

# **THE SOCIAL COST OF INERTIA: HOW COST-BENEFIT INCOHERENCE THREATENS TO DERAIL U.S. CLIMATE ACTION**

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## ABSTRACT

*As EPA rolls out controversial regulations on power plant emissions of greenhouse gases, a vocal group of legislators, industry groups, and legal and economic scholars are crying foul, arguing EPA didn't "follow the rules" when it conducted its cost-benefit analyses of these regulations.*

*This article traces the origin of these cost-benefit rules, finding that the methodological handbook alleged to be the "worldwide gold standard" was actually developed through a fundamentally flawed process, one that intentionally excluded majority viewpoints in several relevant academic disciplines. Unsurprisingly, it also contains serious methodological mistakes. If these mistakes were to be applied to regulations addressing domestic greenhouse gas emissions (that is, if EPA and other executive agencies do "follow the rules," as demanded by the critics of these regulations in Congress, academia and regulated industry), this injection of both outright irrationality and arguably unethical subjective biases into domestic regulatory policy would threaten to derail substantive U.S. action on climate change.*

*This article also describes how the executive order that spawned these rules is impossible to comply with literally, because it creates a series of "max/min" problems with no common solution. This creates a conundrum that, over and over again, is resolved under these cost-benefit rules in favor of maximizing quantifiable, monetized "net benefits," at the expense of promoting a set of competing yet also important rights- and duty-based factors that the text of the parent executive order ostensibly puts on equal footing.*

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## I. INTRODUCTION

### A. *General Background on the Human Impacts of the Cost-Benefit Analysis Approach to Climate Change Regulation*

When a powerful storm destroyed her riverside home in 2009, Jahanara Khatun lost more than the modest roof over her head. In the aftermath, her husband died and she became so destitute that she sold her son and daughter into bonded servitude . . .

She spends her days collecting cow dung for fuel and struggling to grow vegetables in soil poisoned by salt water. Climate scientists predict that this area will be inundated as sea levels rise and storm surges increase . . . . But Ms. Khatun is trying to hold out at least for a while—one of millions living on borrowed time in this vast landscape of river islands, bamboo huts, heartbreaking choices and impossible hopes.<sup>1</sup>

Human-caused climate change causes tens of thousands of deaths worldwide each year. This death rate, along with rates of other human health impacts, is virtually certain to increase over time.<sup>2</sup> The United States—though recently dethroned by China as the world’s largest carbon dioxide emitter—remains among the largest carbon dioxide emitters per capita.<sup>3</sup> Because carbon dioxide pollution can

1. Gardiner Harris, *As Seas Rise, Millions Cling to Borrowed Time and Dying Land*, N.Y. TIMES, Mar. 29, 2014, at A1.

2. WORLD HEALTH ORGANIZATION, CLIMATE CHANGE AND HEALTH: FACT SHEET NO. 266 (2013), available at <http://www.who.int/mediacentre/factsheets/fs266/en/> (projecting 250,000 additional deaths each year from 2030 to 2050); INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS: CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY, 11–14, available at [http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5\\_SPM\\_FINAL.pdf](http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf) (anticipating species extinction, increased food scarcity, and reduction in water resources).

3. Freya Roberts, *2012’s Carbon Emissions in Five Graphs*, THE CARBON BRIEF (Nov. 1, 2013, 2:10 PM), <http://www.carbonbrief.org/blog/2013/11/2012s-carbon-emissions-in-five-graphs/>

persist in the environment for hundreds or even thousands of years,<sup>4</sup> the United States remains responsible for the largest share of increased carbon dioxide currently in the world's air, oceans, and soil.<sup>5</sup>

The executive branch is attempting to address climate change by pressing a controversial domestic agenda and putting the U.S. on track to take a leadership role at the crucial international negotiations scheduled for Paris in 2015. The Obama administration's relevant proposed and finalized regulations include conservation regulations, fuel economy standards, and limits on pollution from power plants.<sup>6</sup> The administration has also championed subsidies for solar and wind energy, among other non-regulatory energy policy measures.<sup>7</sup>

Stories like that of Ms. Khatun, above, make patent the destruction imposed by the United States and other large-scale emitters onto poor countries that are ill-equipped to cope with these harms; these *human* scale accounts tend to create an impetus to act.<sup>8</sup>

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("In the US, emissions per capita were 16.4 tonnes, and just behind came oil-rich Saudi Arabia with per capita emissions of 16.2 tonnes. The EU and China—both major emitters in absolute terms—had much smaller per capita emissions, at 7.4 and 7.1 tonnes respectively."); Louise Watt, *US, China Take Small Steps Toward Fighting Climate Change, but Differ on Global Plan*, U.S. NEWS & WORLD REPORT (July 9, 2014), <http://www.usnews.com/news/business/articles/2014/07/09/china-us-differ-on-global-plan-to-cut-emissions>.

4. Mary Christina Wood, *Advancing the Sovereign Trust of Government to Safeguard the Environment for Present and Future Generations (Part I): Ecological Realism and the Need for a Paradigm Shift*, 39 ENVTL. L. 43, 50 (2009).

5. James Hansen et al., *Dangerous Human-Made Interference with Climate: A GISS ModelE Study*, 7 ATMOS. CHEM. PHYS. 2287, 2303 (2007).

6. EXECUTIVE OFFICE OF THE PRESIDENT, THE PRESIDENT'S CLIMATE ACTION PLAN 6, 8, 11 (2013), available at <http://www.whitehouse.gov/sites/default/files/image/president27/climateactionplan.pdf>.

7. *Id.* at 19–20; see also Tony Barboza, *Obama-Appointed Climate Change Task Force Meets in Los Angeles*, L.A. TIMES (Feb. 13, 2014), <http://www.latimes.com/science/sciencenow/la-sci-sn-climate-change-task-force-obama-brown-garcetti—20140213-story.html#axzz2tGQjJkKT> (recounting Obama administration officials' discussions on improving disaster response, use of federal transportation funding, electrical grid upgrades, and renewable energy financing); Coral Davenport, *White House Announces 7 Regional Climate Hubs*, N.Y. TIMES (Feb. 6, 2014), at A13 (detailing the administration's creation of "climate hubs" to assist rural communities in responding to the risks of climate change).

8. See CASS SUNSTEIN, SIMPLER: THE FUTURE OF GOVERNMENT 152 (2013) [hereinafter SUNSTEIN, SIMPLER] (explaining that, "[i]f something bad happens and is memorable," its occurrence may motivate citizens to move for "aggressive regulation" in response); see also ALEX RANDALL, JO SALSURY, & ZACH WHITE, CLIMATE OUTREACH & INFO. NETWORK, MOVING STORIES: THE VOICES OF PEOPLE WHO MOVE IN THE CONTEXT OF ENVIRONMENTAL CHANGE (2014), available at <http://climatemigration.org.uk/wp-content/uploads/2014/01/MovingStories.pdf> (collecting first-person accounts of the effect of

But framing the narrative as one of *aggregate* risk serves to suppress this instinct, and further reducing estimates of aggregate risks to mere inputs into a larger cost-benefit analysis (CBA) moves the narrative even further away from the human instinct to protect vulnerable people in well-publicized danger and closer to what some argue is a better, more rational position from which to make policy decisions.<sup>9</sup>

For example, in his remarks from the Senate floor criticizing an Environmental Protection Agency (EPA) proposal to reduce emissions of greenhouse gases (GHGs), like carbon dioxide, from existing power plants, Senator John Cornyn said:

I wish to clarify once again that the debate over President Obama's EPA rule is not about the science of climate change; it is a debate about whether massive regulations should be forced to pass a simple cost-benefit analysis. The EPA rule clearly fails that test.<sup>10</sup>

While EPA and other agencies have developed regulations on GHGs, and President Obama has pressed other elements of his "Climate Action Plan," many Members of Congress have taken a tack similar to that of Senator Cornyn. They explain that they oppose proposals to reduce GHG emissions, not necessarily because they deny the underlying science or lack concern for people who will be harmed by climate change, but—at least in part—because they are persuaded that CBA shows the proposals will do more harm than good.<sup>11</sup>

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environmental change).

9. See Timur Kuran & Cass R. Sunstein, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV. 683, 753 (1999) (explaining how cost-benefit analysis can "serve as a check on ill-advised availability campaigns"); *but see* Cass Sunstein, *People Don't Fear Climate Change Enough*, BLOOMBERGVIEW (Aug. 27, 2013, 9:11 AM), <http://www.bloomberglaw.com/articles/2013-08-27/people-don-t-fear-climate-change-enough> (explaining that, because climate change is not necessarily directly linked to isolated and memorable disasters, people are not as driven to "outrage" as by other, more distinct risks or hazards).

10. 160 CONG. REC. S3354, S3355–56 (2014) (statement of Sen. John Cornyn).

11. See, e.g., 160 CONG. REC. H1649, H1654 (2014) (statement of Rep. Bob Latta) ("[T]he EPA has put forward broad-reaching regulatory proposals that are either unachievable or lack sufficient cost-benefit justifications. One of the most harmful proposals includes the greenhouse gas emission standards for new power plants that aim to stop the use of coal as an energy source."); *Id.* at H1650 (statement of Rep. Vicky Hartzler) ("Congressional intent in the Clean Air Act is clear. The EPA is required to complete a cost-benefit analysis and base their regulations on the best commercially available technology. It is clear that these standards have not been met."); see also 160 CONG. REC. H6049, H6053 (2014) (statement of Rep. James Lankford) (arguing for abandoning the use of a social cost model for carbon emissions, which was created behind closed-doors, without public input); 160 CONG. REC. S3900, S3900–01

There exists an enormous body of scholarship on CBA.<sup>12</sup> To the extent a portion of it, by accident or by design, is currently helping to prop up such arguments against climate action, this scholarship's merits are of deadly serious concern because of what is at stake. According to the latest report from the Intergovernmental Panel on Climate Change (IPCC), if current emissions trends continue, a temperature increase of 4.1° to 4.8° C (about 7.4° to 8.6° F) by 2100 is likely.<sup>13</sup> Under one plausible reductions scenario, where rates of global carbon dioxide-equivalent emissions are reduced to stay 11% to 17% below 2010 rates through 2050, and then drop to 21% to 54% below 2010 rates from 2050 through 2100, a rise in average mean temperature of 2.6° to 2.9° C (about 4.7° to 5.2° F) is still predicted.<sup>14</sup>

Even under the latter scenario, IPCC scientists are confident that climate change impacts will include increasing deaths and diseases from devastating heat waves, droughts, floods, wildfires, disrupted food production and water supply, damaged infrastructure, and destroyed human settlements.<sup>15</sup> At issue is real, *human* devastation on an utterly massive scale.<sup>16</sup> Unfortunately, however, climate change is a policy problem that is particularly incompatible with the United States' current emphasis on CBA in regulatory policy.

The economic foundations of the type of regulatory CBA practiced in the U.S. technically require that it be used only when the projects under evaluation will not have a large impact on the economy. Although the United States has been side-stepping this fundamental principle for years, evaluating major climate regulations

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(2014) (statement of Sen. Jeff Flake) (condemning the EPA's current approach as "arbitrary, cumbersome," and "a violation of common sense").

12. Don Bradford Hardin, Jr., *Why Cost-Benefit Analysis? A Question (and Some Answers) About the Legal Academy*, 59 ALA. L. REV. 1135, 1179 (2008) (detailing an increase in CBA scholarship).

13. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS, CLIMATE CHANGE 2014: MITIGATION OF CLIMATE CHANGE 9–13, *available at* [http://report.mitigation2014.org/spm/ipcc\\_wg3\\_ar5\\_summary-for-policymakers\\_approved.pdf](http://report.mitigation2014.org/spm/ipcc_wg3_ar5_summary-for-policymakers_approved.pdf) (last visited Dec. 26, 2014).

14. *Id.* at 12.

15. *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS, CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS 7, *available at* [http://www.climatechange2013.org/images/report/WG1AR5\\_SPM\\_FINAL.pdf](http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf) (last visited Dec. 26, 2014) (projecting that climate change problems are "virtually certain" to increase).

16. *See id.* (finding, *inter alia*, that "[w]arming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased.").

using current, standardized regulatory CBA methodologies violates this principle in a more dramatic fashion than ever in our history.

To explain: CBA is a branch of applied *microeconomics* that—in an effort to enhance welfare, utility, or some similar social objective—applies some of the same economic assumptions applicable to a firm or household more broadly. However, nothing could be larger, more *macro*, than the global climate. Using microeconomic insights to inform more “macro” regulatory decisions may be attractive when a regulatory alternative (as with a proposal relating to a single firm that has little influence on the larger economy) will have little impact on any factors external to the microeconomic analysis. But the further the actual facts move from this assumption, the less helpful such microeconomic models become to real-world decision makers.

CBAs, because they rely on estimates of “partial equilibrium analyses,” assume any factors not under assessment will remain unaffected while the set of moving pieces actually under analysis are evaluated.<sup>17</sup> However, performing valid partial equilibrium analyses (or even making defensible estimates) is not even theoretically possible when the condition of the entire, populated planet centuries into the future is one of the moving pieces.<sup>18</sup> National energy and climate policy seem particularly unsuited for a sort of accounting that depends on a number of external factors to remain the same, no matter what action is or isn’t taken. Unfortunately, despite this fundamental incompatibility, CBA *is* playing a key role in the current debate. Thus, it is necessary to examine the merits of the relevant methodological arguments. For example, is it true that EPA’s proposed rule for existing power plant emissions “fail” CBA, as many Members of Congress have claimed?<sup>19</sup> Or does EPA get it right when

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17. See RICHARD E. JUST ET AL., *THE WELFARE ECONOMICS OF PUBLIC POLICY* 45–47 (2004) (describing partial equilibrium analysis and explaining that a partial equilibrium analysis approach is useful, but requires focusing on one factor at a time and assuming that all other factors are unaffected).

18. *C.f.* Douglas A. Kysar, *What Climate Change Can Do About Tort Law*, 41 ENVTL. L. 1, 47 (2011) (“[I]magine the pursuit of social welfare maximization as being akin to climbing a mountain. Partial equilibrium analysis offers narrow technical advice on how best to climb that mountain. . . . Nowhere in the analysis, however, is the question posed, ‘Are we on the right mountain?’”).

19. See *supra* note 11; see also *Determining the Proper Scope of Climate Change Benefits*, BROOKINGS INST. (June 4, 2014), <http://www.brookings.edu/research/papers/2014/06/04-determining-proper-scope-climate-change-benefits-gayer> (“[A] new working paper from Ted Gayer and Kip Viscusi suggests that the EPA’s methodology for calculating the benefit represents a shift away from typical practice. A more traditional cost-benefit analysis would estimate climate benefits of only \$2 billion to \$7 billion—less than the estimated compliance

its CBA estimates that these regulations will result in billions of dollars in net social welfare benefits?<sup>20</sup> Given the number of value judgments involved in producing these assessments,<sup>21</sup> and given the shaky foundation upon which this endeavor rests,<sup>22</sup> there can be no objectively correct answer to these questions. What can be shown, though, and what this article establishes, is that CBA provides no rational justification for putting the brakes on climate change regulations. To the extent these welfare analyses do tell us anything useful, they counsel that we are waiting too long to do too little. To put it back into human terms, the United States' inertia—its attachment to existing, flawed policy and to existing, irrational tactics for regulatory analysis—is imperiling hundreds of millions of lives of real people like Ms. Khatun.

### *B. How Mistakes in an Arcane CBA Methodological Handbook Fuel Opposition to Climate Change Regulations*

The foundation for some of these claims that climate change proposals “fail” CBA—and the corollary claim that these proposals *would* fail CBA if only agency economists would “follow the rules” of CBA—can be found in an obscure 2003 handbook created by George W. Bush's Office of Management and Budget (OMB). These guidelines, titled “OMB Circular A-4, Regulatory Analysis,” (colloquially, A-4) establish methodologies agencies must use in the Regulatory Impact Analyses (RIAs) they must prepare for major rules subject to OMB-supervised regulatory review.<sup>23</sup>

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cost[.]” (citing TED GAYER & W. KIP VISCUSI, DETERMINING THE PROPER SCOPE OF CLIMATE CHANGE BENEFITS 3–4 (June 3, 2014), *available at* [http://www.brookings.edu/~media/research/files/papers/2014/06/04%20determining%20proper%20scope%20climate%20change%20benefits%20gayer/04\\_determining\\_proper\\_scope\\_climate\\_change\\_benefits.pdf](http://www.brookings.edu/~media/research/files/papers/2014/06/04%20determining%20proper%20scope%20climate%20change%20benefits%20gayer/04_determining_proper_scope_climate_change_benefits.pdf)).

20. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34,830, (proposed June 18, 2014) (to be codified at 30 C.F.R. pt. 60).

21. Jonathan Masur & Eric Posner, *Climate Regulation and the Limits of Cost-Benefit Analysis*, 99 CALIF. L. REV. 1557, 1596–99 (2011) (summarizing the various judgments required for cost-benefit analysis and their potential for arbitrariness).

22. Douglas A. Kysar, *Politics By Other Meanings: A Comment On “Retaking Rationality Two Years Later,”* 48 Hous. L. Rev. 43, 68 (2011) (“Invariably, cost-benefit analyses of proposed regulations are dense, jargony, and opaque; inevitably they contain moments deep within their technical details in which the analyst masks a critical value choice through a methodological maneuver . . . . [And the foundational value questions] are typically treated by cost-benefit proponents as matters of elite expertise or disciplinary orthodoxy, rather than debatable moral and political issues.”).

23. OFFICE OF MGMT. & BUDGET, CIRCULAR A-4: REGULATORY ANALYSIS (2003)

When EPA's claims about the welfare impacts of a rule are inconsistent with A-4, critics argue that EPA's estimates are bogus.<sup>24</sup> For example, in response to a request from Senator David Vitter and Representative Darrell Issa, the U.S. Government Accountability Office (GAO) released a report in July 2014 assessing "how EPA has used economic analyses in its decision making during the rulemaking process and the extent to which EPA adhered to OMB guidance in conducting selected elements of the economic analyses the agency used to support recent rulemakings."<sup>25</sup> To meet this objective, GAO studied seven EPA rulemakings and "assessed them against key principles outlined in OMB Circular A-4," ultimately finding that EPA did not always follow the guidelines contained in A-4.<sup>26</sup> Predictably, this finding that EPA did not comply fully with A-4 has fueled claims that EPA's proposed new climate change regulations are themselves deeply flawed.<sup>27</sup>

There has even been legislation introduced in the House that would specifically require EPA to follow A-4 in new analyses of

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[hereinafter OMB CIRCULAR A-4]; see also OFFICE OF INFO. & REGULATORY AFFAIRS, AGENCY CHECKLIST: REGULATORY IMPACT ANALYSIS (2010), available at [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) [hereinafter RIA CHECKLIST]. Though some of these papers may not be published in academic journals, they have proven powerful on Capitol Hill, undergirding the positions of opponents of mandatory GHG reductions. See, e.g., *The 'Social Cost of Carbon': Some Surprising Facts: Hearing Before the Sen. Comm. on Env't and Pub. Works*, 113th Cong. (2013) (statement of Robert P. Murphy, Senior Economist, Institute for Energy Research); U.S. CHAMBER OF COMMERCE: INST. FOR 21ST CENTURY ENERGY, ASSESSING THE IMPACT OF POTENTIAL NEW CARBON REGULATIONS IN THE UNITED STATES (2014), available at [http://www.energyxxi.org/sites/default/files/file-tool/Assessing\\_the\\_Impact\\_of\\_Potential\\_New\\_Carbon\\_Regulations\\_in\\_the\\_United\\_States.pdf](http://www.energyxxi.org/sites/default/files/file-tool/Assessing_the_Impact_of_Potential_New_Carbon_Regulations_in_the_United_States.pdf); Robert P. Murphy, *Power Plant Rule Fails Administration's Own Cost/Benefit Test*, INST. FOR ENERGY RESEARCH (Jun. 2, 2014), <http://instituteforenergyresearch.org/analysis/power-plant-rule-fails-administrations-costbenefit-test/#>.

24. *Issa, Vitter: GAO Report Confirms EPA Fudges Costs of Regulations*, COMM. ON OVERSIGHT & GOV'T REFORM (Aug. 11, 2014), <http://oversight.house.gov/release/issa-vitter-gao-report-confirms-epa-fudges-costs-regulations/> [hereinafter *Issa, Vitter*] (Representative Issa contends that the "Obama Administration failed to provide thorough, transparent cost-benefit analyses for major environmental rules that cost American jobs" and that "EPA pushed through regulations using sloppy analysis[.]" Senator Vitter claims the GAO report demonstrated problems with "EPA's methodologies for claiming health and employment impacts, both of which they are fudging[.]").

25. U.S. GOV'T ACCOUNTABILITY OFFICE, REP. NO. GAO-14-519, ENVIRONMENTAL REGULATION: EPA SHOULD IMPROVE ADHERENCE TO GUIDANCE FOR SELECTED ELEMENTS OF REGULATORY IMPACT ANALYSES 3 (2014), available at <http://www.gao.gov/assets/670/664872.pdf>.

26. *Id.* at 3-4, 10.

27. *Issa, Vitter, supra* note 24; see also S. Res. 512, 113th Cong. (2014) (devoting four pages to complaints over the EPA's proposed rules for carbon pollution emission guidelines).

EPA's Clean Power Plan. The Clean Power Plan sets GHG emissions limits for new and existing power plants.<sup>28</sup>

The cachet of A-4 is bolstered by continued favorable treatment by many in the legal academy, including such prominent CBA scholars as Professors Cass Sunstein<sup>29</sup> and Kip Viscusi<sup>30</sup> (who also happen to have been among the seven peer reviewers of A-4).<sup>31</sup> While this scholarly work may not support climate inaction *directly*—Cass Sunstein was personally involved in approving some of the GHG regulations and policies at issue in the current debate<sup>32</sup>—academic support for applying flawed A-4 directives to regulations, including GHG regulations, is lending credibility to overtly political anti-regulatory rhetoric that relies on A-4.<sup>33</sup>

Much of the current confusion over the appropriate way to conduct a regulatory CBA derives from the executive order that spawned A-4, an executive order that is impossible to comply with literally (see discussion in Part IV, below). This still-operative Clinton-era order, Executive Order 12,866, “Regulatory Planning and Review,” requires executive agencies to prepare regulatory impact analyses (RIAs) for a centralized review overseen by OMB's Office of Information and Regulatory Affairs (OIRA).<sup>34</sup> When George W. Bush's OMB initially issued Circular A-4 in 2003, this represented a move away from considering deontological values in RIAs (explicitly required under President Clinton's executive order), and a shift toward giving heavier weight to formalistic CBA results.

The stated purpose of A-4 is to implement the language in E.O. 12,866 that calls for assessing projected costs and benefits.<sup>35</sup> But E.O. 12,866 also requires evaluating and optimizing numerous other considerations, some of which are incompatible with even this “soft”

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28. H.R. 2948, 113th Cong. (2013).

29. Cass R. Sunstein, *The Real World of Cost-Benefit Analysis: Thirty-Six Questions (and Almost as Many Answers)*, 114 COLUM. L. REV. 167, 172–73 (2014) [hereinafter Sunstein, *Thirty-Six Questions*].

30. GAYER & VISCUSI, *supra* note 19, at 13.

31. OMB CIRCULAR A-4, *supra* note 23, at 1.

32. Sunstein, *Thirty-Six Questions*, *supra* note 29, at 171.

33. *E.g.*, 160 CONG. REC. H1649, H1650 (2014) (statement of Rep. Vicky Hartzler); *Issa, Vitter*, *supra* note 24.

34. Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993). A closely related Executive Order issued by President Obama “is supplemental to and reaffirms” E.O. 12,866's regulatory analysis provisions. Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 21, 2011).

35. OMB CIRCULAR A-4, *supra* note 23, at 1.

CBA decision criterion. The Order sets out a series of irreconcilable “max/min” problems with no common solution, a series of directives to do the impossible, i.e., to identify the single solution that maximizes or minimizes multiple competing variables all at once. For analysts producing RIAs under A-4, it creates a conundrum that, over and over again, is resolved in favor of maximizing quantifiable, monetized “net benefits” (to the extent this is consistent with the agency’s mandate), at the expense of promoting other conflicting yet also important duty- and rights-based factors that the text of the executive order puts on equal footing with the consequentialist concerns addressed by CBA.

This problem was exacerbated when, in one of his first major moves after becoming OIRA Administrator in 2009, Professor Cass Sunstein issued a memorandum to agencies calling for even more rigid adherence to A-4 than was required under the George W. Bush administration that created it.<sup>36</sup> The increasing ascendancy of A-4 results in E.O. 12,866-implementation in a way that gives insufficient influence to the ethical, deontological concerns expressly recognized as deserving protection by the language of that executive order.

Furthermore, A-4 is deeply flawed even when considered only as a tool for achieving its consequentialist objective to identify regulatory options that maximize net social welfare. It instructs agencies to use a set of estimation procedures that, on the whole, are biased against protective regulations, especially regulations whose benefits accrue in the future and which are harder to quantify.<sup>37</sup> For example, A-4 requires that regulatory benefits that will accrue in the future must be reported using a very high discount rate, one that commentators almost universally describe as too high even while OMB specifies more correct, lower rates to be used in other types of analyses.<sup>38</sup> One might ask why OMB would not just allow but actually

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36. See OFFICE OF INFO. & REGULATORY AFFAIRS, REGULATORY IMPACT ANALYSIS: A PRIMER (2011), available at [http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4\\_regulatory-impact-analysis-a-primer.pdf](http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4_regulatory-impact-analysis-a-primer.pdf) (reiterating and expounding the requirements which Circular A-4 places upon agencies).

37. David M. Driesen, *Is Cost-Benefit Analysis Neutral?*, 77 U. COLO. L. REV. 335, 400 (2006) (CBA “has thwarted environmental protection completely”) [hereinafter Driesen, *Is Cost-Benefit Analysis Neutral?*]; Thomas O. McGarity & Ruth Ruttenberg, *Counting the Cost of Health, Safety and Environmental Regulation*, 80 TEX. L. REV. 1997, 2042 (2002) (CBA cost estimates are consistently too high because they are made by regulated entities).

38. See Melissa J. Luttrell, *The Case for Differential Discounting: How a Small Rate Change Could Help Agencies Save More Lives and Make More Sense*, 3 WM. & MARY POL’Y REV. 80, 115 [hereinafter Luttrell, *Differential Discounting*] (discussing OMB’s explanation for applying different discount rates for different kinds of benefits); OFFICE OF MGMT. & BUDGET,

*mandate* CBA methodologies that are fringe positions in the field of mainstream welfare economics (excluding the un-peer reviewed, self-published work produced by regulatory think tanks, much of it funded in some way by regulated industry itself)? The answer may lie in the fact that many of the erroneous and subjectively biased methodologies now enshrined in A-4 date back to the Reagan era, when the preferred methodologies of overtly anti-regulatory interests were promoted by OMB and imposed to varying degrees on agencies for the express purpose of slowing them down.<sup>39</sup>

Unfortunately, despite all A-4's defects and limitations, over time it has come to be regarded by many as the "worldwide gold standard" of applied regulatory analysis.<sup>40</sup> Supporters of robust agency CBA requirements, including former OIRA administrators under Republican and Democratic administrations, endorse A-4 as being produced under rigorous peer review and a public comment process.<sup>41</sup> They also claim it reflects the mainstream consensus among relevant experts.<sup>42</sup>

However, the process by which A-4 was prepared did not include "notice and comment" in the sense that phrase is traditionally used for rulemakings under the Administrative Procedures Act (APA). A crucial difference is that in APA rulemakings the rulemaking agency must provide a reasonable, non-arbitrary response to commenters or face possible legal consequences for moving forward in the face of commenter criticism.<sup>43</sup> Here, no such requirement was imposed.

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CIRCULAR NO. A-94, 8-9 (1992), available at [http://www.whitehouse.gov/omb/circulars\\_a094#8](http://www.whitehouse.gov/omb/circulars_a094#8); see *infra* notes 108-119 and accompanying text.

39. See *Heritage Foundation Report: Reagan Team's Blueprint to EPA*, 53 WATER POLLUTION CONTROL FED'N 16, 16-17 (1981) (promoting "full decentralization" of decision-making processes); see also Luttrell, *Differential Discounting*, *supra* note 38, at 81-82; JAMES MILLER, FIX THE U.S. BUDGET!: URGINGS OF AN "ABOMINABLE NO-MAN" 2 (1994); Thomas O. McGarity, *A Cost-Benefit State*, 50 ADMIN. L. REV. 7, 58 (1998) [hereinafter McGarity, *A Cost-Benefit State*]; Lawrence Mosher, *Reaganites, with OMB's List in Hand, Take Dead Aim at EPA's Regulations*, 13 NAT'L 256, 256 (1981) (James C. Miller III, head of the OMB office that compiled an analysis of environmental regulations by EPA stated "[w]e're going to be putting down very hard rules for them.").

40. Videotape: Administrative Conference of the United States: Committee on Regulation (Apr. 29, 2013 at 1:40:33), [http://acus.granicus.com/MediaPlayer.php?view\\_id=2&clip\\_id=82](http://acus.granicus.com/MediaPlayer.php?view_id=2&clip_id=82) (statement of Susan Dudley).

41. *Id.* at 1:40:23; John D. Graham, *Valuing the Future: OMB's Refined Position*, 74 U. CHI. L. REV. 51, 51 (2007); see Sunstein, *Thirty-Six Questions*, *supra* note 29, at 201 (considering A-4 "binding, because it reflects the official position of the U.S. government").

42. OMB CIRCULAR A-4, *supra* note 23, at 21.

43. U.S. DEP'T OF TRANSP., RULEMAKING REQUIREMENTS 9 (Apr. 2011), available at

Similarly, its proponents claim A-4 is reliable because it is “peer reviewed,” but the process used was grossly inadequate. Though the peer reviewers were well-regarded scholars, they represented a very narrow set of viewpoints, and many of them had real or apparent conflicts of interest.<sup>44</sup> Furthermore, there was never a requirement that Circular A-4 actually had to satisfy these peer reviewers.<sup>45</sup>

As the Obama administration implements its “Climate Action Plan,” it will rely on A-4 methodologies to complete CBAs of major climate regulations. To incorporate the monetized value of climate benefits and costs into these CBAs, agencies will rely on the administration’s controversial Social Cost of Carbon (SCC) estimates. The oft-repeated criticism that the SCC is too high because it arguably was derived in a way inconsistent with two A-4 methodological guidelines (ones that would have reduced the SCC by reducing the weight given to future beneficiaries and to people outside the United States) is flawed in *substance* since these are legitimate concerns for regulatory analyses. This critique is also *procedurally* flawed to the extent it assumes any executive agency obligation to comply with this flawed set of OMB guidelines that were never officially promulgated as a rule or enacted as a law. Moreover, had the SCC been derived using certain other, more reasonable OMB methodologies that were *not* followed—such as the requests to use appropriate values for human lives and to use a logical baseline—the SCC estimates would have been even higher.

Part II of this article describes regulatory analysis, including the enhanced role of A-4, under the Obama administration. Part III explains why E.O. 12,866 is incoherent; I argue, however, that even given the impossibility of *literally* implementing all of E.O. 12,866’s inconsistent directives, OIRA errs in emphasizing CBA to the extent it does. Part IV contends that A-4 contains substantive methodological flaws that have a significant impact on regulations and explains how A-4 was created through a flawed process. Part V argues that the legal scholars, lobbyists, and government policy makers (including some Members of Congress) who criticize the SCC

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<http://www.dot.gov/sites/dot.dev/files/docs/Value%20of%20Travel%20Time.pdf>; *see also* Administrative Procedure Act, 5 U.S.C. § 553(c) (2012) (“[T]he agency shall give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation. After consideration of the relevant material presented, the agency shall incorporate in the rules adopted a concise general statement of their basis and purpose.”).

44. *See infra* notes 126, 135 and accompanying text.

45. *See infra* p. 167.

for considering the impacts of externalizing emissions onto other countries and for its failure to use an after-inflation (real) discount rate of 7%, err in claiming that these SCC numbers are illegitimate for not “following the rules” as laid out in A-4. It also identifies OMB guidelines not followed that would have *increased* the SCC. Part VI concludes that A-4 is producing misleading results and that compliance with A-4 should no longer be a required part of the regulatory review process for any regulation, especially regulations targeting climate change.

## II. THE AMPLIFIED ROLE OF OMB METHODOLOGICAL GUIDELINES ON REGULATORY ANALYSIS UNDER PRESIDENT OBAMA

Professor Sunstein, who is among the most cited and respected legal scholars in the United States, served as President Obama’s first “regulatory czar.” In that position he established an architecture of regulatory review for this administration. While there are competing narratives on the subject of how intrusive President Obama’s OIRA has become in the rulemaking process, there is agreement on the point that A-4 has become significantly more influential than it was under the George W. Bush administration that created A-4. Required adherence to formalistic methodological requirements has significantly increased since President Clinton issued E.O. 12,866 in 1993.

OIRA has been criticized on multiple fronts since acquiring its current role in the regulatory review apparatus in the 1980s. OIRA has been likened to a regulatory black hole that often delays and rejects proposed regulations before the public even has an opportunity to review them. OIRA has also been attacked for requiring agencies to engage in analyses that serve as a “one-way ratchet,” systematically weakening public health and environmental regulations.<sup>46</sup>

OIRA-overseen regulatory review, if cynically used to enable a

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46. David M. Driesen, *Distributing the Costs of Environmental, Health, and Safety Protection: The Feasibility Principle, Cost-Benefit Analysis, and Regulatory Reform*, 32 B.C. ENVTL. AFF. L. REV. 1, 74 (2005); see Michael A. Livermore, *Cause or Cure? Cost-Benefit Analysis and Regulatory Gridlock*, 17 N.Y.U. ENVTL. L. J. 107, 109 (2008) (describing longstanding concerns of environmentalists and “pro-regulatory groups” that cost-benefit analysis was “code for deregulation”); see also Driesen, *Is Cost-Benefit Analysis Neutral?*, *supra* note 37, at 347–48 (2006) (describing the EPA’s inability to regulate asbestos, despite clear health concerns).

president to avoid direct accountability for his or her unwillingness to let an agency proceed, has few—if any—defenders on public policy grounds. The *legal* legitimacy of this OIRA action does have defenders.<sup>47</sup> But OIRA *qua* rational regulatory reviewer, on the one hand, and centralized inter-agency policy coordinator, on the other, finds numerous champions in the literature.<sup>48</sup>

When it is performing this more widely-accepted “regulatory analysis” role, OIRA insists agencies follow the cost-benefit methodologies enumerated in Circular A-4.<sup>49</sup> In describing the regulatory review process, Professor Sunstein writes:

[T]he most difficult problems appear quite rarely, and when they do, the executive branch usually has standardized methods for handling them. These methods are often captured in authoritative documents that are both meant and understood to bind executive agencies even though they lack the force of law (in the sense that they set out purely internal requirements and hence cannot be used in court). The Office of Management and Budget’s Circular A-4, issued in 2003, is the formal, binding guidance document that governs the analysis of regulatory impacts, and it outlines many of those standardized methods. (*It is noteworthy that Circular A-4 was issued in the George W. Bush Administration and continues in the Obama Administration; its longevity attests to its technical character.*)<sup>50</sup>

But A-4 is not merely a “technical” document. The methodological prescriptions within it reflect decades of lobbying and political wrangling.<sup>51</sup> Choices that were controversial in 1981 may appear more settled in 2014; this is because proponents of a certain variety of cost-benefit analysis won a political battle, not because

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47. See Sunstein, *Thirty-Six Questions*, *supra* note 29, at 172–73 (explaining that A-4 is binding, and that difficult problems only “rarely” arise, for which there are “standardized methods”).

48. *E.g.*, Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245, 2327–28 (2001).

49. Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 18, 2011) (requiring regulatory system to account for costs and benefits, based on “the best available science”); *see also* RIA CHECKLIST, *supra* note 23 (supporting the proposition that A-4 operationalizes E.O. 12,866 and emphasizing importance of analyzing costs and benefits).

50. Sunstein, *Thirty-Six Questions*, *supra* note 29, at 172–73 (emphasis added).

51. For examples of initially controversial anti-regulation biases benefitting regulated industry that have persisted in OMB’s methodological guidelines since the Reagan administration, see Luttrell, *Differential Discounting*, *supra* note 38, at 82 n.9.

there has been a true meeting of the minds on strictly technical matters after a robust debate in the relevant literatures.<sup>52</sup> Entrenched is not the same as correct.

In 2011, President Obama issued a new executive order on regulatory review, E.O. 13,563, which explicitly re-affirms and does not amend E.O. 12,866.<sup>53</sup> The key rules at issue in the suite of rules that will comprise the Obama administration's climate regulations will be "significant regulatory action[s]" (the trigger for mandatory OIRA cost-benefit review under the Order) within the meaning of E.O. 12,866.<sup>54</sup> Interestingly, however, most rules reviewed by OIRA today are not in any obvious way "significant regulatory action[s]" that require OIRA review at all.<sup>55</sup> This appears to go against President Clinton's intention when he initially signed E.O. 12,866 and explained that regulatory review would be "dramatically different" and that many fewer regulations would be subjected to a review.<sup>56</sup>

Since leaving his post as OIRA Administrator, Professor Sunstein has produced a flurry of scholarship describing and defending the OIRA-overseen regulatory review process.<sup>57</sup> The

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52. *Id.* at 82, 127–28.

53. Its key addition was a directive to the agencies to conduct retrospective reviews of regulation, a directive not at issue here. *See generally* Exec. Order No. 13,563, 78 Fed. Reg. 3821 (Jan. 18, 2011). To ensure compliance with the cost-benefit provisions of E.O. 13,563, agencies are referred to A-4, the same manual that operationalizes CBA under Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Jan. 21, 2012). RIA CHECKLIST, *supra* note 23.

54. Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993).

55. *See* CURTIS COPELAND, LENGTH OF RULE REVIEWS BY THE OFFICE OF INFORMATION AND REGULATORY AFFAIRS 52 (2013), available at <http://www.acus.gov/sites/default/files/documents/-Copeland%20Report%20CIRCULATED%20to%20Committees%20on%2010-21-13.pdf> ("some elements of the definition of a 'significant regulatory action' are subject to interpretation, and OIRA may understandably view certain rules as meeting the definition that agencies do not.").

56. William J. Clinton, U.S. President, *Remarks on Signing the Executive Order on Regulatory Planning and Review and an Exchange With Reporters* (Sept. 30, 1993), AMERICAN PRESIDENCY PROJECT, <http://www.presidency.ucsb.edu/ws/?pid=47134> (last visited Dec. 29, 2014).

57. *E.g.*, Cass R. Sunstein, *The Office of Information and Regulatory Affairs: Myths and Realities*, 126 HARV. L. REV. 1838 (2013) [hereinafter Sunstein, *Myths and Realities*]; SUNSTEIN, SIMPLER *supra* note 8; Sunstein, *Thirty-Six Questions*, *supra* note 29; Cass R. Sunstein, *On Not Revisiting Official Discount Rates: Institutional Inertia and the Social Cost of Carbon*, (Regulatory Policy Program, Working Paper No. RPP-2013-21, 2013) [hereinafter Sunstein, *Institutional Inertia*]. In addition to the rules it is required to review, OIRA elects to review a number of rules that are not categorized as "economically significant" under Executive Order 12,866. Sunstein, *Myths and Realities*, *supra*, at 1869; *see also* Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993). OIRA review is a process all major executive agency proposed rules must undergo at least twice before becoming regulations. Stuart Shapiro, *Unequal*

window into the inner workings of OIRA that Professor Sunstein's recent writings provide is valuable to OIRA watchers both inside and outside academia, because key portions of the review process are closed to any external would-be monitors. For example, the crucial *first* centralized regulatory review of an inchoate rule—including any substantive revision to the proposed rule that occurs during this process—generally happens before the public has any opportunity to comment on (or even see) the agency's original regulatory proposal.<sup>58</sup> And the public often has no idea whether a decision to hold up a rule came from an OIRA desk officer or the White House Chief of Staff—the process is that impenetrable.<sup>59</sup>

While Professor Sunstein has been writing about OIRA-overseen centralized regulatory review and revision, additional windows into how this process functions under the Obama administration have appeared. The first was a critique by Professor Lisa Heinzerling (former head of EPA's Office of Policy and Planning), who provides a first-hand account of a deeply dysfunctional process, a narrative fundamentally at odds with Professor Sunstein's apologetics.<sup>60</sup> More recently, Curtis Copeland produced a report for the Administrative Conference of the United States that offered numerous accounts from anonymous sources inside the administration that—taken as a whole—also undermine Professor Sunstein's narrative of a lightly flawed but basically well-functioning regulatory review apparatus.<sup>61</sup>

Centralized review in the Obama administration prioritizes the use of CBA in the regulatory decision-making process and has created increased pressure on agencies to follow A-4 requirements when assessing and reporting regulatory costs and benefits.<sup>62</sup> According to Professor Sunstein, the Obama administration's focus

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*Partners: Cost-Benefit Analysis and Executive Review of Regulations*, 35 ENV'T L. L. REP. 10433, 10435 (2005).

58. See COPELAND, *supra* note 55, at 15 (detailing the OIRA review process and demonstrating that OIRA review of proposed rules occurs before publication).

59. See *id.* at 17 (describing the process by which disputes between agencies and the OMB regarding the approval of a rule are resolved by the executive branch).

60. See generally Lisa Heinzerling, *Inside EPA: A Former Insider's Reflections on the Relationship Between the Obama EPA and the Obama White House*, 31 PACE ENVTL. L. REV. 325 (2014) (discussing the relationship between the EPA and the White House, and the "chaotic" and self-interested nature of OIRA's review process).

61. See generally COPELAND, *supra* note 55, at 40–49.

62. Cass R. Sunstein, *The Stunning Triumph of Cost-Benefit Analysis*, BLOOMBERGVIEW (Sept. 12, 2012), <http://www.bloomberglaw.com/articles/2012-09-12/the-stunning-triumph-of-cost-benefit-analysis>.

on compliance with A-4 represents an “unprecedented commitment to quantification of both costs and benefits.”<sup>63</sup>

This increased emphasis on compliance with A-4 in rulemaking and this policy focus on an especially rigid, formalistic CBA represent a giant move away from the intentions of E.O. 12,866. Here, then-Professor Elena Kagan describes the general intention of the Order:

[E.O. 12,866] suggested a generally more positive attitude toward regulatory efforts, particularly on health and safety matters. In addition to reciting language about the potential benefits of regulation, the order eased the mandate that agencies use cost-benefit analysis as the basis of decision-making by authorizing the agencies to incorporate in this analysis “equity,” “distributive impacts,” and “qualitative measures.”<sup>64</sup>

A comparison of regulatory analyses under the Clinton and Obama administrations is illustrative of how far in the direction of formal, quantitative cost-benefit analysis regulatory review under E.O. 12,866 has drifted. For example, in its 2000 rulemaking on health privacy standards, the Department of Health and Human Services declined to place a monetary figure on the intangible value of privacy, explaining that:

Benefits [of the rule] are difficult to measure because people conceive of privacy primarily as a right, not as a commodity . . . . However, it is possible to evaluate some of the benefits that may accrue to individuals as a result of proposed regulation, and these benefits, alone, suggest that the regulation is warranted. Added to these benefits is the intangible value of privacy, the security that individuals feel when personal information is kept confidential. This benefit is very real and very significant but there are no reliable means of measuring [the] dollar value of such benefit.<sup>65</sup>

Yet when the Department of Justice recently issued regulations that were intended to control sexual abuse of prisoners, DOJ was required to submit a CBA of the proposal to OIRA, following the

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63. *Id.*

64. Kagan, *supra* note 48, at 2286.

65. Standards for Privacy of Individually Identifiable Health Information Regulation Preamble, 65 Fed. Reg. 82,462, (proposed Dec. 28, 2000) (to be codified at 45 CFR pts. 160 and 164), *available at* <http://aspe.hhs.gov/admnsimp/final/PvcPre02.htm>.

guidelines of A-4.<sup>66</sup> In a chilling report, forcible rape of an adult prisoner was assigned a monetary value of -\$310,000 or -\$480,000, while “contacts with a staff member that only involved touching of the inmate’s buttocks, thigh, penis, breasts, or vagina in a sexual way” were assigned a value of -\$600 per incident.<sup>67</sup>

This willingness to monetize even *rape* represents a major shift from Clinton-era implementation of E.O. 12,866. OIRA originally permitted the rulemaking agency to abstain from monetizing significantly lesser invasions of privacy and dignity, respecting the general understanding that some regulations protect rights that defy commodification.

### III. ALTHOUGH E.O. 12,866 IS INCOHERENT, ITS TEXT AND HISTORY ESTABLISH THAT REGULATORY ANALYSES WERE INTENDED TO ADDRESS DEONTOLOGICAL CONCERNS

Textbooks on policy analysis tend to use the phrase “cost-benefit analysis” to refer very specifically to a formal economic analysis in which, among other things, the present value of social welfare gains and losses are identified, quantified, and expressed in the same units.<sup>68</sup> Historically, the analyses produced by agencies arguably have not been true “cost-benefit analyses” within the narrow, technical definition used in CBA textbooks, although they have indeed been analyses that considered costs and benefits and are generally referred to as “cost-benefit analyses.”<sup>69</sup> Instead, these prior CBAs might include narrative descriptions of costs and benefits, with overt policy discussions finding their way into the CBA weighting along with the

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66. Melissa J. Luttrell, *Bentham at the OMB: A Response to Professor Rowell*, 64 ADMIN. L. REV. 1013, 1029 (2012) [hereinafter Luttrell, *Bentham*].

67. *Id.* (quoting Regulatory Impact Assessment: Notice Of Final Rule For Prison Rape Elimination Act (PREA) Standards at 24, 64 (May 17, 2012), available at <http://www.ojp.usdoj.gov/programs/-pdfs/prea-ria.pdf>). For an excellent critique of this monetization see Daniel A. Farber, *Breaking Bad? The Uneasy Case for Regulatory Breakeven Analysis 6–7* (Apr. 28, 2014) (unpublished manuscript) (on file with author), available at <http://ssrn.com/abstract=2430263>.

68. See, e.g., JUST ET AL., *supra* note 17, at 170–71 (providing detailed explanations of different “money metrics” that may be used as proxies for utility); Amy Sinden, *Formality and Informality in Cost-Benefit Analysis*, UTAH L. REV. (forthcoming 2015), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2442357](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2442357) at 7–14 (describing in detail the theoretical, welfare economics basics of this type of formal CBA).

69. See, e.g., Robert W. Hahn, *How Changes in the Federal Register Can Help Improve Regulatory Accountability*, 52 ADMIN. L. REV. 927, 932 (2000) (“The authors of the [EPA] report [did] not indicate if the agency was required to state specifically whether the benefits justified the costs, or if the authors simply drew their own conclusions.”).

monetary estimates.<sup>70</sup>

Most of the CBAs produced under the Reagan and George H.W. Bush administrations under Executive Order 12,291, E.O. 12,866's principal predecessor, in this way were quite different from the high-theory CBAs described in public policy texts. This practical result is inevitable, regardless of an administration's attitude toward health, safety, and environmental regulation. The insurmountable difficulties in quantification, monetization, and risk assessment prevent real world agency analyses from resembling formal, textbook models.<sup>71</sup>

E.O. 12,866's predecessor, E.O. 12,291, provided: "Regulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society[.]"<sup>72</sup> E.O. 12,866 was intended to soften the rigid CBA requirements of the Reagan-era E.O. 12,291 by removing the absolute requirement that benefits outweigh costs to the extent permitted by law.<sup>73</sup> As we have seen, even E.O. 12,291 was not so rigid in its adherence to "hard" CBA that the analyses it generated were limited to consideration of only quantified and monetized inputs.

In its "regulatory philosophy" statement, E.O. 12,866 provides:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) *and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider*. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (*including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity*), unless a statute requires another regulatory approach.<sup>74</sup>

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70. *See id.* ("[Hahn] found that a large number (99%) of [regulatory impact] analyses reported cost information; most (87%) reported a quantification of benefits; only a few (25%) actually monetized those benefits; and even fewer (18%) reported that they found that monetized benefits exceeded costs.").

71. Luttrell, *Differential Discounting*, *supra* note 38, at 118 n.117.

72. Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 17, 1981).

73. Luttrell, *Bentham*, *supra* note 66, at 1030; Sinden, *supra* note 68, at 73–74.

74. Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993) (emphasis added).

The only way to read the language above as communicating anything intelligible is to read it as calling for a balancing of deontological ethical principles with the more welfarist/utilitarian values reflected—albeit incompletely—in a policy wherein all inputs to the analysis must be either monetized or omitted.

There is no obvious way to import the required concern for “qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider” into an analysis that monetizes “net benefits” without treating it as a type of quantitative data. This complete quantification and monetization of all non-economic values considered in the agency’s regulatory impact analysis is not only unnecessary, under the text of the executive order it is arguably forbidden.

Agencies cannot literally maximize all the listed types of regulatory benefits, as “[i]t is not mathematically possible to maximize for two (or more) variables at the same time.”<sup>75</sup> The techniques used in mathematics to maximize (or minimize) one variable or another necessarily imply that it is not possible to simultaneously maximize two variables in an equation.<sup>76</sup>

A particularly striking expression of the popular misunderstanding about this pseudo-maximum problem is the famous statement according to which the purpose of social effort is the ‘greatest possible good for the greatest possible number.’ A guiding principle cannot be formulated by the requirement of maximizing two (or more) functions at once. Such a principle, taken literally, is self-contradictory. (In general one function will have no maximum where the other function has one.) It is no better than saying, e.g., that a firm should obtain maximum prices at maximum turnover, or a maximum revenue at minimum outlay.<sup>77</sup>

This directive to maximize and minimize multiple concerns occurs in E.O. 12,866 again, when “[t]o ensure that agencies’ regulatory programs are consistent with” the Order’s all-of-the-above

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75. Garret Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243, 1243 (1968). Concededly, simultaneous maximization of multiple variables could occur in theory if the variables in regulatory analysis were related in such a way that maximizing one also maximizes all. Though in such a case, the equation need only maximize a single variable to maximize all of them, and the analyst should maximize that one variable.

76. *Id.* at 1243; JOHN VON NEUMANN AND OSKAR MORGENSTERN, *THE THEORY OF GAMES AND ECONOMIC BEHAVIOR* 11 (1944).

77. NEUMANN, *supra* note 76, at 11.

regulatory philosophy, the Order directs each agency to adhere to all of the following principles, among others:<sup>78</sup>

- “*design its regulations in the most cost-effective manner to achieve the regulatory objective.*”<sup>79</sup>
- “*to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt.*”<sup>80</sup>
- “*assess the effects of Federal regulations on State, local, and tribal governments, including specifically the availability of resources to carry out those mandates, and seek to minimize those burdens that uniquely or significantly affect such governmental entities, consistent with achieving regulatory objectives.*”<sup>81</sup>
- “*tailor its regulations to impose the least burden on society, including individuals, businesses of differing sizes, and other entities (including small communities and governmental entities), consistent with obtaining the regulatory objectives . . . [.]*”<sup>82</sup>
- “*draft its regulations to be simple and easy to understand, with the goal of minimizing the potential for uncertainty and litigation arising from such uncertainty.*”<sup>83</sup>
- “*assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.*”<sup>84</sup>

As with the regulatory philosophy with which these principles are meant to ensure consistency, it is impossible for an agency to apply such competing directives in a literal way. For example, the regulation that “imposes the least burden on society” might not

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78. Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993).

79. *Id.* (emphasis added).

80. *Id.* (emphasis added).

81. *Id.* (emphasis added).

82. *Id.* (emphasis added).

83. *Id.* (emphasis added).

84. *Id.*

“minimiz[e] the potential for uncertainty and litigation arising from uncertainty,” and/or might not also “to the extent feasible, specify performance objectives[.]”<sup>85</sup>

As with E.O. 12,866’s regulatory philosophy, the best reading would allow agencies to make “reasoned determinations” without monetizing intangible regulatory costs and benefits unless this monetization of intangibles makes sense. It does not explicitly or implicitly call for across-the-board formal quantitative CBA, using the controversial techniques promoted at the time of A-4’s drafting by industry-sponsored think tanks like the Harvard Center for Risk Analysis (HCRA).<sup>86</sup> Yet this is exactly what A-4 currently demands.

#### IV. CIRCULAR A-4 IS NOT THE GOLD STANDARD FOR REGULATORY ANALYSIS

##### *A. Intentional and Unintentional Bias*

A significant function of OMB-supervised regulatory review has always been straightforwardly political. It was thus under President Reagan, when the modern era of OIRA-overseen regulatory review began.<sup>87</sup> This political gate-keeper/speed-check function has persisted through to the current administration.<sup>88</sup> And so, during a recession year election when regulations were frequently characterized as “job-killing,”<sup>89</sup> the Obama administration was able to use OMB regulatory

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85. *Id.*

86. The think tank former OIRA administrator John Graham directed immediately before his appointment to OIRA. 147 CONG. REC. S7906-04 (2001) (statement of Sen. Durbin) (listing corporate funders of Harvard Center for Risk Analysis (“HCRA”) and criticizing methodologies used to assess risk regulation as biased against protective regulation); *id.* (statement of Sen. Wellstone) (describing and criticizing the under-protective methodologies employed at HCRA to assess risk regulation).

87. MILLER, *supra* note 39, at 2–4.

88. See COPELAND, *supra* note 55, at 4–5 (“From 1994 through 2011, the average amount of time it took to complete a review was 51 days . . . . [I]n the first half of 2013, the average review time was 140 days . . . .”); John M. Broder, *Groups Sue After E.P.A. Fails to Shift Ozone Rules*, N.Y. TIMES, Oct. 12, 2011, at A15, available at [http://www.nytimes.com/2011/10/12/science/earth/12epa.html?\\_r=0](http://www.nytimes.com/2011/10/12/science/earth/12epa.html?_r=0). (David Baron, a lawyer for Earthjustice environmental group, addressed the Obama administration’s rejection of a stricter ozone standard, stating that “instead of protecting people’s lungs as the law requires, [the Obama] administration based its decision on politics, leaving tens of thousands of Americans at risk of sickness and suffering.”).

89. See, e.g., John M. Broder, *Bashing EPA Is New Theme in GOP Race*, N.Y. TIMES, Aug. 18, 2011, at A1 (“In an earlier debate [Michele Bachmann] said the agency should be renamed the ‘job-killing organization of America.’ She has called global-warming science a hoax.”); Juliet Eilperin, *EPA’s Greenhouse Gas Limits Affect Only New Power Plants*, WASH. POST, Mar. 28, 2012, at A16 (“We were successful in stopping their job-killing agenda through legislation when we defeated cap-and-trade. Now our fight is to stop them from forcing it on the

review to keep controversial regulations on ice, at least until after the election.<sup>90</sup> President Obama's OIRA—as with the previous administration's—will reportedly sometimes delay agencies' submission of regulations to OIRA (or records them as having been “submitted” later than they really are)<sup>91</sup> because official submission triggers a public notice.<sup>92</sup>

While the purely political role of centralized regulatory review persists, there is much more than bald politics to centralized regulatory review. Reviews at OIRA are overseen by OIRA staffers and administrators whose concerns surely include an earnest interest in good policy making, and who do not appear to believe they are manning the Death Star.<sup>93</sup> The facially, though not actually,<sup>94</sup> neutral checkpoint that all economically significant executive agency regulations must pass through, is careful review by OIRA for compliance with A-4.<sup>95</sup> (EPA uses specialized guidelines for regulatory review, but these are meant to operationalize A-4's requirements, not contradict or circumvent them.<sup>96</sup>)

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American people through regulations,” said Sen. James M. Inhofe (Okla.), the top Republican on the Senate Environment and Public Works Committee.”)

90. COPELAND, *supra* note 55, at 4 (“[B]y the first half of 2013, at least 17 departments and agencies had average review times of more than 90 days (up from only two departments in 2011) . . . [Agency employees explained this was due to] concerns by some in the Executive Office of the President (EOP) about the issuance of potentially costly or otherwise controversial rules during an election year[.]”).

91. *Id.* at 40–41 (“For example, the agency’s ‘NPDES Electronic Reporting Rule’ (2020-AA47) was sent to OIRA on December 22, 2011, but was not ‘received’ by OIRA until nearly a month later, on January 20, 2012”); *see also* Heinzerling, *supra* note 60, at 360 (noting the same month-long time gap in the NPDES Electronic Reporting Rule).

92. *See* COPELAND, *supra* note 55, at 32 (explaining that OIRA administrator Howard Shelanski in 2013 said that “unnecessary delays in review are harmful to everyone: to those who are denied the benefits of regulation, to those wishing to comment on proposed rules and influence policy, and to those who must plan for any changes the regulations require of them”).

93. *Id.* at 41–42; John D. Graham, *Saving Lives Through Administrative Law and Economics*, 157 U. PA. L. REV. 395, 400 (2008) [hereinafter Graham, *Saving Lives*].

94. *See* Driesen, *Is Cost-Benefit Analysis Neutral?*, *supra* note 37, at 387 n.290 (citing William W. Buzbee, *Regulatory Reform or Statutory Muddle: The “Legislative Mirage” of Single Statute Regulatory Reform*, 5 N.Y.U. ENVTL. L.J. 298, 369–71 (1996) (explaining that CBA relies on non-transparent political judgments)); Thomas O. McGarity & Ruth Ruttenberg, *Counting the Cost of Health, Safety and Environmental Regulation*, 80 TEX. L. REV. 1997, 2018 (2002) (“[M]any of these broad [CBA] assessments are based largely upon ex ante predictions, highly ambitious assumptions, and very little empirical analysis of the actual costs that regulatees have incurred in complying with particular regulations.”).

95. McGarity, *A Cost-Benefit State*, *supra* note 39, at 15 (“Indeed, regulatory agencies are not beyond hiding policy judgments behind the “scientific” veneer of risk assessment.”).

96. U.S. EPA, GUIDELINES FOR PREPARING ECONOMIC ANALYSES 1-1 to 1-2 (2010),

## 1. Formality vs. Informality

Over time, the A-4 methodologies have come to be regarded as the “gold standard” of applied regulatory analysis.<sup>97</sup> This Section describes some of the controversial—and flat-out incorrect—methodologies required by A-4. Because of these mistakes, even an earnest attempt to apply A-4 methodologies to obtain an unbiased result must necessarily fail.

First, the small piece of E.O. 12,866 that A-4 actually addresses, directs agencies to assess prospective costs and benefits. It is not at all clear that this therefore calls for a formal, quantitative cost-benefit analysis of the sort required by A-4. Again, an evaluation of costs and benefits can be a simple weighing of pros and cons, or a highly elaborate welfare analysis that occupies several PhDs for several months, and which follows years, or even decades, of data collection.

A-4 was drafted by OIRA Administrator John Graham and his staff<sup>98</sup> at a time when numerous prominent scholars contended that OIRA promoted a formalistic CBA, which generated irrational results that perverted the very laws being implemented through regulation.<sup>99</sup> Professors Matthew Adler and Eric Posner aptly described CBA’s reputation among academics across disciplines near the time A-4 was drafted:

The reputation of cost-benefit analysis (CBA) among American academics has never been as poor as it is today, while its popularity among agencies in the United States government has never been greater. Many law professors, economists, and philosophers believe that CBA does not produce morally relevant information and should not be used in project evaluation. A few commentators argue that the information produced by CBA has some, but limited, relevance. Defenders of CBA form an increasingly beleaguered minority, consisting mostly of applied economists who feel compelled to respond to attacks on the methodological underpinnings of their work. Modern textbooks on CBA are plentiful, and some of them are optimistic about the usefulness of

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available at [http://yosemite.epa.gov/ee/epa/eeerm.nsf/vwAN/EE-0568-50.pdf/\\$file/EE-0568-50.pdf](http://yosemite.epa.gov/ee/epa/eeerm.nsf/vwAN/EE-0568-50.pdf/$file/EE-0568-50.pdf).

97. Videotape: Administrative Conference of the United States: Committee on Regulation, *supra* note 40, at 1:40:33.

98. John D. Graham et al., *Managing the Regulatory State: The Experience of the Bush Administration*, 33 *FORDHAM URB. L.J.* 953, 966–69 (2006).

99. E.g., Mathew D. Adler & Eric A Posner, *Rethinking Cost-Benefit Analysis*, 109 *YALE L.J.* 167, 167 (1999).

the procedure, but most of them frankly acknowledge its serious flaws and the inadequacy of the standard methods for correcting these flaws.<sup>100</sup>

Nevertheless, A-4 enthusiastically embraces the methodologies of this “beleaguered minority” of applied economists. A4 requires that monetization and quantification are to be attempted whenever possible.<sup>101</sup> A4 demands discounting at a very high rate, higher even than what most economists in the field advocate.<sup>102</sup> The document also places a very high value on data collection—a policy that has generally operated to prevent timely responses to known serious risks because the status quo persists while the agency waits for data.<sup>103</sup>

There were other, less rigid and formalistic, and—in the views of many—*better* ways to compare pros and cons under E.O. 12,866. The Order merely exhorts agencies to ensure costs “justify” benefits, which could have been interpreted to require an evaluation of alternatives including narrative descriptions of regulatory impacts, and eschewing the controversial practice of discounting human and environmental benefits.<sup>104</sup> As Professor Amy Sinden explains in an excellent forthcoming article:

Informal CBA relies on qualitative descriptions intuitively compared and purports to give no more than general guidance. The most formal varieties of CBA, on the other hand, rely on numbers and mathematics and purport, at least, to provide precise answers. Informal CBA provides no more than a secondary check

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100. *Id.* at 167. In the article, however, Professors Adler and Posner offer a qualified defense of CBA.

101. OMB CIRCULAR A-4, *supra* note 23.

102. *See infra* note 114 and accompanying text; *see also* McGarity, *A Cost-Benefit State*, *supra* note 39, at 71–72 (“A high discount rate biases the analysis against future benefits, even though ‘it is not clear why the later born should have to pay interest to induce their predecessors not to exhaust [depletable resources].’” (quoting Michael S. Baram, *Cost-Benefit Analysis: An Inadequate Basis for Health, Safety and Environmental Regulatory Decisionmaking*, 9 *ECOLOGICAL L.Q.* 473, 488–89 (1980))).

103. *See generally* McGarity, *A Cost-Benefit State*, *supra* note 39, at 26 (“The exceedingly detailed risk assessments . . . have a huge potential to consume scarce agency resources and delay rulemaking initiatives. The fact that much of the necessary information is within the control of the regulated industry, which has every incentive to delay new regulations, only exacerbates the potential for delay.”).

104. For an excellent description of how this approach might be implemented, see Sidney A. Shapiro & Christopher H. Schroeder, *Beyond Cost-Benefit Analysis: A Pragmatic Reorientation*, 32 *HARV. ENVTL. L. REV.* 433, 469–83 (2008).

on a decision that has been made by other means, while formal CBA provides a standard-setting tool for identifying the optimal choice from among a whole range of regulatory alternatives. And between these two extremes lie yet more varieties of CBA.<sup>105</sup>

The language in E. O. 12,866 that A-4 implements does not require the type of formal, quantitative CBA that relies heavily on expensive and elaborate risk assessment protocols and controversial monetization procedures to produce numerical “net benefit” estimates. A-4 is far at the formal end of the CBA spectrum. It instructs agencies to use a set of estimation procedures that, although deeply entrenched after decades of use at OIRA, reflect neither good economics nor good sense.<sup>106</sup>

## 2. Why A-4 Methodologies Generate “Garbage Out” Results, Even Given Accurate Inputs

Perhaps the strongest basis for inferring that A-4 reflects more than pure, apolitical policy judgment, unfettered by other pressures, is the specified discount rate. A-4 specifies that even for expenditures during a recession, a range of values that includes an after-inflation discount rate of 7% should be assessed and reported. This is unjustifiable even under the A-4 logic, which reports that this rate represents the “opportunity cost of capital.”<sup>107</sup>

This opportunity cost theory assumes that, in the absence of regulation, the inflation-adjusted annual growth in value of the avoided costs would be 7%. But it is wildly implausible to assume avoided regulatory costs would experience growth at this rate. For example, if 7% is a firm’s return on investment after adjusting for inflation, then achieving 7% annual growth in the value of all avoided regulatory compliance costs would require 100% reinvestment of these funds by the firm during the lifespan of the proposed regulation, with zero consumption. Moreover:

[F]or regulations for which the costs, invested at the discount rate, would not grow enough to exceed the expected benefits by the time the benefits are to be realized (that is, for any regulation that passes CBA under equal discounting), the problem is compounded. If all

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105. Sinden, *supra* note 68, at 2–3.

106. *See supra* notes 98–106 and accompanying text; *see infra* notes 108–114 and accompanying text.

107. OMB CIRCULAR A-4, *supra* note 23, at 34.

the foregone costs are unlikely to be invested, it is still less likely that a *larger* sum of money—i.e., the amount that would have to be invested at the discount rate in order for the value of the investment to equal the value of the regulatory benefits at the times they would have occurred—would be invested as a direct result of a regulator’s decision not to regulate.<sup>108</sup>

Many prominent economists and philosophers have persuasively argued that human lives and other intangible goods should not be discounted at all, since “harms to future generations deserve no less protection than harms to the current generation.”<sup>109</sup> But among academics who endorse formal, quantitative CBA with discounting, the vast majority recommend a rate approaching the “social rate of time preference,” which has been estimated to be a real (that is, after-inflation) rate of between one and three percent.<sup>110</sup> Additionally, economists generally recommend substantially lower rates for protections meant to benefit future generations, as in the climate change context.<sup>111</sup> There is simply no sound economic or ethical basis for requiring agencies to use the 7% rate in regulatory analyses.<sup>112</sup>

The 7% discount rate greatly undervalues all benefits that are expected to accrue in the future, and thus seriously distorts evaluation of the benefits of public protection. This requirement to report benefits under an unreasonably high discount rate is—and always has been—a *normative* choice, one masquerading as objective economics. It is also a choice that does not reflect the United States’ expressed preferences, as a nation that cares about children’s welfare (evidenced by the protective agendas of major public health and environmental statutes that agencies are charged with implementing).<sup>113</sup>

When John Graham began his tenure at OIRA, he had already

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108. Luttrell, *Differential Discounting*, *supra* note 38, at 112 (emphasis added).

109. Edward R. Morrisison, *Judicial Review of Discount Rates Used in Regulatory Cost-Benefit Analysis*, 65 U. CHI. L. REV. 1333, 1338–39 (1998); *see also* Lisa Heinzerling, *Environmental Law and the Present Future*, 87 GEO. L.J. 2025, 2025–29 (1999); McGarity, *supra* note 39, at 71–72; Richard L. Revesz & Matthew R. Shahabian, *Climate Change and Future Generations*, 84 S. CAL. L. REV. 1097, 1104–06 (2011).

110. JUST ET AL., *supra* note 17, at 580.

111. Martin L. Weitzman, *Gamma Discounting*, 91 AM. ECON. REV. 260, 267–68 (2001).

112. *See* Revesz & Shahabian, *supra* note 109, at 1110–15 (discussing economic basis for decreasing discount rates in future).

113. *See, e.g.*, 42 U.S.C. § 7545(b)(4)(A)(i) (2012) (requiring administrator to conduct study on the effects that the increased use of certain chemicals in gasoline have on public health).

acknowledged a real discount rate of 7% was too high for evaluating public health and safety regulations.<sup>114</sup> The prevailing view among academic experts was also that 7% was significantly too high for evaluating health, safety, and environmental regulations.<sup>115</sup> Yet he claimed one of his major achievements as OIRA Administrator was the change in required methodology that specified the discount rate to be used for regulatory review would be *both* 7% and 3%.<sup>116</sup> One wonders what—given the other major changes Graham made to the status quo—kept Graham from eliminating the 7% rate altogether, given that he believed the rate was too high and that the 3% real rate was better.<sup>117</sup>

Similarly, prior to becoming OIRA Administrator, Professor Cass Sunstein was on record criticizing A-4's call for both a 7% real rate and a 3% real rate, since the 7% rate seemed “badly outmoded” to Sunstein in 2007.<sup>118</sup> Yet, during his three years as head of OIRA, agencies were required to prepare analyses under both rates. Although the 7% rate enjoys little support among experts, it nevertheless plays a very influential role since it is politically difficult for agencies to produce regulations that have “net costs” under either rate. It is puzzling that it has never been eliminated, especially during a sustained recession, when even the opportunity cost arguments that once supported the 7% rate among a minority of economists were unavailable.

Other examples of anti-regulation biases that have persisted through each version of OMB's methodological guidelines on CBA include the manner in which regulatory costs and benefits are quantified and monetized.<sup>119</sup> As applied, these requirements have

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114. E.g., Tammy O. Tengs & John D. Graham, *The Opportunity Costs of Haphazard Social Investments in Life-Saving*, in RISKS, COSTS, AND LIVES SAVED: GETTING BETTER RESULTS FROM REGULATION 167, 169 (Robert W. Hahn ed., 1996) (employing as well as advocating use of a five percent discount rate); see also Graham, *Saving Lives*, *supra* note 93, at 504 (writing less than two years after stepping down as OIRA Administrator that “many past [CBAs] have used discount rates (e.g., 7% or 10% per year) for future health benefits that we now realize are too high.”).

115. Graham, *Saving Lives*, *supra* note 93, at 504 n.471.

116. *Id.*, at 504; see also OMB CIRCULAR A-4, *supra* note 23, at 33–34.

117. See *id.* at 504 (describing 7% rate as “too high” and describing a methodological change that gave “stronger consideration” to the 3% rate as an improvement to the regulatory review process, even though agencies were still requested to use both rates in their analyses).

118. Cass R. Sunstein & Arden Rowell, *On Discounting Regulatory Benefits: Risk, Money, and Intergenerational Equity*, 74 U. CHI. L. REV. 171, 206 n.126 (2007).

119. See Luttrell, *Differential Discounting*, *supra* note 38, at 82–83 n.9 (collecting OMB guidance documents implementing the cost-benefit analysis requirements of Executive Order

systematically undervalued regulatory benefits, which tend to be more difficult than costs to quantify and monetize, while the process for estimating costs often produces inflated numbers.<sup>120</sup> In addition, even when implementing protective statutory language, agencies are directed *not* to be conservative in their assumptions regarding risks to public health and the environment, but instead to use less protective “best estimates” of risk.<sup>121</sup> This is another practice that, as a practical matter, reduces flexibility in standard setting and likely causes agencies systematically to underestimate the need for regulatory protections. This “best estimate” language does not exist in E.O. 12,866, though the Order does contain flexible language allowing agencies to use the “best *reasonably obtainable* information concerning the need for, and consequences of, the intended regulation.”<sup>122</sup> A-4’s default rule managing risk regulation requires that agencies give preference to less protective, central estimates of risk, thereby possibly delaying time-sensitive regulation until the “best available” information is obtained. A-4’s default rule undermines E.O. 12,866’s more flexible “reasonably obtainable” language.

### *B. Peer Review and Public Comment*

A-4 supporters, including OIRA administrators under Republican and Democratic administrations, endorse it as the

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12291, and its successor, Executive Order 12,866).

120. LISA HEINZERLING, CTR. FOR PROGRESSIVE REGULATION, COMMENTS FROM THE CENTER FOR PROGRESSIVE REGULATION ON DRAFT OMB REPORT AND COST-BENEFIT GUIDELINES (Apr. 3, 2003), *available at* [http://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/2003\\_report/251.pdf](http://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/2003_report/251.pdf).

121. OMB CIRCULAR A-4, *supra* note 23, at 42. A-4 provides:

It is a common practice to compare the “best estimates” of both benefits and costs with those of competing alternatives. These “best estimates” are usually the average or the expected value of benefits and costs. Emphasis on these expected values is appropriate as long as society is “risk neutral” with respect to the regulatory alternatives. While this may not always be the case, you should in general assume “risk neutrality” in your analysis.

*Id.* For a discussion of why conservative assumptions in risk assessments lead to more stringent standards, see McGarity, *A Cost-Benefit State*, *supra* note 39, at 27–29. For a recent discussion of how a more precautionary stance might be imported into CBA, and why “to the extent that CBA does not adequately address catastrophic risk, it egregiously violates the precautionary principle,” see David M. Driesen, *Cost-Benefit Analysis and the Precautionary Principle: Can They Be Reconciled?*, 43 MICH. ST. L. REV. 771, 806 (2013).

122. Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993).

product of peer review and a public notice-and-comment process.<sup>123</sup> They also claim it reflects mainstream economic consensus.<sup>124</sup> However, A-4 was developed by OMB through a flawed process, so it is unsurprising that the final document retained the serious substantive biases described above.

One of the goals of peer review is to ensure quality; for example, academic peer reviewers are expected to identify flaws and suggest improvements.<sup>125</sup> For this to occur, the selection of peer reviewers is determinative. Diverse viewpoints are necessary to avoid review by an echo chamber of extremely like-minded “peers.”

All seven of A-4’s peer reviewers were economists or law professors who endorsed the controversial applied welfare economics approach to regulatory review.<sup>126</sup> This means that implementing the relevant language in the Executive Order excluded many viewpoints

123. See, e.g., *Rulemaking Process and the Unitary Executive Theory Hearing Before the Subcommittee on Commercial and Administrative Law*, 110th Cong. 6–7 (2008) (testimony of Susan E. Dudley, Administrator, Office of Information and Regulatory Affairs).

124. Graham, *Saving Lives*, *supra* note 93, at 452 n.259 (“Both *OMB Circular A-4* and the OMB’s annual report to Congress on the costs and benefits of federal regulations are produced through a process that includes peer review by leading scholars in the fields of BCA and administrative law, as well as public comment.”); see also Sunstein, *Thirty-Six Questions*, *supra* note 29, at 172–73 (“[i]t is noteworthy that Circular A-4 was issued in the George W. Bush Administration and continues in the Obama Administration; its longevity attests to its technical character”).

125. *Reviewing Peer Review*, 4 NATURE IMMUNOLOGY 297 (2003), available at <http://www.nature.com/ni/journal/v4/n4/full/ni0403-297.html>.

126. The peer reviewers of A-4 were Cass Sunstein, Lester Lave, Milton C. Weinstein, James K. Hammitt, Kerry Smith, Jonathan Weiner, Douglas K. Owens, and W. Kip Viscusi. OMB CIRCULAR A-4, *supra* note 23, at 1. The followings works, all of which were published before the requests to peer review A-4, are examples of scholarship, authored by the peer reviewers, all of which endorses or employs CBA (and/or its close cousin, cost-effectiveness analysis) as a decision tool in policymaking: RISK VS. RISK: TRADEOFFS IN PROTECTING HEALTH AND THE ENVIRONMENT (John D. Graham & Jonathan Baert Wiener eds., 1997); James K. Hammitt & John D. Graham, *Willingness to Pay for Health Protection: Inadequate Sensitivity to Probability?*, 18 J. OF RISK & UNCERTAINTY 33 (1999); Lester B. Lave & Satish V. Joshi, *Benefit Cost Analysis in Public Health*, 17 ANN. REV. PUB. HEALTH 203 (1996); V. Kerry Smith & Ju-Chin Huang, *Can Markets Value Air Quality? A Meta-Analysis of Hedonic Property Value Models*, 103 J. OF POL. ECON. 209 (1995); CASS SUNSTEIN, RISK AND REASON: SAFETY, LAW, AND THE ENVIRONMENT (2002); Milton Weinstein et al., *Cost-Effectiveness Analysis of AIDS Prevention Programs: Concepts, Complications, and Illustrations*, in AIDS: SEXUAL BEHAVIOR AND INTRAVENOUS DRUG USE 471 (C.F. Turner et al. eds., 1989); W. Kip Viscusi & Joni Hersch, *Cigarette Smokers as Job Risk Takers*, 83 REV. OF ECON. & STAT. 269–80 (2001).

This set of academics was highly biased toward those who promoted more formal, quantitative welfare analyses than what would have been strictly necessary to satisfy Executive Order 12,866’s direction that costs be evaluated to determine whether they “justify” benefits. There is no dispute that any of the above-listed peer reviewers are excellent scholars.

opposed to this use of formal, quantitative CBA, which, at the time, was endorsed by only a “beleaguered minority” of academics.<sup>127</sup>

Critics of using formal, quantitative CBA to assist in making regulatory decisions would not have been difficult to locate; these scholars were publishing numerous law review articles and testifying on Capitol Hill against efforts to expand CBA’s influence even further. For example, Professors Sidney Shapiro and Thomas McGarity, legal scholars who were among the many academics who published and testified before Congress on CBA methodological issues during this time period, held endowed chairs at the University of Kansas and the University of Texas, respectively.<sup>128</sup>

The draft guidelines were emailed to prospective peer reviewers by then Administrator of OIRA, Professor John Graham. Most of these peer reviewers were either his recent co-authors, fellow affiliates of AEI-Brookings Joint Center for Regulatory Studies, former close collaborators, or recent colleagues at HCRA (a think tank he directed immediately before taking over as OIRA administrator).

Furthermore, the phrase “peer reviewed” was used here with a much different meaning than it has in academia, and the process used was inadequate to ensure quality control. No obligation existed for Circular A-4 to satisfy independent peer reviewers or, as in academia, an impartial editor. Instead, its authors could take what suggestions they liked and ignore the rest.

The draft guidelines that were emailed<sup>129</sup> to prospective peer reviewers by Professor Graham reflect many of his policy priorities while at HCRA.<sup>130</sup> Two of the peer reviewers had worked with

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127. Adler & Posner, *supra* note 99, at 167.

128. See Sidney A. Shapiro, *Curriculum Vitae*, available at <http://law.wfu.edu/faculty/assets/profile/cv/cv.shapirsa.pdf>; Thomas O. McGarity, *Curriculum Vitae*, available at [http://www.utexas.edu/law/faculty/cvs/tom56\\_cv.pdf](http://www.utexas.edu/law/faculty/cvs/tom56_cv.pdf); *Public Health and Natural Resources: A Review of the Implementation of our Environmental Laws—Parts I and II Hearings Before the Committee on Gov. Affairs*, 107th Cong. 42–46 (March 7, 2002) (testimony of Thomas O. McGarity, W. J. Kronzer Chair, University of Texas Law School).

129. See, e.g., E-mail exchange between John Graham, Adm’r, Office of Info. & Regulatory Affairs, Office of Mgmt. & Budget and Kerry Smith, Faculty Emeritus, Dep’t of Econ., N.C. State Univ. (Feb. 9, 2003), available at <http://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/2003report/5.pdf> (last visited Nov. 4, 2014).

130. Compare OMB CIRCULAR A-4, *supra* note 23, with *Clean Air Act: Review and Oversight: Hearing Before the Subcommittee On Clean Air, Wetlands, Private Property, and Nuclear Safety, Committee on Environment and Public Works*, 106th Cong. 85–90 (1999) (statement of John D. Graham, Director, Center for Risk Analysis, Harvard School of Public

Professor Graham at HCRA prior to Graham's appointment as OIRA administrator;<sup>131</sup> these two reviewers should have been excluded due to conflicts of interest. The common-sense guideline that excludes former "close collaborators"<sup>132</sup> from the set of eligible peer reviewers would have excluded these two former colleagues, who had co-authored numerous articles with him, in addition to a third scholar who co-authored a book with Professor Graham and a fourth who authored its foreword.<sup>133</sup> Thus, four of the seven reviewers had real or apparent conflicts of interest that should have excluded them from A-4's peer reviewers.

The remaining three peer reviewers and Professor Graham were among the academics who signed an amicus brief sponsored by the AEI-Brookings Joint Center for Regulatory Studies and filed in *Whitman v. American Trucking Associations*.<sup>134</sup> The brief was filed less than a year before Professor Graham's nomination.<sup>135</sup> The brief

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131. According to the October 1996 issue of *Risk in Perspective*, a publication of The Harvard Center for Risk Analysis, Milton Weinstein "founded" HCRA in 1995. See Milton C. Weinstein, *Panel Issues Standards for Cost Effective Analysis*, 4 RISK IN PERSPECTIVE 6 (Oct. 1996), available at <http://www.hsph.harvard.edu/wp-content/uploads/sites/1273/2013/06/Panel-Issues-Standards-Oct-96.pdf>; but see John D. Graham, School of Pub. & Env'tl. Affairs, Ind. Univ., *Curriculum Vitae* at 2, available at [www.indiana.edu/~spea/. . ./vita/graham\\_john\\_cv.pdf](http://www.indiana.edu/~spea/. . ./vita/graham_john_cv.pdf) (Professor Graham's CV lists his position as "founding director" of HCRA from 1989 to 2001). While this timeline is somewhat confusing, it seems safe to infer they worked together at HCRA at the same time. Professor Graham was also described as the Director of HCRA at the same time A-4 peer reviewer and current HCRA Director James Hammit was on the faculty at HCRA. See Edmond Toy, John D. Graham & James K Hammit, *Fueling Heavy Duty Trucks: Diesel or Natural Gas*, 8 RISK IN PERSPECTIVE 1 (Jan. 2000), available at [http://www.hsph.harvard.edu/wp-content/uploads/sites/1273/2013/06/RISK\\_IN\\_PERSP\\_JANUARY2000.pdf](http://www.hsph.harvard.edu/wp-content/uploads/sites/1273/2013/06/RISK_IN_PERSP_JANUARY2000.pdf) (Hammit and Graham co-authored this article for the Harvard Center for Risk Analysis.).

132. RULES AND REGULATIONS ADMINISTRATIVE CONFERENCE OF THE UNITED STATES, 58 Fed. Reg. 45,409-01 (Aug. 30, 1993).

133. SUNSTEIN, RISK V. RISK, *supra* note 126, at vii–xii.

134. Brief Amici Curiae of AEI-Brookings Joint Center for Regulatory Studies et al. supporting Cross-Petitioners at 13–18, *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457 (No. 99-426) (2001), available at [http://www.brookings.edu/~media/research/files/reports/2000/7/naaqs%20litan/07\\_naaqs\\_litan.pdf](http://www.brookings.edu/~media/research/files/reports/2000/7/naaqs%20litan/07_naaqs_litan.pdf). Notably, Professors Graham, Sunstein, and Viscusi held contemporaneous positions on the Council of Academic Advisers for the AEI-Brookings Joint Center for Regulatory Studies. *Id.* at iii.

135. *Id.* at i; see also U.S. Senate Comm. on Homeland Sec. & Governmental Affairs, *Nominations Hearing: John D. Graham to be Administrator of the Office of Information and Regulatory Affairs at the Office of Management and Budget, Angela Styles to be Administrator of the Office of Federal Procurement Policy and Steven A. Perry to be Administrator of the General Services Administration*, SENATE.GOV (May 17, 2001 10:00 a.m.), [http://www.hsgac.senate.gov/hearings/nominations-hearing\\_john-d-graham-to-be-administrator-of-the-office-of-information-and-regulatory-affairs-at-the-office-of-management-and-budget-angela-styles-to-be-administrator-of-the-office-of-federal-procurement-policy-and-steven-a](http://www.hsgac.senate.gov/hearings/nominations-hearing_john-d-graham-to-be-administrator-of-the-office-of-information-and-regulatory-affairs-at-the-office-of-management-and-budget-angela-styles-to-be-administrator-of-the-office-of-federal-procurement-policy-and-steven-a)

contended that CBA “can help promote the design of better regulations by providing a sensible framework for comparing the alternatives involved in any regulatory choice,” and supported considering cost in determining ambient air quality standards.<sup>136</sup>

This surely does not amount to “recent co-authorship” such that any of these peer reviewers would be disqualified from peer reviewing Professor Graham’s work in a well-regarded journal for this reason alone.<sup>137</sup> However, it is significant that even these three peer reviewers—possibly the only peer reviewers of A-4 who would *not* have been disqualified due to conflict of interest concerns from peer reviewing a scholarly publication by Professor Graham—had demonstrated themselves to be politically active in advocating for an even greater role for CBA in rulemaking, just like Professor Graham.

At the time A-4 was circulated as a draft, prospective peer reviewers existed who would likely have proposed other operational guidelines for the agencies. For example, guidelines that relied more on reasoned judgment than on the quasi-scientific formulae promoted by the beleaguered champions of a regulatory decision-making scheme driven by fully monetized CBA and by CBA’s close relative, cost-effectiveness analysis (CEA).<sup>138</sup> The numerous skeptics of this HCRA-style CBA and CEA who were writing at the time might have proposed ways to present regulatory impacts that depended less on monetization and would better balance consequentialist and deontological concerns.<sup>139</sup> Some of these potential peer reviewers even commented on A-4 when it was presented as a draft.<sup>140</sup>

In addition, while public comments were solicited, there was no

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perry-to-be-administrator-of-the-general-services-administration (nominating Graham to be Administrator of the Office of Information and Regulatory Affairs in 2001).

136. *See id.*

137. SARA ROCKWELL, YALE UNIV. OFFICE OF RESEARCH INTEGRITY, ETHICS OF PEER REVIEW: A GUIDE FOR MANUSCRIPT REVIEWERS 7, *available at* [http://radonc.yale.edu/Images/Ethical\\_Issues\\_in\\_Peer\\_Review\\_tcm307-34211.pdf](http://radonc.yale.edu/Images/Ethical_Issues_in_Peer_Review_tcm307-34211.pdf) (last visited Dec. 28, 2014) (“In general, you should not review papers written by people you have collaborated with or published with in the recent past.”).

138. These two forms of welfare analyses are closely related and rely on many of the same tools, such as discounting. CEA produces ratios showing how programs aimed at achieving the same goal compare; in cost-effectiveness analysis (unlike CBA), either the costs or the benefits are fixed, and results are expressed as, for example, lives (or acres of wilderness) saved per dollar. *See* OMB CIRCULAR A-4, *supra* note 23, at 9–12.

139. Examples of such scholars include Lisa Heinzerling, Sidney Shapiro, and Thomas McGarity, among many others.

140. *E.g.*, Heinzerling, *supra* note 120.

“notice and comment” in the sense in which that term is used for rulemakings under the Administrative Procedures Act (APA). A crucial difference is that in APA rulemakings the rulemaking agency must provide a reasonable, non-arbitrary response to commenters or face possible legal consequences for moving forward in the face of commenter criticism. Here, OMB was able to unilaterally decide when it had adequately addressed commenters’ concerns, with commenters from the affected public having no recourse analogous to the affected public’s standing to sue under the APA. Thus, to say the OMB guidelines were subject to “public notice and comment”<sup>141</sup> is misleading, since the phrase evokes notice-and-comment procedures under the APA, which have teeth.

#### V. THE UNCOMFORTABLE RELATIONSHIP BETWEEN A-4 AND THE SOCIAL COST OF CARBON

In addition to the harm A-4 creates *directly* by pushing regulations toward less stringency for irrational reasons, A-4 has also provided grounds for legislators,<sup>142</sup> academics,<sup>143</sup> interest groups,<sup>144</sup> and think tank analysts<sup>145</sup> to criticize the administration’s estimated social cost of carbon (SCC) (the monetized value of a marginal metric ton of carbon pollution avoided). The administration’s estimated SCC also reflects the avoidance of an equivalent metric ton of carbon in the form of another GHG. Critics of EPA’s proposed existing power plant rule and other rules that incorporate the SCC into their CBAs have used A-4 as the basis for opposing these regulations, arguing that the SCC fails to “follow the rules.” Following the rules here

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141. Administrative Conference of the United States: Committee on Regulation, *supra* note 40, at 1:40:23; Graham, *Valuing the Future*, *supra* note 41, at 51; Sunstein, *Thirty-Six Questions*, *supra* note 29, at 201.

142. *Supra* notes 23, 26–27 and accompanying text.

143. GAYER & VISCUSI, *supra* note 19, at 8.

144. Robert P. Murphy, *Power Plant Rule Fails Administration’s Own Cost/Benefit Test*, INST. FOR ENERGY RESEARCH (June 2, 2014), <http://instituteforenergyresearch.org/analysis/power-plant-rule-fails-administrations-costbenefit-test/#>; U.S. CHAMBER OF COMMERCE, INST. FOR 21ST CENTURY ENERGY, *ASSESSING THE IMPACT OF POTENTIAL NEW CARBON DIOXIDE REGULATIONS IN THE UNITED STATES (2014)*, available at [http://www.energyxxi.org/sites/default/files/file-tool/Assessing\\_the\\_Impact\\_of\\_Potential\\_New\\_Carbon\\_Regulations\\_in\\_the\\_United\\_States.pdf](http://www.energyxxi.org/sites/default/files/file-tool/Assessing_the_Impact_of_Potential_New_Carbon_Regulations_in_the_United_States.pdf).

145. PATRICK J. MICHAELS & PAUL C. KNAPPENBERGER, CTR. FOR THE STUDY OF SCIENCE, OFFICE OF MANAGEMENT AND BUDGET’S REQUEST FOR COMMENTS ON THE TECHNICAL SUPPORT DOCUMENT ENTITLED TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 2 (Feb. 26, 2014), available at [http://object.cato.org/sites/cato.org/files/pubs/pdf/omb\\_scc\\_comments\\_michaels\\_knappenberger.pdf](http://object.cato.org/sites/cato.org/files/pubs/pdf/omb_scc_comments_michaels_knappenberger.pdf) (last visited Nov. 4, 2014); Murphy, *supra* note 144.

means complying with A-4 methodological provisions that are wrong. For example, legislation was introduced in the House that would require EPA to produce additional analyses of emissions limits on power plants using “best available methods,” defined as analyses “consistent with guidance from . . . Circular A-4.”<sup>146</sup>

Interestingly, the divergence from OMB methodologies does more than just inflate the SCC. For example, by valuing foreign lives in developing nations at a lower value than U.S. lives, the SCC estimates are lower than they would be if they employed the estimated value of a life saved (or lost) within the range OMB endorses. Valuing *all* lives at the same rate used to value American lives in the same CBAs would have greatly increased the value of reducing GHG emissions within the United States.

#### *A. Background on the Social Cost of Carbon*

The costs and benefits of regulations promulgated under President Obama’s Climate Action Plan are being assessed using valuations of climate harms that were generated by an Inter-Agency Working Group (IWG) convened for this purpose.<sup>147</sup> In 2013, the IWG’s initial 2010 figures were updated to reflect updates in its underlying models; these 2013 updates significantly increased the SCC figures.<sup>148</sup>

The impetus for the IWG’s initial SCC estimates was a decision by the United States Court of Appeals for the Ninth Circuit forbidding agencies from ignoring the costs and benefits of monetizable climate harms when using CBA to set standards.<sup>149</sup> That case arose in 2006 when the National Highway Traffic Safety Administration (NHTSA) used the monetizable social cost and

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146. H.R. 2948, 113th Cong. (2013).

147. INTERAGENCY WORKING GROUP ON SOCIAL COSTS OF CARBON, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 (2010), *available at* <http://www.epa.gov/oms/climate/regulations/scc-td.pdf> [hereinafter 2010 TECHNICAL SUPPORT DOCUMENT: SCC]; *The Social Cost of Carbon*, U.S. EPA (Nov. 26, 2013), [http://www.epa.gov/climatechange/EPA\\_activities/economics/scc.html](http://www.epa.gov/climatechange/EPA_activities/economics/scc.html) (last visited Nov. 4, 2014).

148. INTERAGENCY WORKING GROUP ON SOCIAL COSTS OF CARBON, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 2 (Nov. 2013), *available at* <http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf> [hereinafter 2013 TECHNICAL UPDATE OF THE SCC].

149. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 508 F.3d 508, 558 (9th Cir. 2007), *vacated and reh’g denied*, 538 F.3d 1172 (9th Cir. 2008).

benefit inputs in its CBA to identify the fuel economy standard that was the most cost-beneficial.<sup>150</sup> After considering incorporation of a monetized value for carbon dioxide emissions in its 2003 proposed rule, the agency ultimately declined to monetize carbon dioxide when setting the 2006 final rule, which meant that the value of avoiding carbon dioxide emissions was not considered when NHTSA set its standard.<sup>151</sup> The following year, the Ninth Circuit found the agency's failure to factor in the value of carbon dioxide emissions to be arbitrary and capricious, explaining that while various experts' monetary estimations left the agency with a range of estimates for the value of carbon dioxide—many of them centering on approximately \$50 per metric ton of carbon dioxide, with others ranging as low as \$3—the monetizable value of this benefit was surely not \$0.<sup>152</sup>

The purpose of the SCC estimates is to allow agencies to incorporate the social benefits of reducing GHG emissions into CBAs. Like A-4, it is intended to direct agencies in implementing the CBA requirements of E.O. 12,866. According to the IWG, “the SCC is an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year.”<sup>153</sup> It is intended to value changes in agricultural productivity, human health impacts, property damage, and environmental impacts from climate change.<sup>154</sup>

The IWG's 2013 increases to SCC estimates were initially rolled out quietly in an energy conservation rule for microwave ovens.<sup>155</sup> These increases generated a great deal of controversy, with the House of Representatives even passing legislation that would prohibit

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150. *Id.* at 523–27.

151. *Id.*; Average Fuel Economy Standards for Light Trucks Model Years 2008-2011, 71 Fed. Reg. 17,566, 17,589 (Apr. 6, 2006) (“On the benefit side, for example, there is a significant reduction in carbon dioxide emissions, which cannot be monetized. There is no agreement in the literature on values or range of values for monetizing such a benefit to the United States.”).

152. *Ctr. for Biological Diversity*, 508 F.3d at 533; *see also* Masur & Posner, *supra* note 21, at 1557–63 (summarizing agencies' decisions to begin including value for Social Cost of Carbon (SCC) in their regulator CBAs on an ad hoc basis).

153. 2013 TECHNICAL UPDATE OF THE SCC, *supra* note 148, at 2.

154. *Id.*

155. Energy Conservation Program: Energy Conservation Standards for Standby Mode and Off Mode for Microwave Ovens, 78 Fed. Reg. 36,316, 36,349–52 (Jun. 17, 2013) (amended 10 C.F.R. pts. 429, 430); *see also* *New Energy Efficiency Standards for Microwave Ovens to Save Consumers on Energy Bills*, ENERGY.GOV (May 31, 2013), <http://energy.gov/articles/new-energy-efficiency-standards-microwave-ovens-save-consumers-energy-bills> (last visited Nov. 4, 2014).

agencies from using the SCC in certain large energy rules.<sup>156</sup> In a Senate hearing shortly after the updates to the SCC were announced, newly appointed OIRA Administrator Howard Shelanski faced criticism for OIRA's failure to circulate the update for public comment, and was questioned on the failure to follow A-4's methodology.<sup>157</sup> In response to this uproar, OMB opened the 2013 SCC update to public comment.<sup>158</sup> So far, it has not officially responded to comments.

Congressional opposition to the SCC has continued. Senator Vitter and 31 co-sponsors introducing a resolution condemning EPA's CBAs of its proposed and final rules setting limits on new and existing power plant GHG emissions.<sup>159</sup> The proposed resolution condemns EPA for, among other things, "fail[ing] to provide a complete assessment of the economic costs imposed by the proposed rules or the benefits that may result."<sup>160</sup>

*B. A-4 Is an Internal Management Document Created by Executive Fiat Under the George W. Bush Administration, and the Obama Administration Can Freely Ignore It*

For all the reasons described above, A-4 is not the right way for regulators to evaluate regulations under E.O. 12,866. And it is certainly the wrong tool for evaluating climate change policy: A-4 openly acknowledges its requirements do a poor job of valuing intergenerational benefits.<sup>161</sup> Fortunately, IWG was not required to use A4 analysis to arrive at the SCC.

Yet legislators, policymakers, scholars, and think tank analysts have repeatedly criticized the IWG's recommendations for failing to comply with some of A-4's requirements in deriving the SCC.<sup>162</sup> The substance of the claims that the particular methodologies in dispute

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156. H.R. 1582, 113th Cong. (2013).

157. *Examining the Obama Administration's Social Cost of Carbon Estimates: Hearing Before the Subcommittee On Energy Policy, Health Care And Entitlements of the Committee on Oversight and Government Reform*, 113th Cong. 17–19 (2013) (questioning of Howard Shelanski, Administrator, Office of Information and Regulatory Affairs, Office of Management and Budget, regarding the omission of the 7% rate).

158. The public comment period ended in January of 2014.

159. S. Res. 512, 113th Cong. (2014).

160. *Id.* at 4.

161. See OMB CIRCULAR A-4, *supra* note 23, at 35–36 (summarizing criticisms of A-4's method of valuing intergenerational benefits).

162. *E.g.*, *supra* notes 141–144.

would have produced better results is taken up below. But, as a threshold matter, this “inconsistency” criticism is easily and completely answered with: “so what?” No outside group or legislator is entitled to have the agencies comply with A-4, which are OMB’s purely internal guidelines and which were never promulgated as a rule or enacted as a law.<sup>163</sup> Even E.O. 12,866, A-4’s parent executive order, is not enforceable by anyone outside the executive branch.<sup>164</sup> With the stroke of a pen, President Obama could eliminate E.O. 12,866’s CBA requirements, which only exist and persist by executive fiat.

This simple principle seems to elude many of the most powerful and influential critics of the SCC. For example, in one of the oddest examples of lawmakers seeming to misunderstand this simple procedural matter, the House passed H.R. 1582, The Energy Consumers Relief Act of 2013.<sup>165</sup> Included in the passed version of the bill was the Murphy Amendment, which provided:

Notwithstanding any other provision of law or any executive order, the Administrator of the Environmental Protection Agency may not use the social cost of carbon in order to incorporate social benefits of reducing carbon dioxide emissions, or for any other reason, in any cost-benefit analysis relating to an energy-related rule that is estimated to cost more than \$1 billion unless and until a Federal law is enacted authorizing such use.<sup>166</sup>

Even if this bill were to become law, OMB could unilaterally revoke A-4 and thereby eliminate the need for formalized CBA (and with it, the need for the SCC) in RIAs altogether. No legislative CBA requirement exists that could stop President Obama’s Climate

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163. See Sunstein, *Thirty-Six Questions*, *supra* note 29, at 172 (explaining that A-4 is an authoritative document that sets out only internal requirements and is not a law).

164. This is fortunate since, for the reasons described in Part III, E.O. 12,866 is literally impossible to comply with fully. If outside actors could block regulations that do not comply fully with every provision in 12,866, this would shut down rulemaking. Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993) (“This Executive order is intended only to improve the internal management of the Federal Government and does not create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.”); see also *Chen v. Carroll*, 48 F.3d 1331, 1339 (4th Cir. 1995) (“A court should not enforce an executive order intended for the internal management of the President’s cabinet.”); Sunstein, *Thirty-Six Questions*, *supra* note 29, at 172.

165. See *supra* note 155.

166. *Id.*

Action Plan from proceeding. The current, central role of formal, quantified CBA in the rulemaking process only exists at the pleasure of the President. No stakeholder outside the executive branch is entitled to demand compliance with E.O. 12,866,<sup>167</sup> let alone to insist on compliance with the flawed methodological guidelines implementing it.<sup>168</sup>

*C. Criticism of SCC for Not “Following the Rules” of A-4: The Merits of the Substantive Case*

Although, for the reasons described above, the administration has absolutely no obligation to require agency compliance with A-4, this subpart evaluates the substance of the A-4 provisions at issue. The following criticism of the SCC, taken from joint comments of eleven conservative think tanks, is representative of similar criticism that has come from legislators, academics, interest groups, and think tank analysts:<sup>169</sup>

The IWG chose not to use a 7% discount rate to calculate the present value of future CO2 emission reductions, and not to report separate SCC values for the U.S. domestic economy. Those choices inflate the hypothetical value of CO2 emission reductions and conflict with OMB Circular A-4.<sup>170</sup>

These two recurring complaints, that the IWG should have used a 7% discount rate and that it should have reported separate SCC values that excluded non-U.S. damages, will be taken up in turn.

1. Discount Rates for Climate Benefits Are, if Anything, Too High

*a. Reporting Only Rates that Are Lower than 7% Is Correct*

The decisions the United States makes now, regarding domestic and global mitigation and adaptation policies, will help determine

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167. See Sunstein, *Thirty-Six Questions*, *supra* note 29, at 172 (explaining that E.O. 12,866 and A-4 as authoritative documents “bind executive agencies even though they lack the force of law.”).

168. See *id.*

169. See *supra* notes 142–145.

170. *Comment on the Office of Management and Budget (OMB) Notice: Technical Support Documents: Update of the Social Cost of Carbon for Regulatory Impact Analysis under Executive Order No. 12866*, COMPETITIVE ENTERPRISE INSTITUTE (Feb. 26, 2014) available at <http://www.regulations.gov/#!documentDetail;D=OMB-2013-0007-0101>.

what the world will be like centuries into the future. For agency analysts completing CBAs for regulations addressing climate change, this creates a logically and ethically difficult accounting problem. Due to the enormous time lag between current social costs and the time when some of the distant future benefits will be experienced, the discount rate—the rate used to convert future costs and benefits to present value in CBA—is extremely powerful in the SCC analysis. If the lives and wellbeing of people who live 300 years from now are discounted at the rates agencies use for shorter-term, *infra*-generational analyses, then almost no weight at all will be given to the welfare of the distant future. As A-4 itself acknowledges, intergenerational discounting creates difficult normative questions of justice and fairness that economics cannot objectively solve.<sup>171</sup>

Broadly speaking, there are three rationales for discounting intangible benefits at rates as high as 3% and 7%, which A-4 specifies as appropriate for most domestic regulations. They are: (1) descriptive discounting, in which discount rates are understood to reflect people's actual preference for obtaining regulatory benefits sooner rather than later;<sup>172</sup> (2) prescriptive discounting, where the discount rate is intended to reflect our best ethical judgment about what future benefits *ought* to be worth to us;<sup>173</sup> and (3) opportunity cost discounting, where the discount rate is justified by the foregone benefits of other competing investments not undertaken.<sup>174</sup>

The first place to look for insight into how a regulation's benefits should be discounted is the statute under whose authority the regulation is to be promulgated. Statutes used to protect the distant future, like the Clean Air Act, generally have protective intentions. Thus, for the regulatory benefits of climate change mitigation, this inquiry will generally yield a "prescriptive" rate or "growth" rate.<sup>175</sup> Both the prescriptive and growth rates would be lower than the 3% rate specified in A-4.<sup>176</sup>

In the climate change context, the principal objections to very

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171. See OMB CIRCULAR A-4, *supra* note 23, at 35–36 (discussing various techniques that can be used in intergenerational discounting).

172. Revesz & Shahabian, *supra* note 109, at 1107.

173. *Id.* at 1104.

174. See *id.* at 1110 (discussing opportunity cost discounting).

175. See *id.* at 1109 (estimating that growth discounting would lead to an intergenerational discount rate of 2.4%).

176. See *id.* at 1104–06, 1109 (describing estimates of growth and prescriptive discount rates, the latter of which is frequently posited to be zero).

low discounting—including the objection that agencies should consider the value of chimerical alternatives, such as immunizations programs, with higher “rates of return”—are incoherent outside the purely hypothetical context of an omnipotent global decision maker. When EPA is determining whether to allow power plants to inflict damage on the distant future, the agency has no power to divert any foregone regulatory compliance costs to alternative investments. Because such opportunity costs of not-actually-displaced, wholly theoretical social investments are not representative of actual opportunities agencies can elect, they are not legitimate reasons to devalue the harms agency regulations seek to avoid.

A problem with CBA is that very low discount rates may appear too low to use for costs. To the extent these are monetary costs or actual market goods, they are conventionally investible or consumable and do have a time value that reflects this. This means it might not make intuitive sense to devalue short-term monetary costs at the same rate as distant benefits, even if the analyst chooses to assign some discount rate to each.

One solution is to use a declining discount rate.<sup>177</sup> Another is to simply use different rates for different CBA inputs, as described below.

*b. Differential Discounting Within RIAs Is Not “Absurd”*

In 2010, after reviewing both the existing literature and the applicable OMB guidelines on cost-benefit analysis, the IWG promoted the use of a 3% discount rate for carbon emissions. While it also reported values at a 2.5% rate and a 5% rate, agencies have largely adopted the 3% “central estimate.”<sup>178</sup> The primary support in the literature for the 3% rate comes from assessing alternative rates of return on displaced consumption. In other words, it is a rate premised on the economic value of the *costs* of regulation. However, once one accepts that the discount rate used for costs need not be identical to the rate used for benefits,<sup>179</sup> then a discrete logical and/or

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177. See generally M. Weitzman & C. Gollier, *How Should the Distant Future be Discounted When Discount Rates are Uncertain?*, 107 ECON. LETTERS 350 (2010) (concluding that discount rates must decline over time when “future discount rates are uncertain but have a permanent component.”).

178. See Masur & Posner, *supra* note 21, at 1561, 1566 (discussing agencies reliance on IWG discount rate of 3%).

179. See Luttrell, *supra* note 38, at 128 (concluding that OMB should “reconsider its long-

normative justification for the application of a 3% rate to *benefits* is also needed. The interagency committee does not supply such a justification, and what rationales exist in the literature for discounting intergenerational benefits at rates as high as 3% are unconvincing.

Because the IWG did not compute an SCC at a 7% discount rate, commentators have complained that agencies cannot use a consistent discount rate in the CBAs prepared for OMB review at the 7% rate. As one critic argued:

We thus have an absurd situation, in which EPA and other regulatory agencies will be following the rules and calculating benefits and costs at both the 3 percent and 7 percent discount rates. Yet, when they express the “social benefits” of reducing greenhouse gas emissions at the 7 percent rate, they are actually going to plug in the wrong number, and explain in a footnote why they are doing so.<sup>180</sup>

As I demonstrate in an earlier paper, *The Case for Differential Discounting*, it is simply not true that all benefits considered in CBAs must always be discounted at the same rate as costs to avoid perverse or absurd outcomes.<sup>181</sup> While this type of discounting is now an unusual practice, that doesn’t make it wrong. Again, entrenched is not the same as correct.

It is true that because the IWG did not report SCC values at the 7% discount rate, agencies will no longer be discounting *all* “goods” at 7%. Nevertheless, if the best reason to continue discounting non-commodity benefits—no matter what they are, and even if they are already reported and discounted separately from other inputs—at a 7% rate is that “A-4 says so” or that it is “standard practice,” then it would be better to abandon this practice.

## 2. Reporting Global Benefits Is Appropriate

Many have argued the SCC should omit considering impacts outside of the United States, including externalized harms suffered by

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standing directive that executive agencies must always discount health and environmental benefits at the same rate as monetary costs”).

180. Robert P. Murphy, *Working Group Broke the Rules with Its ‘Social Cost of Carbon’ Estimate*, AMERICAN PRODUCTS, AMERICAN POWER (Aug. 19, 2013), <http://www.productsandpower.org/2013/08/19/working-group-broke-the-rules-with-its-social-cost-of-carbon-estimate/>.

181. Luttrell, *Differential Discounting*, *supra* note 38.

developing nations.<sup>182</sup> Since this furor has been largely focused on EPA's regulations of power plants under section 111 of the Clean Air Act, this analysis will focus on those rules as well.

There are two principal objections to including foreign lives in the SCC estimate. The first, and the most common objection, is that agencies are required by government guidelines (meaning A-4) to calculate a domestic estimate; the second is that EPA lacks the authority to regulate for the benefit of foreign lives. Once these objections are addressed, the basic question resolves to a simple ethical one: in its assessments of the social value of regulatory options, should the United States consider the global commons as a free waste dump, except to the extent this dumping directly harms Americans?

For the reasons described above, the first objection to reporting global benefits in assessing climate change regulations is easily refuted. A-4, a purely internal guideline to executive agencies that was created ten years ago by executive fiat, does not bind the Obama administration. If OMB allows the practice, then there is nothing that prohibits agencies from including foreign benefits in the cost-benefit analyses they prepare for OMB. Indeed, other federal agencies have included foreign costs and benefits in regulatory CBAs when these values were important and quantifiable.<sup>183</sup> Moreover, agencies are not required to exclude regulatory compliance costs borne by foreign

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182. See Murphy, *Power Plant Rule Fails Administration's Own Cost/Benefit Test*, *supra* note 23 (arguing that SCC estimates should focus on benefit to Americans rather than global benefit from reduction in climate change); see also U.S. CHAMBER OF COMMERCE: INSTITUTE FOR 21<sup>ST</sup> CENTURY, *ASSESSING THE IMPACT OF POTENTIAL NEW CARBON DIOXIDE REGULATIONS IN THE UNITED STATES* 46-48 (2014) (discussing the impact of regulating CO<sub>2</sub> emissions on Americans, while neglecting to consider the impact CO<sub>2</sub> emission regulations will have on developing nations), available at [http://www.energyxxi.org/sites/default/files/file-tool/Assessing\\_the\\_Impact\\_of\\_Potential\\_New\\_Carbon\\_Regulations\\_in\\_the\\_United\\_States.pdf](http://www.energyxxi.org/sites/default/files/file-tool/Assessing_the_Impact_of_Potential_New_Carbon_Regulations_in_the_United_States.pdf); *The 'Social Cost of Carbon: Some Surprising Facts: Hearing Before the Sen. Comm. on Env't and Pub. Works*, *supra* note 23, at 6-7 (discussing OMB guidance requiring the SCC to be estimated from a domestic rather than a global perspective).

183. ENVTL. DEF. FUND ET AL., *COMMENTS ON TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER NO. 12,866* (Feb. 26, 2014), available at [http://www.ucsusa.org/assets/documents/global\\_warming/Joint-Comments-to-OMB.pdf](http://www.ucsusa.org/assets/documents/global_warming/Joint-Comments-to-OMB.pdf) (citing Unique Device Identification System, 78 Fed. Reg. 58,786 (Sept. 24, 2013)); Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption, 78 Fed. Reg. 3504 (Jan. 16, 2013) (including costs to foreign farms); U.S. CUSTOMS AND BORDER PROTECTION REGULATORY AGENDA, RIN 1651-AA96 *DEFINITION OF FORM I-94 TO INCLUDE ELECTRONIC FORMAT* (2013) (estimating preliminary net benefits to foreign travelers and carriers).

companies doing business in the United States.<sup>184</sup>

The second objection concerns agencies' legal authority to consider foreign lives when setting standards. In regards to EPA's use of the SCC in its CBA of the proposed regulation of existing power plants, Professor Eric Posner argues that "96% of the global population lives outside the United States. Obama lacks any clear authority to regulate for their benefit."<sup>185</sup>

The relevant provisions in the Clean Air Act call on EPA to regulate "air pollution which may reasonably be anticipated to endanger public health or welfare."<sup>186</sup> There is nothing in this language or in the Clean Air Act that expressly limits EPA to regulating exclusively on behalf of Americans. It would be perverse if, although EPA has statutory authority to promulgate regulations addressing "global warming,"<sup>187</sup> it could not consider global benefits in the CBAs of those regulations.

Even assuming, counterfactually, that EPA were required by statute to set standards that ignore impacts on other countries, the analyses it prepares for OMB review are not themselves establishing regulatory standards under the applicable statutes. For example, the question of what is the "best available control technology" for a major stationary source of GHG pollution under section 111(b) of the Clean Air Act need not be determined by the results of EPA's CBA.

An influential article by Ted Gayer and Kip Viscusi argues that it may be a bad idea to evaluate regulations from a global perspective because, in the past, agencies generally have not done this, and we should proceed with great circumspection before making substantial changes from standard practice.<sup>188</sup> Ultimately, the goal of these analyses is to estimate the welfare changes brought about by regulation. Should we take the position that, moving forward, we will

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184. See generally OMB CIRCULAR A-4, *supra* note 23 (stating that agencies are not required to exclude regulatory compliance costs borne by foreign companies doing business in the United States).

185. Eric Posner, *Wrong Number: Obama's New Climate Plan is Based on a Dubious Calculation and Falls Woefully Short*, SLATE (July 9, 2013), [http://www.slate.com/articles/news\\_and\\_politics/view\\_from\\_chicago/2013/07/obama\\_s\\_climate\\_action\\_plan\\_how\\_it\\_miscalculates\\_the\\_social\\_cost\\_of\\_carbon.single.html](http://www.slate.com/articles/news_and_politics/view_from_chicago/2013/07/obama_s_climate_action_plan_how_it_miscalculates_the_social_cost_of_carbon.single.html).

186. 42 U.S.C. § 7411(b) (2012); 42 U.S.C. § 7411(d) (2012).

187. See generally *Massachusetts v. Env'tl Prot. Agency*, 549 U.S. 497 (2007) (stating that the EPA can regulate greenhouse gases but cannot consider global benefits as part of its cost-benefit analysis).

188. See generally GAYER & VISCUSI, *supra* note 19 (arguing that agencies should be careful when evaluating regulations from a global perspective as it has not previously been the standard practice).

only care about American welfare because that has been our tradition?

If this is our tradition, it is an illegitimate one. From a basic moral standpoint, the United States should not make policy decisions that rely on welfare analyses wherein most of the global harms the United States causes to human welfare are automatically set to zero. As a leading source of global GHG emissions, our energy policy is paid for, in part, by the current and future residents of vulnerable nations, like low-lying Bangladesh. These nations should not be involuntarily conscripted to bear potentially catastrophic costs of the United States' domestic energy policy.

One option is to add a footnote to the welfare analysis, explaining that the geographic areas considered in the calculation of costs and benefits are not identical. This would be better than requiring illegitimate welfare analyses that assume an entitlement to treat other nations as free dumping grounds for our waste in the name of producing cleaner analyses.

Another reason Mr. Gayer and Professor Viscusi argue against EPA's recent consideration of global benefits is that "if applied broadly to all policies . . . [t]he global perspective would likely shift immigration policy to one of entirely open borders[.]"<sup>189</sup> This is simply irrelevant since there are numerous good government practices that cannot be "applied broadly to all policies."<sup>190</sup> There is no reason that EPA's considering global welfare in analyses of climate policy should have any effect on immigration policy.

#### *D. Certain OMG Methodological Guidelines Not Followed Would Have Increased the SCC*

Opponents of President Obama's Climate Action Plan focus on the OMB rules that, quite appropriately, were *not* followed. That is, the global scope of benefits and discount rate, as discussed in subpart C, above. In contrast, little attention has been paid to common, OMB-endorsed CBA methodologies that *should* have been followed. These more correct methodologies would have increased SCC values.

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189. *Id.* at 21.

190. *Id.*

### 1. Lives in Developing Nations Are Valued Less than U.S. Lives Within the Same Regulatory Analysis

OMB states that “current agency practice provides a value of a statistical life (VSL) ranging from roughly \$5 million to \$9 million per statistical life” for agency CBAs.<sup>191</sup> But the averted deaths in developing nations—whose monetized values are imported into agency CBAs via the SCC—are valued at a lower figure that is GDP-dependent.

In both its 2010 and 2013 Reports on the Social Cost of Carbon, the IWG relied on integrated assessment models (IAMs), which use scientific, economic, and risk projections to generate estimates of the monetized value of climate costs and benefits.<sup>192</sup> In the IAMs relied on by the IWG in estimating the SCC, harms to human health are calculated as a percentage of GDP; the weight given to mortality and health harms (such as deaths and diminished quality of life as a result of illness) are thus significantly greater when the injured person lives in a country with a higher GDP.<sup>193</sup> Horribly, under this practice the more climate change reduces a country’s GDP, the less its residents’ lives will be worth to save.

In domestic debates over how much carbon pollution the United States should be externalizing, the only ethical answer to the question of how foreign lives should be valued is that they should be given *at least* as much weight as an American life. This is the only defensible way to set a monetized value on the lives of people for whose deaths or quality of life impairment the United States bears responsibility.

Human lives in developing countries, under certain CBA assumptions, are worth much less than domestic lives because—due principally to resource constraints—they are “willing to pay” (WTP) less for incremental risk reductions.<sup>194</sup> However, the challenge faced

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191. OIRA: A PRIMER, *supra* note 36, at 10.

192. 2010 TECHNICAL SUPPORT DOCUMENT: SCC, *supra* note 147, at 5; 2013 TECHNICAL UPDATE OF THE SCC, *supra* note 148, at 2.

193. See Ethan Case, The Value of Statistical Life and the Social Cost Of Carbon (Apr. 2013) (unpublished Masters thesis, Duke University), available at <http://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/6833/EthanCaseMP.pdf?sequence=1> (stating that this assessment is “a number intended to price the damage done to the economy by each ton of CO<sup>2</sup>”); see also 2010 TECHNICAL SUPPORT DOCUMENT: SCC, *supra* note 147, at 8–10 (explaining the method for monetizing the value of costs and benefits in integrated assessment models).

194. See W. Kip Viscusi, *The Value of Life in Legal Contexts: Survey and Critique*, 2 AM. L. & ECON. REV. 195, 197–98 (2000) (arguing that lives in developing countries are worth less than domestic lives under certain CBA assumptions as these individuals are willing to pay less for

by the IWG is not to value WTP *qua* WTP; it is to create a monetized social value for this good so it may be weighed against the *social* costs of domestic regulation. The normative nature of this exercise is unavoidable, since welfare economics *is* normative economics.<sup>195</sup> The 2013 increases to the SCC are an improvement, since they mean the US will consider climate change mitigation to be worth more in the domestic regulatory context. But they are not enough. In the next update to the SCC the IWG should consider the ways that the global nature of the IAM inputs might create injustice when used without upward adjustment in domestic RIAs that use higher values for similar damages to Americans.

Thus, to be more just, IWG in its next report should adjust IAMs so that foreign lives are valued at a level at least equal to the value of domestic lives for the purposes of analyzing proposed domestic actions.<sup>196</sup> Given the nature of the IAM inputs, it may prove difficult for the IWG to disaggregate the monetizations of health impacts so that they may be valued equally to harms to Americans. Nevertheless, to the extent this is possible for future SCC estimates, it would improve what is presently a very unjust practice. In RIAs of domestic regulations, the US should not persist in assigning the lives of innocent people in developing nations, killed or harmed by U.S. emissions, a lesser value than the lives of their American counterparts.

## 2. The Baseline for the SCC

### *a. IWG's Use of an IAM Model that Assumes Regulation Occurs*

A-4 states: “You need to measure the benefits and costs of a rule against a baseline. This baseline should be the best assessment of the way the world would look absent the proposed action.”<sup>197</sup> This directive, to use as a baseline the “status quo” world, is one that would have been sensible for the IWG to adopt. While IWG is under no obligation to use A-4 methodologies, this is another example of an OMB methodology that would have been appropriate here, and one

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certain risk reductions).

195. JUST ET AL., *supra* note 17, at 3.

196. If it is strongly desired as an analytical preference that the geographical area for which costs are assessed equal the area for which benefits are assessed, then the area for which other regulatory costs and benefits are assessed might be expanded to the whole world.

197. OMB CIRCULAR A-4, *supra* note 23, at 15.

that would have raised the SCC if it had been followed.

To generate its “marginal” SCC values, the IWG needed to make certain assumptions about future emissions.<sup>198</sup> To facilitate this process, a set of future scenarios was averaged that included both business as usual (BAU) scenarios, and a scenario that assumed that relatively rapid action would be taken to reduce or slow GHG emissions rates.<sup>199</sup>

For the suite of finalized and planned Obama administration regulations that address climate change,<sup>200</sup> any SCC values generated using assumptions more optimistic than BAU for emissions are using the wrong baseline. Unfortunately, the IWG’s SCC figures *did* incorporate estimates that assumed concerted global action to reduce emissions.<sup>201</sup> When evaluating the costs and benefits of policies that would reduce emissions from the BAU baseline, it is illogical to use a model that assumes that any contemplated reductions from BAU will occur. This is analogous to an attempt to assess the social value of incapacitating an actually at-large assassin under the assumption that she is already incapacitated—the monetized social value would be zero, not because there is no real social gain from stopping her, but because the calculus is based entirely upon an incorrect factual assumption.

A more logical baseline from which to evaluate the current suite of regulatory actions on climate—and any subsequent domestic climate regulations and/or moves toward U.S. participation in concerted global action on climate—is a BAU baseline. The IWG

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198. The IWG also needed to make certain assumptions about future growth, in addition to setting other dependent assumptions. To see this, consider attempting to assess the difference in social value of a metric ton of drinking water under different assumptions about scarcity: its value in the world where potable water is scarce would be very different from its value in a world where it is bountiful.

199. 2010 TECHNICAL SUPPORT DOCUMENT: SCC, *supra* note 147, at 5.

200. *See generally* Cong. Research Service, Rep. No. R40506, Cars, Trucks, and Climate: EPA Regulation Of Greenhouse Gases From Mobile Sources (2014), *available at* <http://fas.org/sgp/crs/misc/R40506.pdf> (describing the plan to issue a rule for new GHG emissions standards for mobile sources); *see also* BIPARTISAN POLICY CTR., GREENHOUSE GAS REGULATION OF EXISTING POWER PLANTS UNDER THE CLEAN AIR ACT: KEY THEMES EMERGING FROM THE BIPARTISAN POLICY CENTER’S WORKSHOP SERIES (2014), [http://bipartisanpolicy.org/sites/default/files/files/BPC%20Energy%20Greenhouse%20Gas%20Regulation\(1\).pdf](http://bipartisanpolicy.org/sites/default/files/files/BPC%20Energy%20Greenhouse%20Gas%20Regulation(1).pdf) (discussing GHG regulations); U.S. GOV’T ACCOUNTABILITY OFFICE, REP. NO. GAO-14-669R, ENERGY CONSERVATION PROGRAM: ENERGY CONSERVATION STANDARDS FOR COMMERCIAL AND INDUSTRIAL ELECTRIC MOTORS (2014), *available at* <http://www.gao.gov/assets/670/664472.pdf> (explaining energy conservation standards for electric motors).

201. *See* 2013 TECHNICAL SUPPORT DOCUMENT: SCC, *supra* note 148, at 15 (explaining that the U.S.’s working in tandem with other countries warranted a global measure of estimates).

should not use a scenario that averages BAU scenarios with any scenarios that simply assume some of the emissions goals of the regulations will be achieved regardless of what course the regulator takes.

One might argue that it is theoretically possible that concerted global effort could actually move the world off its BAU pathway without mitigation efforts from the United States. Realistically, given the role of the United States in international diplomacy and its status as a leading GHG emitter, such a scenario seems too unlikely to be the basis of a substantial piece of a no-action baseline in the IWG models.<sup>202</sup> In short, the IWG most likely underestimates the SCC, as applied to proposed climate mitigation measures, because it proposes the wrong baseline for climate regulations.

### 3. The SCC May Underestimate the Compounding Effects of Major U.S. Climate Change Regulations

A related issue that may cause agencies to underestimate climate benefits, and one that the IWG might improve in its next set of updates to the SCC, is that the IWG did not address how agencies should assess emissions changes that are greater than “marginal.” This static baseline is incompatible with the goal of U.S. climate change regulations, which, it is hoped, will have significantly more than a marginal impact on emissions. According to the IWG:

The purpose of the SCC estimates presented here is to make it possible for agencies to incorporate the social benefits from reducing carbon dioxide emissions into cost-benefit analyses of regulatory actions that have small, or ‘marginal,’ impacts on cumulative global emissions.<sup>203</sup>

IAMs generate economic values for additional incremental emissions of carbon dioxide under various scenarios and assumptions. These models—three of which are the foundation of the IWG’s SCC values under both the original 2010 document and the 2013 technical update—enabled the IWG to generate estimates of the monetized

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202. See Fei Teng & Shuang-Qing Xu, *Definition of Business as Usual and Its Impacts on Assessment of Mitigation Efforts*, 3 ADVANCES IN CLIMATE CHANGE RESEARCH 212, 213–17 (2012) (discussing mitigation efforts by developed and developing countries).

203. 2010 TECHNICAL SUPPORT DOCUMENT: SCC, *supra* note 147, at 2.

social cost of one additional metric ton of carbon.<sup>204</sup>

Assuming that the IWG's valuations are correct for a single metric ton, estimating the economic harm caused by emitting two billion metric tons of carbon (or the harm avoided by preventing the release of two billion metric tons of carbon) is far more complicated than merely multiplying the SCC figure for a single metric ton by two billion. This is because the change that would occur if the policy was evaluated is not a *marginal* change in emissions. Changes of this magnitude should alter assumptions in the model itself, and should change the SCC figures the model produces.<sup>205</sup>

Plugging a static set of SCC figures into partial equilibrium analyses of a suite of regulations that would generate larger-than-marginal changes in GHG output, violates the very basics of CBA theory. In fact, the SCC should increase or decrease depending on how stringent the suite of regulations addressing GHG emissions is. This is the reason the IWG could only provide a value for marginal changes in emissions to be used in domestic RIAs.

Given the enormous importance of U.S. mitigation efforts in enabling successful diplomatic strategies to address climate change, large mitigation may create opportunities to address climate change that the United States would otherwise not have had. For this reason, the estimated total value of the Obama administration's collective regulations to reduce carbon emissions is likely too low.<sup>206</sup>

This discussion highlights a fundamental problem with CBA, one that cannot be resolved by improving flawed methodologies—though if CBA must be done, improving the CBA methodologies is absolutely necessary and worth doing. The problem is this: real-world regulatory CBAs are necessarily flawed and incomplete,<sup>207</sup> but even an idealized, textbook CBA<sup>208</sup> must rely on the existence of equilibrium outside of the project or policy being assessed.<sup>209</sup> OMB-overseen CBAs, which depend for their validity on the assumptions necessary for “partial equilibrium analyses,” are simply not a good

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204. *Id.*; see also 2013 TECHNICAL UPDATE OF THE SCC, *supra* note 148, at 2.

205. Kysar, *supra* note 22, at 60.

206. This argument has also been made by other commentators. *E.g., id.*; but see Posner, *supra* note 185 (suggesting that EPA restrictions on carbon dioxide emissions by power plants might send coal overseas for combustion).

207. *E.g.,* Shapiro & Schroeder, *supra* note 104.

208. For example, an analysis where changes in “consumer surplus” and “producer surplus” effectuated by policy changes are fully estimated and compared over time.

209. See JUST ET AL., *supra* note 17, at 46 (explaining that partial equilibrium analysis must focus on one factor at a time and assume that all other factors are unaffected).

way to make regulatory decisions for major rules affecting public health or the environment. CBA is especially unhelpful for decisions affecting climate policy, where none of the key factors—including many assumed to be constant or fixed in CBAs—are real-world constants that can be assessed in isolation from each other or assumed to remain stable. The CBA model is by definition inapplicable.

While the 2013 updates to the IWG's SCC numbers represent an improvement over the lower 2010 figures, a switch to a less formalized variety of regulatory analysis is required. This new regulatory analysis must be less dependent on highly monetized CBA in order to make the process rational and coherent.

## VI. CONCLUSION

In issuing E.O. 12,866, President Clinton intended to relax the Reagan-era focus on CBA in regulatory review.<sup>210</sup> Unfortunately, standard setting continues instead to drift toward a de facto “maximize monetized net benefits” decision criterion that is at odds with many widely shared societal values, including those values animating the very statutes whose regulations are being assessed.<sup>211</sup>

U.S. public policy commitments—as embodied in the legislation being implemented—should determine the way agencies evaluate environmental and public health regulations. The reverse should not be true. A small group of policy analysts' ideological commitments to certain methodologies should not be prompting agencies to make choices that run counter to the protective environmental and public health statutes these agencies are charged with carrying out.

Defects in A-4, combined with increased requirements that agencies follow A-4's controversial methodologies, result in implementation of E.O. 12,866 in a way that gives inadequate purchase to the deontological concerns expressly recognized as deserving protection by the Order's language. Despite its “gold standard” reputation, A-4 is not a policy-neutral operationalization of

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210. *See supra* notes 78–85 and accompanying text (outlining the more holistic analysis intended in E.O. 12,866).

211. Shapiro, *supra* note 57, at 10435–36 (citing FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING (2004)) (supporting the proposition that “benefits, like environmental goods and the value of a life, are inherently difficult to value, and, therefore, the benefits of regulations protecting these goods are underestimated whereas costs are easily quantified and hence given a greater weight.”).

E.O. 12,866. It was produced in a procedurally defective process, and it is not the best way to do a welfare analysis, if one is to be done.

Conventional regulatory CBA is simply the wrong tool to assess climate policy, and A-4's continuing influence on analyses of climate change regulations is increasingly dangerous. Applying A-4's requirements even more strictly, as proposed by some policymakers, could thwart urgently needed efforts to address an urgent and utterly monumental threat.

The IWG's recent increases to its estimated SCC are an improvement. However, in order to make the regulatory review process more rational and coherent, it is necessary to have a less formalized variety of regulatory analysis. Regulatory analysis would better inform regulatory decisions in the climate change arena if it were less dependent on highly monetized CBA and instead put *all* legitimate policy concerns (including the full panoply of consequentialist and deontological concerns enumerated in E.O. 12,866 and the full range of concerns that animate the statutes being implemented) on-screen in a coherent way. The primary goal of this more rational analysis would be to enable what is known about the full range of concerns to be evaluated and balanced by the *agencies*—which are, after all, the bodies to which Congress actually delegated the task of rulemaking—instead of by a defective algorithm.