Comment on Proposed OMB Circular A-4

David C. Tryon, Director of Litigation
Alex M. Certo, Legal Fellow
Zachary D. Cady, Associate Economist
Trevor W. Lewis, Economic Research Analyst
The Buckeye Institute

June 6, 2023

Interest of Commentor

Commentor, The Buckeye Institute, was founded in 1989 as an independent research and educational institution—a think tank—to formulate and promote free-market policies. Through its Economic Research Center, The Buckeye Institute performs timely and reliable research on key issues, compiling and synthesizing data, formulating free-market policies, and marketing those public policies for Ohio and other states across the country. The Buckeye Institute assists executive and legislative branch policymakers by providing ideas, research, and data to help them effectively advocate free-market public policy solutions. The Buckeye Institute is a non-partisan, nonprofit, tax-exempt organization, as defined by I.R.C. § 501(c)(3).

Through its Legal Center, The Buckeye Institute works to restrain government overreach at all levels by filing lawsuits, submitting amicus briefs, and preparing public comments. Regarding this proposed rule, The Buckeye Institute maintains that federal law requires federal agencies to sufficiently justify any regulation and any benefit-cost analysis on which it relied. That analysis must be scientifically and economically sound, must be the best analysis possible, and must be unbiased.

Introduction

Executive Order 12866 (E.O. 12866) unequivocally states that "The American people deserve a regulatory system that works for them, not against them: a regulatory system that protects and improves their health, safety, environment, and well-being and improves the performance of the economy without imposing unacceptable or unreasonable costs on society." To fulfill that mission, E.O. 12866 explains that "Federal agencies should promulgate only such regulations as are required by law, are necessary to interpret the law, or are made necessary by compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people." That regulatory philosophy has been reaffirmed in subsequent Executive Orders 13563, 13771, 13777, 13891, and 14094.

To help federal agencies meet these objectives, the Office of Management and Budget (OMB) issued Circular A-4 (A-4 2003), which provides regulators with a suite of best practices for performing regulatory impact analysis (RIA). RIAs are critical for assessing the full economic and social impacts of proposed regulatory action. A-4 2003 offers a blueprint and toolbox for regulators to transparently produce credible, concise, and replicable RIAs. Thus far, RIAs produced under A-4 2003 have attempted to credibly inform law- and policymakers about the likely effects of regulations. Unfortunately, the proposed changes to Circular A-4 (Proposed A-4) undermine this effort by compromising the process for performing sound and transparent RIAs in three primary ways.

First, Proposed A-4 sets an unrealistically low real discount rate of 1.7 percent, which risks overstating benefits while grossly under estimating costs. Second, it tacitly approves the use of even lower intergenerational real discount rates. And finally, the proposed changes allow regulators to include noncitizens living abroad when calculating primary benefits. These arbitrary

and capricious revisions risk distorting the benefit-cost analyses (BCA) on which the required RIAs rely; likely violate the Administrative Procedure Act (APA); and will subject agencies to more litigation. All in all, Proposed A-4 stacks the deck in the regulator's favor, making it easier to justify economically reckless regulations that encroach on freedoms enjoyed by American industries and citizenry.

I. The Office of Information and Regulatory Affairs (OIRA) Must Use the Best Scientific and Economic Analysis Available in Determining Discount Rates

a. OIRA Must Meet the Standards of an "Expert"

As E.O. 12866 observed, OMB's "Office of Information and Regulatory Affairs (OIRA) is the repository of expertise concerning regulatory issues, including methodologies and procedures that affect more than one agency, this Executive Order, and the President's regulatory policies," which makes OIRA a de facto government expert in setting federal regulatory guidelines. The Supreme Court has explained that the validity of any expert's opinion is based on "whether the reasoning or methodology underlying the [expert's] testimony is scientifically valid and [] whether that reasoning or methodology properly can be applied to the facts in issue . . . . [A] key question to be answered in determining whether a theory or technique is scientific knowledge . . . [is] whether it can be (and has been) tested. 'Scientific methodology today is based on generating hypotheses and testing them to see if they can be falsified; indeed, this methodology is what distinguishes science from other fields of human inquiry.'"[1] In formulating Proposed A-4, OIRA is doing none of this.

Instead, OIRA's Proposed A-4 predicates its new discount rate on cherry-picked studies while ignoring numerous other studies that reach very different conclusions. Courts routinely reject experts that engage in such unreasonable cherry-picking because "[e]xperts who engage in cherry-picking of the evidence fail to satisfy the scientific method and *Daubert*."[2] Rulemaking agencies must rely on A-4's discount rates in order to receive OIRA's "expert" approval to publish regulations for notice and comment.[3] But because OIRA has "arbitrarily pick[ed] and [chose] among the same kind of scientific data when formulating [its] opinion[],"[4] any agency rule that relies on Proposed A-4's arbitrary and capricious discount rates when evaluating regulatory costs and benefits will be subject to legal challenge.

b. Agencies Must Comply with the APA and Avoid Using "Arbitrary and Capricious" Data and Analysis

Agencies promulgating regulations must comply with the APA, which provides:[5]

---

[1] *Daubert* v. *Merrell Dow Pharms., Inc.*, 509 U.S. 579, 592–593, (1993) (citing C. Hempel, ***Philosophy of Natural Science*** (Prentice-Hall, Inc., 1966), p. 49).

[2] *Van* v. *Ford Motor Co.*, 332 F.R.D. 249, 269 (N.D. Ill. 2019). *Barber* v. *United Airlines, Inc.*, 17 F. App'x 433 (7th Cir. 2001).

[3] *See* **E.O. 12866**, Sec. 2(b).

[4] *In re Fluidmaster*, No. 140-CV-5696, 2017 WL 1196990, at *21 (N.D. Ill. Mar. 31, 2017).

[5] *See* **5 U.S.C. §§ 704**, 706.

> The reviewing court shall . . . (2) hold unlawful and set aside agency action, findings, and conclusions found to be—
> (A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law (or) . . .
> (E) unsupported by substantial evidence . . . .

Courts review agency actions to ensure APA compliance.[6] Such review does and will include whether rulemaking agencies performed appropriate benefit-cost assessments that relied upon *inter alia* the "best reasonably available" "economic and other information." Agency benefit-cost justifications are subject to challenge under the APA[7] and courts will decline to enforce as "arbitrary and capricious" rules for which there is not an adequately reasoned BCA.[8]

Agency BCAs must "assess both the costs and benefits of the intended regulation"[9] and use the best reasonably obtainable scientific, technical, [and] economic information."[10] Under E.O. 13563, BCAs must also be "[c]onsistent with the President's Memorandum for the Heads of Executive Departments and Agencies, 'Scientific Integrity' (March 9, 2009) [(SI Memo)], and its implementing guidance, [and] each agency shall ensure the objectivity of any scientific and technological information and processes used to support the agency's regulatory actions."[11] The SI Memo explains that "[t]he public must be able to trust the science and scientific process informing public policy decisions."[12] Thus, any agency rule predicated on Proposed A-4's faulty methodology risks unenforceability[13] because OIRA's proposed discount rate is not economically sound or "capable of empirical test";[14] and its use of noncitizens in primary RIAs does not meet APA requirements.

II. Net Present Value and the Importance of Discounting

When a company considers how to invest for future growth, it uses various forecasting tools to determine the future value of projected future revenue. The net present value (NPV) model is one

---

[6] *See, e.g., Dep't of Com.* v. *New York*, 139 S. Ct. 2551, 2556 (2019) ("The APA instructs reviewing courts to set aside agency action that is 'arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.'").

[7] See *Nat'l Ass'n of Home Builders* v. *EPA*, 682 F.3d 1032, 1040 (D.C. Cir. 2012) ("[W]hen an agency decides to rely on a cost-benefit analysis as part of its rulemaking, a serious flaw undermining that analysis can render the rule unreasonable.").

[8] See *City of Portland* v. *EPA*, 507 F.3d 706, 713 (D.C.Cir.2007) (noting that "we will [not] tolerate rules based on arbitrary and capricious cost-benefit analyses"); *Owner–Operator Indep. Drivers Ass'n* v. *Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 206 (D.C.Cir.2007) (vacating regulatory provisions because the cost-benefit analysis supporting them was based on an unexplained methodology).

[9] **E.O. 12866**, Sec. 1(b)(6).

[10] **E.O. 12866**, Sec. 1(b)(7).

[11] **E.O. 13563**, Sec. 5.

[12] **SI Memo** at ¶ 2.

[13] *See, e.g, California* v. *Bernhardt*, 472 F. Supp. 3d 573, 595 (N.D. Cal. 2020) (BLM regulation struck down even though "OIRA pressured and directed BLM in the rulemaking process").

[14] *Daubert*, 509 U.S. at 593 (citing Hempel, *supra*, at 49). See also K. Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge* 37 (5th ed. 1989) ("[T]he criterion of the scientific status of a theory is its falsifiability, or refutability, or testability.") (emphasis deleted).

of those tools.

The discount rate is a critical component of NPV models because it determines how to value money today versus the potential of more money in the future. Regulators therefore must also utilize NPV model discounting to ensure that present assessments of future costs and benefits are normalized with assessments of present costs and benefits. Such comparisons must be made in constant dollars, which means that inflation/deflation must also be incorporated into the discounting analysis.

Methods of discounting vary, but the standard method is as follows:

$$PV = \frac{FV}{(1+r)^t}$$

"PV" is the present value and "FV" is the future value of the costs and/or benefits being calculated, "r" is the discount rate, and "t" is the number of time periods until the costs and benefits are incurred. As an example, assume that a company must decide whether to invest up-front in a project that promises a lump sum of $1 million in three years. After assessing the project's risks and uncertainties, and considering the company's own time preferences, it determines the applicable market discount rate to be three percent. The equation becomes:

$$PV = \frac{1,000,000}{(1.03)^3}$$

The present value of this calculation is $915,141.66. That means that for the company to make this up-front investment, the project must cost less than $915,141.66. But if the anticipated future risks rise and the company determines that the added risk also requires raising the discount rate to seven percent, then the equation becomes:

$$PV = \frac{1,000,000}{(1.07)^3}$$

In this case, the project must cost less than $816,297.88 for the company to make the investment.

Of course, real world calculations can be much more complex. If, for example, a stream of payouts will occur instead of a single lump sum payment, then a set of present value calculations must be made. Taking the three percent discount rate example above, if rather than paying $1 million in three years, the investment pays $400,000 after the first year, $300,000 after the second year, and $300,000 after the third year, with all values calculated in constant present dollars, the set of calculations would be as follows:

Year	Value Before Discounting	Value After Discounting	Formula
0	N/A	N/A	N/A
1	$400,000	$388,349.51	$\dfrac{400,000}{(1.03)^1}$
2	$300,000	$282,778.77	$\dfrac{300,000}{(1.03)^2}$
3	$300,000	$274,542.50	$\dfrac{300,000}{(1.03)^3}$

The total discounted future payment stream is $945,670.78, so the up-front costs must be less than that sum for the company to make the investment. With a seven percent discount rate, the calculation becomes:

Year	Value Before Discounting	Value After Discounting	Formula
0	N/A	N/A	N/A
1	$400,000	$388,349.51	$\dfrac{400,000}{(1.07)^1}$
2	$300,000	$282,778.77	$\dfrac{300,000}{(1.07)^2}$
3	$300,000	$274,542.50	$\dfrac{300,000}{(1.07)^3}$

In this case, costs must be less than $880,752.76 for the company to want to make the investment. Put simply, the lower the discount rate applied to long-term benefits, the greater the present value of those benefits and the greater the costs that can be incurred profitably. In these two scenarios, we utilize real discount rates. Real discount rates are used when revenue is adjusted to constant dollars. If dollars are not being held constant, then inflation or deflation must be incorporated into the discount rate, thus converting it from a real discount rate to a nominal discount rate. Currently, the OMB advises regulators to use real discount rates for RIAs.

But agency NPV models used for RIAs differ from corporate NPV models. Businesses discount future revenues, but regulators use NPV models to estimate the monetized value of future benefits and then discount those monetized future benefits. In proposing new regulations, agencies anticipate that the government will generally cover enforcement costs, while regulated entities will cover compliance costs. Agencies usually recognize that the regulatory costs are incurred up-front on a much shorter timeline than the benefits, which means that the costs will be discounted over a shorter period—if at all. Regulators then compare the discounted benefits against all costs associated with the regulation. Positive net benefits indicate that the benefits accrued to the American people outweigh the costs of regulating the industry. Thus, OMB's decision to eliminate the reporting requirement for a seven percent discount rate and reduce the social discount rate

(SDR) from three percent to 1.7 percent makes regulatory costs look cheaper and therefore easier for regulations to pass the RIA analysis.[15]

III. History of OMB's Treatment of Discount Rates

In 1992, OMB Circular A-94, published under the regulatory requirements promulgated by E.O. 12291, established seven percent as the real discount rate for RIAs because it reflected the pre-tax average rate of return accrued to small business capital. This real discount rate also reflected the rate of return to private capital in the stock market, which has ranged from six to seven percent per year.[16] As reported by the Council of Economic Advisers, the average annual increase in the National Income and Product Accounts data obtained a 7.1 percent discount rate over a period of 67 years, from the inception of the data set in 1947 to 2014.[17]

The rate of return that could be earned elsewhere measures the opportunity cost of an investment. Requiring regulators to discount at a real discount rate of seven percent reflected the opportunity cost of private capital used to meet regulatory compliance costs. This made the regulation competitive with foregone investment opportunities.

Circular A-94 acknowledged that a private capital discount rate was not appropriate for every regulatory setting and allowed regulators to use discretion in selecting lower discount rates for sensitivity analyses. These lower discount rates reflected an assumed social rate of time preference. The "social rate of time preference" is a real discount rate that supposedly reflects society's willingness to sacrifice present goods for the sake of future goods. The real social discount rate is posited to be lower than the average seven percent rate of return on private capital, but the benefits society accrues from the lower discount rate are alleged to offset the lost private investment.

The EPA's regulatory analysis for its 1998 rule limiting hazardous air pollutants from the paper manufacturing industry and discharged wastewater provides an example of claimed social benefits monetized and then discounted with a social discount rate the EPA deemed appropriate for those social benefits. The EPA presented impacts at the social rate of time preference of three percent, which it claimed was appropriate. The proposed rule generated positive net benefits of $5 billion and $7 billion at real discount rates of seven percent and three percent, respectively.[18]

---

[15] Rea S. Hederman Jr., Michael E. Reed, and Trevor Lewis, *The Economic Impact of A Potential New Clean Power Plan on Ohio and California*, The Buckeye Institute, April 12, 2023.

[16] **Circular A-94**, Economic Analysis of Federal Regulations Under Executive Order 12866; Bazelon et al., Discounting inside the beltway, McKinsey.

[17] **Discounting For Public Policy: Theory and Recent Evidence on the Merits of Updating the Discount Rate**, Council of Economic Advisers Issue Brief, January 2017.

[18] United States Environmental Protection Agency, **Economic Analysis for the National Emission Standards for Hazardous Air Pollutants for Source Category: Pulp and Paper Production; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards: Pulp, Paper, and Paperboard C**, October 27, 1997.

Inspired by the EPA's 1998 rule, OMB Circular A-4 2003 incorporated three percent as a real discount rate to provide regulators with a real discount rate to reflect the social rate of time preference. OMB justified three percent economically by using the real rate of return on 10-year Treasury notes. Taking the average nominal rate of return on 10-year Treasury notes beginning in 1973 and adjusting the pre-tax return by the annual rate of change in the consumer price index (CPI) yielded 3.1 percent.[19] While it is dubious to ever discount risky prospects at a risk-free "social rate of time preference," assumed to be lower than the market rate of return on investment, the assumed rate should at a minimum reflect the return on U.S. Treasury notes, which offer a risk-free rate of return to investors.

IV. Proposed A-4 Relies on Flawed Methodology and Flawed Economic Literature Review

A. A Flawed Methodology

Proposed A-4 eliminates the requirement to report benefits and costs at three percent and seven percent real discount rates, and instead provides regulators with a standard 1.7 percent social discount rate and gives them discretion over other discount rates selected for sensitivity analyses. The proposed 1.7 percent social discount rate is intended for projects with a 30-year timeline, after which OMB offers caution but does not forbid even lower discount rates for estimating intergenerational benefits over longer periods.[20] These changes are a mistake.

If regulators were to consider a thirty year "intergenerational" benefits timeline, that would strongly suggest the need for a much higher discount rate. Projected benefits over 30 years are speculative and this speculation must be included in any discount rate if it can be considered at all.[21]

Proposed A-4 adopts the astonishingly low 1.7 percent social discount rate by using Circular A-4 2003's flawed methodology, which compared the average rates of return on 10-year Treasury securities and 10-year Treasury Inflation Protected Securities (TIPS) by the annual rate of change in the CPI to find the average annual real risk-free rate of return. Because 10-Year TIPS were first offered in 2002, OMB included 10-Year Treasury securities from 1993 to 2002 to obtain a continuous 30-year period for its estimate.[22] But OMB has selected a 30-year period in which the Federal Reserve forced interest rates to relatively low levels. The federal funds rate averaged only 2.4 percent between 1992 and 2022 and was at or near the Zero Lower Bound for a seven-year period between 2008 and 2015 and a two-year period between 2020 and 2022. Federal fund rates

---

[19] **OMB Circular A-4**, Regulatory Analysis, September 17, 2003.
[20] **OMB Draft Circular A-4**, Regulatory Analysis, April 6, 2023.
[21] *See, e.g., Goodwin* v. *MTD Prod., Inc.*, 232 F.3d 600, 609 (7th Cir.2000) (expert's proffered testimony not admissible because it was based on speculation); *Council of Parent Att'ys & Advocs., Inc.* v. *DeVos*, 365 F. Supp. 3d 28, 51 (D.D.C. 2019) (noting that "an agency's predictive judgments about the likely economic effects of a rule . . . must be based on some logic and evidence, not sheer speculation" (quotation marks and citations omitted)).
[22] **OMB Circular A-4**, Regulatory Analysis, April 6, 2023.

during this period had more to do with the central bank contending with three major recessions[23] than with an organic, secular decline in the real rate of interest.

Basing the social discount rate on a single 30-year window of aberrant, artificially low Treasury bill returns does not accurately reflect the real risk-free rate of return to private capital. Instead, OMB should estimate the long-term discount rate by including 10-year Treasury securities going back at least 50 years. That longer timeline is more economically sound, more accurately reflects real consumption preferences in the economy, and accords with rudimentary statistical wisdom that seeks as large a representative dataset as possible.

OMB's prior guidance sensibly adopted the standard economic view that discount rates should incorporate risk premiums (unless expected payoffs are already adjusted downward in proportion to risk). Accordingly, a higher discount rate should be used to account for higher risks. When the discount rate used is artificially low, the estimated present value of benefits from a regulation is exaggerated relative to its costs.

Proposed A-4's arbitrarily low discount rate violates the spirit of the benefit-cost analysis established in E.O. 12291 and the very purpose of NPV models, namely to estimate accurately how much capital companies should invest in certain projects with varying risks. By lowering the SDR and removing the required seven percent discount rate, Proposed A-4 turns a tool for estimating future revenue into a regulator's rubber stamp that will ensure all future regulatory benefit streams dwarf present compliance costs.

B. A Flawed Economic Literature Review

Rather than provide a resource that helps regulators assay the future value of corporate capital, Proposed A-4 cherry-picks among academic sources that justify low social discount rates by failing to factor risk and accurately represent the present value of future dollars.

Social discount rates have their roots in the work of Arrow (1966), Feldstein (1964), Bradford (1975), and Lind (1970, 1982),[24] among others, and the greater debate over the opportunity cost of public spending projects that crowd out private investment.[25] By the 1990s, the Washington consensus was that a lower discount rate reflecting the risk-free rate of return to private capital

---

[23] It should be noted that the federal funds rate was already in the middle of a steep decline in 1992, a decline that had begun in 1989 and gained steam following the recession that began in 1990.

[24] Kenneth Arrow, "**Discounting and Public Investment Criteria**," *In Water Research* (Johns Hopkins University Press, 1966); Martin Feldstein, "**The Social Time Preference Discount Rate in Cost Benefit Analysis**," *Economic Journal*, Volume 74, Issue 294 (1964) p. 360-379; David Bradford, "**Constraints of Government Investment Opportunities and the Choice of Discount Rate**," *American Economic Review*, Volume 65, Issue 5 (1975) p. 887-899; Kenneth Arrow and Robert Lind, "**Uncertainty and the Evaluation of Public Investment Decisions**," *American Economic Review*, Volume 60, Issue 3 (June 1970) p. 364-378; Robert Lind, "**A Primer on the Major Issues Relating to the Discount Rate for Evaluating National Energy Options**," *In Discounting for Time and Risk in Energy Policy* (Resources for the Future, 1982).

[25] John Robinson, "**Philosophical Origins of the Social Rate of Discount in Cost-Benefit Analysis**." *The Bilbank Quarterly* Volume 68, No. 2, 1990. p. 245 – 265.

was appropriate for discounting project benefits, regardless of the time horizons.[26] The perception of global climate change as an imminent threat, for example, persuaded advocates to push for low SDR to give a greater weight to the benefits and costs expected to accrue to future generations.

Reducing the SDR from three percent to 1.7 percent and eliminating the historic seven percent discount rate rely on research myopically focused on lowering the SDR to give greater weight to the projected future damages of climate change. Proposed A-4 lacks academic rigor and a holistic consideration of the interplay between regulation compliance costs and public benefit. The economics literature cited in Proposed A-4 fails to account for how compliance costs are distributed over a population and how risk is still latent in the SDR.

In 1970, Arrow and Lind made the theoretical argument that governments can diffuse a regulation's cost over a large population such that the future benefits that accrue to the average citizen are much higher. This hypothesis supposedly justifies using a social rate of time preference that is lower than the market rate. But Arrow and Lind represented only one side of a larger debate over the appropriate discount rate for governments to use. Peter A. Diamond and Jack Hirshleifer—uncited and ignored in Proposed A-4—both disputed the Arrow and Lind argument. Diamond and Hirshleifer considered proper governmental discount rates as they examined how stock prices naturally reflect the social cost of risk.[27] Hirshleifer argued that governments adopt market prices to account for this risk. E.J. Mishan (1972) also critiqued Arrow and Lind (1970) by pointing out that although it is technically true that governments can spread costs among many citizens, a lower SDR is appropriate so long as the government is not the only institution paying for the regulation.[28] As a prominent scholar on discounting and a major academic source for A-4 2003, Mishan's criticisms carry a lot of academic weight. Removing Mishan from Proposed A-4, and the absence of Diamond and Hirshleifer, indicate that OMB has eschewed criticisms and challenges to low social discount rates.

Proposed A-4 does not address the contrary analysis across the economics literature in adopting the lower hurdle for public investment returns offered by Arrow and Lind (1970), and it ignores economic critiques of improperly treating government debt as a risk-free asset despite its high correlation with risk. Lucas (2014) challenges the Arrow and Lind conclusion, for example, because it wrongly presumes that returns on government projects are as risk-free as returns on government debt: "That assumption is clearly violated for many if not most of the investments made by governments around the world. For example, in the United States, the federal government's credit-related investments . . . have close analogs that are priced in competitive

---

[26] Coleman Bazelon and Kent Smetters, "**Discounting Inside the Washington D.C. Beltway**," *Journal of Economic Perspectives*, Volume 13, Number 4 (1999) p. 213—228; Anthony E. Boardman, David H. Greenberg, Aidan R. Vining, and David L. Weimer, *Cost-Benefit Analysis Concepts and Practice*, Fifth Edition, 2018.

[27] Jack Hirshleifer, "**Investment decisions under uncertainty: applications of the state preference approach**," *Quarterly Journal of Economics*, Volume 80, No. 2 (May 1966), p. 252 – 277; Jack Hirshleifer, "**Efficient allocation of capital in an uncertain world**," *American Economic Review*, Volume 54, p. 72 – 85; Peter Diamond, "**The Role of the stock market in a general equilibrium model with technological uncertainty**," *American Economic Review*, Volume 57, No. 4 (September 1967) p. 759 – 776.

[28] E. J. Mishan, "**Uncertainty and the Evaluation of Public Investment Decisions: Comment**" *The American Economic Review*, Volume 62, Number ½ (March 1, 1972) p. 161—164.

markets, and payoffs which are sharply lower during downturns."[29] Lucas (2013) also explains that the choice for discounting for the ambiguous notion of "intergenerational benefits" is unclear—"discounting at the risk-free rate is unlikely to be the answer either."[30] If the risk-free rate of return is too low for discounting future benefits, then it is unequivocally insufficient for discounting benefits accrued to those living in the present.

Using a tailored research report that conveniently ignores counter arguments in the economic literature to blithely justify an artificially low SDR of 1.7 percent is academically dishonest and smacks of confirmation bias. Academic cherry-picking and bias in Proposed A-4 deprives policy and lawmakers with an accurate benefit-cost assessment of how regulatory actions will impact the economy and the regulated parties.

Of course, the longer the revenues—or regulatory benefits—are projected into the future, the greater the discount rate that is necessary to account for greater time preference, risk, and uncertainty. If the benefits of a regulation are extended out for 10 years—something regulators often do—the greater the degree to which those benefits must be discounted and the smaller the estimated up-front costs will be to justify a regulation. Moreover, the further out the estimated benefits go, the more speculative they become. And, as the degree of speculation increases, the discount rate should also increase. This is particularly true in Proposed A-4, which attempts to project benefits "intergenerationally." Indeed, in the legal sense, these intergenerational benefits would be so speculative as to be completely inappropriate to include in any sort of calculation.[31]

C. Flawed Guidance for Corporate Discounting Invites Legal Challenges

According to Weitzman (1999), "every good economist knows that the proper procedure is to perform a sensitivity analysis using several plausible discount-rate values."[32] OMB A-4 2003 understood this and included a three percent social discount rate to be used alongside the seven percent discount rate that reflects the returns to corporate capital. Removing the required three percent and seven percent real discount rates from Proposed A-4 and replacing them with a single 1.7 real discount rate is problematic and will subject agencies to litigation risk.

First, a single required discount rate, especially one as low as 1.7 percent, wrongly assumes that companies do not invest to receive the highest returns on physical and financial capital in excess of the social benefits attained through regulations. Second, by not providing industry specific discount rates for sensitivity analysis and instead allowing regulators to select "appropriate private discount rates" for that analysis will muddle the regulatory process. Failing to establish

---

[29] Deborah Lucas, "**Rebutting Arrow and Lind: why governments should use market rates for discounting**," *Journal of Natural Resources Policy Research*, Volume 6, Issue 1 (January 2014) p. 85 – 91.
[30] *Ibid.*
[31] *See, e.g., Goodwin*, 232 F.3d at 609 (expert's proffered testimony not admissible because it was based on speculation); *Council of Parent Att'ys & Advocs., Inc.*, 365 F. Supp. 3d at 51 (noting that "an agency's predictive judgments about the likely economic effects of a rule . . . must be based on some logic and evidence, not sheer speculation" (quotation marks and citations omitted)).
[32] Martin L. Weitzman, "**Gamma Discounting**," *American Economic Review*, Volume 91, Issue 1, p. 260 – 271.

realistic discount rates that reflect the rate of growth for investment capital will result in poor RIAs with abstruse discount rates and open future regulations up to legal challenge.

Since businesses will pay for the compliance cost of a regulation, it is important to compare the costs paid by business against the future benefit stream discounted against a discount rate reflecting returns to corporate capital. Such comparison ensures that the benefits received from a regulation would clear a minimum hurdle rate and yield a positive return on investment. But Proposed A-4 removes the agency requirement to present a private capital discount rate—historically seven percent—and thus deprives agencies and regulated entities of an accurate comparison of future benefits against foregone private sector growth. Instead, Proposed A-4 authorizes regulators to select any industry specific discount rate to reflect that industry's specific risks and capital costs, which places the onus of estimating an appropriate real discount rate on the regulator, complicating the regulatory review process and making it more expensive.

Discount rates vary widely across industries. Wind and solar projects' future revenues, for example, are discounted at real rates between six and nine percent. Alaska's Department of Revenue discounted the revenue from the Willow Project at 10 percent. A 2011 study estimated a farmer's discount rate to be as high as 34 percent. Venture capital firms discount the future revenue received from start-ups at rates as low as 40 and as high as 70 percent. Such wide variation reflects an industry-specific risk premium, and because industries must pay the compliance costs of regulation, regulators must be sympathetic to the risks associated within these industries and select appropriate industry-specific discount rates. Failure to do so risks inviting legal challenges for selecting an improper discount rate for the sake of justifying a regulatory measure.

The seven percent discount rate represents the long-run return on capital rooted in over a century of stock market data. And because seven percent reflects the long-run average, it incorporates successful and unsuccessful investment alike, and therefore provides regulators with a necessary, minimum floor option for discounting long-term future. By omitting the seven percent discount rate and instead encouraging regulators to set private capital discount rates in a sensitivity analysis, Proposed A-4 opens the door to legal challenges from regulated industries claiming economic damages from unjustifiable compliance costs incurred by chasing overstated benefits.

V. Benefit-Cost Analyses Should Not Include Noncitizens Living Outside the United States

Proposed A-4 authorizes regulatory agencies to balance the domestic costs of regulations with benefits to noncitizens living outside the United States. OMB provides no statutory authorization for agencies to include such benefits during rulemaking benefit-cost analyses for proposed regulations. Indeed, the executive orders underlying Proposed A-4 (and its predecessors) have expressed the opposite.

E.O. 12866, for example, states that it is "vital" that the "regulatory planning and review process" "serves the American people," because "[t]he American people deserve a regulatory system that

works for them * * * ."[33] E.O. 12866's regulatory philosophy—affirmed by subsequent orders—instructs "Federal agencies [to] promulgate only such regulations as are required by law, are necessary to interpret the law, or are made necessary by compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people."[34] Federal agencies exist to protect the rights and interests of taxpaying Americans, not noncitizens living in other countries.

Proposed A-4 allows benefits and costs accrued by noncitizens living abroad to be included in a RIA's primary analysis. Including noncitizens—who do not pay for compliance or enforcement costs—in a BCA exaggerates a regulation's benefits while diluting its costs. A regulation reducing air pollution from coal power plants, for example, will destroy American coal mining jobs and shoulder coal-plant operators with heavy compliance costs. Noncitizens living abroad bear none of those costs but arguably reap the purported benefit of cleaner air. Adding noncitizens to one side of the BCA and not the other dramatically skews the results, allowing regulators to consider the regulatory benefits to 7.54 billion noncitizens while only considering costs imposed on some small fraction of the 332 million U.S. citizens who pay the regulatory price tag. In other words, regulated Americans bear 100 percent of the costs and reap only 4.2 percent of the benefits.[35]

Among other scenarios, Proposed A-4 suggests including benefits and costs to noncitizens when the effects of a regulation on U.S. citizens and residents are too difficult to estimate. This approach is backward. Agencies should not attempt to justify difficult to assess regulatory burdens by using noncitizens residing abroad as proxies for the United States. The inability of an agency to evaluate the effects of its regulations on those it regulates calls into question its ability to accurately estimate the effects of its proposed regulation at all. If an agency cannot quantify certain effects of its regulation on those it regulates, then those estimates are mere speculation that should be discarded.

Conclusion

Proposed A-4 harms the regulatory process and the interests of the American people. It deviates drastically from OMB's historical treatment of discount rates by substituting an unrealistically low 1.7 percent social discount rate for a standard seven percent discount rate. It relies upon a flawed methodology and an incomplete, cherry-picked reading of the economics literature for its theoretical foundation. It deprives agencies and regulated entities of an accurate comparison of future benefits against foregone private sector growth, and authorizes regulators to choose industry specific discount rates, which saddles regulators with estimating an appropriate real discount rate, complicating the regulatory review process. And it improperly includes effects on noncitizens living outside the United States among its benefit calculations, while excluding them from its regulatory cost analysis. These serious errors open the door to successful legal challenges against any future regulation that relies upon Proposed A-4 guidance because the guidance will make such regulation "arbitrary and capricious" in violation of the Administrative Procedure Act.

---

[33] **E.O. 12866**.

[34] **E.O. 12866**, Sec. 1(a).

[35] 332 million U.S. Citizens divided by the world population of about 7.88 billion = 4.2 percent.

About The Buckeye Institute

Founded in 1989, The Buckeye Institute is an independent research and educational institution – a think tank – whose mission is to advance free-market public policy in the states.

The Buckeye Institute is a non-partisan, non-profit, and tax-exempt organization, as defined by section 501(c)(3) of the Internal Revenue code. As such, it relies on support from individuals, corporations, and foundations that share a commitment to individual liberty, free enterprise, personal responsibility, and limited government. The Buckeye Institute does not seek or accept government funding.