effective in the year following the regulation’s promulgation.

EPA’s standard evaluation picks a “reference year” that corresponds to the assumed operational period and takes a “snap shot” of the annual benefits and costs occurring in that year. The constraints of running air quality models understandably limit the analysis to a one period assessment. But these snap-shot annuities -- occurring in different periods for different rules -- are not giving the same information, or the information that would be provided in an analysis that discounts the costs and benefits over the implementation

¹ FYI, I could not find this rule listed in Table A-2.

period and in the operational period beyond, and then re-annualizes the resulting NPV starting from the year after the regulation is promulgated.

DOT sometimes evaluates new technology rules differently than the method used by EPA/DOT in the assessment of the greenhouse gas emissions and fuel efficiency standards for MD-HD trucks/engines. Rather than modeling the operational period after the stock turns over, the benefits and costs flowing from one year's worth of new stock during the phase-in period are assessed. Examples include the ejection mitigation rule (2011; 2127-AK23), and a rule on occupant crash protection in buses which will be relevant for next year's OMB report (November 2013; 2127-AK56, 2127-AK56). If the baseline for the comparison to the new technology is constant, then the annuity computed from the market penetration of the new technology in a given year understates the annuity that would be computed from full market penetration in a future year.² On the other-hand, the value of the larger annuity would be diminished for occurring in the future.³

EPA evaluated new source performance standards for petroleum refineries (2012; 2060-AN72) in the way that DOT evaluated the rules for ejection mitigation and occupant protection in buses, just discussed. In this case, the effects of the compliance of new sources built after May 14, 2007 were computed in the reference year 2017. Presumably in the case of NSPS for air pollution emitters, this kind of evaluation approach is the only option – since the point at which “new sources” constitute the whole market could be a long way in the future.

In general, the temporal periods for economic evaluation are not presented very clearly in the recent batch of RIAs we reviewed, nor are the implications of the methodology choices about timing discussed. Moreover, the economic evaluation literature does not

² In the RIA for ejection mitigation, the difference between the policy scenario and the baseline is assumed to be constant, with the baseline computed from sales data on models for a recent period before the year of the analysis. But market evolution towards more occupant protection was occurring before the rule was to take effect, so it seems likely that the impact of the rule would be diminishing over-time. Indeed, the rule could be viewed as accelerating a market trend. An ideal way to analyze this rule would have been to forecast the baseline occupant protection without the rule, the occupant protection with the rule, and to take the difference. At some point in the future, the difference would be zero as the market converged to the standard set by the rule. Having projected the future stream of diminishing differences, the net-present value could have been computed. Then, this NPV could have been re-annualized over the period of market convergence. This analysis would have given a different estimate for the annual benefits and costs than the estimate stated in the RIA.

³ The DOT rule on the certification of Part 23 turbofan- and turbojet-powered airplanes (2011; 2120-AJ22) was not analyzed like the rules for ejection mitigation and occupant protection in buses. For this rule, the evaluation period is the 57 years in which the rule is implemented. The operational period of the rule is not considered -- probably because projections cannot be reliably made so far into the future.

address the methodology implications of the structural variety encountered in regulations and the consequence of practical evaluation constraints.⁴ I assume the reason is that evaluation guides focus on the analysis of particular investments, and a relatively circumscribed set of alternatives, and that this kind of analysis does not confront the same degree of normalization problem that arises in meta-analysis. The going assumption seems to be that annualizing benefits and costs is adequate for normalize timing differences across investments; see, for example, *Cost-Benefit Analysis For Investment Decisions*, Glenn P. Jenkins, Chun-Yan-Kuo, and Arnold Harberger, August 2011. (This work influenced the approach of the *Canadian Cost-Benefit Guide for Regulatory Proposals*). But annualizing benefits and costs in current RIAs does not necessarily make the economic content of the analyses comparable, given the different ways in which the annualizing is conducted.

A related issue is the possible inferences a reader might draw from reading the OMB report. I would guess that most readers would assume that the reported benefits and costs are occurring during the fiscal year in which they are reported. However, for a rule like the fuel consumption and greenhouse gas emissions standard for MD/HD trucks, the operational period will be beyond the 10 year window in which the rule will appear in the report. In more typical cases, the annual benefits and costs reported may occur several years after the year in which they are reported. Aggregations of the benefits and costs across a 10 year period also ignore the timing in which benefits and costs are occurring. I am not suggesting that the reporting format be changed – I obviously do not have the competence to make that judgment, not knowing the relevant issues and constraints. But it does strike me that the structural diversity of regulations complicates the way to report their effects -- as well as the way to analyze them.

Please let me know if you have any questions. And thank you for soliciting my input.

Sincerely, Kerry Krutilla

Minor editorial issues

1. Table 1-6 (a)

- a) benefit and cost information is missing for reciprocating combustion engines (2060–AQ58).

⁴ See, for example, the recent EPA BCA guide published in May of this year; the *Interim Canadian Cost-Benefit Analysis Guide for Regulatory Proposals, 2007* (which is still in effect), or OMB Circular A-4.

- b) EPA Incineration rule (2060–AR15 and 2050–AG44) is not included that I could see. This might be because the last RIA was published in 2011 (although there have been updates as memoranda from EPA contractors). However, on pdf pp 10, third para from the bottom, the report states that the rule is included. Here is the relevant part: “EPA finalized the 2011 National Emission Standards for Hazardous Air Pollutants for Major and Area Sources of Industrial, Commercial, and Institutional Boilers and Process Heaters and the Commercial and Industrial Solid Waste Incineration Units, but announced a delay notice, staying the effective date of these rules. In January 9, 2012, the United States District Court for the District of Columbia vacated the delay notice and remanded the notice for further proceedings. EPA subsequently published the final versions of these rules, on January 31 and February 1, 2013. The 2013 versions of these rules are therefore included in this draft Report” (emphasis mine).
- c) A final NESHAP for the Portland Cement Manufacturing Industry and Performance Standards for Portland Cement Plants (2060-AQ93) was also published in the Federal register in February 2013. But I see the economic effects of this rule is included in Table A-1 2011 – probably because the most recent RIA seems to be for 2010.

2. Footnote 18, starting on pp 14 and continuing to pp 15.

The footnote mentions that EPA escalates future VSL values for income elasticity, but does not mention that DOT guidance now calls for doing the same. Below is from the 2nd para of the DOT guidance document that you cite. (FYI, the cite does not appear in your reference list at the end of the report, so you might want to list it).

“Empirical studies published in recent years indicate a VSL of \$9.1 million in current dollars for analyses using a base year of 2012. We also find that an income elasticity of 1.0 should be used to project VSL to future years. Based on wage forecasts from the Congressional Budget Office, we estimate that there will be an expected 1.07 percent annual growth rate in median real wages over the next 30 years (2013-2043). These estimates imply that VSL in future years should be estimated to grow by 1.07 percent per year before discounting to present value.”

Source: Revised Departmental Guidance 2013: Treatment of the Value of Preventing Fatalities and Injuries in Preparing Economic Analyses. DOT