SBCA Presidents' and *JBCA* Editors' Comments on Revised U.S. Analytic Guidance

Guidance is not Enough: Comments on U.S. Draft Circular A-4, "Regulatory Analysis"

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The authors thank Susan Dudley and Tom Kniesner for organizing this series and benefitted greatly from many conversations with others involved in the series.

Guidance is not Enough: Comments on U.S. Draft Circular A-4, "Regulatory Analysis"

Lisa A. Robinson (Harvard T.H. Chan School of Public Health)

Abstract: In April 2023, the U.S. Office of Management and Budget (OMB) issued a draft update of its 2003 best practice guidance for regulatory analysis, Circular A-4, and requested public comment. This working paper was prepared for a *Journal of Benefit-Cost Analysis* special issue that consolidates comments on the draft from past Society for Benefit-Cost Analysis presidents and Journal editors. Although I address several substantive issues, my primary concern is barriers to implementation. One of the most important sentences in both original and revised Circulars reads: "You will find that you cannot conduct a good regulatory analysis according to a formula. Conducting high-quality analysis requires competent professional judgment..." The challenge is supporting the development of this judgement, and ensuring that analysts have the data and resources necessary to conduct high quality analyses that are useful for decision-making.

Keywords: benefit-cost analysis, regulation

JEL classifications: D6; H4.

Acknowledgements: I thank Susan Dudley for organizing and supporting this special issue and for her insightful comments, and Thomas Kniesner for encouraging publication. For numerous interesting and thoughtful discussions, I also thank Jennifer Baxter, Aaron Kearsley, Jeff Shrader, and many others, including the contributors to this special issue.

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1.0 PROLOGUE

For over 40 years, U.S. executive branch agencies have been required to conduct benefit-cost analysis to support major policy decisions. The U.S. Office of Management and Budget (OMB), in the Executive Office of the President, plays a major role in developing best practice guidance and reviewing these analyses. In 2023, OMB updated its guidance for the first time in many years, incorporating several substantial changes. What follows is part of a *Journal of Benefit-Cost Analysis* special issue that consolidates the comments from past Society for Benefit-Cost Analysis presidents and *Journal* editors on the draft of OMB's regulatory analysis guidance. I provide context for my comments, replicate my comments verbatim, and discuss the results.

In reviewing previously submitted comments, I found few discussed practical implementation. Although many, if not most, comments were brief and non-substantive, several knowledgeable experts provided thoughtful feedback that reflected familiarity with the underlying concepts and empirical research.[1] They rarely addressed the data, tools, and skills needed for successful application, however. The comments focused largely on the words on the page rather than on the work needed to implement them. To promote greater attention to this issue, my comments focus largely on the training and resources required to support high quality analyses that are useful for decision-making.

The starting point for these comments was OMB's issuance of a draft update of Circular A-4: *Regulatory Analysis* (OMB 2023a) in April 2023, along with a preamble describing the changes (OMB 2023b) and a request for public comment. At the same time, OMB requested comment on an update of Circular A-94: *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs* (OMB 2023c). This was the first update of Circular A-4 since 2003 (OMB 2003), and of Circular A-94 since 1992 (OMB 1992), although in the latter case the accompanying discount rates were frequently updated. As in the past, OMB requested comments on the revisions from Federal agency staff, from the general public, and from invited external peer reviewers.

Both Circulars continue the longstanding tradition of encouraging benefit-cost analysis of major Federal regulations (Circular A-4), and Federal investments (Circular A-94), although Circular A-4 receives substantially more attention. For example, 4,492 comments were received on the draft Circular A-4, while only 50 were received on the draft Circular A-94.[2] It is not entirely clear why this imbalance exists. It likely occurs, at least in part, because regulations impose direct costs on industries and other organizations, who often strongly contest the requirements, with pushback from those who benefit from the results. In contrast, the costs of direct Federal spending are less visible. The relationship between taxes and government debt and specific Federal investments is complex and not self-evident.

Similarly, this special issue focuses on the requirements for regulatory analysis in Circular A-4. However, I and a few others commented on both draft Circulars (Robinson 2023a), often emphasizing the need to harmonize their provisions. The final version of Circular A-94 is similar to the final version of Circular A-4 and frequently references it, suggesting that OMB agreed with this advice.

[1] Xie, Hay, and Hirsch (2023) find that of the almost 4,500 comments submitted, only 185 were unique comments with substantive content.
[2] Counts from https://www.regulations.gov/document/OMB-2022-0014-0001/comment for A-4 and https://www.regulations.gov/document/OMB-2023-0011-0001/comment for A-94, as viewed August 2024.

Shortly after the final Circulars were published, the White House released *Advancing the Frontiers of Benefit Cost Analysis: Federal Priorities and Directions for Future Research* (NSTC 2023). That report was authored by a subcommittee co-chaired by the Council of Economic Advisors, the OMB Office of Information and Regulatory Affairs, and the Office of Science and Technology Policy, all within the Executive Office of the President. The subcommittee involved 80 members from throughout the government. The report addresses many longstanding challenges to the conduct of benefit-cost analysis, with the hope of spurring significant progress. It is important to recognize, however, that achieving its goals requires substantial investment of time and resources over several years, including increased funding to cover the involvement of agency staff as well as external researchers. Survey clearance under the Paperwork Reduction Act also needs to be eased significantly. Good research takes time and resources.

2.0 COMMENTS AS SUBMITTED

Comments on U.S. Office of Management and Budget, Circular A-4 Modernization Updates, Docket OMB–2022–0014

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June 20, 2023

The U.S. Office of Management and Budget (OMB) is revising Circular A-4, Regulatory Analysis, as part of its initiative to modernize regulatory review. That Circular was published in 2003. Since that time, there have been substantial advancements in theory and practice. Our understanding of the challenges associated with conducting high-quality analyses also has increased significantly.

OMB is to be applauded for undertaking this challenging and extensive update and for encouraging and incorporating substantial review by stakeholders. This is clearly an arduous undertaking which addresses many difficult and complicated issues. Ultimately, the results of this effort will improve both the conduct of regulatory analysis and the quality of regulatory decisions, enhancing societal welfare.

For context, I first summarize my qualifications. I then comment on cross-cutting issues and on specific sections of the draft revision. Many of my comments relate to clarifying the text, providing additional practical guidance, and updating the discussion in some areas to reflect recent developments in the literature.

Qualifications

I have been involved assessing policy impacts for over 40 years, as a government employee, a consultant to government agencies, and an academic researcher. I have led numerous assessments of the costs, benefits, and other impacts of environmental, health, and safety policies and regulations; addressed methods for benefit-cost analysis and cost-effectiveness analysis; and drafted guidance documents. As a result, I have substantial in-the-trenches experience in conducting and evaluating regulatory analyses as well as in developing guidance documents and reviewing their implementation.

For example, building on my work on conducting regulatory analysis, for the U.S. Environmental Protection Agency (EPA) I co-authored guidelines on valuing the benefits of the 1996 amendments to the Safe Drinking Water Act and contributed to its initial (2000) *Guidelines for Preparing Economic Analysis*.

For a consortium of Federal agencies, I co-edited the 2006 Institute of Medicine report, *Valuing Health for Regulatory Cost-Effectiveness*. More recently, I co-authored the U.S. Department of Health and Human Services (HHS) 2016 *Guidelines for Regulatory Impact Analysis* as well as the 2019 *Reference Case Guidelines for Benefit-Cost Analysis in Global Health and Development* for the Bill and Melinda Gates Foundation. I also developed approaches for valuing fatal and nonfatal risk reductions for EPA, HHS, the U.S. Department of Transportation, the U.S. Department of Homeland Security, and other agencies and organizations.

I have taught many seminars, workshops, and courses on the conduct of benefit-cost analysis and have been a member of several expert advisory groups. Since its inception, I have been an active member of the Society for Benefit-Cost Analysis, serving as President as well as on numerous committees. I have also been involved in the *Journal of Benefit-Cost Analysis* since its conception, as a member of its Editorial Board, peer reviewer, author, guest editor, and symposia organizer.

Links to many of my relevant recent publications are available here: https://www.hsph.harvard.edu/lisa-robinson/publications/.

General Comments

Several requirements currently contained in Circular A-4 (as well as in agency guidance documents) are often ignored. For example, as documented in OMB's *Annual Reports to Congress on the Benefits and Costs of Federal Regulations*, the analyses of many major regulations do not include reasonably complete estimates of benefits and costs, and in some cases do not include any quantitative estimates of benefits. Another example is the lack of distributional analysis, as documented in Robinson, Hammitt, and Zeckhauser (2016) and elsewhere. The extent to which this lack of adherence reflects data, time, or resource constraints; disagreement with the requirements; concerns about potentially undermining the Administration's preferred policies; lack of knowledge or understanding of best practices; the need for greater OMB enforcement; and/or other factors is unclear.

Below, I first offer some suggestions that are technically outside the scope of the revisions to Circular A-4, but seem essential to ensuring its appropriate implementation and improving the practice of regulatory analysis more generally. I also offer some suggestions related to the Circular itself.

(1) Support scholarly research and training: Full implementation of many the Circular's provisions will be challenging without substantially increased investment in scholarly research and training. At the moment, academic researchers face few incentives to conduct the types of applied best practices work that is needed to improve approaches to conducting regulatory analysis (see, for example, my later comments on stated preference research and distributional analysis). Providing Federal grant funds and supporting publication outlets for this type of research is crucial.

One of the most important sentences in both the revised and original Circular reads:

> *You will find that you cannot conduct a good regulatory analysis according to a formula. Conducting high-quality analysis requires competent professional judgment…* (p. 3)

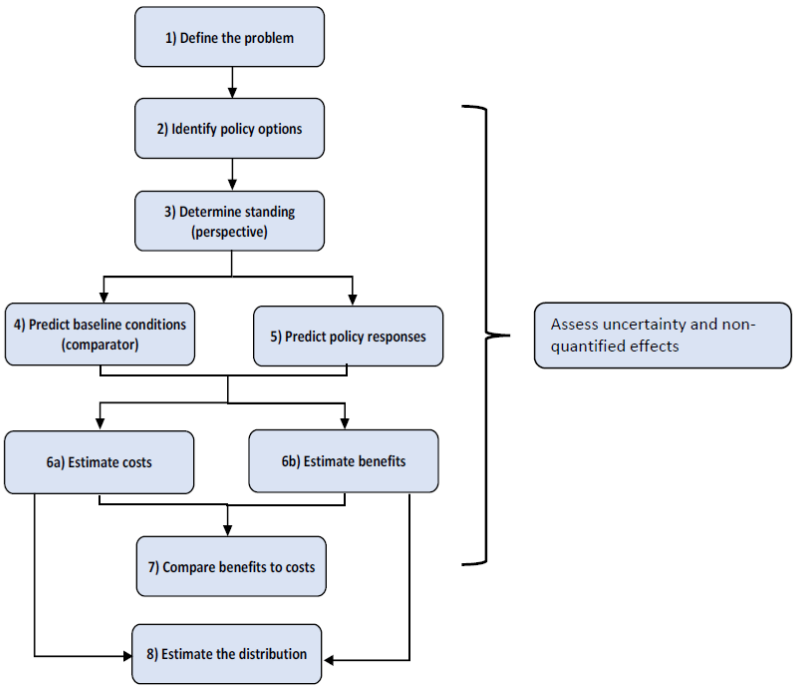
However, developing "competent professional judgement" requires substantial training and experience. In addition to understanding the Circular's requirements and tailoring its application to the particular regulatory context, analysts face difficult choices about how to best use whatever data are available to inform decisions that must be made in the near term. Understanding options for using data that vary in

quality and suitability, as well as understanding how to clearly communicate both the implications and uncertainties associated with its application, requires extensive hands-on practice and expert coaching.

Yet benefit-cost analysis is rarely taught as part of the undergraduate or graduate curriculum, and when covered is often discussed in only a few sessions of more broadly focused courses. While professional development workshops are available, they are usually short and limited in scope. Encouraging increased training and experience in both educational settings and the workplace by whatever means possible is essential.

(2) Streamline and reorganize the discussion: While the draft Circular contains much important and useful information, it is very dense and repetitive and it is often difficult to determine what it requires or recommends. What follows are some suggestions for streamlining and reorganizing the discussion.

a) **Remove nonessential material**: Either delete less essential material, move it to appendices, or suggest key documents for readers to reference for more information rather than including the information in the Circular.
b) **Distinguish between requirements and supporting material:** One option would be to follow a consistent format in each major section that highlights key requirements or recommendations (e.g., bolded or as bulleted or numbered lists) followed by discussion of (a) key concepts and theory, then (b) relevant empirical work.
c) **Begin with more explicit framing:** Although the table of contents is very helpful, it would be useful to begin with an overview of the contents and a discussion of their interrelationships. For example, something along the lines of the graphic below (with supporting text), tailored to the Circular's contents, would be valuable.[3]



[3] Versions of this graphic and the associated text discussion appear in several documents, including Robinson et al. (2019) and U.S. Department of Health and Human Services (2016).

d) **Include text boxes and formula but steer clear of specific examples:** Including text boxes to highlight key points and formula to illustrate key calculations would be very useful. For example, illustrating how present values are calculated and how an estimate of individual willingness to pay (WTP) is converted to a value per statistical life (VSL) estimate would be very informative. Specific examples from previous analyses may be less useful, since it is tempting to blindly follow the example rather than to think carefully about the extent to which it is relevant to the current context. Such examples may be more helpful as part of a training program, when there is more opportunity to discuss the usefulness of the example in different contexts.

e) **Provide guidance and resources to improve communication with a general audience:** Regulatory analyses are usually dense and complex technical documents that are difficult to understand and follow, even for those who have substantial experience in conducting these analyses. Analysts are often too familiar with the details of their work to easily identify areas where the presentation may be confusing. Providing guidance and training on clear communication as well as templates for analysts to follow, and ample time to review the analysis before it is published, would be helpful. Involving technical editors also may be very useful. Improving the clarity of the written product seems particularly important given the Biden Administration's commitment to encouraging more stakeholder engagement in regulatory development and review.

(3) Create a central repository of completed analyses: It would be very valuable to develop a central repository of completed regulatory analyses. Such a repository would be helpful to those interested in learning about the basis for related policy decisions. More importantly, it would be an essential resource for those interested in assessing similar policies at the Federal, regional, state, or local level, as well as in other countries. Having the opportunity to build on previous work is far more efficient than starting from scratch, allowing time and resources that would otherwise be devoted to revisiting the same issues to instead be devoted to other (more welfare enhancing) purposes.

Page-by-Page Comments

p. 3: Require scoping analysis: It is often tempting for analysts to just dive in, rather than first spending time thinking carefully about the approach and about how to best allocate limited time and resources. Beginning with a logic diagram or flowchart that links regulatory requirements to the full range of possible impacts is often useful. For more discussion of approaches to scoping and screening, see HHS (2016), Section 2.4, and Robinson et al. (2019), Section 2.2.

pp. 4-5: Require consistent categorization of impacts as costs or benefits: [4] As long as the sign is correct (positive or negative), the categorization of an impact as a cost or a benefit will not affect the estimate of net benefits. However, analysts, decisionmakers, and other stakeholders are often interested in comparing total costs and total benefits across regulatory options or across regulations. In this case, consistent categorization is essential for comparability.

[4] This is a lightly edited extract from Robinson et al. (2019), and is also very similar to the guidance in Chapter 2 of the guidance provided by the U.S. Department of Health and Human Services (2016).

One intuitively appealing option is to distinguish between inputs and outputs. Under this scheme, costs are the required inputs or investments needed to implement and operate the regulation – including real resource expenditures such as labor and materials, regardless of whether these are incurred by government, private or nonprofit organizations, or individuals. Benefits are then the outputs or outcomes of the policy, i.e., changes in welfare such as reduced risk of death, illness, or injury.

Under this framework, counterbalancing effects should be assigned to the same category as the impact they offset. For example, costs might include expenditures on improved technology as well as any cost-savings that result from its use; benefits might include the reduction in disease incidence as well as any offsetting risks, such as adverse reactions to medications or substitution of less healthy foods for those subject to the regulation.

pp. 5-8, 34, 48-49: Update and clarify discussion of cost-effectiveness analysis and QALYs. These sections are outdated and do not reflect recent guidance and research. The Gold et al. (1996) guidance has been replaced with Neumann et al. (2016); guidance developed explicitly for regulatory analysis in response to a request from OMB and a consortium of agencies (IOM 2006) also should be incorporated. A more recent discussion of the consistency of QALYs with utility theory is provided in Hammitt (2017). For a more up-to-date discussion of QALYs and their relationship to valuing health effects in regulatory analysis, see Chapter 3 and Appendix C of HHS (2016). Robinson, Eber, and Hammitt (2022) provide an example of the challenges associated with applying these methods in regulatory analysis.

pp. 11-15: Distinguish impacts directly influenced by the regulatory decision from impacts influenced by Congressional or other action. Including impacts driven by early compliance with expected regulatory decisions or by statutory requirements could lead to misleading conclusions about the impacts of a regulatory agency's decision. Given that the primary goal of the analysis is to inform that decision, disaggregation seems necessary. Assessing the impacts of anticipatory compliance and of preceding Congressional action provides important information on policy impacts, but is not as easily addressed through immediate agency action.

pp. 12-14, 23-24, 53-55: Consider influence of regulatory design on compliance. The discussion of compliance and enforcement throughout the Circular could be significantly enriched by incorporating some of the material from Giles (2022) on how to design regulations to encourage compliance.

p. 27: Discuss the use of research synthesis methods to combine results across studies. Given that each individual study and data source will have both advantages and limitations, it is often useful (and preferable) to combine results across studies or data sources using methods such as systematic review, meta-analysis, and expert elicitation. There are many references on these methods that provide information on best practices, several of which are summarized in Robinson and Hammitt (2015a,b).

pp. 28-29: Streamline discussion of WTP versus WTA, and provide more practical advice. The discussion of WTP vs. WTA is missing some recent, directly relevant references that highlight related challenges. These include Hammitt (2015), Knetsch (2015), and Viscusi (2015). However, it may be better to shorten this discussion to focus more on providing practical advice for analysts, and simply footnote these and other references for those who are interested in learning more. Analysts may find it useful, for example, to review Tuncel and Hammitt (2014), which provides information on the extent to which WTP/WTA disparities are likely to be found for different types of outcomes. References such as section 2.1 of Robinson and Hammitt (2011) address the extent to which estimates of WTA are available for

outcomes of potential concern and difficulties with its empirical estimation. More generally, given limitations in the empirical research, analysts may often need to rely on estimates of WTP regardless of whether WTA may be the more appropriate measure.

p. 34: Note that other-regarding preferences are not always altruistic. As discussed in Section 4 of Robinson and Hammitt (2011), preferences for outcomes that accrue to others may not be altruistic; for example, preferences may reflect the desire to reward or punish others.

p. 34: Recognize that OMB clearance under the Paperwork Reduction Act is a major barrier to conducting new stated preference research to support regulatory analysis. Substantial new best practice stated preference research is needed to improve the valuation of many nonmarket benefits in regulatory analysis. However, academic researchers face few incentives to pursue such work given that funders and scholarly journals as well as academic promotion policies typically favor innovative research rather than research that reflects accepted best practices. While the Federal government faces greater incentives to encourage researchers to pursue such work, grant funding is scarce and work conducted by Federal employees and contractors must be cleared by OMB. Such clearance requires significant time and resources and is difficult to achieve. Without revisions to the clearance requirements and process, substantial contributions to this literature that support improved analysis of regulatory outcomes are likely to be rare.

p. 37: Clarify that the benefit transfer process is the same as the process that should be followed to estimate any parameter value. It is not clear why this process is described as applying only to benefit values; the same process applies to estimating almost any parameter. In each case, analysts must describe the parameter to be estimated, search the literature for potentially relevant research and data, evaluate the available studies and data sources for quality and applicability, select estimate(s) for application, and address uncertainty. On a more minor point, the HHS *Guidelines for Regulatory Impact Analysis* (2016) include a graphic on p. 13 that may be useful in describing this process.

pp. 40: Add guidance on estimating direct compliance costs. Estimates of compliance costs are needed as a starting point for partial or general equilibrium modeling and at times are the only cost estimates included in the analysis. Discussion of how to best estimate these costs could be easily added to the Circular, based on texts such as Boardman et al. (2018) and the current EPA (2010) and HHS (2016) guidance. Both HHS (Baxter, Robinson, and Hammitt 2017) and EPA (2020) have also developed guidance on valuing time, and HHS has developed guidance on estimating medical costs (Robinson, Rein, and Hammitt 2017).

pp. 44, 51: Clarify and update discussion of valuing risks to children. The discussion of valuing risks to children should be updated to reflect newer work. For review of related issues and recent research, see Robinson et al. (2019).

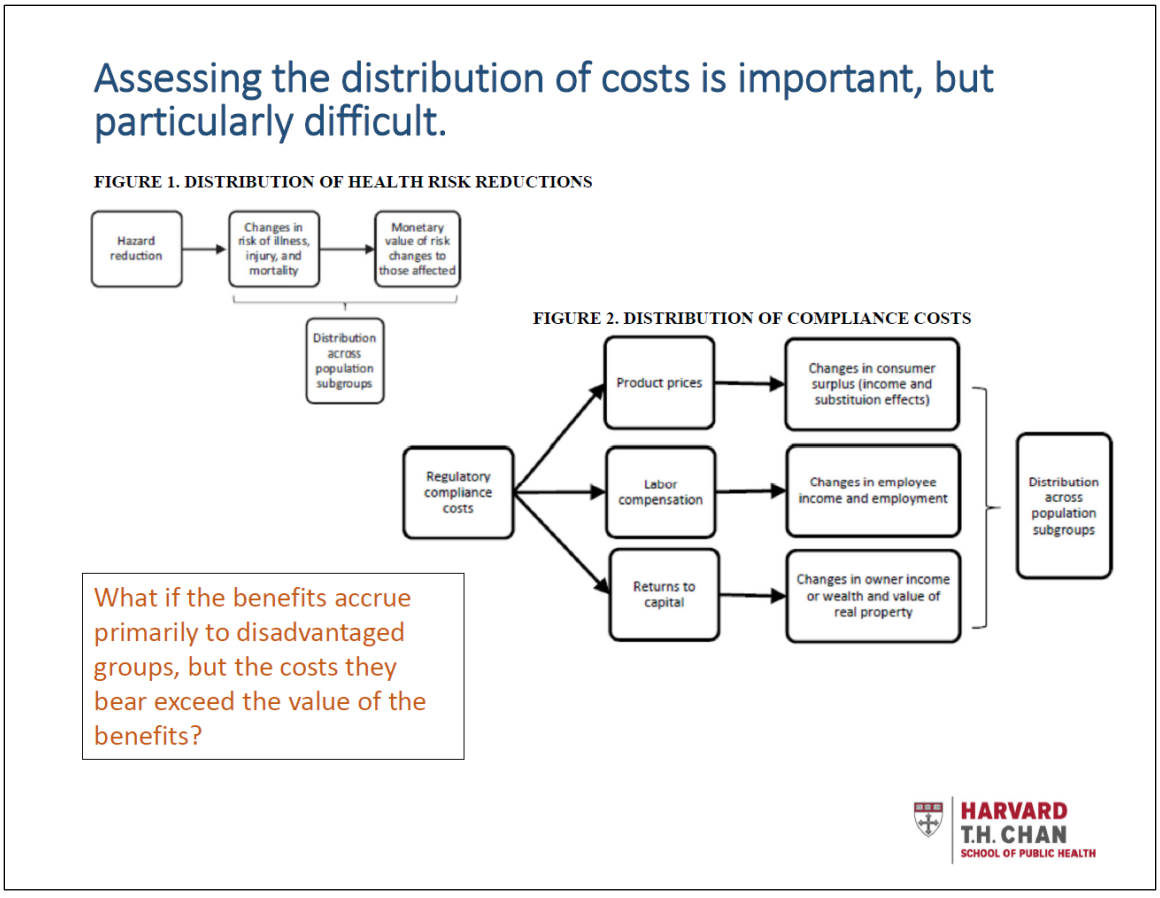
pp. 47-51. Update references on valuing health and longevity. While it seems sensible to defer making specific suggestions on valuing risks to health and longevity, given the complexity of the issues, the references in this section should be updated to reflect the results of recent expert panel deliberations and academic research. For example, the discussion of expert panel deliberations should reference the conclusions of more recent EPA Science Advisory Board panels (EPA 2011, EPA 2017). The discussion of the relationship between VSL and VSLY and adjustments for age differences, and of the extent to which it is feasible to adjust VSL for other differences in the populations and risks affected, should also be

updated to reflect more recent work (see, for example, Robinson, Eber, and Hammitt 2021). In footnote 82, it would be useful to add a reference to HHS (2021), which provides more guidance (including an Excel workbook) on adjusting VSL for inflation and real income growth.

pp. 61-65. Address pragmatic and policy issues related to distributional analysis. Given the importance of distributional issues, the discussion of how to estimate the distribution of impacts is inadequate. The weighting proposed in the Circular is not possible unless analysts are first able to estimate how benefits and costs are distributed across those who are advantaged and disadvantaged. Related issues and general guidance are discussed in more detail in Robinson, Hammitt, and Zeckhauser (2016) as well as in subsequent guidance documents (e.g., HHS 2016, Robinson et al. 2019).

Most importantly, little is known about how costs initially imposed on industry are distributed across individuals in different income or other groups, yet this information is essential to estimating the extent to which net benefits aggravate or ameliorate existing inequities. Some researchers have investigated the distribution of aggregate costs across many regulations or assessed the general equilibrium effects of large individual regulations. Little is known, however, about the extent to which the costs of smaller regulations are passed on as price increases, wage decreases, or reduced returns to capital. The distributional effects of passing on costs via each pathway are also not well-understood.

These challenges are illustrated in the graphics below, which are derived from the references provided previously.



In addition, an important barrier to may be the lack of agency ability to address any inequities they find when they conduct these analyses, given their existing statutory authority (see Robinson, Hammitt, and Zeckhauser 2016 for more discussion). Explicit guidance on how to deal with this concern seems warranted.

p. 66: Footnote 116 is misleading and should be deleted. The application of a population-average VSL should not be confused with equity weighting. First, it has no conceptual or empirical foundation, e.g., in the marginal utility of income or preferences for distribution. Second, from an individual's perspective, the population-average overstates the WTP of poor individuals and understates the WTP of wealthy individuals, and hence is not a fair representation of their preferences for spending on small risk reductions rather than other things. Third, if the distribution of costs is not weighted consistently with the distribution of benefits, the ultimate results will be misleading.

3.0 EPILOGUE

Although OMB solicited comments widely, it was under no obligation to address them, which means that responses to many comments are not reflected in the final version of Circular A-4 (OMB 2023e) nor in the explanation of the changes (OMB 2023f). In my case, OMB implemented some suggestions and cited related research in explaining the changes.[5] It was perhaps not surprising that several of my proposed changes were not incorporated, due at least in part to the challenges associated with addressing them. I briefly summarize OMB's responses to these comments then conclude with some thoughts on the relationship between research and policy.

3.1 Responses to general comments

As expected, the responses to my general comments were mixed. Many were outside the scope of the Circular, but seem essential to achieving its goals.

"Support scholarly research and training:" Although the revisions to Circular A-4 do not directly address this first comment, the subsequent "Frontiers..." report (NSTC 2023) was a major step towards encouraging more scholarly research. Neither the Circular nor the Frontiers report fully address the need for training, however. Regulatory analysis is challenging, which makes it fascinating to conduct, but the challenges mean that substantial training from experienced practitioners is essential to promote best practices.

The major Federal regulatory agencies currently employ a relatively small cohort of experienced regulatory economists. Training will become particularly important as the baby boom generation retires, less experienced employees take on more responsibilities, and new analysts enter the workforce. While the Society for Benefit-Cost Analysis and others provide professional development opportunities, a substantial increase in the availability of in-depth training is crucial to promote high quality, informative, and useful analysis.

"**Streamline and reorganize the discussion:"** It is perhaps not surprising that OMB did not respond to this second comment. The changes I suggest would require extensive editing and additional work, and more rounds of review before the Circular could be finalized. However, the suggested changes are worth

[5] Work cited in the draft or final Circular, the preamble to the draft, and/or the explanation of the response to comments includes Robinson and Hammitt (2011, 2015a) and Robinson, Hammitt and Zeckhauser (2016), as well as comments on OMB's Draft 2013 Report to Congress (Robinson 2013).

considering in future work on the Circular, agency guidance, and other documents. Substantial recent research (e.g., Rogers and Lasky-Fink 2023) suggests that writing more concisely with a clear organizational structure promotes effective communications and improves responses.[6]

"Create a central repository of completed analyses:" Similarly, this third comment would require substantial work, although of a different type. It is also outside the scope of the Circular. While the upfront investment needed to create this repository would be significant, the long-term benefits would likely be substantial. Such a repository would increase the efficiency of future work. If carefully designed, it would also provide an easily accessible resource that decision-makers and stakeholders as well as analysts could consult for immediate information on potential policy impacts, rather than needing to wait for new analyses to be completed.

3.2 Responses to page-by-page comments

OMB responded to my 15 page-by-page comments to varying degrees, as summarized in Table 1 below. To avoid repetition, I do not repeat the rationale for these comments, but believe more attention to these issues is warranted in future work for the reasons noted in the previous section.

Table 1. Responses to Comments

Comment on Draft Circular A-4 (OMB 2023a)	Revisions in Final Circular A-4 (OMB 2023d)
p. 3: Require scoping analysis	Partially addressed; notes analysis is iterative (p. 3).
pp. 4-5: Require consistent categorization of impacts as costs or benefits	Not addressed.
pp. 5-8, 34, 48-49: Update and clarify discussion of cost-effectiveness analysis and QALYs	Addressed; expresses preference for benefit-cost analysis (pp. 4,7), updates discussion of cost-effectiveness analysis (pp. 5-7) and QALYs (p. 49).
pp. 11-15: Distinguish impacts directly influenced by the regulatory decision from impacts influenced by Congressional or other action	Not addressed; explanation (OMB 2023e, p. 13) cites comment, notes that agency practices will vary depending on analytic burden and other considerations.*
pp. 12-14, 23-24, 53-55: Consider influence of regulatory design on compliance	Addressed throughout; cites Giles (2022) in footnote 46 (p. 23).*
p. 27: Discuss the use of research synthesis methods to combine results across studies	Partially addressed, added reference to Robinson and Hammitt (2015) in footnote 70 (p. 37) discussion of valuation methods, rather than discussing the use of these methods more generally.
pp. 28-29: Streamline discussion of WTP versus WTA, and provide more practical advice	Not addressed; discussion refined but not streamlined (pp. 29-31).
p. 34: Note that other-regarding preferences are not always altruistic	Not addressed, although both draft and final reference Robinson and Hammitt (2011) which raises this concern (p. 34).
p. 34: Recognize that OMB clearance under the Paperwork Reduction Act is a major barrier to conducting new stated preference research to support regulatory analysis	Not addressed.
p. 37: Clarify that the benefit transfer process is the same as the process that should be followed to estimate any parameter value	Not addressed; both draft and final note that this process can be used for costs and market values, but do not link the benefit transfer discussion to other parameter estimates (e.g., effectiveness, health impacts) that also involve transferring values.

[6] See also: https://writingforbusyreaders.com/

Comment on Draft Circular A-4 (OMB 2023a)	Revisions in Final Circular A-4 (OMB 2023d)
pp. 40: Add guidance on estimating direct compliance costs	Not addressed; both draft and final discuss cost estimation in general terms.
pp. 44, 51: Clarify and update discussion of valuing risks to children	Partially addressed; includes minor edits but does not cite more recent reviews of the literature.*
pp. 47-51. Update references on valuing health and longevity	Partially addressed; defers making specific recommendations as indicated in comment, includes minor edits to update and clarify certain points, and adds cite to HHS (2021) guidance on updating estimates for inflation and real income growth in footnote 92 (p. 50).*
pp. 61-65. Address pragmatic and policy issues related to distributional analysis	Partially addressed; section includes substantial edits. "Frontiers..." report (NSTC 2023) emphasizes need for more research.*
p. 66: Footnote 116 is misleading and should be deleted	Not addressed.

Notes: * indicates comments specifically referenced in OMB's explanation of its responses to public input (OMB 2023e).

3.3 Some closing thoughts

I am fortunate that my involvement in conducting benefit-cost analyses, drafting and reviewing guidance (e.g., HHS 2016, Robinson et al. 2019), and undertaking academic research have allowed me to explore most of the substantive topics addressed in Circular A-4 elsewhere; I do not address them here. However, two points related to the above discussion seem worthy of emphasis.

First, guidance is not enough. Regulatory analyses are complex and diverse, requiring substantial investigation of the specific context. We have little choice but to rely on the analysts themselves to explore the details – searching for available data, evaluating its quality and applicability, conducting the analysis, and communicating the results. Much happens behind the scenes, often under tight deadlines with limited staff, data, and models. Although the Circular now provides detailed guidance on many, if not all, analytic components, it does not and cannot possibly cover all of the issues that arise when implementing this guidance for a specific regulation.

Providing training and resources to aid less experienced analysts in developing competent professional judgement is essential. The guidance is simply a starting point. It will be ignored if what it proposes is infeasible, not well-understood, or inconsistent with legal authorities or policy goals. Understanding how to work with limited data, so as to inform decisions without ignoring related uncertainties, is a vital component of the process and requires substantial education and experience.

Second, the development and review of the revised Circular provides many examples of the profound influence of academic research on policymaking. As illustrated by the subsequent "Frontiers..." report (NSTC 2023), a substantial increase in policy-relevant research is needed, however. Many have written about how academic researchers can influence policy (e.g., Oliver and Cairney 2019). Although often based on anecdotal evidence from an individual's own experiences, these writings provide much sound advice. For this advice to be effective, academics need to be interested in pursuing more policy-relevant research and willing to undertake the steps needed to make that research visible and useful to policy analysts and decisionmakers. Incorporating more incentives for influencing policy in the criteria for academic promotion and for publication in peer-reviewed journals, as well as in measures of academic

achievement would also be helpful. Hopefully, the excitement around the Circular and the "Frontiers..." report will help.

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