

Judicial Review of Regulatory Impact Analysis

Why Not the Best?

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Abstract

Regulatory agencies often produce mediocre economic analysis to inform their decisions about major regulations. For this reason, Congress is considering proposals that would require regulatory agencies to conduct regulatory impact analysis and subject it to judicial review. For judicial review to work, judges must be able to verify agency compliance with quality standards even if they are not experts in the subject matter the agencies deal with. This article demonstrates that courts could effectively review the quality of agencies' regulatory impact analysis if they were given more concrete statutory guidance on what a regulatory impact analysis must include and the stringency with which a court will review that analysis. We propose a regulatory reform that would accomplish this goal: amend the Administrative Procedure Act to specify the main elements a regulatory impact analysis must include and to clarify the standard of review by requiring that agencies use the best available evidence in their analysis.

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Judicial Review of Regulatory Impact Analysis: Why Not the Best?*

Reeve Bull and Jerry Ellig[†]

I. Introduction

Sentiment is growing in Congress for legislation that would require most regulatory agencies to prepare a regulatory impact analysis (RIA) before adopting major regulations.¹ Regulatory reform bills requiring such analysis have passed the House of Representatives several times and have been introduced in the Senate.² A major sticking point, however, is the role of courts in reviewing agencies' analysis.³

* The subtitle is intended as an allusion to the “best available evidence” standard that we propose in this article. It also serves as an homage to President Carter’s 1976 campaign autobiography, however, as it was Carter who issued the first executive order requiring agencies to prepare a “regulatory analysis” that compares the economic consequences of a new regulation with alternatives. See JIMMY CARTER, WHY NOT THE BEST? (1976); Exec. Order No. 12,044, 43 Fed. Reg. 12,661 (March 23, 1978).

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¹ Executive Order 12,866 requires executive branch agencies to produce an assessment of the benefits and costs of certain regulations and the alternatives if the regulations meet certain requirements detailed in section II, *infra*. The term of art used to describe that analysis is “regulatory impact analysis.” Independent agencies sometimes are required by statute to produce various types of economic analysis, often referred to as “benefit-cost analysis.” Throughout this article, we use the term “regulatory impact analysis” to refer to any agency analysis of the underlying problem it seeks to solve, alternatives, benefits, and costs. The Regulatory Accountability Act, H.R. 5, 115th Cong. § 102(3) (2017) defines a “major” regulation as a regulation that has an annual cost to the economy of \$100 million or more, adjusted for inflation, or certain other significant economic effects. The legislation would require regulatory impact analysis for major rules from executive branch and independent agencies.

² See, e.g., Regulatory Accountability Act, H.R. 5, 115th Cong. (2017); Regulatory Accountability Act, S. 2006, 114th Cong. (2015); Independent Agency Regulatory Analysis Act, S. 1607, 114th Cong. (2015); Principled Rulemaking Act, S. 1818, 114th Cong. (2015); Regulatory Accountability Act, H.R. 185, 114th Cong. (2015); Regulatory Accountability Act, H.R. 2122, 113th Cong. (2013); Regulatory Accountability Act, H.R. 3010, 112th Cong. (2011).

³ See, for example, the keynote discussion between Sen. James Lankford (R-OK), chairman of the Homeland Security and Government Affairs Committee’s Subcommittee on Regulatory Affairs and Federal Management, and Sen. Heidi Heitkamp (D-ND), ranking minority member of the subcommittee, at the 2016 annual meeting of the Society for Benefit-Cost Analysis. Sen. Lankford cited judicial review as a way to hold agencies accountable for following basic rules when they issue new regulations. Sen. Heitkamp expressed concern that judicial review could become a “gotcha” game. James Lankford and Heidi Heitkamp, “Improving the Theory and Practice of Benefit-Cost Analysis” (keynote address, Society for Benefit-Cost Analysis Annual Conference and Meeting, Washington, DC, March 16–18, 2016). Video of the discussion is available at <https://www.youtube.com/watch?v=qsp3QO1o-tQ>; discussion of judicial review begins at approximately 23 minutes.

Even in the absence of an overarching statutory RIA requirement, recent developments suggest that an agency that prepares an RIA is not free to overlook its findings. Federal courts have increasingly come to view as per se irrational an agency action that ignores the economic considerations associated with a contemplated course of action (assuming no statutory prohibition on reviewing such economic considerations exists).⁴ The courts have not imposed a requirement that agencies maximize net benefits, yet they have suggested that a regulation that “does significantly more harm than good” is inappropriate.⁵ Thus, even under existing law, an agency that completely ignores the economic implications of a rule does so at its own peril. Although case law has not unequivocally held that an agency must give some consideration to the findings of an RIA to survive judicial review, courts seem to be headed in that direction.⁶ Moreover, agency reliance on the findings of an RIA opens it up to judicial review.⁷

Few regulatory reform proposals engender as much controversy as the idea of judicial review of regulatory impact analysis. Proponents believe that judicial review could hold agencies accountable for conducting the analysis, promote better analysis by correcting errors, and encourage transparency by prompting agencies to provide more complete explanations of analytical methods.⁸ More generally, proponents see judicial review as a means to produce more

⁴ *Michigan v. EPA*, 135 S. Ct. 2699, 2707 (2015) (“One would not say that it is even rational, never mind ‘appropriate,’ to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits”); *id.* at 2716–17 (Kagan, J., dissenting) (“Cost is almost always a relevant—and usually, a highly important—factor in regulation. Unless Congress provides otherwise, an agency acts unreasonably in establishing ‘a standard-setting process that ignore[s] economic considerations’” [internal citations omitted]); *Metlife, Inc. v. Fin. Stability Oversight Council*, No. 15-0045, slip op. at 30 (D.D.C. Mar. 30, 2016) (“In the end, cost must be balanced against benefit because ‘[n]o regulation is “appropriate” if it does significantly more harm than good’” [internal citations omitted]).

⁵ 135 S. Ct. at 2707; 135 S. Ct. 2716–17 (Kagan, J., dissenting); *Metlife, Inc. v. Fin. Stability Oversight Council*.

⁶ CASS SUNSTEIN, COST-BENEFIT ANALYSIS AND ARBITRARINESS REVIEW (March 2016), *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2752068.

⁷ Caroline Cecot & W. Kip Viscusi, *Judicial Review of Agency Benefit-Cost Analysis*, 22 GEO. MASON L. REV. 575, 591–605 (2015).

⁸ *Id.* at 606.

effective and less costly regulation by encouraging higher-quality analysis in line with the standards already articulated in executive orders.⁹ Opponents express skepticism that generalist judges possess the specialized training needed to competently review agency economic analysis.¹⁰ Critics also fear that expanded judicial review would slow down the regulatory process and allow judges to decide on the basis of their own policy preferences, either substituting their policy views for those of the agency or showing excessive deference if they agree with the agency.¹¹

The proponents of judicial review have identified a significant problem. Assessments by independent scholars and government agencies have identified serious deficiencies in agency regulatory impact analyses for major regulations. Those deficiencies stem from a fundamental structural problem: in the absence of judicial review, enforcement mechanisms to promote high-quality analysis are relatively weak.

Judicial review could potentially fill that gap. Examining a sample of cases in which appeals courts have reviewed agency regulatory impact analysis, we find that courts have

⁹ Susan Dudley, *Improving Regulatory Accountability: Lessons from the Past and Prospects for the Future*, 65 CASE WESTERN RESERVE U. LAW REV. 1027, 1055 (2015); *Cost-Justifying Regulations: Protecting Jobs and the Economy by Presidential and Judicial Review of Costs and Benefits: Hearing Before the Subcomm. on the Courts, Commercial & Administrative Law of the H. Comm. on the Judiciary*, 112th Cong. 5 (2011) (statement of John D. Graham, Dean, Indiana University School of Public and Environmental Affairs), available at http://judiciary.house.gov/_files/hearings/pdf/Graham05042011.pdf.

¹⁰ Robert J. Jackson, Jr., *Cost-Benefit Analysis & the Courts*, 78 LAW & CONTEMP. PROB. 55, 56 (2015) (“[G]eneralist federal judges and their law clerks obviously lack the expertise necessary to closely review the type of [cost-benefit analysis] that would justify a particular regulatory choice in today’s financial markets”).

¹¹ See, e.g., “Dissenting Views,” REGULATORY ACCOUNTABILITY ACT OF 2013, H.R. REP. NO. 113-237, at 60–61 (2013); Grant M. Hayden and Matthew T. Bodie, *The Bizarre Law and Economics of ‘Business Roundtable v. SEC,’* 38 J. CORP. LAW 101 (2012); Michael E. Murphy, *The SEC and the District of Columbia Circuit: The Emergence of a Distinct Standard of Judicial Review*, 7 VIRGINIA LAW & BUS. REV. 125, 127 (2012); Eric A. Posner & E. Glen Weyl, *Cost-Benefit Analysis of Financial Regulations: A Response to Criticisms*, YALE LAW J. FORUM 261 (Jan. 22, 2015), available at http://www.yalelawjournal.org/pdf/Posner-WeylPDF_ijby4z9e.pdf; *Recent Cases: D.C. Circuit Finds SEC Proxy Access Rule Arbitrary and Capricious for Inadequate Economic Analysis*, 125 HARV. L. REV. 1088, 1092–93.

perceptively and competently identified significant flaws that affect all major aspects of regulatory impact analysis. When remanding regulations, courts seem to have no clear pro- or anti-regulatory bias. Agencies, in turn, have often improved their analysis in response to those court decisions.

Unfortunately, the current “arbitrary and capricious”¹² standard that governs judicial review is vague and leads to highly inconsistent court decisions. Courts may be capable of carefully reviewing regulatory impact analysis, but they do not always do so. To establish judicial review as an effective incentive for improved analysis, regulatory reform legislation must do more than simply state that regulatory impact analysis will be subject to judicial review. A truly effective reform must specify the major elements the analysis should include and establish a clear standard to guide judicial review.

We propose such a reform, consisting of two elements. First, the Administrative Procedure Act should be amended to specify that a regulatory impact analysis (or agency economic analysis that plays a similar role, regardless of what it is called) must include (1) an evidence-based assessment of the nature and cause of the problem the regulation is intended to solve, (2) discussion of reasonable alternative solutions suggested by the evidentiary record, and (3) estimates of the social benefits and social costs of each alternative. Second, in performing that analysis, the agency would be required to use the best available evidence in the record. These reforms would help ensure that courts meaningfully review the quality of regulatory impact analysis without allowing judges to substitute their policy preferences for those of Congress or the regulatory agency.

¹² *Recent Cases* 1092.

A thorough regulatory impact analysis should assess whether a significant problem exists, identify the most promising alternative solutions to the problem, and assess the benefits and costs of each alternative. Regulatory impact analysis, however, is not the same as a regulatory decision. Our proposal seeks to improve the quality of analysis. We take no position on whether regulators should follow a particular decision rule, such as regulating only when benefits exceed costs or selecting the alternative with the greatest net benefits. That is a normative question outside the scope of this article.

Section II of this article outlines the major elements of regulatory impact analysis. Section III summarizes scholarly and government research that evaluates the quality of regulatory impact analysis; the preponderance of the evidence indicates significant deficiencies in analysis of major regulations. Section IV explains the reasons for that result: agencies often lack incentives to perform high-quality analysis. Section V outlines the current extent of judicial review of regulatory impact analysis and the current standards of review. Section VI examines 42 cases in which courts have assessed some aspect of an agency's regulatory impact analysis, showing that courts are capable of performing such assessment but do so inconsistently because the current standard of review is vague. Section VII outlines our proposed standard for judicial review of regulatory impact analysis. Section VIII addresses several possible objections to the proposed standard. Section IX concludes.

II. Major Elements of Regulatory Impact Analysis

Executive Order 12866,¹³ issued under President Bill Clinton, and US Office of Management and Budget (OMB) Circular A-4, “Regulatory Analysis,”¹⁴ issued under President George W. Bush, outline the primary elements that should be included in a regulatory impact analysis and explain how regulatory agencies should use economic analysis to guide decisions. The Unfunded Mandates Reform Act (2 U.S.C. §§ 1501–71) contains similar requirements, but “because of numerous exceptions and exclusions in the Act, the set of rules that are subject to UMRA’s analytical requirements are a subset of the rules that are subject to the analytical requirements in EO 12866.”¹⁵ Executive Order 12866 was retained by the Bush administration and most recently reaffirmed by President Obama in Executive Order 13563.¹⁶

Executive Order 12866 states that agencies should assess the benefits and costs of proposed regulations and alternatives.¹⁷ Other language in the executive order, however, has been interpreted to limit this analysis requirement to only a fraction of all federal regulations. The Office of Information and Regulatory Affairs (OIRA) reviews regulations only from executive branch agencies and only when they are considered “significant.”¹⁸ Executive Order 12866 requires agencies only to provide “an assessment of” the potential benefits and costs of

¹³ Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Oct. 4, 1993). For a brief history of executive orders that require regulatory impact analysis, see Cecot & Viscusi, *supra* note 7, at 579–82.

¹⁴ OFFICE of MGMT. & BUDGET, CIRCULAR A-4, REGULATORY ANALYSIS (2003), *available at* http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/a-4.pdf.

¹⁵ CURTIS W. COPELAND, ECONOMIC ANALYSIS AND INDEPENDENT REGULATORY AGENCIES 20 (2013), *available at* <https://www.acus.gov/report/economic-analysis-final-report>.

¹⁶ The Obama executive order added a requirement that “each agency is directed to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible.” *See* Exec. Order No. 13,563 § 1(c), 76 Fed. Reg. 3821, 3821 (Jan. 21, 2011).

¹⁷ Exec. Order No. 12,866 § 1, 58 Fed. Reg. 51,735, 51,735–36.

¹⁸ *Id.* at § 3(f) (for criteria that determine whether a regulation is significant).

significant regulations.¹⁹ “Economically significant” regulations are those that have costs or other economic effects exceeding \$100 million annually or that meet other criteria specified in section 3(f)(1) of Executive Order 12866. For economically significant regulations, the agency must analyze and quantify the benefits and costs of the regulation and alternatives.²⁰ In the 2008–2013 period, federal agencies published a total of 14,795 regulations. About 9.5 percent of those regulations were considered significant and were reviewed by OIRA. Only 2 percent of the regulations were economically significant.²¹

The principal elements of regulatory analysis outlined in the executive order and in OMB guidance reflect standard economic principles of policy analysis and government performance management.²² Those elements include analysis of the systemic problem, development of alternatives, estimation of the benefits or other desired outcomes of the regulation and of each alternative, and estimation of the costs of the regulation and of each alternative.

A. Analysis of the Systemic Problem

The first principle enunciated in Executive Order 12866 is that “each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or

¹⁹ *Id.* at § 6(a)(3)(B)(ii).

²⁰ *Id.* at §§ 6(a)(3)(C)(ii), 6(a)(3)(C)(iii).

²¹ The source for all three statistics is JERRY ELLIG, EVALUATING THE QUALITY AND USE OF REGULATORY IMPACT ANALYSIS 11–12 (July 2016).

²² GOVERNMENT ACCOUNTABILITY OFFICE, FEDERAL RULEMAKING: AGENCIES INCLUDED KEY ELEMENTS OF COST-BENEFIT ANALYSIS, BUT EXPLANATIONS OF REGULATIONS’ SIGNIFICANCE COULD BE MORE TRANSPARENT 3 (Sept. 2014) (“These four broad elements stem from several sources including Executive Orders 12866 and 13563, OMB’s *Circular A-4*, and general economic principles. *Circular A-4*, consistent with standard economic principles, identifies these selected elements as basic elements to include in the regulatory analysis required by the executive orders”); Jerry Ellig & Jerry Brito, *Toward a More Perfect Union: Regulatory Analysis and Performance Management*, 8 FLA. ST. U. BUS. REV. 1 (2009) (explaining parallels between analytical steps for regulatory impact analysis and government performance management); THOMAS O. MCGARITY, REINVENTING RATIONALITY: THE ROLE OF REGULATORY ANALYSIS IN THE FEDERAL BUREAUCRACY 112 (1991) (defining regulatory analysis as the application of rational policy analysis to regulation).

public institutions that warrant new regulatory action) as well as assess the significance of that problem.”²³ Analysis of the problem is the logical first step in regulatory analysis for several reasons. First, decision makers need to know whether a problem exists and is significant before they can judge whether regulation is necessary. Second, if regulation is necessary, regulators must understand the root cause of the problem if they are to design a regulation that effectively solves the problem. Third, a regulation cannot possibly produce benefits unless it solves a problem. Thus, analysts must understand the cause or causes of the problem before they can determine whether the regulation is likely to produce benefits.

Both Executive Order 12866 and OMB Circular A-4 clearly state that agencies must do more than simply cite the statute that authorized or required the regulation.²⁴ The previously cited passage from the executive order directs each agency to analyze the problem it intends to address. Furthermore, for “significant” regulations reviewed by OIRA, the executive order requires the agency to furnish OIRA with “a reasonably detailed description of the need for the regulatory action and an explanation of how the regulatory action will meet that need.”²⁵ Circular A-4 instructs agencies to “demonstrate that the proposed action is necessary”²⁶ and “explain whether the action is intended to address a significant market failure or to meet some other compelling public need.”²⁷

“Market failure” and “government failure” are terms that have specific definitions in economics; they are not merely epithets applied to a market or government outcome that someone

²³ Exec. Order No. 12,866 § 1(b)(1), 58 Fed. Reg. 51,735, 51,735.

²⁴ As explored in section VII.A of this article, this requirement is especially important when the statutory mandate is exceedingly vague (*e.g.*, directing the agency to regulate in the “public interest”).

²⁵ Exec. Order No. 12,866 §6(a)(3)(B)(i).

²⁶ OMB CIRCULAR A-4, at 3.

²⁷ *Id.* at 4.

dislikes.²⁸ The failure arises when market or government processes do not achieve the economically efficient result, which occurs when every unit of every resource is allocated to the use that consumers value most highly. If resources are not allocated efficiently, they could be redeployed to make at least one person in society better off without making anyone else worse off.

Market failure occurs in four primary forms: externalities, public goods, market power, and information asymmetry.²⁹ An *externality* occurs when a person's or firm's actions have significant effects on others' welfare that the decision maker does not take into account. Air pollution is often considered the classic example of a negative externality. A *public good* is a special kind of positive externality: someone's decision to purchase a good or service confers benefits on others in society, but the decision maker does not take these benefits into account. National defense is the classic example of a public good. A firm has *market power* when the absence of competition allows it to profitably increase price above the level (and reduce output below the level) that would exist with competition. *Information asymmetry* occurs when one party to a transaction possesses significant information that would materially affect the other party's decision, but the information is concealed from or costly to convey to the other party.

Governments may also fail to produce the economically efficient result for a variety of reasons. Special interests may use legislative or regulatory processes to redistribute wealth to themselves, even if the resulting policies fail to advance—or actually reduce—economic efficiency.³⁰ Existing regulations may require revision because they were poorly designed to

²⁸ For a highly readable description of market failure and government failure, see SUSAN E. DUDLEY & JERRY BRITO, *REGULATION: A PRIMER* 12–20 (2d ed. 2012).

²⁹ OMB CIRCULAR A-4, at 4–5.

³⁰ For example, a recent regulation requiring inspection of catfish-processing plants by the US Department of Agriculture gives domestic catfish producers an advantage over Vietnamese producers. Ron Nixon, *Catfish Farmers, Seeking Regulation to Fight Foreign Competition, Face Higher Bills*, NEW YORK TIMES, Mar. 20, 2015, available at http://www.nytimes.com/2015/03/21/us/catfish-farmers-seeking-regulation-to-fight-foreign-competition-face-higher-bills.html?_r=0.

begin with or because market circumstances have changed and the old regulations have become obsolete.

OMB Circular A-4 notes that economic efficiency is not the only rationale for regulation; compelling public needs other than efficiency may also motivate regulation. Congress intends some regulations to redistribute resources, often to promote fairness.³¹ Others, such as regulations prohibiting discrimination, are intended to secure fundamental rights.³² Even when no market or government failure has occurred, a clear understanding of the problem Congress seeks to solve can help the agency write a regulation that achieves congressional purposes in the most effective manner.

B. Development of Alternatives

Executive Order 12866 directs agencies to consider multiple types of alternatives. Agencies should consider whether existing regulations have contributed to the problems they seek to solve,³³ identify and assess alternatives to direct regulation (such as user fees or information provision),³⁴ and “identify and assess alternative forms of regulation.”³⁵ For economically significant regulations, the regulatory impact analysis must include

an assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives to the planned regulation, identified by the agency or the public (including improving the current regulation and reasonably viable nonregulatory actions).³⁶

Circular A-4 includes an even longer list of alternatives, including antitrust enforcement, consumer-initiated litigation, administrative compensation systems, state or local regulation,

³¹ OMB CIRCULAR A-4, at 4–5.

³² *Id.* at 5.

³³ Exec. Order No. 12,866, § 1(b)(2), 58 Fed. Reg. 51,735, 51,735–36.

³⁴ *Id.* § 1(b)(3).

³⁵ *Id.* § 1(b)(8).

³⁶ *Id.* § 6(a)(3)(C)(iii).

different levels of stringency, different compliance dates, different enforcement methods, different requirements for different-sized firms or for firms in different regions, performance standards rather than design standards, fees, penalties, subsidies, marketable permits, changes in property rights, bonds, insurance, warranties, standardized testing, mandatory disclosure, and government provision of information.³⁷ Agencies are not expected to consider all of these alternatives for every regulation, but they should strike “some balance between thoroughness and the practical limits on [their] analytical capacity.”³⁸ Circular A-4 even suggests that agencies should analyze alternatives outside the scope of current law if they believe such alternatives would be genuinely superior: “If legal constraints prevent the selection of a regulatory action that best satisfies the philosophy and principles of Executive Order 12866, [agencies] should identify these constraints and estimate their opportunity cost.”³⁹

C. Estimation of the Expected Benefits or Other Desired Outcomes of the Regulation and of Each Alternative

A regulation’s benefits are outcomes that improve human well-being. Lower prices for consumers, reduced injuries or fatalities, lower crime rates, and improved health are examples of outcomes that improve human well-being. Reduced pollutant emissions, improved enforcement, improved compliance, or a larger number of entities covered or served are not in themselves benefits; they are outputs or activities that may lead to benefits. A sound regulatory analysis

³⁷ OMB CIRCULAR A-4, at 6–9.

³⁸ *Id.* at 7.

³⁹ *Id.* at 17.

should include a coherent theory and empirical evidence demonstrating that the outputs that result from the regulation are likely to create the desired outcomes.

Executive Order 12866 requires agencies to provide “an assessment of” the potential benefits of significant regulations.⁴⁰ For economically significant regulations, the agency must analyze and quantify the benefits of the regulation and of each alternative.⁴¹ Circular A-4 contains extensive guidance on how to estimate, quantify, and monetize benefits.⁴²

Some regulations redistribute wealth from one group to another. Because the benefits received by the first group are equivalent to the costs imposed on the second group, it is more accurate to characterize those benefits as transfers from one group to another. Circular A-4 notes, “Transfer payments are monetary payments from one group to another that do not affect total resources available to society.”⁴³ For this reason, OMB directs agencies to distinguish transfers from benefits and to include transfers in a discussion of the regulation’s distributional effects.⁴⁴

The means by which a regulation achieves transfers, however, can also alter people’s behavior by altering the incentives they face; thus, a regulation may simultaneously create benefits and transfers. For example, many of the regulations implementing the Affordable Care Act create substantial wealth transfers, but they are also intended to increase the number of Americans with health insurance by reducing premiums for particular groups. If health insurance improves health outcomes, the improvement in health outcomes would count as a benefit. Reductions in the cost of health insurance for some groups that are paid for by increases in the cost of insurance for other groups would count as transfers.

⁴⁰ Exec. Order No. 12,866 § 6(a)(3)(B)(ii), 58 Fed. Reg. 51,735, 51,741.

⁴¹ *Id.* at §§ 6(a)(3)(C)(i), 6(a)(3)(C)(iii).

⁴² OMB CIRCULAR A-4, at 14–42.

⁴³ *Id.* at 38.

⁴⁴ *Id.*

D. Estimation of the Expected Costs of the Regulation and of Each Alternative

In regulatory impact analysis, the term “cost” refers to the standard economic concept of opportunity cost. The opportunity cost of an alternative is the value of benefits forgone because that alternative was chosen.⁴⁵ For this reason, the cost of a regulation is not necessarily measured by the regulated entity’s direct expenditures on compliance. The cost of a regulation also includes the opportunities forgone because managers’ and employees’ time and attention are diverted from other activities to regulatory compliance.⁴⁶ Regulatory costs also include indirect costs that occur when firms, employees, and consumers change their behavior in response to incentives created by the regulation. For example, heightened airport security procedures adopted after 9/11 increased the cost and aggravation of flying, which led travelers to drive instead of fly for short trips. Because highway travel is more hazardous than flying, the substitution led to an increase in highway deaths, which is one cost of enhanced airport security.⁴⁷

III. How Well Do Agencies Perform and Use Regulatory Impact Analysis?

A. Case Studies

Case studies by independent scholars document instances in which regulatory analysis helped improve regulatory decisions by providing additional options regulators could consider or by unearthing new information about benefits or costs of specific modifications to the regulation.⁴⁸ For example, in his case study of a 2004 EPA regulation requiring power plants to design

⁴⁵ *Id.* at 19.

⁴⁶ For a comprehensive list of the potential costs of regulation to regulated entities, see MERCATUS CTR. AT GEORGE MASON UNIV., REGULATORY COST CALCULATOR (March 20, 2014), *available at* <http://mercatus.org/publication/regulatory-cost-calculator>.

⁴⁷ *See generally* Garrick Blalock et al., *The Impact of Post-9/11 Airport Security Measures on the Demand for Air Travel*, 50 J. LAW & ECON. 731 (2007).

⁴⁸ *See generally* MCGARITY, *supra* note 22; RICHARD D. MORGENSTERN, ECONOMIC ANALYSES AT EPA: ASSESSING REGULATORY IMPACT (1997); Arthur Fraas, *The Role of Economic Analysis in Shaping Environmental Policy*, 54 LAW & CONTEMP. PROBS. 113 (1991).

cooling water intake structures that minimize harm to marine organisms, Scott Farrow concluded, “EPA clearly chose an approach that imposed a considerably lighter burden on society. . . . The record provides substantial evidence that the agency considered a lower-cost alternative to meeting a standard with the potential to save approximately \$3 billion in annualized dollars or approximately \$40 billion in present value.”⁴⁹ More recently, the Department of Agriculture’s regulatory analysis of poultry-processing inspection identified opportunities to simultaneously improve food safety and processing line efficiency by focusing inspectors’ efforts on offline testing for pathogens instead of visual inspection of carcasses.⁵⁰

Case studies also find, however, that even extensive regulatory analyses often have substantial weaknesses.⁵¹ Regulatory analysis rarely—if ever—determines the agency’s decision, occasionally affects important aspects of decisions, and more often has smaller effects on some aspects of decisions. Analyses accompanying budget regulations are especially poor.⁵² RIAs often seem to be advocacy documents written to justify decisions that were already made, rather than information that helped regulators determine a course of action.⁵³

A study prepared for the Administrative Conference of the United States assesses economic analyses of regulations by independent regulatory agencies.⁵⁴ The study recounts the

⁴⁹ Scott Farrow, *Improving the CWIS Rule Regulatory Analysis: What Does an Economist Want?*, in REFORMING REGULATORY IMPACT ANALYSIS 176, 182 (Winston Harrington et al. eds., 2009).

⁵⁰ JERRY ELLIG ET AL., *REGULATING REAL PROBLEMS: THE FIRST PRINCIPLE OF REGULATORY IMPACT ANALYSIS* 3 (2016).

⁵¹ REFORMING REGULATORY IMPACT ANALYSIS (Winston Harrington et al. eds., 2009); see also MCGARITY, *supra* note 22; MORGERSTERN, *supra* note 48; Fraas, *supra* note 48.

⁵² See generally Eric A. Posner, *Transfer Regulations and Cost-Effectiveness Analysis*, 53 DUKE LAW J. 1067 (2003).

⁵³ Wendy E. Wagner, *The CAIR RIA: Advocacy Dressed Up as Policy Analysis*, in REFORMING REGULATORY IMPACT ANALYSIS 57 (Winston Harrington et al. eds., 2009); RICHARD WILLIAMS, *THE INFLUENCE OF REGULATORY ECONOMISTS IN FEDERAL HEALTH AND SAFETY AGENCIES* (July 2008), available at http://mercatus.org/sites/default/files/publication/WP0815_Regulatory%20Economists.pdf.

⁵⁴ COPELAND, *supra* note 15, at 61–110.

results of evaluations by the GAO, agency inspectors general, and outside researchers, and it also offers some new evaluations of agency economic analysis. Common themes that emerge from this report include the following:

- Independent agencies often, but not always, perform some type of analysis that considers benefits and costs qualitatively.⁵⁵
- Agencies avoid analyzing benefits or costs of different aspects of the regulation despite the fact that such analysis is required by statute; hence, their analysis does not provide a complete assessment of the benefits and costs of the entire regulation. Analysis of alternatives is almost always confined to alternatives within the agency's statutory authority.⁵⁶
- Quantification of benefits is uncommon.⁵⁷
- Quantification of costs is more common, but it is often confined to paperwork costs.⁵⁸
- Costs to agencies are often ignored.⁵⁹
- Benefits and costs of alternatives are less likely to be considered or quantified.⁶⁰
- At some agencies, economic analysis primarily affects rulemaking during internal discussions, before a formal analysis is prepared.⁶¹
- On a few occasions, data analysis has affected regulatory decisions by identifying the costs of alternative thresholds where regulation might apply or by making decision makers aware of high-cost alternatives that produce little benefit.⁶²

⁵⁵ *Id.* at 75, 78–80, 81, 87.

⁵⁶ *Id.* at 74–78, 94.

⁵⁷ *Id.* at 80–81, 87.

⁵⁸ *Id.* at 80–81, 88.

⁵⁹ *Id.* at 76, 78, 80–81, 88.

⁶⁰ *Id.* at 75, 80.

⁶¹ *Id.* at 107–8.

⁶² *Id.* at 108.

B. Retrospective Comparisons

Several studies assess the quality of RIAs by comparing the benefits and costs predicted at the time the regulation was implemented with those identified after implementation. Much of the debate over those studies focuses on whether agencies systematically over- or understate benefits and costs.⁶³ More noteworthy for purposes of this paper, all those studies find that benefits, costs, and benefit-cost ratios are inaccurate more frequently than they are accurate.

C. Checklist Evaluations

Independent scholars and the GAO have assessed agency compliance with regulatory analysis requirements through “checklist” evaluations of large samples of regulations.

1. Independent scholarship. The simplest type of checklist evaluation of a regulatory analysis seeks to ascertain whether the analysis includes information about benefits and costs of the regulation. A recent OMB draft report on the benefits and costs of federal regulations indicates that from fiscal years 2004 through 2013, 116 regulations reviewed by OMB included dollar estimates of both benefits and costs. That figure is only 3.80 percent of the 3,040 rules OMB reviewed during that period and about 0.33 percent of all rules issued by federal agencies.⁶⁴ An earlier study examined economically significant prescriptive regulations covered in OMB’s

⁶³ See generally OFFICE OF MGMT. & BUDGET, VALIDATING REGULATORY ANALYSIS: REPORT TO CONGRESS ON THE COSTS AND BENEFITS OF FEDERAL REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL, AND TRIBAL ENTITIES (2005); WINSTON HARRINGTON, GRADING ESTIMATES OF THE BENEFITS AND COSTS OF FEDERAL REGULATION: A REVIEW OF REVIEWS (2006); Winston Harrington, Richard Morgenstern & Peter Nelson, *On the Accuracy of Regulatory Cost Estimates*, 19 J. OF POL’Y ANAL. & MGMT. 297 (2000).

⁶⁴ JAMES BROUGHEL, PUBLIC INTEREST COMMENT ON OMB 2014 DRAFT REPORT ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL, AND TRIBAL ENTITIES 4 (2014), available at <http://mercatus.org/publication/omb-2014-draft-report-congress-benefits-and-costs-federal-regulations-and-unfunded>.

annual report on the benefits and costs of regulation from fiscal years 1997 through 2003. The authors found that 76 percent of agency RIAs included a monetized estimate of costs, 55 percent had a monetized estimate of benefits, and 44 percent had monetized estimates of both benefits and costs.⁶⁵

Regulations from independent agencies fare no better. From fiscal years 2004 through 2013, independent commissions and government corporations enacted 141 major rules. Only 83 of those rules—about 59 percent—had any information on benefits or costs.⁶⁶

In a series of papers, Robert Hahn and his coauthors developed and applied a yes/no checklist to evaluate whether agencies' RIAs have included major elements that OMB expects them to include. Hahn et al. evaluated 48 health, safety, and environmental regulations issued between 1996 and 1999. The researchers found that RIAs included the following:

- A monetized estimate of benefits for 45 percent of the regulations
- A monetized estimate of costs for 90 percent
- A monetized estimate of net benefits for 28 percent
- A range of benefit estimates for 25 percent
- A range of cost estimates for 25 percent
- A discussion of alternatives for 73 percent

⁶⁵ See generally Robert W. Hahn & Robert E. Litan, Counting Regulatory Benefits and Costs: Lessons for the US and Europe, 8 J. OF INT'L ECON. L. 473 (2005).

⁶⁶ Figures are from OFFICE OF MGMT. & BUDGET, 2015 DRAFT REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND AGENCY COMPLIANCE WITH THE UNFUNDED MANDATES REFORM ACT 84–85 (2015). The precise percentage is unclear for two reasons. First, the numerator may be inaccurately low because some regulations identified as having no benefit or cost information actually did have some of that information. See COPELAND, *supra* note 15, at 65–73. Second, the denominator may be inaccurately low because not all independent agency regulations are reported to the Government Accountability Office database that OMB uses as its source. See BROUGHEL, *supra* note 64, at 13.

- A discussion of net benefits of alternatives for 31 percent⁶⁷

Hahn and Patrick Dudley reported similar results when they evaluated 72 EPA regulations adopted between 1982 and 1999.⁶⁸

Several recent studies used a shorter checklist based on criteria suggested by OIRA. Stuart Shapiro and John Morrall examined 100 major rules promulgated between 2000 and 2009 for which agencies monetized benefits and costs.⁶⁹ Those rules arguably should be expected to have the most complete analysis. For about 70 percent of those rules, the agencies described the need for the regulation, described alternatives, and monetized all benefits and costs mentioned. Only 40 percent of the rules, however, were accompanied by monetized benefit and cost estimates for all alternatives.⁷⁰

Art Fraas and Randall Lutter evaluated the RIAs for 13 environmental regulations issued between 2005 and 2009 with benefits or costs of at least \$1 billion. They found that two of these regulations were accompanied by no explanation of a market failure or other reason for the regulation. Three failed to quantify benefits and costs for at least one alternative. Very few of the regulations provided an extensive quantitative analysis of uncertainty or showed how the stream of benefits and costs was expected to change over time.⁷¹ Fraas and Lutter also examined the

⁶⁷ See generally Robert W. Hahn et al., *Assessing Regulatory Impact Analysis: The Failure of Agencies to Comply with Executive Order 12,866*, 23 HARVARD J.L. & PUB. POL'Y 859 (2000).

⁶⁸ See generally Robert W. Hahn & Patrick M. Dudley, *How Well Does the U.S. Government Do Benefit-Cost Analysis?*, 1 REV. OF ENVTL. ECON. & POL'Y 192 (2007).

⁶⁹ A "major" rule is a rule whose economic impact exceeds \$100 million annually, adjusted for inflation. See 5 U.S.C. § 804(2). Lists of major rules typically include rules from independent agencies, which are not covered under Executive Order 12,866 and hence do not get classified as "significant" or "economically significant" under the rubric of the executive order.

⁷⁰ See generally Stuart Shapiro & John F. Morrall III, *The Triumph of Regulatory Politics: Benefit-Cost Analysis and Political Salience*, 6 REG. & GOV'T 189 (2012).

⁷¹ See generally Art Fraas & Randall Lutter, *The Challenges of Improving the Economic Analysis of Pending Regulations: The Experience of OMB Circular A-4*, 3 ANN. REV. OF RESOURCE ECON. 71 (2011).

analysis accompanying 78 major regulations issued by independent agencies between 2003 and 2010. The analysis for 69 percent of the regulations discussed benefits and costs. Benefits were monetized for only 12 percent of the regulations, and costs were monetized for only 47 percent. In many cases, the cost estimates covered only the paperwork costs, not the broader social costs.⁷²

2. *Government Accountability Office*. During the course of several decades, GAO has also assessed executive agency regulatory impact analyses to determine how well they comply with requirements in the relevant executive orders and OMB guidance.⁷³ GAO has found that agencies often fail to (1) describe or analyze the problem that the regulation seeks to solve, (2) consider a range of alternatives (or even a single alternative), (3) describe clear baselines, or (4) monetize important benefits and costs.⁷⁴

A more recent GAO evaluation assessed 203 rules issued between July 1, 2011, and June 30, 2013. GAO employed a checklist to ascertain whether key elements of regulatory analysis were present in the RIA or *Federal Register* notice. To ensure that the results were generalizable, the study selected a stratified random sample of 57 economically significant rules and 109 rules that were significant but not economically significant. GAO also reviewed all 37 major rules issued by independent agencies during the time period of the study.⁷⁵

⁷² See generally Arthur Fraas and Randall L. Lutter, *On the Economic Analysis of Regulations at Independent Regulatory Commissions*, 63 ADMIN. LAW REV. 213 (2011). Percentages were calculated from data in table 1.

⁷³ GOVERNMENT ACCOUNTABILITY OFFICE, REGULATORY REFORM: AGENCIES COULD IMPROVE DEVELOPMENT, DOCUMENTATION, AND CLARITY OF REGULATORY ECONOMIC ANALYSES (May 1998); GOVERNMENT ACCOUNTABILITY OFFICE, AIR POLLUTION: INFORMATION CONTAINED IN EPA'S REGULATORY IMPACT ANALYSES CAN BE MADE CLEARER (Apr. 1997).

⁷⁴ For a recent example, see GOVERNMENT ACCOUNTABILITY OFFICE, ENVIRONMENTAL REGULATION: EPA SHOULD IMPROVE ADHERENCE TO GUIDANCE FOR SELECTED ELEMENTS OF REGULATORY IMPACT ANALYSES (July 2014).

⁷⁵ GOVERNMENT ACCOUNTABILITY OFFICE, FEDERAL RULEMAKING: AGENCIES INCLUDED KEY ELEMENTS OF COST-BENEFIT ANALYSIS, BUT EXPLANATIONS OF REGULATIONS' SIGNIFICANCE COULD BE MORE TRANSPARENT 4 (Sept. 2014).

Table 1 summarizes the results. All economically significant regulations included a statement of the need for the regulation and some discussion of benefits and costs. Of those regulations, however, 20 percent included no discussion of alternatives, 25 percent had no monetary estimate of costs, and 67 percent failed to calculate net benefits. Major regulations—the regulations from independent agencies most analogous to economically significant regulations—performed somewhat worse. All included a statement of need, but 33 percent failed to discuss alternatives, 20 percent contained no monetized estimate of costs, 95 percent contained no monetized estimate of benefits, and none included a calculation of net benefits. Significant regulations usually included the key elements of regulatory analysis even less frequently than either economically significant or major regulations.

Table 1. Percentage of Regulations That Include Key Elements of Regulatory Impact Analysis

Regulatory analysis element	Economically significant, executive branch, 57 rules (percent)	Significant, executive branch, 109 rules (percent)	Major, independent, 37 rules (percent)
Statement of need	100	100	100
Alternatives	81	22	62
Discussion of benefits	100	66	92
Discussion of costs	100	57	97
Monetized benefits	76	15	5
Monetized costs	97	39	78
Net benefit calculation	37	6	0

Source: Government Accountability Office, “Federal Rulemaking: Agencies Included Key Elements of Cost-Benefit Analysis, but Explanations of Regulations’ Significance Could Be More Transparent” (Report GAO-14-714, Washington, DC, September 2014).

The GAO study presents a relatively optimistic view of agency compliance because GAO did not evaluate the quality of agencies’ statements of need, alternatives, or benefit and cost estimates. The transmission letter accompanying the study explicitly notes, “Our analysis was

not designed to evaluate the quality of the cost-benefit analysis in the rules.”⁷⁶ Agencies seem to have received credit for including a statement of need as long as they cited the legislation authorizing or requiring the regulation; the agency did not have to analyze the problem the regulation was intended to solve.⁷⁷ GAO checked to see whether agencies discussed alternatives, but it did not assess whether the range of alternatives was as broad as OMB guidance suggests or whether the agency assessed all significant margins. Agencies received credit for discussing alternatives even if they did not calculate the net benefits of those alternatives.⁷⁸ Finally, GAO determined whether agencies discussed and monetized benefits and costs, but it did not assess the quality of those estimates or whether the agencies identified all relevant benefits and costs.⁷⁹

GAO has used the same checklist system to evaluate economic analysis undertaken by financial regulators for major regulations issued under the Dodd-Frank Act. Almost all of those regulations were from independent agencies. The three most recent reports presented checklist information on major regulations finalized between July 2012 and July 2015.⁸⁰ GAO reported that the agencies always included a statement of the problem.⁸¹ For about 50 percent of the regulations, the economic analysis explicitly identified a baseline; for the rest, it implicitly

⁷⁶ *Id.*

⁷⁷ *Id.* at 22.

⁷⁸ *Id.* at 27–29.

⁷⁹ *Id.* at 23.

⁸⁰ GOVERNMENT ACCOUNTABILITY OFFICE, DODD-FRANK REGULATIONS: IMPACT ON COMMUNITY BANKS, CREDIT UNIONS AND SYSTEMICALLY IMPORTANT INSTITUTIONS (2015) [hereafter 2015 GAO DODD-FRANK REPORT]; GOVERNMENT ACCOUNTABILITY OFFICE, DODD-FRANK REGULATIONS: REGULATORS’ ANALYTICAL AND COORDINATION EFFORTS (2014) [hereafter 2014 GAO DODD-FRANK REPORT]; GOVERNMENT ACCOUNTABILITY OFFICE, DODD-FRANK REGULATIONS: AGENCIES CONDUCTED REGULATORY ANALYSIS AND COORDINATED BUT COULD BENEFIT FROM ADDITIONAL GUIDANCE ON MAJOR RULES (2013) [hereafter 2013 GAO DODD-FRANK REPORT]. Two previous GAO studies of Dodd-Frank also used the same checklist method but did not report separate results for major regulations. GOVERNMENT ACCOUNTABILITY OFFICE, DODD-FRANK ACT: AGENCIES’ EFFORTS TO ANALYZE AND COORDINATE THEIR RULES (2012); GOVERNMENT ACCOUNTABILITY OFFICE, DODD-FRANK ACT REGULATIONS: IMPLEMENTATION COULD BENEFIT FROM ADDITIONAL ANALYSIS AND COORDINATION (2011).

⁸¹ *See* GAO 2015 DODD-FRANK REPORT at 14; GAO 2014 DODD-FRANK REPORT at 14; GAO 2013 DODD-FRANK REPORT at 14.

assumed that the state of the world before Dodd-Frank was the baseline.⁸² Alternatives were identified for 77 percent of the regulations.⁸³ For 90 percent of the regulations, the agency's analysis discussed both benefits and costs.⁸⁴ Benefits, however, were rarely monetized, and monetary costs were usually confined to paperwork costs.⁸⁵ Like the July 2014 GAO study, the Dodd-Frank reports present an overly optimistic view of agency analysis because they merely indicate whether certain elements were present in the analysis without assessing their quality.

D. Qualitative Evaluation: The Mercatus Center's Regulatory Report Card

The most recent evaluation of a large sample of RIAs has been undertaken by researchers at the Mercatus Center at George Mason University.⁸⁶ The Mercatus Center's Regulatory Report Card assesses the quality of an agency's analysis and the extent to which the agency claimed to use the analysis in decisions. The Report Card consists of six criteria derived from Executive Order 12866 and Circular A-4.⁸⁷ The Report Card evaluates how well the agency analyzed the systemic problem, alternatives, benefits, and costs. It also identifies whether the agency claimed to use any part of the analysis in decisions and whether the agency clearly explained the role that net

⁸² See GAO 2014 DODD-FRANK REPORT at 13 (covering 15 regulations); GAO 2013 DODD-FRANK REPORT at 14–15 (covering 10 regulations). The GAO 2015 Dodd-Frank Report said that the agency identified a baseline for all six major regulations covered in that report, but it did not state whether the baseline was a projection of the state of affairs in the absence of the regulation or an implicit assumption that the pre-Dodd-Frank state of the world was the baseline. See GAO 2015 DODD-FRANK REPORT at 18.

⁸³ The percentage was calculated by the authors based on information in the three GAO Dodd-Frank reports previously cited.

⁸⁴ The percentage was calculated by the authors based on information in the three GAO Dodd-Frank Reports previously cited.

⁸⁵ See GAO 2015 DODD-FRANK REPORT at 18; GAO 2013 DODD-FRANK REPORT at 15. The GAO 2014 Dodd-Frank Report did not explicitly state whether agencies monetized benefits or costs.

⁸⁶ The Report Card's methodology is fully described in Jerry Ellig and Patrick A. McLaughlin, *The Quality and Use of Regulatory Analysis in 2008*, 32 RISK ANALYSIS 855 (2012).

⁸⁷ The Report Card originally consisted of 12 criteria. At the end of 2012, it was revised to align more closely with the four principal regulatory analysis requirements. All of the components of the post-2012 version are also contained in the original version, so scores can be tabulated for either version using the same data. A spreadsheet containing scores using both versions of the Report Card is available at www.mercatus.org/reportcards.

benefits played in its decisions. Rather than a yes/no checklist, the Report Card contains a qualitative evaluation of the RIA on each criterion (Appendix A lists the six criteria and the subquestions considered under each criterion). The evaluators, economics professors and graduate students with training in regulatory analysis, award a Likert-scale score ranging from zero points (no relevant information) to five points (complete analysis of all or most aspects, with potential best practices). Table 2 lists the scoring standards. Because of its qualitative nature, the Report Card thus represents a middle ground between intensive case studies and checklist systems that merely indicate whether an element of the analysis was present without evaluating its quality.

Table 2. Report Card Scoring Standards

Score	Explanation of score
5	Complete analysis of all or nearly all aspects, with one or more “best practices”
4	Reasonably thorough analysis of most aspects and/or shows at least one “best practice”
3	Reasonably thorough analysis of some aspects
2	Some relevant discussion, with some documentation of analysis
1	Perfunctory statement, with little explanation or documentation
0	Little or no relevant content

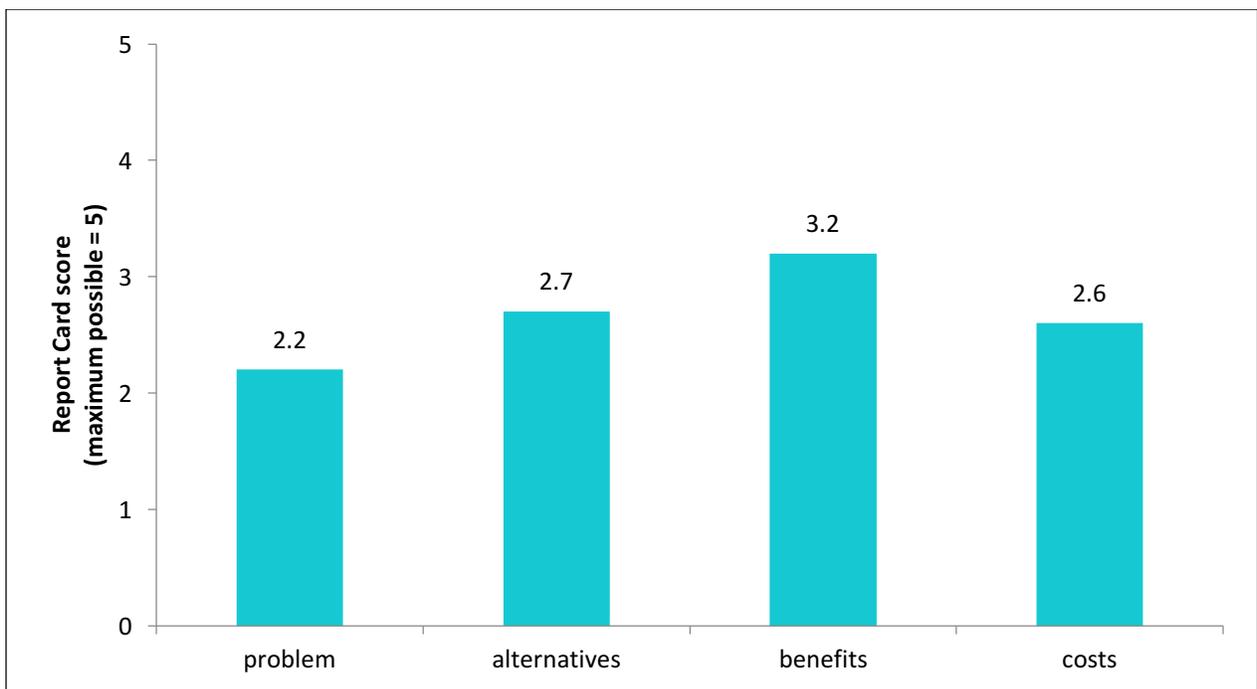
The Report Card evaluated all proposed economically significant prescriptive regulations that cleared OIRA review between 2008 and 2013. “Prescriptive” regulations contain mandates or prohibitions,⁸⁸ they are distinct from budget regulations, which implement federal spending programs or revenue-collection measures.⁸⁹

⁸⁸ See Posner, *supra* note 52; see also Patrick A. McLaughlin & Jerry Ellig, *Does OIRA Review Improve the Quality of Regulatory Impact Analysis? Evidence from the Bush II Administration*, 63 ADMIN. L. REV. 179 (2011).

⁸⁹ The Report Card evaluated budget regulations in 2008 and 2009 but discontinued evaluating budget regulations in 2010. See Jerry Ellig et al., *Continuity, Change, and Priorities: The Quality and Use of Regulatory Analysis Across U.S. Administrations*, 7 REG. & GOV. 153, 160 (2013).

In the regulations evaluated by the Report Card, the best score for the first four criteria measuring the quality of analysis was 18 of 20 possible points, or 90 percent. The average score was only 10.7 points, or 54 percent.⁹⁰ For most regulations, the analysis was seriously incomplete or agencies failed to explain how they used the analysis to inform decisions.

Figure 1. Average Scores for Major Elements of Regulatory Impact Analysis



Note: Data are for 130 prescriptive regulations proposed from 2008 to 2013.

Source: Jerry Ellig, “Evaluating the Quality and Use of Regulatory Impact Analysis” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, July 2016), 19.

Figure 1 summarizes the results for the four major elements of regulatory impact analysis. The criterion with the lowest score is analysis of the systemic problem. Two-thirds of the regulations scored two points or less, which indicates that most regulations had little or no

⁹⁰ ELLIG, *supra* note 21, at 18.

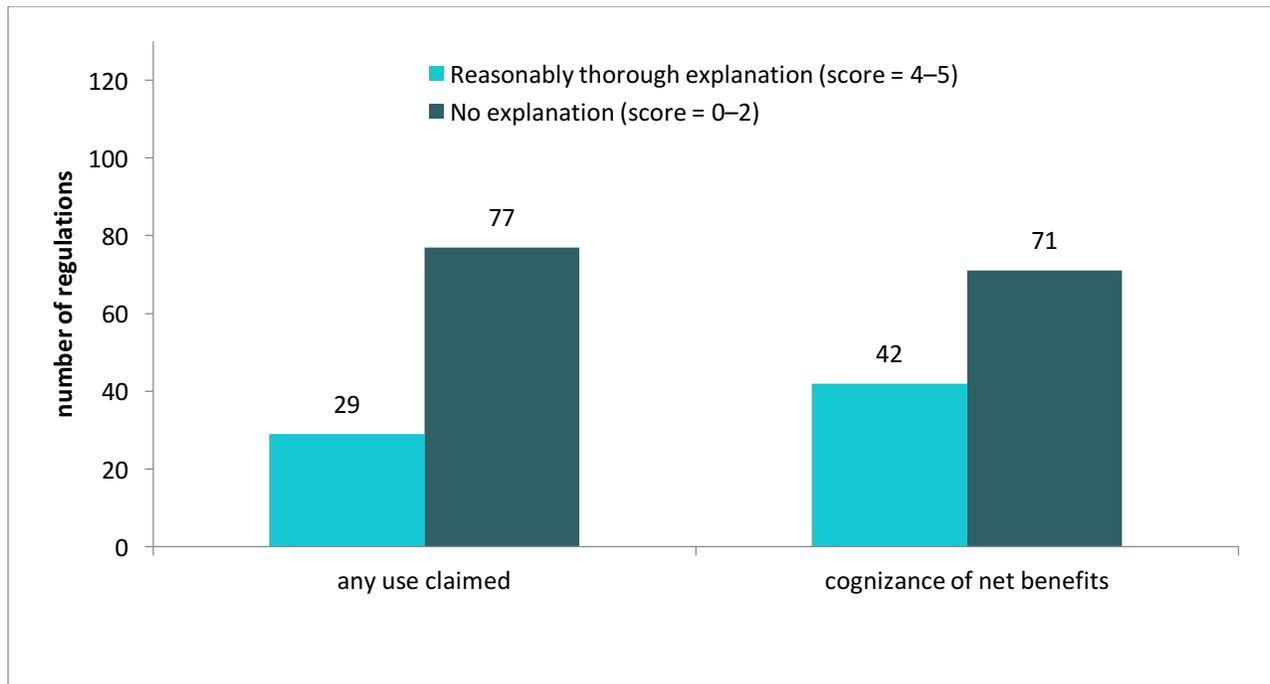
evidence to back up claims of market failure, government failure, or other significant problems. Scores for the other major elements of regulatory analysis are only slightly better. For all criteria, the majority of the scores are less than four points—the score that indicates reasonably complete analysis of most aspects of the criterion.

Two Report Card questions assess how well the agency explained its use of the analysis in decisions. Question 5 asks how well the agency explained its use of the analysis in any decisions. Question 6 asks whether the agency either selected the alternative with the greatest net benefits or explained why it chose another option. “Any use claimed” and “Cognizance of net benefits” both earned an average of less than one-half the possible points (2.3 and 2.4 points, respectively).⁹¹

Figure 2 charts the number of regulations that are accompanied by either a reasonably thorough explanation of how the agency used the analysis (score = 4 or 5) or no explanation (score = 0–2). Agencies offered reasonably thorough explanations of how some part of the analysis affected major decisions for 29 regulations (22 percent). For 77 regulations (59 percent), they offered no explanation of how any part of the analysis affected decisions. Similarly, agencies explained how net benefits influenced their decisions or how other factors outweighed net benefits for 42 regulations (32 percent). For 71 regulations (55 percent), agencies neither demonstrated that they chose the alternative that maximizes net benefits nor explained why they chose another alternative.

⁹¹ ELLIG, *supra* note 21, at 19.

Figure 2. Frequency of Regulations with Reasonably Thorough or No Explanation of How the Agency Used the Analysis



Source: Jerry Ellig, “Evaluating the Quality and Use of Regulatory Impact Analysis” (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, July 2016), at 25.

These results confirm, for recent regulations, the findings of previous research that employed case studies or checklists: many regulatory analyses are seriously incomplete and are seldom used.

IV. Why the Mediocre Results?

Incomplete regulatory impact analysis and poor explanation of how it affected decisions are not confined to one administration. Administrations of either political party seem equally likely (or unlikely) to conduct robust economic analysis. When Hahn and Dudley assessed RIAs produced during the Reagan, G. H. W. Bush, and Clinton administrations, they found no statistical

evidence of differences between administrations or over time.⁹² Similarly, comparing regulations proposed from 2008 through 2013, studies using Report Card data found no average difference in the quality or use of RIAs between the G. W. Bush and Obama administrations.⁹³

That is not to say that politics has no effect on the quality or use of RIAs. Rather, the influence of politics is pervasive and not limited to a single administration.⁹⁴ For example, the quality and use of RIAs varies systematically with a measure of regulatory agencies' political preferences.⁹⁵ One study found that agencies identified by experts as more "conservative" tended to produce lower-quality analysis in the (Republican) G. W. Bush administration, and agencies identified as more "liberal" tended to produce higher-quality analysis. The opposite correlation occurred during the (Democratic) Obama administration.⁹⁶ Interim final regulations implementing the two most recent administrations' signature policy priorities—health care for Obama, homeland security for Bush—also had significantly lower-quality analysis than did other executive branch regulations.⁹⁷ Those results are consistent with Eric Posner's hypothesis that administrations use centralized review of regulations to control agencies, and an administration demands less information from agencies that are ideologically closer to the administration.⁹⁸ Conversely, Shapiro and Morrall find that regulations that receive few public comments and are not issued at the end of an administration tend to have the highest net

⁹² Hahn and Dudley, *supra* note 68, at 206.

⁹³ Ellig et al., *supra* note 89; Ellig, *supra* note 21, at 64.

⁹⁴ Donald R. Arbuckle, *The Role of Analysis on the 17 Most Political Acres on the Face of the Earth*, 31 RISK ANALYSIS 884 (2011).

⁹⁵ Ellig et al., *supra* note 89, at 165–67; Ellig, *supra* note 21, at 65.

⁹⁶ Ellig et al., *supra* note 89.

⁹⁷ Jerry Ellig & Christopher Conover, *Presidential Priorities, Congressional Control, and the Quality of Regulatory Analysis: An Application to Health Care and Homeland Security*, 161 PUBLIC CHOICE 305 (2014).

⁹⁸ Eric Posner, *Controlling Agencies with Cost-Benefit Analysis: A Positive Political Theory Perspective*, 68 U. CHI. L. REV. 1137 (2001).

benefits. They interpret this result to mean that economic analysis plays a greater role for regulations that are less politically sensitive.⁹⁹

Although politics will always influence regulatory analysis and decisions, it is unlikely that the election of different office holders will, by itself, lead to a significant change in the overall quality or use of RIAs. Institutionally, regulatory agencies tend to define success as the creation of new regulations that advance their specific mission.¹⁰⁰ Presidents may find that they get their preferred regulatory outcomes by appointing agency heads who zealously look for new opportunities to regulate.¹⁰¹ Agencies also tend to have economic incentives to supply more output and seek more expenditures than elected leaders or the median voter would desire.¹⁰² All those factors can be expected to dampen regulators' enthusiasm for conducting analysis that encourages them to advance overall welfare rather than their agency's specific mission.

Significant improvement will likely require institutional changes to the regulatory process itself. Under the current regulatory process, executive branch agencies have relatively weak motivation to produce high-quality analysis and use it in decisions, and most independent agencies have even less reason to do so.

⁹⁹ Shapiro & Morrall, *supra* note 7070, at 199.

¹⁰⁰ ANTHONY DOWNS, *INSIDE BUREAUCRACY* 102–52 (1967); JAMES Q. WILSON, *BUREAUCRACY: WHAT GOVERNMENT AGENCIES DO AND WHY THEY DO IT* 260–62 (1989); Christopher C. DeMuth & Douglas H. Ginsburg, *White House Review of Agency Rulemaking*, 99 HARV. L. REV. 1075 (1986); Susan E. Dudley, *Observations on OIRA's Thirtieth Anniversary*, 63 ADMIN. L. REV. 113 (2011).

¹⁰¹ *See generally* Ryan Bubb & Patrick L. Warren, *Optimal Agency Bias and Regulatory Review*, 43 J. LEG. STUDS. 95 (2014).

¹⁰² *See generally* WILLIAM A. NISKANEN, JR., *BUREAUCRACY AND PUBLIC ECONOMICS* (1994).

A. Executive Branch Agencies

Executive Order 12866 and OMB Circular A-4 offer extensive guidance on what a regulatory analysis is supposed to include and how regulators are supposed to use the results. The primary enforcement mechanism is review by OIRA. The OIRA administrator can return a regulation to an agency for further consideration if the analysis is inadequate or if the regulators failed to use the analysis to inform decisions.¹⁰³

Empirical research finds that OIRA review is associated with higher-quality RIAs and better explanations of how an agency used the RIA to inform its decisions. The quality and use of regulatory analysis is positively correlated with the length of OIRA review time.¹⁰⁴ OIRA's influence in the administration (measured by whether the administrator is a political appointee or an acting administrator) is positively correlated with claimed use of regulatory analysis.¹⁰⁵ Prescriptive regulations, whose RIAs receive more intensive OIRA review, tend to have higher-quality RIAs.¹⁰⁶ Thus, the evidence indicates that effective OIRA review can make a difference.

Nevertheless, OIRA review is a relatively weak enforcement mechanism. OIRA has a dual role of ensuring that regulations implement both “the President’s priorities” and the principles set forth in Executive Order 12866.¹⁰⁷ White House staff sometimes initiate and direct rule writing, rather than just reacting to the agencies’ regulatory proposals.¹⁰⁸ Although that

¹⁰³ Exec. Order No. 12,866 § 6(b)(3), 58 Fed. Reg. 51,735, 51,742 (Oct. 4, 1993).

¹⁰⁴ See generally Jerry Ellig & Rosemarie Fike, *Regulatory Process, Regulatory Reform, and the Quality of Regulatory Impact Analysis*, J. BENEFIT-COST ANALYSIS (forthcoming); Stuart Shapiro & John F. Morrall III, *Does Haste Make Waste? How Long Does It Take to Do a Good Regulatory Impact Analysis?*, 20 ADMIN. & SOC'Y 1 (2013).

¹⁰⁵ Ellig & Fike, *supra* note 104; Ellig, *supra* note 21, at 73–75.

¹⁰⁶ McLaughlin & Ellig, *supra* note 88.

¹⁰⁷ Exec. Order No. 12,866 § 6(b), 58 Fed. Reg. 51,735, 51,742–43 (Oct. 4, 1993).

¹⁰⁸ John Graham, *Saving Lives Through Administrative Law and Economics*, 157 U. PA. L. REV. 395, 395 (2008); see also Lisa S. Bressman & Michael P. Vendenbergh, *Inside the Administrative State: A Critical Look at the Practice of Presidential Control*, 105 MICH. L. REV. 47 (2006); Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245 (2001).

practice gives the president greater control over the specific content of regulations, it also effectively prevents OIRA from credibly threatening to return a regulation because of low-quality analysis. Because White House staff, and perhaps even the president, have already decided to allow the regulation to proceed, the OIRA administrator knows that any attempt to block a regulation initiated by the White House likely would lose on appeal. As one former federal economist noted after senior managers altered his cost and benefit estimates in an RIA, “Those in OMB who thought the benefits and costs were poorly estimated were told by the White House to back off.”¹⁰⁹

Even when a rule is not initiated by the White House, administration officials can heavily influence the rule’s development. Regarding former OIRA administrator Susan Dudley,

When she became OIRA administrator, even though she had worked in OIRA previously, it was an “eye-opener” to see how the West Wing works, and the number of people who were interested in the issues addressed by draft regulations. She said the political appointees in the White House realize that regulations are an important policy tool, and they all want to be involved. By the time the OIRA administrator gets confirmed in an administration (which is usually one of the last positions to be confirmed), she said the White House offices are somewhat used to playing a decisional role in regulations, and it can be difficult for the OIRA administrator to take control.¹¹⁰

If OIRA cannot credibly threaten to block a regulation and major decisions have already been made, the agency has little incentive to produce a high-quality RIA.

OIRA’s staff has shrunk significantly since it first received responsibility for regulatory review in 1981. Since then, the office has acquired major new responsibilities, such as production of the annual report to Congress on the benefits and costs of federal regulations. Other responsibilities, such as review of agency information collection requests under the Paperwork Reduction Act, have not diminished. Yet despite the increase in workload, OIRA’s

¹⁰⁹ Williams, *supra* note 53, at 9.

¹¹⁰ CURTIS COPELAND, LENGTH OF RULE REVIEWS BY THE OFFICE OF INFORMATION AND REGULATORY AFFAIRS 47 (2013), available at <https://www.acus.gov/report/oira-review-report>.

staff has steadily shrunk, from 90 people in 1981 to about 45 in 2013, whereas the number of regulators in agencies has grown by 51 percent. Regulatory staff outnumbers OIRA's staff by almost 5,000 to 1.¹¹¹

B. Independent Agencies

Most independent agencies face even weaker incentives to produce high-quality economic analysis than executive branch agencies face.

Independent agencies are subject to few of the provisions of Executive Order 12866, which requires independent agencies to prepare regulatory plans for inclusion in the Unified Regulatory Agenda but makes no provision for OIRA review of their regulations. Apparently, no president has wanted to litigate whether the president has authority to compel agencies to produce RIAs and review agency regulations. Sally Katzen, the OIRA administrator who drafted Executive Order 12866, notes that legal advisors to authors of the executive orders on regulatory analysis in both the Reagan and Clinton administrations “concluded that the president had authority to review the rules of the [independent regulatory agencies], and the decision not to do so was essentially for political reasons—namely, deference to Congress, which traditionally views the [independent regulatory commissions] as ‘its’ agencies, not the president’s.”¹¹² After reviewing a series of Justice Department Office of Legal Counsel opinions on the question,

¹¹¹ For figures used to calculate regulatory agency staff growth, see SUSAN DUDLEY & MELINDA WARREN, SEQUESTER'S IMPACT ON REGULATORY AGENCIES MODEST (2013), available at http://wc.wustl.edu/files/wc/imce/2014_regulators_budget.pdf. The calculation excludes the Transportation Security Administration, which hired tens of thousands of airport inspectors when the federal government took over airport security screening after 9/11. The OIRA staff figure for 1981 is from Jerry Brito & Veronique de Rugy, *Midnight Regulations and Regulatory Review*, 61 ADMIN. L. REV. 163, 184 (2009). The 2013 OIRA staff figure was supplied in an email from Susan Dudley, Dir., Reg. Studies Ctr., George Washington Univ., to Authors (Aug. 5, 2013) (on file with authors).

¹¹² Sally Katzen, *Cost-Benefit Analysis: Where Should We Go from Here?*, 33 FORDHAM URB. L.J. 101, 109 (2005).

Curtis Copeland questions whether OIRA has authority to review independent agency rules but concurs that presidents have avoided the issue to avoid confrontation with Congress.¹¹³ President Obama's Executive Order 13579 requested that independent agencies perform RIAs and retrospective analysis of existing regulations, but it included no enforcement mechanism and no provisions requiring OIRA reviews of independent agency regulations or regulatory analysis.¹¹⁴

Several statutory analytical requirements apply to independent as well as executive branch agencies.¹¹⁵ Those requirements cover much narrower aspects of regulatory analysis than the executive orders cover.

The Paperwork Reduction Act, for example, requires regulatory agencies to estimate the size of the paperwork burden associated with any requests for information from the public, including paperwork burdens created by regulations.¹¹⁶ Paperwork burdens, however, are only a subset of the costs of regulation.

The Regulatory Flexibility Act requires regulatory agencies to determine whether a regulation would have a significant effect on a substantial number of small businesses, governments, or nonprofit institutions.¹¹⁷ If so, the agency must consider alternatives that would minimize the effect on those small entities. The Small Business Administration's Office of Advocacy monitors agency compliance with the Regulatory Flexibility Act and assists agencies with the required analysis. An agency's Regulatory Flexibility Act analysis should provide information about the incidence of regulatory costs (particularly how they affect entities of different sizes) and alternatives that the agency considered, but those are only two of the topics a

¹¹³ Copeland, *supra* note 15, at 20–25.

¹¹⁴ Exec. Order No. 13,579, 76 Fed. Reg 41,587 (2011).

¹¹⁵ For a thorough review, see Hester Peirce, *Economic Analysis by Federal Financial Regulators*, 9 J.L. ECON. & POL'Y 569 (2013).

¹¹⁶ 44 U.S.C. §§ 3501–20.

¹¹⁷ 5 U.S.C. §§ 601–12.

good regulatory impact analysis should cover. Because the agency determines whether a regulation has a significant effect on small entities, the agency effectively decides whether it must undertake a full Regulatory Flexibility Analysis. A recent study found that agencies prepared a full Regulatory Flexibility Act analysis for only 8 percent of all rules and 38 percent of major rules issued from 1996 through 2012.¹¹⁸

Some independent regulatory agencies are subject to statutes directing them either to conduct benefit-cost analysis or to consider benefits and costs for certain types of regulations. Little scholarly research explicitly examines the effects of those statutory requirements. Some agencies have avoided conducting benefit-cost analysis by claiming that language requiring them to “consider” benefits and costs does not require them to conduct an analysis.¹¹⁹

The Securities and Exchange Commission (SEC) is an interesting exception. In 1999, Congress added a requirement that the SEC consider whether a regulatory action will promote “efficiency, competition, and capital formation.”¹²⁰ The House Commerce Committee’s report on that legislation expressed the expectation that “the Commission shall analyze the potential costs and benefits of any rulemaking initiative, including whenever practicable, specific analysis of such costs and benefits. The Committee expects that the Commission will engage in rigorous analysis pursuant to this section.”¹²¹ The SEC has lost multiple court cases in recent years as a result of incomplete economic analysis.¹²² In March

¹¹⁸ Connor Raso, *Agency Avoidance of Rulemaking Procedures*, 67 ADMIN. L. REV. 101, 134–35 (2015).

¹¹⁹ Copeland, *supra* note 15, at 56–57.

¹²⁰ 15 U.S.C. § 77b(b).

¹²¹ H.R. REP. NO. 104-662, at 39 (1996).

¹²² *Business Roundtable v. SEC*, 647 F.3d 1144 (D.C. Cir. 2011); *American Equity v. SEC*, 572 F.3d 923 (D.C. Cir. 2009); *Chamber of Commerce v. SEC*, 443 F.3d 890 (D.C. Cir. 2006); *Chamber of Commerce v. SEC*, 412 F.3d 133 (D.C. Cir. 2005). On the quality of SEC economic analysis compared with that of executive branch agencies, see Jerry Ellig & Hester Peirce, *SEC Regulatory Analysis: A Long Way to Go, and a Short Time to Get There*, 8 BROOK. J. CORP., FIN. & COM. L. 361 (2014).

2012, the commission's general counsel and chief economist issued new guidance that pledged to improve the quality of economic analysis and follow the "spirit" of Executive Order 12866 and OMB Circular A-4.¹²³ Before issuance of that guidance, SEC regulatory impact analyses were much less complete than those prepared by executive branch agencies.¹²⁴ Some legal scholars take issue with the courts' interpretation of the SEC's statutory language, and the SEC contends that it is not required to conduct benefit-cost analysis.¹²⁵ But the SEC's response to the court decisions suggests that judicial review can create a powerful incentive for better regulatory impact analysis.

V. Existing Judicial Review Requirements for Agency Economic Analyses

Judicial review of agency economic analyses is far from a novel development. For at least 30 years, federal courts have entertained challenges to regulations premised on the argument that the issuing agencies overlooked relevant evidence or reached erroneous conclusions when examining the rules' economic effects. Nevertheless, the case law is exceedingly unclear on two distinct issues:

- 1) To what extent will a reviewing court assess an agency's rule in light of the findings of an RIA that is not statutorily mandated?
- 2) How rigorously will a reviewing court assess an agency's economic analyses?

¹²³ MEMORANDUM FROM THE SEC'S DIVISION OF RISK, STRATEGY, AND FINANCIAL INNOVATION AND THE OFFICE OF GENERAL COUNSEL TO THE STAFF OF THE RULEMAKING DIVISIONS AND OFFICES (Mar. 16, 2012) [hereafter SEC GUIDANCE], available at http://www.sec.gov/divisions/riskfin/rsfi_guidance_econ_analy_secrulemaking.pdf.

¹²⁴ See generally Ellig & Peirce, *supra* note 122.

¹²⁵ See summaries of arguments in Copeland, *supra* note 15, at 41, 58–60, and Peirce, *supra* note 115, at 583–84.

This section explores the existing cases and elaborates on these two uncertainties in the case law. It then examines some of the consequences associated with this lack of clarity and considers potential solutions.

A. “Arbitrary and Capricious” and “Substantial Evidence” Review

Under section 706(2)(A) of the Administrative Procedure Act (APA), a court must set aside an agency rule that it deems to be “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”¹²⁶ For agency decisions reached using the formal procedures of 5 U.S.C. §§ 556–57 (that is, formal rulemaking and formal adjudication), a court must set aside a conclusion that is “unsupported by substantial evidence.”¹²⁷ In certain statutes, Congress specifies that agency action will be reviewed under the “substantial evidence” standard, even in cases in which the agency has not used formal decision-making procedures.¹²⁸

What it means for a rule to be “arbitrary and capricious” is not immediately apparent from the text of the statute, and the meaning the courts give to those words has evolved over time and largely depends on the type of rule being reviewed. As Professor Jud Mathews has shown, the stringency of the “arbitrary and capricious” standard has ebbed and flowed in the 70 years since the APA was enacted. Initially, the standard was understood to require a very high degree of deference to agencies, much like the “rational basis” test courts apply when reviewing the

¹²⁶ 5 U.S.C. § 706(2)(A). This standard of review extends more broadly than so-called *Chevron* deference, which applies solely to an agency’s interpretation of statutory language. *See Chevron U.S.A., Inc. v. Nat’l Res. Def. Council*, 467 U.S. 837, 843 (1984). “Arbitrary and capricious” review, by contrast, is applied to the agency’s factual findings and ultimate conclusions.

¹²⁷ 5 U.S.C. § 706(2)(E).

¹²⁸ *See, e.g.*, 29 U.S.C. § 655(f); 42 U.S.C. § 6306(b)(2).

constitutionality of most statutes issued by Congress.¹²⁹ In the 1960s, the United States Court of Appeals for the District of Columbia Circuit ratcheted up the level of scrutiny, articulating what came to be known as the “hard look” standard of review.¹³⁰ In its famous *State Farm* decision, the United States Supreme Court essentially embraced this “hard look” standard,¹³¹ closely examining the rulemaking record and concluding that an agency acted arbitrarily and capriciously in failing to consider a potentially viable alternative approach.¹³² Although the Supreme Court has never repudiated the *State Farm* holding, administrative law scholars have suggested that courts have been reluctant to apply the rigorous standard it establishes,¹³³ and more recent cases have shown considerably greater deference when reviewing agency rules.¹³⁴

In addition to its evolution over time, the “arbitrary and capricious” standard often looks somewhat different depending on the context in which courts apply it. Specifically, when reviewing a rulemaking record characterized by exceedingly complex fact-finding that calls on insights of the natural sciences or other highly technical disciplines, the courts will generally apply a deferential standard of review that involves, primarily, policing for procedural irregularities rather than reassessing the evidence considered by the agency.¹³⁵

¹²⁹ JUD MATHEWS, SEARCHING FOR PROPORTIONALITY IN U.S. ADMINISTRATIVE LAW 15 (Legal Studies Research Paper 2015), <http://ssrn.com/abstract=2561583>; see, e.g., *Nat'l Broad. Co. v. United States*, 319 U.S. 190 (1943) (“Our duty is at an end when we find that the action of the Commission was based upon findings supported by evidence, and was made pursuant to authority granted by Congress”).

¹³⁰ Mathews, *supra* note 129, at 16; see also *Nat'l Ass'n of Food Chains, Inc. v. Interstate Commerce Comm'n*, 535 F.2d 1308, 1314 (D.C. Cir. 1976); *Greater Bos. Television Corp. v. FCC*, 444 F.2d 841, 851 (D.C. Cir. 1970).

¹³¹ Mathews, *supra* note 129, at 22.

¹³² *Motor Vehicles Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 51, 56 (1983).

¹³³ Michael Herz, *The Rehnquist Court and Administrative Law*, 99 *Nw. U. L. REV.* 297, 314 (2004); Mathews, *supra* note 129, at 30–31.

¹³⁴ See, e.g., *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 513–14 (2009) (“We have made clear, however, that ‘a court is not to substitute its judgment for that of the agency’ . . . and should ‘uphold a decision of less than ideal clarity if the agency’s path may reasonably be discerned’” (internal citations omitted)).

¹³⁵ *Balt. Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 103 (“When examining [a] scientific determination, as opposed to simple findings of fact, a reviewing court must generally be at its most deferential”); *Ethyl Corp. v. EPA*, 541 F.2d 1, 36 (D.C. Cir. 1976) (“The enforced education into the intricacies of the problem

Thus, the term “arbitrary and capricious” masks a high degree of complexity in the underlying case law, which features a spectrum of standards ranging from the highly deferential level of review for technically complex rulemakings to the very searching review conducted by courts applying the “hard look” standard. In this light, the applicability of the “arbitrary and capricious” standard provides little clarification as to what level of scrutiny a reviewing court will actually apply.

“Substantial evidence,” in turn, is a nominally more searching standard of review. It requires the agency to show not only that its decision was neither arbitrary nor capricious, but also that it reached a reasonable conclusion on the basis of the evidence adduced in the rulemaking proceedings (without reference to any extrinsic evidence the parties had no opportunity to refute).¹³⁶ In practice, however, as courts developed the “hard look” doctrine under the “arbitrary and capricious” standard, the “substantial evidence” and “arbitrary and capricious” standards of review have largely converged, and several courts of appeals have suggested that the two standards are effectively indistinguishable when applied to rules adopted pursuant to notice-and-comment procedures.¹³⁷ As then-Professor Scalia suggested, the distinction between the two standards arguably derives not from a more rigorous examination of

before the agency is not designed to enable the court to become a superagency that can supplant the agency’s expert decision maker. To the contrary, the court must give due deference to the agency’s ability to rely on its own developed expertise. The immersion in the evidence is designed solely to enable the court to determine whether the agency decision was rational and based on consideration of the relevant factors” [internal citations omitted].

¹³⁶ Antonin Scalia & Frank Goodman, *Procedural Aspects of the Consumer Product Safety Act*, 20 UCLA L. REV. 899, 934 (1973).

¹³⁷ See, e.g., *Pac. Legal Found. v. Dep’t of Transp.*, 593 F.2d 1338, 1343 (D.C. Cir. 1979); *Associated Indus. of N.Y. State, Inc. v. Dep’t of Labor*, 487 F.2d 342, 349–50 (2d Cir. 1973).

the evidence but rather from the more circumscribed universe of evidence on which the agency can rely under the “substantial evidence” standard.¹³⁸

B. Reviewability of Agency Economic Analyses

As a general matter, an agency prepares an economic analysis because of one of the following three sets of circumstances: (1) the authorizing statute mandates that the agency analyze the costs, benefits, or both of its proposed regulations; (2) a cross-cutting statute or executive order (most notably, Executive Order No. 12866) requires an economic analysis;¹³⁹ or (3) the agency elects to prepare an economic analysis even though it is not required by statute or executive order. As will be examined in greater detail, for economic analyses mandated by statute, courts are clearly authorized to review the underlying factual findings and the agency’s conclusions, although the rigor of review often varies. For RIAs required by Executive Order 12866 or economic analyses undertaken voluntarily by agencies, the scope of judicial review is uncertain under existing case law.

¹³⁸ Scalia & Goodman, *supra* note 136, at 934. For purposes of this paper, we take no position on whether the “substantial evidence” standard features more searching analysis on judicial review than does the “arbitrary and capricious” standard. Although the handful of cases decided under the “substantial evidence” standard considered in this paper undertook a relatively rigorous review of the agency’s evidence, akin to the cases applying a very searching version of the “arbitrary and capricious” standard, the sample of cases is too small to support any definitive conclusions.

¹³⁹ In addition to the requirement to prepare an RIA for an economically significant regulation under Exec. Order No. 12,866, the agency might be required to prepare an analysis under one or more of the following statutes: (1) the Regulatory Flexibility Act (5 U.S.C. §§ 601–12), which requires agencies to describe how their proposed and final rules will affect small entities (*id.* at §§ 603–04); (2) the Unfunded Mandates Reform Act (2 U.S.C. §§ 1501–71), which requires agencies to analyze rules that impose unfunded mandates on state, local, or tribal governments exceeding \$100 million in annual economic impact (*id.* at § 1532); and (3) the Paperwork Reduction Act (44 U.S.C. §§ 3501–3521), which requires agencies to estimate paperwork burdens imposed on the regulated public and provide some justification for such burdens (*id.* at §§ 3506–07). Although those statutes also impose important analytical burdens on agencies, their applicability is limited to specific scenarios. As such, this paper will not focus on those additional analytical requirements.

1. *Statutorily mandated economic analyses.* Both executive branch agencies and so-called independent regulatory agencies (which are exempt from the relevant requirements of Executive Order 12866) are occasionally directed by statute to undertake some analysis of regulatory costs, benefits, or both and factor that analysis into the decision reached.¹⁴⁰ This requirement is by no means universal, and many statutes are silent with respect to whether the agency is to consider regulatory costs and benefits and, if so, whether the agency is to factor them into its decision-making.¹⁴¹ Other statutes, such as the Endangered Species Act¹⁴² and the Clean Air Act,¹⁴³ actually prohibit agencies from considering economic costs when setting policy in certain areas.¹⁴⁴

When a mandate to consider regulatory costs or benefits exists, the weight that the agency is to place on such evidence when making decisions varies significantly from statute to statute. In some cases, the agency must assess the problem it intends to solve and present evidence demonstrating that a “significant” risk exists to justify regulating;¹⁴⁵ once the agency has adequately fulfilled that requirement, it can then regulate to the level it deems appropriate, even if the regulatory costs significantly outstrip the benefits.¹⁴⁶ Other statutes require the agency to act if it is

¹⁴⁰ In a 2013 report for the Administrative Conference of the United States, Curtis Copeland showed that, contrary to popular perception, many independent regulatory agencies are already required by statute to perform some form of benefit-cost analysis. Copeland, *supra* note 15, at 38–55 (noting that the Securities and Exchange Commission, Commodity Futures Trading Commission, Federal Reserve Board, Office of the Comptroller of the Currency, Consumer Financial Protection Bureau, Consumer Product Safety Commission, and Federal Trade Commission all must consider regulatory costs and benefits under certain statutory regimes). That point was driven home by the DC Circuit’s decision in *SEC v. Business Roundtable*, 647 F.3d 1144 (D.C. Cir. 2011), wherein the court struck down a rule issued by the Securities and Exchange Commission in part as a consequence of various flaws associated with its economic analysis. 647 F.3d at 1149–56.

¹⁴¹ Cass R. Sunstein, *Cost-Benefit Default Principles*, 99 MICH. L. REV. 1651, 1668 (2001).

¹⁴² 16 U.S.C. § 1531 *et seq.*

¹⁴³ 42 U.S.C. § 7401 *et seq.*

¹⁴⁴ 16 U.S.C. § 1533(b)(1)(A) (Endangered Species Act); 42 U.S.C. § 7409(b) (Clean Air Act); *Whitman v. Am. Trucking Ass’n*, 531 U.S. 457, 470 (2001) (holding that the Environmental Protection Agency is not to consider costs in setting the National Ambient Air Quality Standards); *Ariz. Cattle Growers Ass’n v. Salazar*, 606 F.3d 1160, 1172 (9th Cir. 2010) (“The decision to list a species as endangered or threatened is made without reference to the economic effects of that decision”); Sunstein, *supra* note 141, at 1663–64.

¹⁴⁵ *See Indus. Union Dep’t, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607, 642 (1980).

¹⁴⁶ Sunstein, *supra* note 141, at 1664.

“feasible” to do so, wording that is generally interpreted to foreclose regulations that would impose crippling burdens on regulated entities (and therefore would prove “economically infeasible”).¹⁴⁷

Still other statutes require agencies to “consider” benefits and costs without indicating what level of disproportion between such benefits and costs will prove fatal to a regulation.¹⁴⁸

Finally, certain statutes impose a benefit-cost balancing requirement.¹⁴⁹ As a general matter, these statutes fail to distinguish between the two possible approaches to ensuring that the benefits outweigh the costs.¹⁵⁰ The first possible approach would simply require that the total dollar value of the regulatory benefits exceed that of the costs (for example, a regulation with \$101 million in benefits and \$100 million in costs is justified). The second approach would require the agency to maximize net benefits (for example, the aforementioned regulation is not justified if another approach would produce \$150 million in benefits and \$100 million in costs).

In those instances in which a statute mandates some form of economic analysis, the court can review the substance of the agency’s decision (for example, to ensure that the total dollar value of economic benefits exceeds that of economic costs if the statute requires benefit-cost balancing). An entirely separate issue is the thoroughness with which the agency assessed the underlying record in defining the problem, assessing alternatives, and analyzing benefits and

¹⁴⁷ *Id.* at 1665–66; see *Quivira Mining Co. v. U.S. Nuclear Regulatory Comm’n*, 866 F.2d 1246, 1250 n.4 (10th Cir. 1989) (“Feasibility analysis in the environmental context requires an agency to protect public health to the maximum extent possible, constrained solely by what is economically or technically feasible”).

¹⁴⁸ Sunstein, *supra* note 141, at 1666; see *Quivira*, 866 F.2d at 1250 (“Cost-benefit rationalization, a considerably looser cost-benefit approach [as compared to cost-benefit optimization], requires the agency merely to consider and compare the costs and benefits of various approaches, and to choose an approach in which costs and benefits are reasonably related in light of Congress’ intent”); *Am. Mining Cong. v. Thomas*, 772 F.2d 617, 631 (10th Cir. 1985).

¹⁴⁹ Sunstein, *supra* note 141, at 1666–67; see *Quivira*, 866 F.2d at 1250 (“Cost-benefit optimization, the strictest type of cost-benefit analysis, requires quantification of costs and benefits and a mathematical balancing of the two to determine the optimum result”).

¹⁵⁰ Specifically, the relevant statutes typically require agencies to regulate an activity that poses an “unreasonable” risk, which courts have interpreted to require that the benefits must exceed the costs. See, e.g., 7 U.S.C. § 136a(a) (Federal Insecticide, Fungicide, and Rodenticide Act); 15 U.S.C. § 2605(a) (Toxic Substances Control Act); Sunstein, *supra* note 141, at 1666–67. The courts have not, however, interfered with the agency’s selection among a range of potential options with benefits exceeding costs (e.g., requiring that the agency select the option with the largest net benefits or the option with the smallest regulatory costs).

costs. As will be explored in greater detail in subsequent sections, courts often review the quality of the agency's analysis in addition to (or in lieu of) examining the substance of the agency's rule. Thus, a court might set aside an agency rule because of flaws in the underlying economic analysis (for example, failing to marshal evidence of an underlying problem, ignoring a viable regulatory alternative, or overlooking relevant evidence bearing on regulatory benefits or costs) without taking a position on what the substance of the rule should be.

2. *RIAs prepared under Executive Order 12866.* Executive Order 12866 requires executive branch agencies to perform a full RIA for any “economically significant” regulation and assess the benefits and costs of significant regulations.¹⁵¹ As noted previously, Executive Order 12866 and OMB Circular A-4 require the agency to assess the nature and significance of the problem it seeks to solve, develop alternative solutions, and compare the benefits and cost of alternative courses of action. Those documents also require agencies to design regulations in the most cost-effective manner and regulate only when the benefits of regulation justify the costs.

The executive order explicitly states that it does not create any right to judicial review or curtail any preexisting right to judicial review.¹⁵² Hence, a party that perceives some flaw in the agency's RIA has no right to challenge the agency's findings directly in court. Nevertheless, if the agency cites the RIA in justifying the rule it ultimately adopts, the agency has injected the RIA into the rulemaking record and therefore made it fair game for challenging the rule.¹⁵³

¹⁵¹ Exec. Order No. 12,866 §§ 3(f)(1), 6(a)(3)(c), 58 Fed. Reg. 51,735, 51,738, 51,741 (Oct. 4, 1993).

¹⁵² *Id.* at § 10.

¹⁵³ *Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1040 (D.C. Cir. 2012); *Am. Equity Inv. Life Ins. Co. v. SEC*, 613 F.3d 166, 177 (D.C. Cir. 2010); *Michigan v. Thomas*, 805 F.2d 176, 187 (6th Cir. 1986); *Cecot & Viscusi*, note 7, at 591.

Unfortunately, the prohibition on judicial review contained in the executive order has created some measure of confusion.¹⁵⁴ In a handful of instances, courts have been reluctant to review the findings of RIAs, even in those cases in which the agency has relied on those findings in preparing a final rule.¹⁵⁵ The better reading of the cases, however, is that at least those aspects of an RIA on which an agency has relied in formulating a rule are reviewable by the courts.¹⁵⁶ Indeed, no logical reason exists for a court to treat information contained in an RIA any differently from other information on which an agency has relied and made part of the record on review.

Finally, in a handful of cases, certain courts have implied (without explicitly holding) that an agency that completely ignores relevant findings of an RIA acts arbitrarily and capriciously.¹⁵⁷ In *Public Citizen, Inc. v. Mineta*,¹⁵⁸ the court relied on information cited in the agency's benefit-cost analysis to invalidate the final rule, notwithstanding the fact that the agency did not include that information in its final rule.¹⁵⁹ In *R.J. Reynolds Tobacco Co. v. FDA*,¹⁶⁰ a First Amendment case dealing with a requirement that cigarette companies place graphic warnings on product labels, the court used the findings of an RIA (which showed that

¹⁵⁴ In this light, perhaps executive branch agencies decline to explain how the RIA affected their decisions for most economically significant regulations out of an abundance of caution. See *supra* section III.

¹⁵⁵ In these cases, the courts have often assumed, for the sake of argument, that the findings of the RIA are reviewable and have upheld the agencies' conclusions without definitively ruling on the question of reviewability. See *Nat'l Truck Equip. Ass'n v. Nat'l Highway Traffic Safety Admin.*, 711 F.3d 662, 670 (6th Cir. 2013); *Fla. Manufactured Hous. Ass'n v. Cisneros*, 53 F.3d 1565, 1579 (11th Cir. 1995) ("HUD also contends that the RIA is not an appropriate object of attack because it was undertaken pursuant to an Executive Order solely as an internal managerial tool for the federal government. . . . We need not resolve this dispute about the rulemaking record, because HUD's reliance on its cost and benefit figures as support for the new wind standards is not arbitrary and capricious, even assuming that the manufacturers' Application for Stay and the two economic reports accompanying it are included as part of the rulemaking record").

¹⁵⁶ See, e.g., TESTIMONY OF RONALD M. LEVIN, WILLIAM R. ORTHWEIN DISTINGUISHED PROFESSOR OF LAW, WASHINGTON UNIVERSITY IN ST. LOUIS, BEFORE THE UNITED STATES SENATE COMMITTEE ON HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS, SUBCOMMITTEE ON REGULATORY AFFAIRS AND FEDERAL MANAGEMENT 4 (Apr. 28, 2015) [hereafter LEVIN TESTIMONY].

¹⁵⁷ *Cecot & Viscusi*, *supra* note 7, at 577, 603–605.

¹⁵⁸ 340 F.3d 39 (2d Cir. 2003).

¹⁵⁹ *Id.* at 56–58 & n.28.

¹⁶⁰ 696 F.3d 1205 (D.C. Cir. 2012).

such labels reduced smoking rates by a mere 0.088 percent) to decide that the speech restriction did not survive intermediate scrutiny.¹⁶¹ Unfortunately, the number of cases is too small a sample on which to draw any definitive conclusion, especially because *R.J. Reynolds* does not involve traditional “arbitrary and capricious” review of an agency rule relying on economic analysis, and neither case articulates a standard by which to assess rules that overlook relevant findings contained in an RIA.

Accordingly, both agencies and litigants face a degree of uncertainty with respect to the reviewability of RIAs prepared under Executive Order 12866. If the agency ignores the RIA in formulating a regulation, it seems fairly clear that a litigant cannot raise a challenge to the underlying rule on the basis of a flaw in the RIA. If the agency relies on the findings of the RIA to support the rule, however, the information in the RIA on which the agency has relied and the conclusions drawn from the RIA almost certainly form a basis for judicial review. If the agency completely ignores the findings of the RIA, the courts might consider the agency’s ultimate conclusions in light of the RIA and set aside the final rule if it is inconsistent with the RIA’s conclusions, although the case law is not definitive on this point.

3. *Voluntarily prepared economic analyses.* Even if an agency is not subject to an economic analysis requirement imposed by statute or executive order, the agency may opt to assess the underlying problem the rule seeks to solve or discuss the benefits and costs of the regulation and alternatives. For instance, although several independent regulatory agencies are exempt from the requirements of Executive Order 12866 and are not required by statute to produce similar

¹⁶¹ *Id.* at 1220.

analysis, those agencies state that they have voluntarily integrated certain aspects of benefit-cost analysis into their decision-making framework.¹⁶²

The case law provides no clear answer on whether an elective economic analysis is subject to judicial review. Presumably, the standard is identical to that for RIAs conducted under Executive Order 12866: if the agency relies on the economic analysis in formulating the final rule, then those aspects on which the agency has relied almost certainly are subject to judicial review.¹⁶³ If the agency completely ignores relevant findings of an RIA, its rule might be subject to challenge if it is inconsistent with those findings.

C. Standard of Review for Agency Economic Analyses

As with any other evidence that forms the basis for an agency's final decision, economic analyses deemed subject to judicial review are examined under the "arbitrary and capricious" standard (unless the "substantial evidence" standard applies, either because the agency used formal decision-making procedures or because the authorizing statute calls for such review).¹⁶⁴

As this paper explored in section V.A, however, what that means in practice is far from clear.

¹⁶² Copeland, *supra* note 15, at 49 ("[T]he NRC is not statutorily required to prepare regulatory analyses as part of its rulemaking process, but has been voluntarily conducting them since 1976, and has been voluntarily complying with the general regulatory analysis requirements applicable to Cabinet departments and independent agencies since OMB began issuing regulatory analysis guidance in 1981"), 103 ("FCC officials said it is now understood that [benefit-cost analysis] is 'an expected part of the agency's decision making,' and that when the Office of the General Counsel reviews rules for compliance with the APA and other statutes, they now look to see that the rule contains evidence of having considered costs and benefits").

¹⁶³ *Compare* Am. Equity Inv. Life Ins. Co. v. SEC, 572 F.3d 923, 934 (D.C. Cir. 2009) ("[W]e must reject the SEC's argument that no error occurred because the SEC was not required by the Securities Act to conduct a § 2(b) analysis. 'The grounds upon which an administrative order must be judged are those upon which the record discloses that its action was based.' The SEC conducted a § 2(b) analysis when it issued the rule with no assertion that it was not required to do so. Therefore, the SEC must defend its analysis before the court upon the basis it employed in adopting that analysis") *with* Nat'l Truck Equip. Ass'n v. Nat'l Highway Traffic Safety Admin., 711 F.3d 662, 670 (6th Cir. 2013) (declining to review an RIA conducted under Exec. Order 12,866 because it "does not create judicially enforceable rights" but nevertheless concluding that the agency's analysis was adequate).

¹⁶⁴ 5 U.S.C. § 706(2)(A).

This is especially true of judicial review of agency economic analyses, given the wide variety of statutory provisions that mandate some study or consideration of economic costs and benefits. A court will likely undertake a more searching inquiry in those instances in which Congress has explicitly required agencies to conduct certain types of economic analysis or imposed a relatively strict benefit-cost balancing requirement. For instance, an agency probably must marshal more evidence to demonstrate that a rule's benefits exceed its costs than to show that a specific approach is "feasible." In addition, although no case law is squarely on point, a court would likely exhibit a high degree of deference in reviewing an RIA prepared pursuant to Executive Order 12866 or an economic analysis voluntarily undertaken by the agency when the authorizing statute contains no mandate to consider alternatives, benefits, or costs.

Regardless of the degree to which the court delves into the substance of an agency's rule, courts have demonstrated an ability to scrutinize the procedural aspects of the agency's decision-making and assess the evidence used to identify an underlying problem, explore alternative approaches, and demonstrate regulatory benefits and costs. Reasons cited by reviewing courts for reversing and remanding agencies' rules based on flaws in the underlying economic analysis include the following:

- Failing to consider an important aspect of the problem confronted¹⁶⁵
- Overlooking a viable regulatory alternative¹⁶⁶

¹⁶⁵ See, e.g., *Business Roundtable v. SEC*, 647 F.3d 1144, 1153–54 (D.C. Cir. 2011); *Am. Equity Inv. Life Ins. Co. v. SEC*, 572 F.3d 923, 935–36 (D.C. Cir. 2009); *Advocates for Highway & Auto Safety v. Fed. Motor Carrier Safety Admin.*, 429 F.3d 1136, 1147 (D.C. Cir. 2005).

¹⁶⁶ See, e.g., *Pub. Citizen, Inc. v. Mineta*, 340 F.3d 39, 58 (2d Cir. 2003); *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1217 (5th Cir. 1991).

- Ignoring evidence bearing on regulatory alternatives or costs and benefits underlying those alternatives (including those submitted by outside entities during the notice-and-comment process)¹⁶⁷
- Making illogical or internally contradictory findings of fact¹⁶⁸
- Engaging in speculation¹⁶⁹
- Relying on less persuasive evidence when better evidence is available¹⁷⁰

D. Conclusions

An assessment of the history of judicial review of agency economic analyses over the course of the past three decades supports two broad conclusions. First, the case law is unclear on whether economic analyses that are not mandated by statute (including both those required by Executive Order 12866 and those voluntarily undertaken by agencies) can form the basis for a challenge on judicial review. This creates uncertainty for agencies and regulated parties alike. For instance, an agency may have prepared an RIA under Executive Order 12866 that supports its favored outcome, but the agency may be reluctant to rely on it absent some certainty concerning whether the RIA is reviewable and what level of scrutiny a reviewing court will apply. Similarly, even in cases in which an agency has explicitly relied on an RIA prepared under Executive Order 12866

¹⁶⁷ See, e.g., *Bus. Roundtable*, 647 F.3d at 1150–51; *Chamber of Commerce of the United States of Am. v. SEC*, 412 F.3d 133, 144–45 (D.C. Cir. 2005); *Competitive Enter. Inst. v. Nat’l Highway Traffic Safety Admin.*, 956 F.2d 321, 324 (D.C. Cir. 1992).

¹⁶⁸ See, e.g., *Bus. Roundtable*, 647 F.3d at 1150, 1153–54; *Chamber of Commerce*, 412 F.3d at 143; *Gas Appliance Mfrs. Ass’n v. Dep’t of Energy*, 998 F.2d 1041, 1047–51 (D.C. Cir. 1993).

¹⁶⁹ See, e.g., *Bus. Roundtable*, 647 F.3d at 1150; *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1200–1201 (9th Cir. 2008); *Advocates*, 429 F.3d at 1147; *Mineta*, 340 F.3d at 59–60; *Competitive Enter. Inst. v. Nat’l Highway Traffic Safety Admin.*, 956 F.2d 321, 324 (D.C. Cir. 1992); *Natural Res. Def. Council, Inc. v. Herrington*, 768 F.2d 1355, 1413–14, 1419, 1422 (D.C. Cir. 1985).

¹⁷⁰ See, e.g., *Bus. Roundtable*, 647 F.3d at 1150–51.

in supporting its final rule, a litigant might be reluctant to challenge flaws in the agency's analysis without some assurance that a court will entertain the argument.

Second, the case law is also unclear on how searchingly the courts will assess agencies' economic analyses cited in support of regulations. Although the "arbitrary and capricious" standard applies to all informal rulemakings, except those subjected to the more searching "substantial evidence" standard by statute, the rigor of the courts' review varies greatly from one case to the next (as section VI will explore in greater detail). Section VII seeks to design a clearer standard of review, building on cases that have set aside agencies' rules as a result of procedural flaws in the underlying economic analysis.

VI. Case Studies of Judicial Review

To explore the potential for judicial review to improve the quality of regulatory impact analysis, we examined a sample of cases in which appellate courts reviewed agency economic analysis for various reasons. The sample consists of 38 cases identified by Caroline Cecot and W. Kip Viscusi,¹⁷¹ 3 additional cases closely related to cases in their sample, and 1 additional SEC case that played a major role in the SEC's decision to issue new guidance on economic analysis. Most of the cases involve executive branch agencies that produced a document called a regulatory impact analysis. The others involve either the economic analysis included in environmental impact statements produced under the National Environmental Policy Act or analyses that were not called RIAs but were conducted by independent agencies that were required to produce some form of benefit-cost analysis.

¹⁷¹ The cases are listed in Cecot and Viscusi, *supra* note 7, at 609–611. Their criteria for selection are described at 589.

Courts have shown themselves capable of assessing the quality of essential elements of an RIA, and agencies that lost cases have responded by improving their analysis. The pattern of remands displays no clear pro- or antiregulatory bias. Whether the limited judicial review that has occurred thus far has created broad incentives for agencies to improve their analysis across the board, however, is far from clear. In some cases, careful judicial review occurred only because the statute authorizing the regulation specified that courts should review the agency's decisions under the "substantial evidence" standard rather than the "arbitrary and capricious" standard. As previously noted, judges and scholars have questioned whether the "arbitrary and capricious" and the "substantial evidence" standards differ in practice.¹⁷² Nevertheless, in the cases reviewed for the sample in this paper, those courts that applied the "substantial evidence" standard engaged in a more searching, rigorous review. Cases decided under the "arbitrary and capricious" standard have exhibited a widely disparate extent and depth of judicial review.

A. Courts Have Assessed Essential Elements of Regulatory Impact Analysis

Judicial review has considered all the key elements of regulatory impact analysis previously identified: analysis of the problem, development of alternatives, estimation of the benefits of each alternative, and estimation of the costs of each alternative.

1. Analysis of the systemic problem. The decision in *Center for Auto Safety v. Peck* demonstrates the courts' ability to assess the evidence underlying an agency's analysis of a regulatory problem. The case involved a National Highway Traffic Safety Administration (NHTSA) regulation that weakened safety standards for car bumpers in low-speed collisions. The court's

¹⁷² See *supra* notes 137–138 and accompanying text.

decision spent several pages examining the agency’s assessment of the root cause of the safety problem the regulation sought to address. Low-speed bumper standards were intended to prevent damage to other auto safety systems that drivers might not bother to repair. Damaged safety systems are responsible for approximately 1 percent of all auto accidents. The court approvingly noted the NHTSA’s assessment that stronger bumper standards would have prevented only a fraction of the 1 percent of accidents caused by damage to other automobile safety systems. The court was also persuaded by the NHTSA’s reasons for rejecting claims data that showed, according to State Farm Insurance, that tighter bumper standards would reduce damage to safety systems. The court even conducted its own analysis using additional years of State Farm data in the record that seemed to contradict the company’s claim.¹⁷³

The court ultimately upheld the regulation on the grounds that those and numerous other judgments were well within the agency’s discretion under the “arbitrary and capricious” standard.¹⁷⁴ The decision, however, demonstrates that the court thought the NHTSA had not just a rational basis for its determinations but superior arguments and evidence.

Public Citizen Health Research Group v. Tyson demonstrates a court’s ability to assess carefully an agency’s problematic analysis, endorsing some parts and rejecting others. An Occupational Safety and Health Administration (OSHA) workplace safety standard limiting long-term worker exposure to ethylene dioxide was reviewed under the Occupational Safety and Health Act’s “substantial evidence” standard. In considering whether ethylene dioxide posed a health hazard, the court considered shortcomings of the studies on which OSHA relied but

¹⁷³ Center for Auto Safety v. Peck, 751 F.2d 1336, 1345–47 (D.C. Cir. 1985).

¹⁷⁴ *Id.* at 1345–68.

concluded that a reasonable person could draw the same conclusions OSHA drew.¹⁷⁵ The court also extensively reviewed OSHA’s risk assessment, which found that ethylene dioxide is a significant hazard.¹⁷⁶ The court upheld OSHA’s conclusion that ethylene dioxide does not have a different effect when the dose is received over a short period of time.¹⁷⁷ However, the court did not simply rubber-stamp OSHA’s analysis. OSHA claimed that issuing a short-term exposure limit was unnecessary because its standard reducing long-term exposure would also reduce short-term exposure. The court remanded that decision because no evidence on the record indicated that this assumption was true.¹⁷⁸

Natural Resources Defense Council, Inc. v. Herrington squarely addressed the question of whether a problem is large enough to justify regulation. States and environmental organizations challenged a Department of Energy (DOE) decision not to set energy efficiency standards for a variety of household appliances. The Energy Policy Conservation Act (EPCA) directed the secretary of energy not to issue appliance standards if he determined that they would not lead to significant energy conservation.¹⁷⁹ The DOE adopted three criteria for significance based on its interpretation of the EPCA that appliance standards are intended to reduce the nation’s dependence on imported oil. The DOE subsequently determined that mandatory standards would not produce significant energy savings for seven of the eight appliances considered.¹⁸⁰ The court rejected the DOE’s definition of “significant” based on its reading of the statute and legislative history.¹⁸¹ This decision demonstrates a court’s ability to assess varying definitions of when a problem is significant enough to justify regulation.

¹⁷⁵ Pub. Citizen Health Research Group v. Tyson, 786 F.2d 1479, 1486–96 (D.C. Cir. 1986).

¹⁷⁶ *Id.* at 1496–1503.

¹⁷⁷ *Id.* at 1504–1506.

¹⁷⁸ *Id.* at 1505–1507.

¹⁷⁹ *Natural Res. Def. Council v. Herrington*, 768 F.3d 1277, 1371 (D.C. Cir. 1985).

¹⁸⁰ *Id.* at 1368.

¹⁸¹ *Id.* at 1372–83.

Numerous cases have considered agency assessments of the baseline—the outcomes likely to occur in the absence of any new regulation. Calculation of the baseline can be a highly technical issue in specific contexts, but courts have had no difficulty understanding the importance of the concept and pointing out flaws in agencies’ baseline analysis. In *Business Roundtable v. SEC*, the court struck down a rule that required public companies to include shareholder-nominated candidates for the board of directors on proxy ballots under certain conditions. The decision noted that the SEC failed to establish a consistent baseline for measuring the frequency of proxy challenges that would be caused by the rule. It further held that the SEC erred in assuming that costs attributable to the regulation were caused by preexisting state laws that grant shareholders the right to elect directors.¹⁸² In *American Equity Investment Life Insurance Co. v. SEC*, the court struck down an SEC rule regulating certain annuities previously regulated by the states because the SEC failed to assess the current level of competition and efficiency associated with the state regulatory framework.¹⁸³

In *Investment Company Institute v. US Commodity Futures Trading Commission*, however, the court rejected a baseline-oriented challenge to a Commodity Futures Trading Commission (CFTC) registration regulation for investment companies that trade derivatives. Appellants argued that the CFTC, like the SEC in *Business Roundtable*, failed to consider the effectiveness of existing regulations—in this case, SEC regulations. The court upheld the CFTC’s rule because the CFTC did in fact assess the SEC regulations and concluded that its own regulations were needed to fill some gaps in the SEC regulations.¹⁸⁴

¹⁸² *Business Roundtable v. SEC*, 647 F.3d 1144, 1151–53 (D.C. Cir. 2011).

¹⁸³ *Am. Equity v. SEC*, 572 F.3d 923, 935–36 (D.C. Cir. 2009).

¹⁸⁴ *Inv. Co. Inst. v. CFTC*, 720 F.3d 370, 377–78 (D.C. Cir. 2013).

Somewhat more complicated baseline issues arose in *Natural Resources Defense Council, Inc. v. Herrington*. The EPCA expressly provided that decisions on those standards should be reviewed under the “substantial evidence” standard rather than the “arbitrary and capricious” standard;¹⁸⁵ thus, the court undertook a highly detailed review of the evidence. Although the decision was remanded for reasons related to the quality of the DOE’s analysis, the court largely upheld the DOE’s baseline analysis. For example, the court held that the DOE was permitted to compare energy efficiency under mandatory standards to a baseline that projected how efficiency would improve in the absence of standards.¹⁸⁶ The court also examined the statistical model the DOE used to predict the baseline in great detail, upholding the DOE’s assumptions that increasing energy prices would lead to greater energy efficiency in the absence of a standard and that higher energy prices would induce consumers to value efficiency to a greater extent.¹⁸⁷

2. Development of alternatives. Numerous court decisions address the range of alternatives the agencies considered. Those decisions always involve specific alternatives or groups of alternatives that petitioners believed the agency either ignored or analyzed inadequately. Courts consistently hold that agencies have no duty to consider every conceivable alternative, and in no case did an agency have to defend itself simply for considering an inadequate number of alternatives.

The simplest failure with regard to alternatives is failure to consider and analyze relevant alternatives. In *Corrosion Proof Fittings v. Environmental Protection Agency*, the court struck

¹⁸⁵ *Herrington*, 768 F.3d at 1369.

¹⁸⁶ *Id.* at 1384 (“[E]nergy savings do not ‘result’ from standards if the same savings would have been achieved without standards”).

¹⁸⁷ *Id.* at 1385–91.

down the EPA's total ban on the use of asbestos. The Toxic Substances Control Act requires adoption of the least restrictive alternative, but the EPA failed to consider alternatives other than an outright ban and no regulation.¹⁸⁸ In *New York v. Reilly*, the court struck down the EPA's decision not to ban the burning of lead-acid batteries, holding that the EPA should have considered alternative regulations short of an outright ban.¹⁸⁹

Chamber of Commerce of the United States v. SEC arose from a regulation that would have required mutual funds to have a majority of independent directors and an independent chairman. The court remanded the regulation in part because the SEC failed to analyze a disclosure alternative championed by several commenters and two dissenting SEC commissioners.¹⁹⁰ In *Business Roundtable v. SEC*, the SEC declined to consider whether imposing the proxy access rules on investment companies (such as mutual funds) would generate different benefits and costs than imposing them on publicly held corporations.¹⁹¹ Given the significant differences between those two types of companies, that evaluation is an important margin the SEC neglected. Declining to estimate the benefits and costs for different types of companies essentially meant that the SEC would not consider the alternative of imposing the rule on one type of company but not the other. The court's decision in *American Equity Investment Life Insurance Co. v. SEC* can also be viewed as faulting the SEC for failing to consider an obvious alternative. In declining to assess the efficiency and competitiveness of current state regulation, the commission declined to assess the effectiveness of the "no action" alternative.¹⁹²

¹⁸⁸ *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1216–17 (5th Cir. 1991).

¹⁸⁹ *New York v. Reilly*, 969 F.2d 1147, 1153 (D.C. Cir. 1992).

¹⁹⁰ *Chamber of Commerce v. SEC*, 412 F.3d 133, 145 (D.C. Cir. 2005).

¹⁹¹ *Business Roundtable v. SEC*, 647 F.3d 1144, 1154–56 (D.C. Cir. 2011).

¹⁹² *Am. Equity v. SEC*, 572 F.3d. 923, 935–36 (D.C. Cir. 2009).

Less commonly, courts find fault with agencies for considering an inadequate range of alternatives rather than for ignoring one or two alternatives. In *Center for Biological Diversity v. National Highway Traffic Safety Administration*, petitioners claimed that the NHTSA violated the National Environmental Policy Act (NEPA) because its environmental assessment considered an inadequate range of alternative fuel efficiency standards for motor vehicles. The NHTSA considered five alternatives, consisting of standards that varied by no more than two miles per gallon. The court agreed with the petitioners, noting that one commenter submitted an analysis that considered 28 possible standards covering a wider range of fuel efficiency.¹⁹³

That case also demonstrates how agencies can run into trouble if they provide insufficient analysis of alternatives they reject. The NHTSA issued fuel economy standards based on each vehicle's footprint instead of setting a company-wide average fuel efficiency standard. The agency declined to adopt a "backstop" company-wide average on the grounds that it would unduly limit consumer choice. Petitioners argued that the NHTSA failed to assess how its decision affected energy conservation, as required under the EPCA. The court agreed and remanded the regulation to the NHTSA with instructions to assess how the proposed backstop would affect energy conservation.¹⁹⁴ The court also remanded the NHTSA's decisions not to redefine "passenger automobile" to close the "SUV loophole" and not to regulate the fuel economy of trucks weighing between 8,500 and 10,000 pounds.¹⁹⁵

The court in *Natural Resources Defense Council, Inc. v. Herrington* faulted the DOE for failure to provide substantial evidence supporting its decisions to disregard a number of potential alternatives, including appliance energy efficiency standards based on prototypes, standards

¹⁹³ *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1218 (9th Cir. 2008).

¹⁹⁴ *Id.* at 1205–1206.

¹⁹⁵ *Id.* at 1207–1212.

involving models that required payback periods exceeding five years, and designs only available in foreign markets. The court also noted that when the DOE identified standards with alternative levels of stringency, it failed to estimate the maximum technologically feasible level of energy savings, as it was required to do under the EPCA.¹⁹⁶

Finally, in some cases, courts found that agencies considered an adequate range of relevant alternatives. In *Webster v. U.S. Department of Agriculture*, appellants argued that the USDA's National Environmental Policy Act (NEPA) analysis associated with construction of a new dam was incomplete because it excluded several alternative actions or dam locations. The court found that the appellants offered no alternatives that the agency failed to consider.¹⁹⁷ Appellants also raised a potentially significant issue when they claimed that the agency failed to consider the benefits and costs of the entire watershed project with and without the disputed dam—arguably a very important margin. The court, however, noted that the environmental impact statement included a chart showing monetary and nonmonetary benefits and costs of the project with and without the dam.¹⁹⁸

3. Estimation of the benefits or other desired outcomes of the regulation and of each alternative.

Courts have often examined assumptions and evidence underlying benefit calculations. In *Center for Biological Diversity v. National Highway Traffic Safety Administration*, the court remanded the NHTSA's corporate average fuel economy regulations for further fact-finding because the NHTSA simply assumed that the value of reduced carbon emissions was zero.¹⁹⁹ In *Business*

¹⁹⁶ *Natural Res. Def. Council, Inc. v. Herrington*, 768 F.3d 1277, 1391–1406 (D.C. Cir. 1985).

¹⁹⁷ *Webster v. USDA*, 685 F.3d 411, 427–28 (4th Cir. 2012).

¹⁹⁸ *Id.* at 431.

¹⁹⁹ *Biological Diversity*, 538 F.3d at 1198–1203.

Roundtable v. SEC, the court found fault with the SEC’s assumption that proxy access would improve directorial decision-making when more compelling evidence suggested the opposite.²⁰⁰

In *American Equity Investment Life Insurance Co. v. SEC*, the SEC claimed that adoption of its rule would increase competition by reducing uncertainty created by the absence of a rule. The court noted that adoption of any rule could arguably create this benefit, so this kind of benefit could not be attributed to the SEC’s rule.²⁰¹ In *Center for Auto Safety v. Peck*, which upheld the NHTSA’s auto bumper standards, the court provided detailed discussions of the objections petitioners raised to the NHTSA’s calculations of benefits and costs.²⁰²

In *Gas Appliance Manufacturers v. US Department of Energy*, the court noted that the DOE assumed—without evidence—that the agency’s energy efficiency standards could reduce energy loss from fittings by 40 percent. Further, the court found that the DOE inflated the benefits estimate by assuming a lower temperature differential in its benefit calculations than the standards actually provided for and made other assumptions unsupported by evidence.²⁰³ The DOE also declined to conduct tests on a prototype model or explain why such tests could not be done—an unacceptable refusal to consider evidence.²⁰⁴

Several cases illustrate courts’ ability to deal with highly technical distinctions. In *Radio Association on Defending Airwave Rights, Inc. v. United States Department of Transportation Federal Highway Administration*, manufacturers of radar detectors challenged a rule banning

²⁰⁰ *Business Roundtable v. SEC*, 647 F.3d 1144, 1151 (D.C. Cir. 2011).

²⁰¹ *Am. Equity v. SEC*, 572 F.3d 923, 934–35 (D.C. Cir. 2009).

²⁰² *Ctr. for Auto Safety v. Peck*, 751 F.2d 1336, 1351–68 (D.C. Cir. 1985).

²⁰³ *Gas Appliance Mfrs. v. DOE*, 998 F.2d 1041, 1047–51 (D.C. Cir. 1993).

²⁰⁴ *Id.* at 1047 (“An important, easily testable hypothesis should not remain untested. Where creation of a fully complying prototype is not very costly, as appears to be the case for water heaters here, it seems reasonable to do so in order to establish the validity of the energy-saving benefits that the agency believes can be achieved at a reasonable cost”).

their use by commercial truckers. Petitioners correctly pointed out that the Federal Highway Administration's (FHWA's) analysis included no evidence that use of radar detectors increases the number of accidents, but the court noted that the FHWA's benefit calculations were based on studies showing that slower speeds reduce the severity of accidents, not the number of accidents.²⁰⁵ *Northern California Power Agency v. Federal Energy Regulatory Commission* involved not a regulatory analysis but the calculation of compensation an investor-owned utility was required to pay municipalities when it took over their service territories. The appellants claimed that the Federal Energy Regulatory Commission (FERC) was arbitrary and capricious in using a 15 percent discount rate, intended to reflect consumers' preferences, to calculate the present value of future benefits to consumers. The court correctly pointed out that a consumer's discount rate is not necessarily the same as a firm's discount rate because the consumer's rate reflects consumer preferences, whereas the firm's rate reflects the firm's cost of capital.²⁰⁶ In *American Mining Congress v. Thomas*, the court rejected challenges to an EPA rule regulating radioactive mill tailings. Several challenges were based on discrepancies in data used to calculate risk estimates. The court examined the data and calculations, concluding that the discrepancies were not large enough for it to rule that the EPA's upper-limit risk estimates were unsupported by the data.²⁰⁷

4. *Estimation of the costs of the regulation and of each alternative.* Perhaps surprisingly, fewer cases deal with estimates of costs than with the other key aspects of regulatory impact analysis.

²⁰⁵ *Radio Ass'n on Defending Airwave Rights v. US Dep't of Transp. Fed. Highway Admin.*, 47 F.3d 794, 802–804 (6th Cir. 1995).

²⁰⁶ *N. Calif. Power Agency v. Fed. Energy Regulatory Comm'n*, 37 F.3d 1517, 1522–23 (D.C. Cir. 1994).

²⁰⁷ *Am. Mining Congress v. Thomas*, 772 F.2d 617, 634 (10th Cir. 1985).

Nevertheless, courts have demonstrated an ability to identify omitted categories of costs, some of which require relatively sophisticated analysis.

The simplest type of case concerns an agency's refusal to consider specific types of costs. In *Chamber of Commerce of the United States v. SEC*, the court faulted the SEC for declining to consider the costs mutual funds would incur to comply with the regulation. The agency was not required to conduct an original empirical study, but it had an obligation to "do what it can" to understand the economic consequences of its rules.²⁰⁸ On remand, the SEC reconsidered the rule for a week and then readopted it based on a reassessment of the record and some extra-record public data. The court again struck down the rule, in part because the SEC failed to consider actual cost data from mutual funds that had already complied with the rule.²⁰⁹

In *Competitive Enterprise Institute v. NHTSA*, plaintiffs challenged the NHTSA's model year 1990 corporate average fuel economy regulations on the grounds that the NHTSA ignored the safety effects of the standards, which prompted manufacturers to produce smaller cars. This is a social cost of regulation flowing from changes in human behavior that economists readily recognize but that narrow estimates of compliance costs to regulated firms omit. Commenters cited substantive studies showing that the safety effect is real, but the NHTSA dismissed those studies based on speculation rather than on contrary evidence.²¹⁰ The court remanded the regulation.

Another type of challenge occurs when an agency considered a cost, but the petitioner claims the agency's evidence was insufficient. In *National Wildlife Federation v. EPA*, environmentalist petitioners argued that the EPA artificially inflated the cost of an option it

²⁰⁸ See generally *Chamber of Commerce v. SEC*, 412 F.3d 144.

²⁰⁹ *Chamber of Commerce v. SEC*, 443 F.3d 890, 906 (D.C. Cir. 2006).

²¹⁰ *Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin.*, 956 F.2d 321, 324–27 (D.C. Cir. 1992).

rejected as too costly. The court generally found that the EPA demonstrated it had a rational basis for its cost estimates.²¹¹ In *Gas Appliance Manufacturers Association v. DOE*, the court faulted the DOE for making an assumption about the cost of including insulation on a heater without any supporting evidence.²¹²

Business Roundtable found that the SEC's assessment of costs was largely based on speculation or insufficient evidence. For example, the SEC (1) failed to quantify the costs to boards of opposing shareholder-nominated candidates (or explain why such quantification was not possible), (2) concluded, based on no evidence, that boards of directors might not oppose shareholder-nominated candidates, and (3) ignored the possibility that the rule would be used by institutional investors, such as unions and pension funds, to elicit unrelated concessions from the company.²¹³

B. Agencies That Lost Cases Have Made Efforts to Improve Their Analysis

This section briefly reviews agency efforts to improve their analysis following court remands or vacatur that were based explicitly on the quality of agency analysis. The number of cases discussed below is less than the total number of remanded and vacated regulations. In some cases, the agency simply withdrew the rule or the portion of the rule that was supported by insufficient analysis. In other cases, new legislation made the issue moot.

²¹¹ *Nat'l Wildlife Fed'n v. EPA*, 286 F.3d 554, 560–66 (D.C. Cir. 2002).

²¹² *Gas Appliance Mfrs. v. DOE*, 998 F.2d 1041, 1047–51 (D.C. Cir. 1993).

²¹³ *Business Roundtable v. SEC*, 647 F.3d 1144, 1149–54 (D.C. Cir. 2011).

1. *Advocates for Highway Safety v. Federal Motor Carrier Safety Administration (2005)*. In response to the court's 2005 remand,²¹⁴ the Federal Motor Carrier Safety Administration (FMCSA), in 2007, proposed a new set of commercial driver training standards that included on-road training. The regulatory analysis contained no new data demonstrating that on-road training or any other specific type of training reduces crashes. Thus, the court remand initially prompted the agency to try to change the regulation with little improvement in the underlying analysis. In 2013, however, the FMCSA withdrew the 2007 Notice of Proposed Rulemaking, announced that it would undertake two studies gathering new data to assess the relationship between driver training and driver safety performance, and the FMCSA declared its intention to start a new rulemaking in response to a new statutory requirement that the agency establish driver training standards.²¹⁵

2. *Center for Biological Diversity v. NHTSA (2007)*. This case was originally decided in November 2007, but the opinion was revised in August 2008 when the court revisited the issue of whether the NHTSA should be required to prepare a full environmental impact statement or just revise their environmental assessment. Thus, the first RIA on that topic issued after the court made its decision on the factors discussed above was the April 2008 RIA accompanying the Corporate Average Fuel Economy (CAFE) regulations proposed in May 2008. The first final environmental analysis issued after the court decision was the NHTSA's environmental impact statement for the rulemaking for model years 2011–15, released in October 2008.

²¹⁴ See generally *Advocates for Highway & Auto Safety v. Fed. Motor Carrier Safety Admin.*, 429 F.3d 1136 (D.C. Cir. 2005).

²¹⁵ Department of Transportation, Federal Motor Carrier Safety Administration, Minimum Training Requirements for Entry-Level Commercial Motor Vehicle Operators, Notice of Withdrawal, 78 Fed. Reg. 57,585, 57,587 (2013).

Both analyses examined a wider range of alternative CAFE standards than the original analysis that was challenged in the case. The original analysis considered only five alternatives, with standards that differed from each other by no more than two miles per gallon.²¹⁶ The alternatives in the 2008 environmental impact statement included (1) no action; (2) an “optimal” standard that equated marginal benefits with marginal costs; (3) standards 25 percent below, 25 percent above, and 50 percent above the optimal standard; (4) a standard that set total costs equal to total benefits; and (5) a standard that exhausted all feasible technologies. The various standards implied fuel efficiencies of 27.5–47.1 miles per gallon for cars and 23.4–37.2 miles per gallon for trucks.²¹⁷ The 2008 RIA also included reduced carbon dioxide emissions as a monetized benefit, performing a sensitivity analysis that showed results for values ranging from \$0 to \$14 per metric ton.²¹⁸

The NHTSA did not improve three aspects of the analysis the court found insufficient because it believed the Energy Independence and Security Act, passed in December 2007, resolved those issues.²¹⁹

3. *Natural Resources Defense Council, Inc. v. Herrington (1985)*. The court declared that “significant” energy savings means “nontrivial” energy savings, implying that future DOE analysis should assess whether energy savings are nontrivial. The court also faulted the department for failing to calculate the maximum technologically feasible standard and for failing

²¹⁶ *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1218 (9th Cir. 2008).

²¹⁷ NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, FINAL ENVIRONMENTAL IMPACT STATEMENT: CORPORATE AVERAGE FUEL ECONOMY STANDARDS, PASSENGER CARS AND LIGHT TRUCKS, MODEL YEARS 2011–2015, at 2-12–2-14 (2008).

²¹⁸ NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, PRELIMINARY REGULATORY IMPACT ANALYSIS: CORPORATE AVERAGE FUEL ECONOMY FOR MY 2011–2015 PASSENGER CARS AND LIGHT TRUCKS, at IX-10–IX-13 (2008).

²¹⁹ National Highway Traffic Safety Administration, Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2011–2015, Proposed Rule, 73 Fed. Reg. 24,352, 24,447, 24,457–61 (2008).

to justify its decisions to ignore standards based on prototypes or with payback periods exceeding five years. The DOE addressed all of these concerns in its next rule that reviewed energy efficiency standards for refrigerators, which were established by legislation enacted in 1987 in the wake of *Natural Resources Defense Council, Inc. v. Herrington*.

In the analysis for its 1989 rule amending the standards, the department calculated energy savings in terms of quadrillion British Thermal Units (BTUs) instead of barrels of oil, and it concluded that all the standards considered in the analysis would save a significant amount of energy.²²⁰ The analysis calculated energy savings and costs associated with the maximum technologically feasible standard and four alternative standards.²²¹ For the most common type of refrigerator, payback periods ranged from 9 months to 6.93 years.²²² The DOE also explained that it considered any product designs that could be assembled by the date the new standard would take effect.²²³

4. *Competitive Enterprise Institute v. NHTSA (1992)*. In 1992, the court remanded the NHTSA's corporate average fuel economy regulations for model year 1990 to consider whether they could be expected to affect auto safety. The NHTSA reopened the rulemaking but then terminated it when the NHTSA received no comments indicating that a change in the 1990 standard would alter manufacturer behavior. The court upheld the NHTSA's decision because no comments were on the record indicating that the 1990 standard would change manufacturer behavior. The

²²⁰ See generally Department of Energy, Office of Conservation and Renewable Energy, Energy Conservation Program for Consumer Products: Energy Conservation Standards for Two Types of Consumer Products, 54 Fed. Reg. 47,936 (1989).

²²¹ *Id.* at 47,919, 47,935.

²²² *Id.* at 47,935.

²²³ *Id.* at 47,938.

court noted, however, that the NHTSA did not give adequate reasons for rejecting the peer-reviewed study by Robert Crandall and John Graham showing that manufacturers decreased the weight of vehicles in response to the fuel economy standards in the 1980s.²²⁴

In 1992, the National Research Council (NRC) issued a report concluding that reductions in vehicle weight have increased the risk of injury to occupants. A 1997 NHTSA report and a 2002 NRC report both concluded that reduced weight impaired safety.²²⁵ More recent fuel economy standards have been based on the vehicle footprint rather than a manufacturer-wide average in order to remove manufacturers' incentives to reduce vehicle weights so they can comply with the average standard, and RIAs for those regulations explicitly discuss safety.²²⁶ It is unclear whether this analytical activity resulted from the original Competitive Enterprise Institute (CEI) case or simply the larger policy controversy of which the case was one part.

5. New Mexico Cattle Growers Association v. United States Fish and Wildlife Service (2001).

The 10th Circuit Court of Appeals ruled that the US Fish and Wildlife Service's (FWS) economic impact analysis of its critical habitat designation for the southwestern willow flycatcher should include "co-extensive" costs associated with its decision to list the species as endangered. When FWS issued a revised rule in 2005, the agency continued to protest vigorously

²²⁴ See generally *Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin.*, 45 F.3d 481 (D.C. Cir. 1995).

²²⁵ For a chronology of reports, see NATIONAL RESEARCH COUNCIL, EFFECTIVENESS AND IMPACT OF CORPORATE AVERAGE FUEL ECONOMY (CAFE) STANDARDS 25–29 (2002).

²²⁶ ENVIRONMENTAL PROTECTION AGENCY AND NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, DRAFT JOINT TECHNICAL SUPPORT DOCUMENT: PROPOSED RULEMAKING FOR 2017–2025 LIGHT-DUTY VEHICLE GREENHOUSE GAS EMISSION STANDARDS AND CORPORATE AVERAGE FUEL ECONOMY STANDARDS, at chapter 2 (2011).

that the entire habitat designation process is usually an enormous waste of time and resources.²²⁷

Nevertheless, the agency produced an extensive economic impact analysis that estimated the combined social cost of the listing decision, the habitat decision, and other policies intended to protect the species. The total cost was estimated at \$32.7–\$38.0 million annually.²²⁸

6. *Public Citizen Health Research Group v. Tyson (1986)*. The court remanded an OSHA rule that declined to set a short-term exposure limit to ethylene oxide, instructing the agency to consider whether a short-term exposure limit would further reduce a significant risk. OSHA hired a contractor to perform site visits and gather data on employees' short- and long-term exposure to ethylene oxide at facilities that produce or use the gas, then estimated the cost to firms of meeting alternative short-term exposure limits of 5 parts per million and 10 parts per million. OSHA concluded that adopting a standard of 5 parts per million would significantly reduce risk at an incremental cost of \$3 million.²²⁹

7. *New York v. Reilly (1992)*. In a 1995 Federal Register notice, the EPA addressed this court decision by providing further evidence that a ban on burning lead-acid batteries would not affect pollutant emissions from solid waste incinerators. First, the EPA noted that more than 90 percent

²²⁷ See generally Department of the Interior, Fish and Wildlife Service, Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Southwestern Willow Flycatcher, Final Rule, 70 Fed. Reg. 60,886 (2005).

²²⁸ INDUSTRIAL ECONOMICS, INC., FINAL ECONOMIC ANALYSIS OF CRITICAL HABITAT DESIGNATION FOR THE SOUTHWESTERN WILLOW FLYCATCHER 1-5-1-6 (2005).

²²⁹ Department of Labor, Occupational Safety and Health Administration, Occupational Exposure to Ethylene Oxide, Final Standard, 53 Fed. Reg. 11,414, 11,421–27 (1988).

of lead-acid batteries are already recycled.²³⁰ Second, the agency reported the results of a joint test with Canadian environmental regulators that involved “spiking” the waste stream at an incinerator with additional batteries to see if the concentration of lead in the smokestack emissions increased. The test found that the additional lead ended up in the ash, not in the air emissions.²³¹ Thus, neither a complete nor a partial ban on battery burning would appreciably improve air quality.

8. *Public Citizen v. FMCSA (2004) and subsequent related cases.* The D.C. Circuit Court of Appeals struck down the FMCSA’s rules on trucker hours of service because the agency failed to consider the effects of the rule on drivers’ health.²³² In dicta, the court indicated that the agency’s benefit-cost analysis assumed that time spent resting was as fatiguing as time spent driving; thus, the analysis likely underestimated the risk of increasing maximum daily driving time from 10 to 11 hours.²³³ The court also questioned the FMCSA’s decision to allow drivers with sleeping berths to split their off-duty time into two periods less than eight hours apiece because evidence indicated that drivers who did not get eight continuous hours of sleep succumbed to fatigue sooner.²³⁴ Finally, the court faulted the agency for declining to develop data on the benefits and costs of requiring electronic onboard monitoring devices.²³⁵ All three issues arose in subsequent rulemakings and court cases.

²³⁰ See generally Environmental Protection Agency, New Source Performance Standards and Emission Guidelines for Municipal Waste Combustors; Combustion of Lead-Acid Vehicle Batteries, Supplemental Notice/Review of Decision, 60 Fed. Reg. 65,439 (1995).

²³¹ *Id.* at 65,440–41.

²³² *Pub. Citizen v. Fed. Motor Carrier Safety Admin.*, 374 F.3d 1209, 1216 (D.C. Cir. 2004).

²³³ *Id.* at 1217–18.

²³⁴ *Id.* at 1219.

²³⁵ *Id.* at 1220–22.

- Eleven-hour driving time.* In 2005, the FMCSA adopted new rules that retained the 11-hour service time limit. Based on a new model estimating the relationship between hours of service and crashes, the agency concluded that the safety differential between a 10- and an 11-hour service period is very small, but the cost differential is very large.²³⁶ In *Owner-Operator Independent Drivers Association v. FMCSA*, the D.C. Circuit Court of Appeals vacated the 11-hour service period because the FMCSA failed to disclose its new fatigue-risk model when it proposed the regulation and also failed to explain several aspects of the model that produced significantly different risk estimates than one would infer from the raw data.²³⁷ The FMCSA's model was an attempt to address the court's concern in *Public Citizen v. FMCSA* that the agency ignored the cumulative effect of on-duty hours on safety. In response to that court decision, the FMCSA explained the model more thoroughly, made some changes in response to the court's decision, sought public comment on the model, subjected it to peer review, and ultimately readopted the 11-hour service period.²³⁸
- Sleeper berths.* The 2005 rules also required drivers using sleeper berths to stay in the berth for at least 8 of the required 10 off-duty hours. To support its sleeper berth decision, the agency cited research and presented analysis in the RIA showing that splitting sleeping time into two periods shorter than 8 hours is less safe than spending one

²³⁶ Department of Transportation, Federal Motor Carrier Safety Administration, Hours of Service of Drivers, Final Rule, 70 Fed. Reg. 49,978, 49,981 (2005).

²³⁷ *Owner-Operator Indep. Drivers Ass'n v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 203–205 (D.C. Cir. 2007).

²³⁸ Department of Transportation, Federal Motor Carrier Safety Administration, Hours of Service of Drivers, Final Rule, 73 Fed. Reg. 69,567 (2008); Department of Transportation, Federal Motor Carrier Safety Administration, Hours of Service of Drivers, Interim Final Rule and Request for Comment, 72 Fed. Reg. 71,247 (2007); FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION AND ICF INTERNATIONAL, REGULATORY IMPACT ANALYSIS FOR HOURS OF SERVICE OPTIONS (2007).

continuous 8-hour period in the sleeping berth.²³⁹ The court upheld the sleeper berth decision because of the new evidence the FMCSA cited.²⁴⁰

- *Electronic onboard recorders.* These devices became the subject of a separate set of rulemakings. The Seventh Circuit Court of Appeals vacated a 2010 FMCSA rule requiring a motor carrier to use electronic onboard recorders if a compliance review revealed a violation rate exceeding 10 percent. The regulation was overturned because the FMCSA failed to consider whether the devices would be used to harass drivers, a factor it was obligated to consider under the statute.²⁴¹ In one sentence, the court noted that the agency still had not estimated the benefits of onboard recorders by testing devices already in use.²⁴² The RIA for the 2011 rule requiring most carriers to install onboard recorders estimated the effectiveness of those devices using data from roadside inspections of carriers that had installed the equipment as a result of settlement agreements when compliance reviews revealed they were violating the hours of service regulations. The FMCSA estimated that onboard recorders reduced driving and duty-time violations by 40 percent.²⁴³ The RIA used this figure to calculate both the benefits and the costs of improved compliance.²⁴⁴ Thus, the FMCSA provided an analysis of benefits and costs based on data about the effectiveness of onboard recorders seven years after a court first faulted the agency for not collecting those data.

²³⁹ FMCSA Final Rule 2005, *supra* note 236, at 49,994; FMCSA AND ICF CONSULTING, REGULATORY IMPACT ANALYSIS AND SMALL BUSINESS IMPACT ANALYSIS FOR HOURS OF SERVICE OPTIONS 57–58 (2005).

²⁴⁰ *Owner-Operator*, 494 F.3d at 379.

²⁴¹ *Owner-Operator Indep. Drivers Ass’n v. Fed. Motor Carrier Safety Admin.*, 656 F.3d 580, 582 (7th Cir. 2011).

²⁴² *Id.* at 589.

²⁴³ FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION, NOTICE OF PROPOSED RULEMAKING, ELECTRONIC ON-BOARD RECORDERS AND HOURS-OF-SERVICE SUPPORTING DOCUMENTS, PRELIMINARY REGULATORY EVALUATION, REGULATORY IMPACT ANALYSIS, INITIAL REGULATORY FLEXIBILITY ANALYSIS, AND UNFUNDED MANDATES ANALYSIS 19–20 (2011).

²⁴⁴ *Id.* at 20–21.

9. *Natural Resources Defense Council v. EPA (1987)*. One provision of EPA regulations governing nuclear waste disposal sites declared that the sites must be constructed and maintained to ensure that individuals near the sites receive no more than minimal exposure to radiation for 1,000 years. The court ruled that the EPA provided insufficient justification for choosing 1,000 years rather than a longer period.²⁴⁵ The EPA claimed that it did not mandate a longer period because it was not possible to reliably demonstrate compliance for longer periods, and the only way to guarantee compliance at some sites under consideration would be to use expensive engineered methods.²⁴⁶ The RIA considered three sites—two in salt formations and one in a basalt formation.²⁴⁷

In response to the court decision, the EPA, in 1993, changed the required time frame for protection of nearby individuals to 10,000 years. The agency stated that improvements in modeling software and better data from the DOE's examination of potential disposal sites now enable demonstration of compliance for the longer time period.²⁴⁸ A revised regulatory impact analysis included additional sites not included in the earlier RIA—several more salt formation sites, granite formation sites, and one site situated in tuff, a compacted volcanic rock. The RIA estimated that the tuff site, which would allow virtually no radiation to escape, also had the

²⁴⁵ See generally *Natural Res. Def. Council v. EPA*, 768 F.2d 1355 (1987).

²⁴⁶ See generally Environmental Protection Agency, *Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes*, Final Rule, 50 Fed. Reg. 38,073 (1985).

²⁴⁷ ENVIRONMENTAL PROTECTION AGENCY, FINAL REGULATORY IMPACT ANALYSIS, 40 CFR PART 191 ENVIRONMENTAL STANDARDS FOR THE MANAGEMENT AND DISPOSAL OF SPENT NUCLEAR FUEL, HIGH-LEVEL AND TRANSURANIC RADIOACTIVE WASTES 1-2 (1985).

²⁴⁸ See generally Environmental Protection Agency, *Environmental Radiation Protection: Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes*, Final Rule, 58 Fed. Reg. 66,401 (1993).

lowest costs.²⁴⁹ The incremental cost of extending the time frame from 1,000 years to 10,000 years, therefore, was very modest.

10. SEC cases. The SEC cases had little direct effect on the economic analysis of the rules considered in the cases. The SEC chose not to reissue the regulations struck down in *American Equity Investment Life Insurance Co. v. SEC* and *Business Roundtable v. SEC*. The commission reissued its independent director regulation remanded in *Chamber of Commerce v. Securities and Exchange Commission* after a week of deliberation without opening up the comment period.²⁵⁰ That regulation was also challenged, struck down, and not repropose.²⁵¹

The court cases, however, prompted a broader reconsideration of the role and extent of economic analysis at the SEC. Eight months after *Business Roundtable v. SEC*, the commission's general counsel and chief economist issued new guidance on economic analysis of regulations.²⁵² The guidance stated that the economic analysis in every SEC rulemaking should include a statement of the need for the regulation, a baseline against which to measure the regulation's effects, reasonable alternatives, and an evaluation of the benefits and costs of the proposed regulation and its alternatives. Those requirements mirror the key elements of regulatory impact analysis identified in Executive Order 12866 and OMB guidance previously described.²⁵³ The guidance also declared that economists would henceforth be involved at every stage in the rule-writing process instead of being brought in at the end to analyze a rule that was already

²⁴⁹ ENVIRONMENTAL PROTECTION AGENCY, REGULATORY IMPACT ANALYSIS FOR EPA'S HIGH-LEVEL WASTE STANDARD (40 CFR PART 191), at 33 (1992).

²⁵⁰ Ellig & Peirce, *supra* note 122, at 368.

²⁵¹ See generally *Chamber of Commerce v. SEC*, 443 F.3d 890 (D.C. Cir. 2006).

²⁵² MEMORANDUM FROM THE SEC DIVISION OF RISK, STRATEGY, AND FINANCIAL INNOVATION AND THE OFFICE OF GENERAL COUNSEL TO THE STAFF OF THE RULEWRITING DIVISIONS AND OFFICES (Mar. 16, 2012).

²⁵³ Ellig & Peirce, *supra* note 122, at 370–73.

written.²⁵⁴ The chief economist's direct reporting line to the chairman was restored.²⁵⁵ A recent empirical study finds that the quality of the SEC's economic analysis improved substantially after it issued the new guidance.²⁵⁶

C. Pattern of Remands Displays No Clear Pro- or Antiregulatory Bias

As noted in section IV, economic analysis of agency regulations is not inherently pro- or antiregulatory. An economic analysis presents information about the problem, alternative solutions, and benefits and costs of alternatives so that decision makers can better understand the relevant opportunities and tradeoffs. By the same token, judicial review of the agency's economic analysis does not inherently favor stronger or weaker regulations, as borne out by this paper's study of the decisions in which federal courts of appeals have reviewed an agency's economic analysis supporting a rulemaking.

In 21 of the 37 decisions involving direct review of the economic analysis supporting a rule (that is, 57 percent of the total), the court rejected all challenges to that analysis.²⁵⁷ Only three of those 21 decisions (14 percent) could be classified as antiregulatory in the sense that the court sided with the agency against an appellant who sought more or stricter regulation. In a majority of cases—13, or 62 percent—the court upheld a regulation that was challenged by a

²⁵⁴ SEC GUIDANCE, *supra* note 123, at 15–17.

²⁵⁵ Ellig & Peirce, *supra* note 122, at 372–73.

²⁵⁶ Jerry Ellig, IMPROVEMENTS IN SEC ECONOMIC ANALYSIS SINCE *BUSINESS ROUNDTABLE: A STRUCTURED ASSESSMENT* (Dec. 15, 2016).

²⁵⁷ See appendix B. For purposes of these calculations, only 37 of the 42 cases cited in the appendix have been included. The 5 remaining cases have been excluded because they did not involve direct review of the economic analysis undergirding a rule. Instead, they involve questions of statutory interpretation or use the economic analysis to address tangential issues (e.g., whether a rule violates the First Amendment).

party seeking less regulation. The remaining 5 cases involved multiple appellants, some of which favored more regulation and some less.

Of the remaining 16 decisions wherein the court struck down at least some aspect of the agency's decision, 7 (44 percent) resulted in an antiregulatory decision insofar as the court suggested that the agency had overregulated in light of the findings of the economic analysis,²⁵⁸ and 9 (56 percent) resulted in a proregulatory decision suggesting that the agency had not regulated heavily enough.²⁵⁹

A court may strike down a rule as a result either of flaws in the substantive conclusions reached by the agency (for example, failure to satisfy a statutory mandate to maximize net benefits) or of errors committed in assessing the evidence. In neither instance does the analysis inherently favor weaker regulations. For instance, in *New York v. Reilly*,²⁶⁰ the court found procedural flaws in the agency's analysis, faulting the agency for considering only the extreme ends of the regulatory spectrum (rejecting an outright ban on the burning of lead-acid batteries in favor of nonregulation) and directing the agency to consider additional regulatory options.²⁶¹ In *Center for Biological Diversity v. NHTSA*,²⁶² the agency cited the difficulty of estimating the

²⁵⁸ See generally *Business Roundtable v. SEC*, 647 F.3d 1144 (D.C. Cir. 2011); *Am. Equity Inv. Life Ins. Co. v. SEC*, 572 F.3d 923 (D.C. Cir. 2009); *Chamber of Commerce v. SEC*, 443 F.3d 890 (D.C. Cir. 2006); *Chamber of Commerce v. SEC*, 412 F.3d 133 (D.C. Cir. 2005); *Gas Appliance Mfrs. Ass'n v. DOE*, 998 F.2d 1041 (D.C. Cir. 1993); *Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin.*, 956 F.2d 321 (D.C. Cir. 1992); *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir. 1991).

²⁵⁹ See generally *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172 (9th Cir. 2008); *Owner-Operator Indep. Drivers Ass'n, Inc. v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188 (D.C. Cir. 2007); *Advocates for Highway & Auto Safety v. Fed. Motor Carrier Safety Admin.*, 429 F.3d 1136 (D.C. Cir. 2005); *Pub. Citizen v. Fed. Motor Carrier Safety Admin.*, 374 F.3d 1209 (D.C. Cir. 2004); *Pub. Citizen, Inc. v. Mineta*, 340 F.3d 39 (2d Cir. 2003); *New York v. Reilly*, 969 F.2d 1147 (D.C. Cir. 1992); *Natural Res. Def. Council v. EPA*, 824 F.2d 1258 (1st Cir. 1987); *Pub. Citizen Health Research Grp. v. Tyson*, 796 F.2d 1479 (D.C. Cir. 1986); *Natural Res. Def. Council v. Herrington*, 768 F.2d 1355 (D.C. Cir. 1985).

²⁶⁰ 969 F.2d 1147 (D.C. Cir. 1992).

²⁶¹ *Id.* at 1153.

²⁶² 538 F.3d 1172 (9th Cir. 2008).

pecuniary benefits associated with reduced carbon emissions as a justification for setting those benefits at zero.²⁶³ Although acknowledging the difficulty of quantifying those benefits, the court nevertheless held that the agency erred and should have made some effort to estimate their scope.²⁶⁴ In *Public Citizen, Inc. v. Mineta*,²⁶⁵ the court assessed the substance of the underlying regulation, finding that the agency improperly overemphasized regulatory costs and downplayed benefits, explicitly rejecting the notion that “cheapest is best.”²⁶⁶

As a matter of logic, this symmetry in the case law is not surprising: ignoring stronger regulatory alternatives is presumably just as easy as overlooking weaker ones, and both regulatory benefits and costs may be under- or overestimated. Similarly, the agency may encounter internal and external pressures favoring either stronger or weaker regulations. For instance, when regulation produces diffuse public benefits, potentially regulated entities tend to have greater incentives and resources to combat enhanced regulation than potential regulatory beneficiaries have to advocate for that regulation.²⁶⁷ Nevertheless, in some instances, incumbent firms may lobby in favor of stronger regulations to the extent that they facilitate cartel behavior or serve as a barrier to entry for smaller firms.²⁶⁸ Agency officials also may have an inherent

²⁶³ *Id.* at 1199–1200.

²⁶⁴ *Id.* at 1200.

²⁶⁵ 340 F.3d 39 (2d Cir. 2003).

²⁶⁶ *Id.* at 58.

²⁶⁷ MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* 127–29 (1971). Any resultant regulatory laxity may be a result of intentional soft-pedaling by regulators who hope to curry favor with potential future employers in the private sector (the explanation favored by traditional capture theory). Jeffrey E. Cohen, *The Dynamics of the “Revolving Door” on the FCC*, 30 AM. J. OF POL. SCI. 689, 690 (1986); Ross D. Eckert, *The Life Cycle of Regulatory Commissioners*, 24 J.L. & ECON. 113, 113 (1981). Regulatory laxity may also be caused by large businesses’ greater ability to file public comments that the agency is legally bound to consider during the rulemaking process. Wendy E. Wagner, *Administrative Law, Filter Failure, and Information Capture*, 59 DUKE L.J. 1321, 1329 (2010).

²⁶⁸ George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. 3 (1971); ADAM SMITH & BRUCE YANDLE, *BOOTLEGGERS & BAPTISTS: HOW ECONOMIC FORCES & MORAL PERSUASION INTERACT TO SHAPE REGULATORY POLITICS* 5 (2014); DUDLEY & BRITO, *supra* note 28, at 18–19.

proregulatory bias insofar as they are ideologically committed to advancing the agency's mission and define the agency's success solely in terms of that mission rather than in terms of overall social welfare maximization.²⁶⁹ Thus, regardless of whether the underlying dynamics favor more or less regulation, judicial review can serve as an important corrective, allowing a neutral decision maker to assess whether the agency has provided objective evidence supporting its desired outcome.

Ultimately, the sample of cases examined in this paper is too small to reach a definitive conclusion concerning whether judicial review of agency economic analyses tends to favor stronger or weaker regulations. Nevertheless, based on both the limited empirical study conducted herein and principles of logic, expanded judicial review seemingly would not inherently favor either outcome. Rather, it would promote objectivity in conducting economic analysis by ensuring that agencies impartially assess the underlying facts and select the regulatory option favored by the weight of the evidence (be it relatively strong or weak).

D. Extent and Depth of Judicial Review Vary Widely

We agree with Cecot and Viscusi that courts seem to be highly capable of assessing the merits of competing evidentiary claims about agency regulatory impact analysis.²⁷⁰ As section VI.A demonstrated, courts have conducted searching review of agencies' analysis of the problem, alternatives, benefits, and costs. But we also agree with Cecot and Viscusi that the thoroughness of judicial review is highly inconsistent.²⁷¹ That is especially true for cases decided under the "arbitrary and capricious" standard. In numerous cases, courts have examined only whether the

²⁶⁹ See generally DOWNS, *supra* note 100; WILSON, *supra* note 100; DeMuth & Ginsburg, *supra* note 100; Dudley, *supra* note 100.

²⁷⁰ Cecot & Viscusi, *supra* note 7, at 608.

²⁷¹ *Id.* at 578, 598, 605.

agency presented some reasoning or evidence in support of the decisions it made in conducting its analysis. Courts have exercised such extreme deference with regard to all four key elements of regulatory impact analysis. Following are some examples.

1. Problem. In *Consumer Electronics Association v. Federal Communications Commission*, the court held that the Federal Communications Commission (FCC) was justified in concluding that adoption of digital broadcast tuners was insufficiently rapid because relatively few households had purchased digital tuners by 2001, and the FCC theorized that slow adoption of digital tuners discouraged development of digital programming.²⁷² A trade association argued that the FCC imposed a burden unnecessary to address the problem because it required cable and satellite subscribers to buy over-the-air digital receivers that they would not use. The court declined to assess whether the burden was necessary to solve the problem, holding that the FCC's decision was a type of "shifting of the benefits and burdens of a regulation" that "is well within the authority of the responsible agency."²⁷³

Louisiana ex rel. Guste v. Verity involved a National Marine Fisheries Service (NMFS) regulation that required shrimpers either to use nets that allow sea turtles to escape or to haul in their nets every 90 minutes to free captured turtles. Appellants claimed that NMFS did not demonstrate that shrimp trawling kills sea turtles, but the court cited numerous studies in the record that demonstrate the harm. The court concluded that the NMFS was not arbitrary and capricious in relying on those studies, even though 20 years of monitoring by the Louisiana

²⁷² *Consumer Elecs. Ass'n v. FCC*, 347 F.3d 291, 300–301 (D.C. Cir. 2003).

²⁷³ *Id.* at 301.

Department of Wildlife and Fisheries found no sea turtles captured by shrimp trawlers.²⁷⁴ Under the “arbitrary and capricious” standard of review, “the court is not to weigh the evidence in the record pro and con.”²⁷⁵

2. *Alternatives.* Courts have also allowed agencies to avoid extensive evaluation of alternatives. In *Investment Company Institute v. CFTC*, appellants argued that the CFTC set the threshold too low when it decided that an investment firm is subject to the registration requirement if nonhedging derivatives trades constitute 5 percent or more of its portfolio. The court upheld the CFTC’s decision because the CFTC offered a reasoned explanation for the 5 percent figure; the CFTC was not required to consider alternative thresholds and then conduct analysis to determine which one was best.²⁷⁶

The court presented a somewhat more extensive but still highly deferential discussion of an agency’s analysis of alternatives in *City of Waukesha v. EPA*, a case challenging EPA regulation of radionuclide levels in drinking water. Petitioners argued that the EPA failed to use the best available studies and data to determine what radium exposure standards protect the public with an adequate margin of safety. This argument squarely addresses the effectiveness of alternative standards. The court deferred to the EPA’s judgment sometimes because the EPA seemed to make a more convincing case based on the court’s reading of the evidence and at other times simply because the EPA gave reasons or cited studies that supported its decisions.²⁷⁷

In *National Wildlife Federation v. EPA*, the court found that the EPA behaved neither arbitrarily nor capriciously in rejecting several alternative compliance-monitoring methods and

²⁷⁴ *La. ex rel. Guste v. Verity*, 853 F.2d 322, 327–29 (5th Cir. 1988).

²⁷⁵ *Id.* at 327.

²⁷⁶ *Inv. Co. Inst. v. CFTC*, 720 F.3d 370, 381 (D.C. Cir. 2013).

²⁷⁷ *City of Waukesha v. EPA*, 320 F.3d 228, 247–55 (D.C. Cir. 2003).

in setting the monthly maximum effluent limitation at the 95th percentile of monthly measurements rather than the 99th. The court reasoned that the EPA has considerable discretion in making these judgments, and the agency explained its reasons.²⁷⁸

3. *Benefits*. In *Florida Manufactured Housing Association v. Cisneros*, the court upheld the US Department of Housing and Urban Development's (HUD) finding that the benefits of new standards for manufactured housing exceed the costs because the agency provided a logical explanation for its benefit and cost figures and its methods were not "flawed or unreasonable." "The role of this Court is not to decide whether HUD or the manufacturers used the better technical data and methodologies; instead, our task is to determine whether HUD's explanation of its administrative action demonstrates that it has considered the appropriate factors required by law and that it is free from *clear* errors of judgment."²⁷⁹

In *Reynolds Metals Co. v. EPA*, petitioners contended that the regulation could not produce the expected level of effluent reduction benefits; correcting several errors in the EPA's analysis would yield a lower reduction in effluents. The court summarized the differences between the petitioners and the EPA and then sided with the EPA because the agency provided a rational basis for its conclusions.²⁸⁰ The court likewise dismissed allegations of deficiencies in the EPA's cost analysis, stating that "an agency has a broad discretion in its selection of data and in the method of calculation, particularly when it involves highly scientific or technical considerations."²⁸¹

Even in remand cases, it is not always clear that the court read the evidence very closely. In *Advocates for Highway Safety v. FMCSA*, the court struck down a regulation that established

²⁷⁸ Nat'l Wildlife Fed'n v. EPA, 286 F.3d 554, 567–73 (D.C. Cir. 2002).

²⁷⁹ Fla. Manufactured Housing Ass'n v. Cisneros, 53 F.3d 1565, 1580 (11th Cir. 1995) (emphasis in original).

²⁸⁰ Reynolds Metals Co. v. EPA, 760 F.2d 549, 559–63 (4th Cir. 1985).

²⁸¹ *Id.* at 565.

standards for commercial driver training because the standards did not include a requirement for supervised on-road training. A report the agency developed in connection with the rulemaking “determined” that supervised on-road training was a necessary part of effective training.²⁸² The FMCSA later noted, however, that the report contained no data or statistical evidence of a relationship between driver training and crash reduction.²⁸³ The report’s “determination” was more of a judgment call than an empirical demonstration.

4. *Costs.* In *National Wildlife Federation v. EPA*, environmental petitioners argued that the EPA artificially inflated the cost of an option it rejected as too costly. The court generally found that the EPA demonstrated it had a rational basis for its cost estimates.²⁸⁴

Northwest Environmental Advocates v. NMFS dealt with an environmental impact statement rather than an RIA; however, the petitioner’s claims that the agency ignored certain costs are similar to the kinds of criticisms one could make in challenging an RIA. The court concluded, “It is not the office of this court to pass upon the wisdom of an agency action or to require an agency to study a proposed action *ad infinitum*. Our role is simply to assure that the agency has taken a hard look at the proposed action. In this case, the Corps has demonstrated the hard look by performing exhaustive studies over numerous years, soliciting and accommodating input from stakeholders, and thoroughly re-analyzing areas of particular concern.”²⁸⁵

Nevertheless, the dissenting opinion strongly criticized the agency’s analysis for ignoring

²⁸² *Advocates for Highway & Auto Safety v. Fed. Motor Carrier Safety Admin.*, 429 F.3d 1136, 1139–40 (D.C. Cir. 2005).

²⁸³ Department of Transportation, Federal Motor Carrier Safety Administration, Minimum Training Requirements for Entry-Level Commercial Motor Vehicle Operators, Notice of Proposed Rulemaking, 72 Fed. Reg. 73,226, 73,229 (2007).

²⁸⁴ *Nat’l Wildlife Fed’n v. EPA*, 286 F.3d 554, 560–66 (D.C. Cir. 2002).

²⁸⁵ *Nw. Env’tl. Advocates v. Nat’l Marine Fisheries Serv.*, 460 F.3d 1125, 1145 (9th Cir. 2006).

possible external costs created by the project and failing to consider how much of the economic benefit would merely constitute diversion of traffic from other ports.²⁸⁶ The dissent suggests that the court may have reached a different decision under a more demanding standard of review.

In *Radio Association on Defending Airwave Rights v. United States Department of Transportation Federal Highway Administration*, the court held that the agency satisfied the 1984 Safety Act's requirement that it must perform a benefit-cost analysis, even if it declined to include some costs.²⁸⁷ In *Consumer Electronics Association v. FCC*, the court held that although the commission simply concluded that the costs were within an acceptable range without conducting much actual analysis of costs, its approach "meets the minimum standard for reasoned decisionmaking."²⁸⁸

One might argue that such highly deferential treatment of agency analysis is the essence of the "arbitrary and capricious" standard. The cases just cited, however, offer a clear contrast to the cases cited earlier in section VI.A, some of which were also decided under the "arbitrary and capricious" standard.

VII. Developing the Standard of Review

As examined in section V, the existing case law is unclear on the reviewability of economic analyses that are not mandated by statute and on the rigor of review applied to agency economic analyses. Section VI demonstrated that judicial review of economic analysis can improve the quality of those analyses yet still afford the agency a high degree of discretion when applying that analysis to craft a regulation. This section will explore statutory reforms designed to capture

²⁸⁶ *Id.* at 1147–50.

²⁸⁷ *Radio Ass'n on Defending Airwave Rights v. U.S. Dep't of Transp. Fed. Highway Admin.*, 47 F.3d 794, 805–806 (6th Cir. 1995).

²⁸⁸ *Consumer Elecs. Ass'n v. FCC*, 347 F.3d 291, 302 (D.C. Cir. 2003).

the benefits deriving from judicial review and remove the uncertainty associated with the existing state of affairs.

To reiterate, this paper does not address any external requirement to prepare an RIA or attempt to specify how an agency should use the results of such an analysis. Efforts to impose an RIA requirement are already afoot in both Congress and the courts, but there has been some uncertainty concerning whether courts are equipped to conduct judicial review of rules relying on the findings of an RIA and how such review might look in practice. This paper focuses solely on illustrating how to design a successful judicial review regime, drawing on 30 years of precedent in which courts have reviewed agency rules relying—at least in part—on analysis contained in an RIA.

The simplest approach to establishing a uniform standard of review would entail a change to the underlying statutory framework. Because the RIA is a fundamental tool of regulatory policymaking and can be undertaken by any administrative agency, this change would best be achieved by amendment of the Administrative Procedure Act (APA), which has come to be seen as a de facto “constitution” of administrative law applicable to all federal agencies.²⁸⁹ We propose the following revisions to the APA to achieve that end:

- *Amend 5 U.S.C. § 551 to include a new subpart that defines “regulatory impact analysis.”* The definition should cover any analysis assessing the nature and significance of an underlying regulatory problem, alternative approaches, and the benefits and costs of a proposed regulation and its alternatives. Further, the definition should include analyses

²⁸⁹ See, e.g., Steven P. Croley, *The Administrative Procedure Act and Regulatory Reform: A Reconciliation*, 10 ADMIN. L. REV. AM. U. 35, 35 (1996); Alan B. Morrison, *The Administrative Procedure Act: A Living and Responsive Law*, 72 VA. L. REV. 253, 253 (1986).

prepared pursuant to statutory mandate, in response to an executive order or any other presidential directive, or on the agency's own initiative.

- *Add a new section (in Title 5, Part I, Chapter 7 of the U.S. Code) that establishes the standard of review applicable to agencies' regulatory impact analyses. Any RIA prepared by the agency becomes part of the rulemaking record on judicial review, regardless of the initial impetus for preparing the analysis. The court will subsequently assess the underlying rule in light of the findings of the RIA. The court must consider whether the agency (1) presented evidence that a significant problem exists and identified the root cause of the problem, (2) considered a reasonable range of alternative solutions that address the root cause, (3) analyzed the anticipated benefits and costs of the selected regulatory option and any alternatives considered, and (4) relied on the best available evidence in reaching those determinations. To the extent that the agency relied on flawed analysis contained in the RIA, overlooked some material issue when preparing the RIA, or ignored some relevant aspect of the RIA in a manner that introduces a material error into the agency's final conclusion, the court will set aside the rule on judicial review.*

The rigor of the court's analysis should be equivalent to that shown in cases applying the "substantial evidence" standard or the "hard look" version of "arbitrary and capricious" review. Given that those standards have been applied inconsistently in the past, as explored in section V.A, the statutory language should also set forth the actions the court should undertake when reviewing the final rule in light of the findings of an RIA. Specifically, the court should scrutinize the evidence of record to ensure that the agency did not commit a significant error in its analysis, overlook relevant evidence, or rely on comparatively weak evidence when more persuasive evidence was available.

A court reviewing an agency's RIA would not attempt to reproduce the evidence undergirding the agency's RIA or conduct its own analysis to determine whether the agency reached the "correct" conclusions on the basis of that evidence. Rather, the court would examine the evidence on the record and determine whether the agency used the best available information. Of course, weighing evidence proffered by litigating parties and deciding which side has presented a more compelling case is at the very core of the institutional role of courts, so federal judges are eminently well equipped to undertake that function.²⁹⁰

In addition, a reviewing court would not strike down an agency's rule simply because it does not perform optimally on each of the factors previously articulated. The key inquiry is whether a flaw or omission in the RIA led to a material difference in the regulation adopted. The factors are intended merely to guide that inquiry and provide greater clarity for agencies concerning the minimum procedures they must follow when preparing an RIA and using the analysis contained therein to craft a final rule.

The remainder of this subsection fleshes out each of the analytic factors in detail, describing the type of evidence that a reviewing court would demand of agencies and the type of analytical flaws that would justify a court's setting aside an agency's rule. The next subsection distinguishes our proposal from past efforts to expand judicial review of agency RIAs.

A. Analysis of the Problem

Under traditional conceptions of the administrative state, federal agencies were considered the "technocratic" arm of government, responsible simply for filling in the details of the policy prescriptions established by Congress (which, in turn, acted on behalf of the sovereign

²⁹⁰ See, e.g., ALLAN IDES & CHRISTOPHER N. MAY, CIVIL PROCEDURE 17 (2003); see also *supra* section VI.

people).²⁹¹ As such, agencies were not responsible for identifying problems or setting regulatory goals; rather, they simply devised the technical means for carrying out the wishes of Congress.²⁹²

Even assuming that there was a time when Congress and agencies maintained a clear distinction between the legislative functions of the former and the executive functions of the latter, that era has drawn to a close. In the nearly 230 years of the Republic, the Supreme Court has only twice struck down a statute for delegating excessive law-making powers to administrative agencies, and the more recent instance dates to the early days of the New Deal.²⁹³ In the intervening 80 years, a period that has witnessed the rise of the modern regulatory state, the Supreme Court has effectively resigned itself to the fact that agencies will necessarily undertake a certain law-making function,²⁹⁴ although Congress must at least articulate an “intelligible principle” to guide agencies’ decision-making.²⁹⁵

Given the expansive policy-making powers they currently enjoy, agencies engaged in the rulemaking process should not be allowed merely to point to their underlying statutory authorization and indicate that Congress has directed them to act. Rather, an agency should articulate in clear prose precisely what problem it intends to solve, present evidence that the

²⁹¹ Richard B. Stewart, *Administrative Law in the 21st Century*, 78 N.Y.U. L. REV. 437, 440–41 (2003).

²⁹² See, e.g., *Schechter Poultry Corp. v. United States*, 295 U.S. 495, 530 (1935) (“[T]he Constitution has never been regarded as denying to Congress the necessary resources of flexibility and practicality, which will enable it to perform its function in laying down policies and establishing standards, while leaving to selected instrumentalities the making of subordinate rules within prescribed limits and the determination of facts to which the policy as declared by the legislature is to apply”); *Pan. Ref. Co. v. Ryan*, 293 U.S. 388, 421 (1935) (“The Congress manifestly is not permitted to abdicate, or to transfer to others, the essential legislative functions with which it is thus vested. Undoubtedly legislation must often be adapted to complex conditions involving a host of details with which the national legislature cannot deal directly”).

²⁹³ *Schechter*, 295 U.S. at 529; *Pan. Ref.*, 293 U.S. at 421.

²⁹⁴ *Mistretta v. United States*, 488 U.S. 361, 378 (1989) (rejecting the notion that delegations “may not carry with them the need to exercise judgments on matters of policy”).

²⁹⁵ *Id.* at 372 (“So long as Congress ‘shall lay down by legislative act an intelligible principle to which the person or body authorized to [exercise the delegated authority] is directed to conform, such legislative action is not a forbidden delegation of legislative power’” [quoting *J.W. Hampton, Jr., & Co. v. United States*, 276 U.S. 394, 409 (1928)]).

problem is significant, and trace the problem to its root cause.²⁹⁶ An evidence-based assessment of the problem the agency seeks to solve can help regulators decide whether and how to regulate, even before they compare the benefits and costs of alternatives.

The simplest and most straightforward use of problem analysis is to determine whether a significant problem exists that regulation might solve. If there is no systematic evidence of a widespread, significant problem, then regulation is unnecessary.²⁹⁷ If analysis of the baseline—that is, the likely conditions in the future in the absence of a new regulation—indicates that the problem is likely to diminish or disappear over time, then either regulation is unnecessary or only a temporary regulation is needed.²⁹⁸

Identifying the root cause of the problem is necessary to identify actions that could potentially solve the problem.²⁹⁹ Problem analysis thus aids in identifying effective alternatives and in weeding out alternatives that only treat symptoms. Identifying the root cause also aids in crafting a regulation that is no broader than it needs to be. Only those entities that are actually proven to be a significant source of the problem need to be regulated.³⁰⁰ A clear understanding of the problem also provides a guidepost for retrospective analysis to assess how much of the problem the regulation solved.

²⁹⁶ This is especially important when the statutory mandate is exceedingly vague, such as when a statutory provision directs the agency to act in the “public interest.” *See, e.g., Nat’l Broad. Co. v. United States*, 319 U.S. 190, 225–26 (1943) (upholding a statute directing an agency to regulate in the “public interest” in the face of a nondelegation challenge); *N.Y. Cent. Sec. Corp. v. United States*, 287 U.S. 12, 24–25 (1932).

²⁹⁷ DUDLEY & BRITO, *supra* note 28, at 90–91; Patrick A. McLaughlin et al., *Regulatory Reform in Florida: An Opportunity for Greater Competitiveness and Economic Efficiency*, 13 FLA. ST. U. BUS. REV. 115–23 (2014).

²⁹⁸ McLaughlin et al., *supra* note 297, at 123–24; Richard A. Williams and Kimberly M. Thompson, *Integrated Analysis: Combining Risk and Economic Assessments While Preserving the Separations of Powers*, 24 RISK ANALYSIS 1618–19 (2004).

²⁹⁹ Ellig & Brito, *supra* note 22, at 10–11.

³⁰⁰ *See generally, e.g.,* Jerry Ellig & Richard Williams, *FDA’s Animal Food Regulation Is for the Birds*, 37 REGULATION 61 (2014) (showing that most of the benefits of a proposed animal food regulation could be achieved by applying it only to pet food, not to all animal feed).

Executive Order 12866 and OMB Circular A-4 provide useful guidance to agencies in that respect. Executive Order 12866 states that “each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action).”³⁰¹ Circular A-4 sets forth various market failures that might justify regulatory intervention, including (1) externalities, (2) public good problems, (3) excessive market concentration, and (4) informational asymmetries.³⁰² Importantly, regulatory interventions need not be limited to efforts to correct market failures and increase net social utility, as Circular A-4 explicitly recognizes.³⁰³ Other reasons for regulatory intervention include promoting justice, prohibiting invidious discrimination, ensuring fairness, advancing public morality, guaranteeing equal opportunity, and cultivating civic virtue.³⁰⁴ In short, although the regulatory problem it addresses need not involve a market failure, a regulatory agency should be as precise as possible in identifying the problem it intends to solve and presenting relevant evidence about its significance and cause.

The cases reviewing the economic analyses underpinning agencies’ rules provide some insight on the flaws that justify setting aside a rule for failure to adequately assess the underlying problem. For instance, in *Advocates for Highway and Auto Safety v. FMCSA*,³⁰⁵ the FMCSA marshaled evidence concerning one cause of accidents (inadequate on-road training for commercial drivers) but then adopted a rule designed to address an entirely separate set of causes (driver qualification, driver wellness, hours of operation, and whistleblower protection).³⁰⁶ Such

³⁰¹ Exec. Order No. 12,866 § 1(b)(1), 58 Fed. Reg. 51,735, 51,735 (Oct. 4, 1993).

³⁰² OFFICE OF MGMT. AND BUDGET, CIRCULAR A-4, September 17, 2003, available at http://www.whitehouse.gov/omb/circulars_a004_a-4/.

³⁰³ *Id.*

³⁰⁴ Reeve T. Bull, *Market Corrective Rulemaking: Drawing on EU Insights to Rationalize U.S. Regulation*, 67 ADMIN. L. REV. 629, 636 (2015).

³⁰⁵ 429 F.3d 1136 (D.C. Cir. 2005).

³⁰⁶ *Id.* at 1146.

a disconnect between the problem identified and the solution adopted is fatal to a proposed regulation; the agency must identify the root cause of the problem it seeks to address and demonstrate how its rule will redress that specific issue.

The agency also must present evidence showing that the underlying problem is sufficiently significant to merit regulatory intervention. To do so, the agency must establish a baseline projection of what will happen in the absence of new regulation effectively enough to illustrate how its proposed intervention ameliorates some deficiency. In *American Equity Investment Life Insurance Co. v. SEC*,³⁰⁷ the SEC claimed that its proposed rule (which subjected a type of variable-rate annuity to the securities laws) would enhance market competition, but it failed to assess existing levels of competition under state regulation or the efficiency of the existing state law regime. Absent some showing that the existing state of affairs was insufficiently competitive, the agency failed to demonstrate that the proposed rule was necessary.³⁰⁸ Similarly, in *Business Roundtable v. SEC*,³⁰⁹ in which the SEC proposed a rule that would facilitate the listing of shareholder-nominated candidates on ballots in corporate elections, the court faulted the agency for failing to establish a consistent baseline with which to measure the frequency of proxy challenges that would be caused by the rule.³¹⁰ Absent such a baseline, the agency could not viably determine whether the rule would alter the status quo (and therefore failed to demonstrate that any problem exists that requires a regulatory solution).³¹¹ In short, the agency must demonstrate why regulation is required and how its proposed intervention effects an improvement.

³⁰⁷ 572 F.3d 923 (D.C. Cir. 2009).

³⁰⁸ *Id.* at 935–36.

³⁰⁹ 647 F.3d 1144 (D.C. Cir. 2011).

³¹⁰ *Id.* at 1153.

³¹¹ *Id.*

The court must limit its review of the agency’s problem analysis to ensuring that the agency has clearly articulated the problem it seeks to solve, presented evidence that the problem is significant, and identified the root cause of the problem. The court must not substitute its judgment concerning whether the underlying regulatory goal is legitimate for the judgment of the agency. As long as the agency puts forward convincing evidence for the existence of a significant problem and for the potential of a proposed rule to improve the status quo, it is not the province of federal judges to opine on whether they would have made the same decision. The problem-articulation requirement will prove crucial in the subsequent steps of the analysis, as the court assesses whether the economic analysis demonstrates that the regulation is likely to produce the intended outcome or outcomes and whether the agency considered viable alternatives to the option selected in achieving that outcome.

This requirement for problem analysis would also have a number of positive effects beyond promoting meaningful judicial review. Under the APA framework for informal rulemaking, the agency must give interested parties an opportunity to comment on its proposed rule.³¹² If stakeholder groups are to comment intelligently, they must have a clear sense of the nature and cause of the problem the agency seeks to solve. Similarly, as agencies undertake retrospective review of their rules, a clear articulation of the regulatory goal will allow both the agency and stakeholder groups to test whether the rule has indeed achieved its purported aims or instead should be modified to enhance its effectiveness.³¹³

³¹² 5 U.S.C. § 553(c).

³¹³ See Administrative Conference of the United States, Recommendation 2014-5, *Retrospective Review of Agency Rules*, ¶¶ 2, 14, 79 Fed. Reg. 75,116–17 (Dec. 17, 2014).

B. Considering Reasonable Alternative Solutions

Gordon Tullock often enjoyed recounting the story about a Roman emperor who judged a singing contest. The first contestant sounded so horrible that the emperor immediately gave the prize to the second contestant.³¹⁴ The emperor's foolishness is obvious to most people: the second singer might have been even worse! In isolation, the consideration of costs and benefits associated with an RIA is meaningless: even if the benefits of a proposed course of action exceed the costs, a regulator cannot determine whether the selected option is desirable absent some consideration of alternatives.³¹⁵ The basic principle is opportunity cost: any given decision is economically optimal only if it is deemed preferable to all other available decisions.³¹⁶ Thus, an effective RIA must compare the preferred course of action to reasonable alternatives.

As discussed in section VI.A.2, that inquiry should not focus on whether the agency considered an adequate *number* of alternative solutions. Rather, the focus should be on whether the agency assessed a range of conceptually viable alternatives (the number and sophistication will vary depending on the circumstances) and whether the agency conducted an adequate analysis of those alternatives.

Of course, a requirement that an agency consider every conceivable alternative to its preferred option would be crippling. For any regulatory decision, the alternative options are literally infinite. Furthermore, even if an agency need only consider "reasonable" alternatives, the analytical burden could still be significant, as one can almost always conceive of a superior

³¹⁴ Peter J. Boettke et al., *Saving Government Failure Theory from Itself: Recasting Political Economy from an Austrian Perspective*, 18 CONST. POL. ECON. 128 (2007).

³¹⁵ *Corrosion Proof Fittings*, 947 F.2d 1201, 1221 (5th Cir. 1991).

³¹⁶ We take no position on whether the optimal regulatory approach is that which maximizes net benefits, although that often will be the case. The agency is free to select whichever approach it deems ideal, but it must offer a reasoned explanation for why it has chosen that option in preference to the available alternatives.

approach in hindsight. Thus, a court reviewing an agency’s RIA must simply ensure that the agency considered the most viable alternatives.

In cases involving judicial review of agency economic analyses, federal courts have recognized the need for balance. In essence, the courts have held that an agency need not consider every conceivable alternative, but it must give some thought to those alternatives that would reasonably come to mind when considering the problem at hand. For instance, in *Chamber of Commerce of the United States v. SEC*,³¹⁷ the court faulted the agency for failing to give adequate consideration to a regulatory alternative that was identified by two commissioners who dissented from the agency’s final decision.³¹⁸ In *Corrosion Proof Fittings v. EPA*,³¹⁹ the court held that an agency must consider a spectrum of acceptable alternatives.³²⁰ In that case, merely considering the two extreme options—an outright ban on a product and simple failure to regulate—was deemed inadequate, with the court on remand instructing the agency to consider a range of intermediate alternatives.³²¹ In short, as the preceding examples and the cases in section VI.A.2 demonstrate, the agency must show that it considered an adequate range of alternatives and that it articulated a rational justification for selecting the preferred option.

Cases arising under the National Environmental Policy Act (NEPA) also provide a useful precedent for this type of inquiry. Under NEPA, an agency undertaking an action “significantly affecting the quality of the human environment” must prepare an environmental impact statement that considers the “alternatives to the proposed action.”³²² In interpreting this requirement under NEPA, federal courts determine the type of alternatives that the agency must

³¹⁷ 412 F.3d 133 (D.C. Cir. 2005).

³¹⁸ *Id.* at 144.

³¹⁹ 947 F.2d 1201 (5th Cir. 1991).

³²⁰ *Id.* at 1216–17.

³²¹ *Id.*; *see also* *New York v. Reilly*, 969 F.2d 1147, 1153 (D.C. Cir. 1992).

³²² 42 U.S.C. §§ 4332(C)(iii), (E).

consider and will set aside an agency action if they determine that the agency overlooked an especially compelling alternative. The courts' analysis is "essentially procedural" and is designed only to ensure that the agency reached a "fully informed and well considered decision"; the agency does not have to choose the alternative that the court would have preferred.³²³

Nevertheless, the agency must consider "an appropriate range of alternatives, even if it does not consider every available alternative."³²⁴ What that means in practice has gradually been fleshed out by the case law. As an initial matter, the agency must consider the "no action" alternative; simply leaving the status quo intact is always a potential option.³²⁵ The other alternatives the agency must consider will depend on the specific circumstances of the case. Generally, an action with an especially significant environmental impact will require more intense scrutiny of potential alternatives.³²⁶ An agency also must consider more alternatives when a significant number of conceivable alternatives exist.³²⁷ By the same token, an agency need not consider alternatives that are "speculative" or "remote."³²⁸ In considering the alternatives, the agency must offer a reasoned explanation for why it selected the preferred option,³²⁹ and it cannot ignore data relevant to its selection among the available options.³³⁰

Ultimately, in assessing an agency's RIA, the court must satisfy itself that the agency considered the key alternatives suggested by the evidentiary record and ensure that the agency

³²³ *Vt. Yankee Nuclear Power Corp. v. Natural Res. Def. Council*, 435 U.S. 519, 558 (1978).

³²⁴ *Headwaters, Inc. v. Bureau of Land Mgmt.*, 914 F.2d 1174, 1181 (9th Cir. 1990).

³²⁵ *Biodiversity Conservation Alliance v. Jiron*, 762 F.3d 1036, 1052 (10th Cir. 2014) ("The range of 'reasonable alternatives' must at least include the alternative of taking 'no action'"); *Friends of Southeast's Future v. Morrison*, 153 F.3d 1059, 1065 (9th Cir. 1998) (stating that "among the alternatives to be considered in an EIS is the no-action alternative"); see also 40 C.F.R. § 1502.14 (2015) (requiring agencies to include the alternative of no action).

³²⁶ *Mo. Mining, Inc. v. Interstate Commerce Comm'n*, 33 F.3d 980, 984 (8th Cir. 1994).

³²⁷ *Vt. Yankee*, 435 U.S. at 552 ("[T]he concept of 'alternatives' is an evolving one, requiring the agency to explore more or fewer alternatives as they become better known and understood").

³²⁸ *City of Aurora v. Hunt*, 749 F.2d 1457, 1467 (10th Cir. 1984); *Life of the Land v. Brinegar*, 485 F.2d 460, 472 (9th Cir. 1973).

³²⁹ *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1199–1200 (D. Colo. 2014).

³³⁰ *1000 Friends of Wis., Inc. v. Dep't of Transp.*, 2015 WL 2454271, at *9 (E.D. Wis. May 22, 2015).

did not overlook obvious possibilities (for example, simply declining to regulate). The alternatives to be considered and the amount of analysis required will depend significantly on the facts of the case.

C. Analyzing the Costs and Benefits of the Preferred Option and Alternatives

The existing case law provides insight into how judicial review of an agency’s analysis of regulatory benefits and costs would look in practice. Although most of those cases involve some statutory benefit-cost analysis requirement—whereas the standard articulated in this paper would extend to any economic analysis on which the agency relies, even in the absence of such a statutory requirement—the cases nevertheless introduce a number of analytical principles that would apply under the standard of review proposed herein.

First, the agency must present actual evidence concerning regulatory benefits and costs; it may not present some unquantified benefit or cost as a trump card absent some evidence showing why the unquantified factor is real and significant. For instance, in *Corrosion Proof Fittings v. EPA*, the agency quantified the value of statistical lives saved over a 13-year period but then cited the value of all lives saved beyond that point as an unquantified benefit.³³¹ Although an agency may justifiably rely on unquantified benefits when monetizing those benefits is impracticable, it cannot refuse to calculate otherwise quantifiable benefits or costs and cite those as “qualitative” evidence to justify its preferred approach. The same principles apply to unquantified values that are not benefits or costs.

³³¹ 947 F.2d at 1218–19.

By the same token, the agency may not rely on theoretical benefits or costs; it must present some evidence showing that the regulation is likely to generate the benefits or costs claimed. For instance, in *Gas Appliance Manufacturers Association v. Department of Energy*,³³² the agency assumed that heat losses in water heater fittings could be reduced by 40 percent but did not marshal any evidence to demonstrate how that was feasible.³³³ Such an abortive analysis is inadequate to prove the existence of regulatory benefits or costs.³³⁴

Second, the court must review the record to ensure that the agency has not committed clear errors in its analysis of the underlying benefits and costs. Although the court should not attempt to reproduce the agency's work or upset tenable agency conclusions with which it might disagree, it should identify any logical flaws in the agency's analysis and set aside any conclusion deriving from those errors that materially affects the final outcome. For instance, an agency must not double-count regulatory benefits or costs.³³⁵ Similarly, an agency must not discount regulatory costs without doing the same for regulatory benefits.³³⁶

Third, the court must ensure that the agency has relied on the best available evidence in reaching its conclusion. This requires the agency to consider not only the evidence it has developed internally, including the RIA and any additional economic analysis it may have commissioned, but also any relevant evidence presented during the notice-and-comment process by outside parties. The court also must ensure that the agency developed the evidence concerning regulatory benefits and costs to the greatest extent possible. In some instances, this may require a

³³² 998 F.2d 1041 (D.C. Cir. 1993).

³³³ *Id.* at 1147.

³³⁴ *Id.*

³³⁵ *See, e.g., Corrosion Proof Fittings*, 947 F.2d at 1219.

³³⁶ *See, e.g., Business Roundtable v. SEC*, 647 F.3d 1144, 1151 (D.C. Cir. 2011); *Corrosion Proof Fittings*, 947 F.2d at 1218.

quantification of regulatory costs, benefits, or both. For example, in *Business Roundtable v. SEC*, the court faulted the SEC for failing to quantify the costs associated with opposing shareholder-nominated candidates (or at least explain why doing so is impractical).³³⁷

In other instances, full quantification of benefits or costs may prove infeasible, but the agency can still provide a rough estimate of them. In *Chamber of Commerce of the United States v. SEC*, the court acknowledged that full monetization of the costs associated with a requirement that 75 percent of mutual fund directors be independent may prove impracticable, but the court suggested that the agency might at least provide a range for the anticipated costs.³³⁸ In *Center for Biological Diversity v. NHTSA*,³³⁹ the court recognized the difficulties associated with quantifying the benefits of reduced carbon emissions, but it faulted the agency's overly simplistic approach of ignoring those benefits entirely.³⁴⁰

In some instances, any effort to put a dollar value to regulatory benefits or costs may be impracticable. In those cases, the agency must at least provide a qualitative description of the benefits and costs and offer a reasoned, evidence-based explanation for why it has concluded that the benefits justify the costs. As previously discussed, unquantified benefits or costs (or overarching "values" that are not even styled as benefits or costs) may not be deployed as a "trump card" justifying whatever regulatory outcome the agency seeks.³⁴¹

Finally, the court must ensure that the agency assessed the benefits and costs not only of the preferred course of action but also of the key alternatives. For instance, in *Corrosion Proof*

³³⁷ 647 F.3d at 1150.

³³⁸ 412 F.3d 133, 143 (D.C. Cir. 2005).

³³⁹ 538 F.3d 1172 (9th Cir. 2008).

³⁴⁰ *Id.* at 1200.

³⁴¹ *Corrosion Proof Fittings*, 947 F.2d 1201, 1218–19 (5th Cir. 1991).

Fittings v. EPA, in which the EPA imposed a complete ban on the manufacture and distribution of asbestos, the court faulted the agency for failing to consider the costs and benefits associated with less burdensome alternatives.³⁴² The court also found error in the agency's failure to assess the health risks associated with asbestos substitutes, many of which are known carcinogens. If the alternatives that arise in the face of an outright ban are even less safe than the prohibited product, then the regulation completely fails to accomplish its primary goal.³⁴³

A complete RIA should identify the alternative with the greatest net benefits—that is, the alternative whose benefits exceed its costs by the greatest amount. If all major benefits and costs can be monetized, then the net benefits are relatively easy to compare. If some major benefits or costs are not monetized, a rigorous qualitative discussion can still identify the nature of the primary tradeoffs involved.

Even when all benefits and costs of a wide variety of alternatives can be quantified and monetized, however, the decision to regulate only when benefits exceed costs—or to select the alternative with the greatest net benefits—involves a value judgment that economic efficiency should be the goal.³⁴⁴ The question of what standards the analysis of benefits and costs must meet is different from the question of how the relationship between benefits and costs should affect agency decisions.

³⁴² *Id.* at 1217 (“Upon an initial showing of product danger, the proper course for the EPA to follow is to consider each regulatory option, beginning with the least burdensome, and the costs and benefits of regulation under each option. . . . Here, although the EPA mentions the problems posed by intermediate levels of regulation, it takes no steps to calculate the costs and benefits of those intermediate levels”).

³⁴³ *Id.* at 1220–21.

³⁴⁴ For discussions of alternative ways that benefit and cost information might be used to guide decisions, see Graham, *supra* note 108, at 432–35; Robert W. Hahn & Cass R. Sunstein, *A New Executive Order for Improving Federal Regulation? Deeper and Wider Cost-Benefit Analysis*, 150 U. PA. L. REV. 1489, 1498–99 (2002).

As explored in section V.B, there is a wide range of benefit-cost analysis requirements in the various statutory schemes authorizing agencies to regulate. Many statutes simply do not mention assessing benefits or costs, which is increasingly interpreted to permit (but not require) agencies to consider such information.³⁴⁵ Affirmative statutory requirements to consider costs and benefits range from a directive to regulate unless the agency determines that doing so would be technologically or economically infeasible (that is, the costs to industry would be so crippling as to render regulation inappropriate) to a strict requirement that the monetized benefits of the regulation exceed the monetized costs.³⁴⁶

Our proposal solely addresses how courts should assess the quality of the agency's analysis, not the agency's criteria for decision-making. The court would examine the underlying evidence to ensure that the agency adequately assessed the benefits and costs both of the preferred regulatory option and of the primary alternatives. In some cases, such examination may entail extensive effort to quantify benefits or costs; in others, merely enumerating the anticipated benefits and costs and making some qualitative effort to compare the two may be sufficient. The degree of quantification or monetization required would depend on the availability of relevant data and analytical methods in each case. Importantly, the court must not set aside the regulation merely because it finds one or more minor flaws in the agency's analysis of benefits and costs; the inquiry remains focused on whether a mistake in the economic analysis materially affected a decision about the regulation.

³⁴⁵ Cecot & Viscusi, *supra* note 7, at 586–87.

³⁴⁶ *See supra* section V.B.

D. Relying on the Best Available Evidence

Under our proposal, the court is limited to the evidentiary record confronted by the agency. That record includes (1) all evidence developed by the agency and (2) evidence furnished by outside parties pursuant to the notice-and-comment process³⁴⁷ that bears on the analysis contained in the agency's RIA. The court must assess the evidence of record and satisfy itself that the agency's analysis reaches logically tenable conclusions based on all the information in the record. In so doing, the court must not substitute its policy preferences for those of the agency. Similarly, the court must not penalize the agency for failure to analyze some aspect of the problem that the court may find interesting but that would not make a material difference in the assessment of the benefits and costs of the key regulatory alternatives.

At the same time, a number of flaws in the agency's analysis justify setting aside a rule that is not supported by the evidence on record. The list that follows explores some of the flaws that courts have identified when setting aside an agency's rule because of deficiencies in the underlying economic analysis. Under our proposal, courts would be empowered to set aside an agency rule when any of the following analytical flaws has a material effect on the agency's decision:

- *Ignoring relevant evidence submitted by outside parties.* Courts already routinely set aside agency rules for failing to consider evidence submitted during the notice-and-comment process that calls into question the decision reached by the agency. For instance, in *Business Roundtable v. SEC*, the agency relied on two “relatively unpersuasive studies” to the exclusion of more convincing evidence submitted by outside parties.³⁴⁸ Similarly, in *Chamber of Commerce of the United States v. SEC*, the agency

³⁴⁷ 5 U.S.C. § 553(c).

³⁴⁸ 647 F.3d at 1150–51.

inappropriately overlooked a regulatory alternative suggested by several commenters and two commissioners who dissented from the agency's ultimate conclusion.³⁴⁹

- *Engaging in speculation.* Summary assertions unsubstantiated by any evidence in the record are insufficient to support an agency's conclusions. In *Center for Biological Diversity v. NHTSA*,³⁵⁰ an agency maintained that the value of carbon emission reduction was zero, notwithstanding competing evidence indicating that the value, although uncertain, most assuredly was greater than zero.³⁵¹ In *Competitive Enterprise Institute v. NHTSA*³⁵² (wherein the agency summarily dismissed the risk that stronger fuel economy standards would reduce automobile safety by inducing consumers to purchase smaller cars), the court faulted the agency for engaging in "statistical legerdemain" and making "conclusory assertions that its decision had no safety cost at all."³⁵³ Failure to marshal evidence demonstrating the existence of a claimed benefit or cost (or the lack thereof) can prove fatal on review.
- *Ignoring important aspects of a regulatory problem.* Failure to acknowledge evidence concerning a key aspect of the problem confronted, including information bearing on potential alternatives or regulatory costs and benefits, is grounds for setting aside an agency's rule. For example, in *Corrosion Proof Fittings v. EPA*, the agency declined to consider any regulatory alternatives short of an outright ban on asbestos, notwithstanding

³⁴⁹ 412 F.3d at 144.

³⁵⁰ 538 F.3d 1172 (9th Cir. 2008).

³⁵¹ *Id.* at 1200.

³⁵² 956 F.2d 321 (D.C. Cir. 1992).

³⁵³ *Id.* at 324.

evidence that asbestos substitutes posed many of the same risks.³⁵⁴ In *Business Roundtable v. SEC*, the court faulted the agency for failing to consider the possibility that the proxy access rule would be used by unions and pension funds to extort concessions from the company, a potential cost associated with the proposed regulation.³⁵⁵

- *Relying on less persuasive evidence to the exclusion of more compelling evidence.* In *Business Roundtable v. SEC*, the agency heavily relied on two studies that the court deemed unpersuasive, at least one of which the agency conceded was ““difficult to interpret.”³⁵⁶ At the same time, the agency summarily dismissed studies submitted by commenters that reached the opposite result, failing to distinguish those studies or explain why they were considered unconvincing.³⁵⁷ If an agency’s reliance on a certain body of evidence is clearly illogical in light of another, more compelling body of evidence, the court is justified in striking down the agency’s decision.
- *Committing errors of logic.* The court should set aside an agency’s rule if it discerns any clear error of logic that resulted in an incorrect or unsupportable conclusion. For instance, in *Business Roundtable v. SEC*, the court noted that the agency assumed that the proxy access rule would be invoked frequently for estimating benefits but then found that it would be invoked infrequently when assessing costs.³⁵⁸ Such facially obvious inconsistencies in the agency’s reasoning merit a court’s setting aside a rule.

In short, although a reviewing court must not substitute its policy preferences for those of the agency, certain flaws in an agency’s evidentiary determinations merit reversal and remand.

³⁵⁴ *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1217, 1220–21 (5th Cir. 1991); *see also* *New York v. Reilly*, 969 F.2d 1147, 1153 (D.C. Cir. 1992) (finding that the EPA improperly ignored less restrictive alternatives than an across-the-board ban on burning lead-acid batteries).

³⁵⁵ *Business Roundtable v. SEC*, 647 F.3d 1144, 1151–52 (D.C. Cir. 2011).

³⁵⁶ *Id.* at 1151.

³⁵⁷ *Id.* at 1150.

³⁵⁸ *Id.* at 1154.

E. Distinguishing Past Reform Proposals

Over the past four decades, members of Congress have introduced a number of regulatory reform proposals that would subject various aspects of agency RIAs to judicial review. The earliest such proposal was the Regulatory Reform Act of 1981.³⁵⁹ Over the ensuing years, numerous bills modeled on the original 1981 legislation emerged.³⁶⁰ Each of those bills offered a suite of reforms to the informal rulemaking procedures of the APA. With respect to preparation and use of RIAs, each of the bills did all or most of the following:³⁶¹

- Required that any major rule (defined as a rule that is likely to have an annual economic impact of \$100 million or more) include both a preliminary and a final regulatory analysis, each of which assesses the regulatory benefits and costs, explores reasonable alternative approaches, and offers a reasoned explanation for the regulatory solution ultimately selected.³⁶²
- Provided that a court must vacate a rule if the agency completely failed to perform a required regulatory analysis.³⁶³
- Indicated that a reviewing court is to assess the regulatory analysis only insofar as it is relevant to the underlying rule. The court does not assess the regulatory analysis directly, but the analysis becomes part of the overall rulemaking record, and the court assesses the final rule in light of the findings thereof.³⁶⁴

³⁵⁹ S. 1080, 97th Cong. (1981).

³⁶⁰ *See, e.g.*, Regulatory Improvement Act of 1999, S. 746, 106th Cong. (1999); Regulatory Improvement Act of 1998, S. 981, 105th Cong. (1998); Comprehensive Regulatory Reform Act of 1995, S. 343, 104th Cong. (1995); Regulatory Reform Act of 1995, S. 291, 104th Cong. (1995).

³⁶¹ Unless otherwise indicated, all citations are to the Regulatory Reform Act of 1981. Each of the subsequent reform bills contained essentially all those elements.

³⁶² S. 1080, 97th Cong. § 622 (1981).

³⁶³ S. 343, 104th Cong. § 623(d) (1995). The Regulatory Reform Act of 1981 did not contain such a requirement.

³⁶⁴ S. 1080, 97th Cong. § 623(d) (1981).

- Failed to articulate any elevated standard of review. By default, the traditional “arbitrary and capricious” standard applies, such that a court will set aside the rule only if the agency reached an irrational conclusion in light of the findings of the regulatory analysis.

Our proposal overlaps with those previous reform efforts in certain respects and differs in others. Like those bills, our proposal does not involve direct review of the RIA; the court is asked to consider the overall rule in light of the RIA and other evidence on the record and to set aside the rule if reliance (or nonreliance) on the RIA introduced a material error into the final analysis.³⁶⁵ Unlike previous bills, our proposal does not address any legislative mandate to perform an RIA and takes no position on what form such an analysis requirement might take.

Finally, whereas the various reform bills do not articulate a standard of review other than the default “arbitrary and capricious” test, we explicitly set forth the analytical steps a reviewing court must undertake, including articulating specific factors on which the court is to assess the final rule’s reliance on the RIA. Defining steps seems necessary because the “arbitrary and capricious” test has been applied inconsistently in practice, as explored in section V.A. In essence, we envision a rigor of review roughly commensurate with that seen in cases that apply

³⁶⁵ Several of those bills might be read to foreclose any review of the underlying RIA except to ensure that the agency actually prepared it. *See, e.g.*, Regulatory Improvement Act of 1999, S. 746, 106th Cong. § 627(e) (1999) (“If an agency fails to perform the cost-benefit analysis, cost-benefit determination, or risk assessment, or to provide for peer review, a court may, giving due regard to prejudicial error, remand or invalidate the rule. The adequacy of compliance with the specific requirements of this subchapter shall not otherwise be grounds for remanding or invalidating a rule under this subchapter”); Comprehensive Regulatory Reform Act of 1995, S. 343, 104th Cong. § 623(d) (1995) (“If an analysis or assessment has been performed, the court shall not review to determine whether the analysis or assessment conformed to the particular requirements of this chapter”). The better reading of those bills is that the court can review the findings of the RIA insofar as they are relevant to the analysis supporting the final rule, although it cannot review the RIA directly. *See, e.g.*, Regulatory Improvement Act of 1999, S. 746, 106th Cong. § 627(d) (1999) (“The cost-benefit analysis, cost-benefit determination under section 623(d), and any risk assessment shall be part of the rule making record and shall be considered by a court to the extent relevant, only in determining under the statute granting the rule making authority whether the final rule is arbitrary, capricious, an abuse of discretion, or is unsupported by substantial evidence where that standard is otherwise provided by law; any regulatory analysis for such agency action shall constitute part of the whole administrative record of agency action for the purpose of judicial review of the agency action”). In translating the standard of review proposed in this paper into statutory language, Congress should be careful to avoid any language that might be misinterpreted as completely foreclosing any judicial review of the findings of an RIA.

the “substantial evidence” standard or the “hard look” version of “arbitrary and capricious” review. Specifically, the court should examine the totality of the evidence and ensure that the agency did not commit any material error, overlook relevant information, or rely on less persuasive evidence instead of more compelling evidence. By more explicitly defining the precise steps a reviewing court must take, this proposal should bring greater consistency to the case law and provide a higher degree of certainty concerning the expectations for agency officials preparing RIAs and applying an RIA’s findings to a rule.

Another question that has emerged over the years—in connection with the regulatory reform bills and with scholarly proposals concerning expanded judicial review of various aspects of agency decision-making—is whether the review is substantive or procedural. Substantive judicial review involves ensuring that the agency’s overall conclusion accords with the standard set forth by Congress (for example, ensuring that quantified benefits exceed quantified costs by the largest margin possible under a statutory regime that requires net benefit maximization). Procedural judicial review requires the court to ensure that the agency carried out the procedures required by Congress (for example, compiling evidence concerning a regulation’s economic benefits and costs).

Applying that rubric, this paper’s proposal falls somewhere along the spectrum between purely procedural and purely substantive review (as do the various reform bills of the 1980s and ’90s). The court is doing more than simply ensuring that the agency checked the relevant boxes (that is, performing a purely procedural review). For instance, if an agency provides an estimate for regulatory costs (and thereby achieves pro forma procedural compliance) but that estimate is clearly inaccurate in light of other evidence in the record, the court will set aside the rule if the error materially affects the final rule. At the same time, the court does not second-guess the

decision-making criteria selected by the agency (as in a purely substantive review) unless the agency reaches a conclusion that is irrational or unsupported by evidence. For instance, a reviewing court would not set aside a rule for failure to select the option that maximizes net benefits (unless another statute required the agency to do so), but it would strike down a rule for failure to offer a comprehensible explanation for why the agency ultimately selected one option over the alternatives.

Ultimately, whether the standard for judicial review is styled as procedural or substantive is of little relevance to the proposal. The overall goal is to (1) ensure that agencies cannot escape judicial scrutiny simply by engaging in pro forma compliance and (2) guarantee that the reviewing judge does not substitute his or her policy preferences for those of the agency. The standard proposed in this paper should provide sufficient incentives for agencies to prepare high-quality RIAs and to take the associated information into account in shaping a rule, while ensuring that the agency retains complete discretion to select the regulatory approach that it believes best advances its statutory mission.

VIII. Potential Objections and Responses

This paper has demonstrated that many agency economic analyses suffer significant flaws. It has also shown that judicial review of agency economic analyses, by identifying some of those flaws, creates incentives for significant improvements in the quality of such analyses. In addition, the paper has set forth a potential framework for reviewing economic analysis on which an agency has relied in a rulemaking (regardless of whether the analysis is statutorily mandated).

Notwithstanding the significant benefits such expanded judicial review of economic analysis promises, one might raise a number of potential objections to the proposal. This final section will

consider three such objections and offer responses: (1) federal judges lack the technical expertise to assess agency economic analyses; (2) extending judicial review to agency economic analyses will contribute to “ossification” of the rulemaking process; and (3) agencies will substitute less formal procedures (for example, issuing guidance documents in lieu of notice-and-comment rules) if the informal rulemaking process becomes overly burdensome.

A. Technical Expertise

It goes without saying that most federal judges are not trained economists. Accordingly, they arguably lack the expertise to evaluate the findings of agency economists responsible for preparing RIAs.³⁶⁶ Thus, one might object to this paper’s proposed expansion of judicial review by contending that it would task judges with a responsibility that they are not adequately equipped to perform, leading to increased uncertainty and deterioration in the quality of agency decision-making because laymen are empowered to set aside the conclusions of experts.

Although perhaps superficially appealing, this argument proves too much. From the very outset, administrative agencies have been staffed by technical mavens who possess access to any number of recondite fields of expertise that generalist legislators and judges lack,³⁶⁷ yet Congress has seen fit to task the federal judiciary with reviewing agency decision-making.³⁶⁸

³⁶⁶ See, e.g., Robert J. Jackson, Jr., *Cost-Benefit Analysis & the Courts*, 78 L. & CONTEMP. PROB. 55, 56 (2015) (“[G]eneralist federal judges and their law clerks obviously lack the expertise necessary to closely review the type of [cost-benefit analysis] that would justify a particular regulatory choice in today’s financial markets”); see also Edward K. Cheng, *The Myth of the Generalist Judge*, 61 STAN. L. REV. 519, 524 (2008) (“Obsession with the generalist deprives the federal judiciary of potential expertise, which could be extremely useful in cases involving complex doctrines and specialized knowledge”); Chad M. Oldfather, *Judging, Expertise, and the Rule of Law*, 89 WASH. U. L. REV. 847, 854 (2012).

³⁶⁷ See, e.g., Woodrow Wilson, *The Study of Administration*, POL. SCI. Q. (July 1887) (“Politics is . . . the special province of the statesman, administration of the technical official”).

³⁶⁸ 5 U.S.C. § 706.

For this very reason, Congress has directed courts to set aside agency action only if they find the agency's decision arbitrary and capricious,³⁶⁹ which the courts have interpreted to require deference when reviewing agency fact-finding and to foreclose judicial second-guessing of an agency's conclusions.³⁷⁰

Furthermore, courts routinely review rulemaking records that contain factual findings deriving from disciplines far more foreign to legal reasoning than economics. For instance, the EPA and OSHA frequently rely on information derived from the natural sciences, including chemistry, microbiology, genetics, and epidemiology. Courts have not recoiled in the face of such complex factual records.³⁷¹

The United States Court of Appeals for the District of Columbia Circuit's decision in *Ethyl Corp. v. EPA*³⁷² is informative. The case concerned an EPA rule designed to reduce the

³⁶⁹ *Id.* § 706(2)(A).

³⁷⁰ *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (“The scope of review under the ‘arbitrary and capricious’ standard is narrow and a court is not to substitute its judgment for that of the agency”).

³⁷¹ *Balt. Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 103 (1983). Moreover, judicial review of agency rulemaking is not the only arena in which generalist judges are called on to review technically complex records. The United States Court of Appeals for the Federal Circuit possesses exclusive jurisdiction over most patent law cases, 28 U.S.C. § 1295(a)(1) (2012), yet few of its judges have completed advanced training in the natural sciences. Nicholas Matich, *Patent Office Practice after the America Invents Act*, 23 *FED. CIRCUIT B.J.* 225, 239 (2013). In exercising this jurisdiction, Federal Circuit judges often must grapple with exceedingly complex technical issues: for instance, the court reviews *de novo* the question of whether a given invention would have been “obvious” in light of the state of the art in the relevant technical field. 35 U.S.C. § 103 (“A patent for a claimed invention may not be obtained . . . if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious . . . to a person having ordinary skill in the art to which the claimed invention pertains”); *see, e.g.*, *MobileMedia Ideas LLC v. Apple, Inc.*, 780 F.3d 1159, 1167 (Fed. Cir. 2015); *Scientific Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 990 (Fed. Cir. 2009). The Federal Circuit has, in recent years, encountered criticism for its failure to definitively resolve certain legal issues and for facing a high reversal rate at the Supreme Court, but those criticisms generally have not reflected a concern that generalist judges are incapable of resolving technical issues. *See, e.g.*, Ashby Jones, *Critics Fault Court's Grip on Appeals for Patents: Calls to Loosen Federal Circuit's Hold Grow amid Complaints over Rulings*, *WALL ST. J.*, July 6, 2014, available at <http://www.wsj.com/articles/critics-fault-courts-grip-on-appeals-for-patents-1404688219>; *cf.* R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 *U. PA. L. REV.* 1105, 1179 (2004) (arguing that the Federal Circuit, although far from perfect, is “moving in the right direction” in discharging its mandate to bring greater uniformity to patent law appeals).

³⁷² 541 F.2d 1 (1976).

content of lead in gasoline.³⁷³ To support the rule, the EPA produced reams of evidence totaling more than 10,000 pages, much of it derived from complex studies concerning the human health effects of lead exposure.³⁷⁴ In articulating the standard of review, the court stated that “the immersion in the evidence is designed solely to enable the court to determine whether the agency decision was rational and based on consideration of the relevant factors” and maintained that “we must affirm decisions with which we disagree so long as this test is met.”³⁷⁵ In a concurring opinion, Judge Bazelon was even more explicit in articulating a modest role for the courts:

Because substantive review of mathematical and scientific evidence by technically illiterate judges is dangerously unreliable, I continue to believe we will do more to improve administrative decision-making by concentrating our efforts on strengthening administrative procedures. . . . It does not follow that courts may never properly find that an administrative decision in a scientific area is irrational. But I do believe that in highly technical areas, where our understanding of the import of the evidence is attenuated, our readiness to review evidentiary support for decisions must be correspondingly restrained.³⁷⁶

As both opinions make clear, the “arbitrary and capricious” standard of review preserves some role for federal courts in reviewing even highly complex factual records, yet judges must exhibit an appropriate level of modesty and leave complex factual determinations to the agency experts.

By comparison, judicial review of agency fact-finding derived from the field of economics seems relatively straightforward. As demonstrated by the cases cited in appendix B, courts have been reviewing such evidence for at least 30 years.³⁷⁷ In many of those cases, the courts undertook a very searching review of the factual findings underpinning the economic analysis.³⁷⁸

³⁷³ *Id.* at 7.

³⁷⁴ *Id.* at 37.

³⁷⁵ *Id.* at 36.

³⁷⁶ *Id.* at 67 (Bazelon, J., concurring).

³⁷⁷ See also *Cecot & Viscusi*, *supra* note 7, at 609–11.

³⁷⁸ See, e.g., *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1194–1203 (9th Cir. 2008); *Natural Res. Def. Council, Inc. v. Herrington*, 768 F.2d 1355, 1413–14, 1419, 1422 (D.C. Cir. 1985).

Under the judicial review standard articulated herein, courts would be tasked with reviewing the agency's analysis associated with defining the regulatory problem, assessing key alternatives, and identifying the benefits and costs of the preferred option and major alternatives. The cases analyzed in this paper clearly illustrate the courts' ability to successfully discharge that function.

B. Ossification

In the past several decades, some regulatory scholars have increasingly come to view the notice-and-comment rulemaking process, which initially was intended to provide a relatively expeditious mechanism for promulgating generally applicable policies, as susceptible to excessive “ossification,” encumbered by layers of procedural requirements that can cause rulemakings to draw out for several years.³⁷⁹ According to these writers, this steady increase in regulatory inertia cannot be attributed to any one cause but instead represents the gradual accretion of rulemaking requirements imposed by Congress and the White House and the increased willingness of federal courts to scrutinize agencies' rulemaking records on judicial review.³⁸⁰

The prevalence of regulatory ossification is not an entirely uncontested concept,³⁸¹ and even those who accept its existence frequently differ on the primary cause or causes. For the sake

³⁷⁹ See, e.g., Thomas O. McGarity, *Some Thoughts on “Deossifying” the Rulemaking Process*, 41 DUKE L.J. 1385, 1400–1403, 1410–26 (1992); Paul R. Verkuil, *Rulemaking Ossification—A Modest Proposal*, 47 ADMIN. L. REV. 453, 453 (1995). In addition to frustrating agencies' rulemaking efforts, ossification might also create an incentive for agencies to circumvent the APA's procedural requirements, perhaps by issuing guidance documents that are not subject to notice-and-comment. See Stephen M. Johnson, *Good Guidance, Good Grief!*, 72 MO. L. REV. 695, 701–702 (2007) (“Since the process for adopting nonlegislative rules is significantly quicker and less expensive than the notice and comment rulemaking process, agencies are increasingly adopting policies and interpreting laws and regulations through nonlegislative rules”).

³⁸⁰ McGarity, *supra* note 379, at 1396–1436.

³⁸¹ Jason Webb Yackee & Susan Webb Yackee, *Testing the Ossification Thesis: An Empirical Examination of Federal Regulatory Volume and Speed, 1950–1990*, 80 GEO. WASH. L. REV. 1414, 1421 (2012) (“[E]vidence that ossification is either a serious or widespread problem is mixed and relatively weak”); see also Anne Joseph O'Connell, *Political Cycles of Rulemaking: An Empirical Portrait of the Modern Administrative State*, 94 VA. L. REV. 889, 932 (2008).

of argument, this paper will simply assume that the rulemaking process has become increasingly ossified and that a major cause is the willingness of courts to set aside agency rules as “arbitrary and capricious” on judicial review. As a normative matter, that outcome reduces welfare only if the benefits of regulations always exceed their costs.³⁸² In those instances in which regulatory costs exceed benefits, ossification actually improves welfare because it forestalls a regulation that diminishes welfare.

Of course, a major purpose of an RIA is to determine whether a rule’s anticipated benefits exceed its anticipated costs and promote maximization of net benefits where possible.³⁸³ To the extent that preparing the RIA delays the issuance of a rule, it creates benefits in preventing or at least forestalling “bad” regulations and imposes costs in delaying “good” regulations. Although the costs are nontrivial, they are probably outweighed by the benefits, given the extreme challenges associated with shifting course once a regulation has been adopted. To witness this phenomenon, one need look no further than the largely unsuccessful efforts at agency “retrospective review” of the past four decades. Since the Carter administration, every president has undertaken a “regulatory lookback” initiative wherein agencies are directed to reassess their existing rules and eliminate or modify those that have become outdated.³⁸⁴ To date,

³⁸² For purposes of this discussion, the terms “benefits” and “costs” are to be construed broadly and are not limited to quantifiable economic gains and losses. Thus, the qualitative benefits of a particular regulatory decision might exceed the costs even if the decision creates a net pecuniary loss.

³⁸³ Exec. Order No. 12,866 § 1(a), 58 Fed. Reg. 51,735, 51,735 (Oct. 4, 1993).

³⁸⁴ JOSEPH E. ALDY, *LEARNING FROM EXPERIENCE: AN ASSESSMENT OF THE RETROSPECTIVE REVIEWS OF AGENCY RULES AND THE EVIDENCE FOR IMPROVING THE DESIGN AND IMPLEMENTATION OF REGULATORY POLICY* 4 (Nov. 17, 2014), available at <https://www.acus.gov/report/retrospective-review-report>.

those efforts have achieved modest success at best,³⁸⁵ and they have not resulted in a durable commitment to retrospective review that has survived from one administration to the next.³⁸⁶

In that light, requiring an initial investment in a high-quality RIA is entirely appropriate because a rule will prove exceedingly difficult to rescind or modify once it has been adopted. Furthermore, even if a “bad” rule is later modified or rescinded, sunk costs associated with its having been enacted often remain and cannot be recovered. This paper’s proposed clarification of the judicial review standard ensures that agencies adhere to a minimum set of analytical requirements when preparing RIAs that inform their rulemakings, which should improve the quality of those analyses.

Admittedly, taking the time to produce better RIAs may delay the issuance of net-beneficial rules in a handful of instances, but the importance of ensuring a high-quality RIA likely justifies those costs. Any forgone benefits (or other desired outcomes) arising from delay are temporary. A regulation that is optimized in response to an RIA will likely yield larger net

³⁸⁵ The failures of retrospective review are likely attributable to a number of distinct causes. First, every regulatory lookback initiative to date has involved “self-review” by the agencies. Regulators have scant incentive to undermine their own handiwork. MICHAEL MANDEL & DIANA G. CAREW, PROGRESSIVE POLICY INSTITUTE POLICY MEMO, REGULATORY IMPROVEMENT COMMISSION: A POLITICALLY VIABLE APPROACH TO U.S. REGULATORY REFORM 13 (May 2013). Furthermore, even assuming complete objectivity, regulators at any given agency may not know how their regulations interact with those of sister agencies to create a large, cumulative regulatory burden. Reeve T. Bull, *Building a Framework for Governance: Retrospective Review and Rulemaking Petitions*, 67 ADMIN. L. REV. 265, 282–83 (2015). Second, regulated entities often have an incentive to oppose any change in the regulatory framework, given that they generally have incurred sunk costs to achieve compliance with the existing regime and might therefore enjoy a competitive advantage vis-à-vis new market entrants. Administrative Conference of the United States, Recommendation 2014-5, Retrospective Review of Agency Rules, 79 Fed. Reg. 75,116 (Dec. 17, 2014) (“Agencies should . . . recognize that private and non-governmental entities’ interests may not align with public interests and that established firms may actually defend regulations that create barriers to entry for newer, smaller competitors”).

³⁸⁶ Cary Coglianese, *Moving Forward with Regulatory Lookback*, YALE J. ON REG. ONLINE, <http://www.yalejreg.com/regulatory-lookback.html> (“Without doing more, the Obama Administration’s recent lookback initiative will end up in the same dustbin as the regulatory review processes initiated under Clinton and Bush. Sure, some discrete improvements in specific regulations will likely result, but retrospective review will remain a periodic and unsystematic fancy rather than a serious, ongoing part of regulatory policymaking”).

benefits (or greater cost-effectiveness) over the life of the rule. For a major regulation, a marginal improvement can increase net benefits by billions of dollars.³⁸⁷

Those who claim that judicial review would make society worse off by forestalling the adoption of necessary regulations assume that they already know things that cannot be known until a high-quality analysis is conducted. The purpose of a regulatory impact analysis is to identify whether a significant problem exists, trace the problem to its root cause, develop alternative solutions that effectively address the root cause, and then discover the likely consequences of each alternative. As section III of this paper demonstrates, many of those analyses are seriously incomplete. In the absence of a complete analysis, one cannot presume to know which regulations are necessary, which alternatives are likely to achieve the desired outcomes, and whether the good consequences outweigh the bad. Economists are often the butt of jokes for making theoretical assumptions that have no basis in reality. In assuming they already know which regulatory approaches are necessary and desirable, skeptics of judicial review have outdone even the worst caricature of the theoretical economist who mistakes his or her assumptions for reality.

Any costs of judicial review are likely to be exceedingly small, given that the minimum standards articulated in section VII are designed to impose a light procedural burden on agencies, incentivizing them to do what they should already be doing as conscientious stewards of the public good. Finally, insofar as the proposed revisions to the APA clarify the standard of review that courts will apply to agency RIAs, those reforms might ultimately save agencies time by setting clear expectations for the specific steps they must undertake to satisfy the analytical requirements.

³⁸⁷ Robert W. Hahn & Paul C. Tetlock, *Has Economic Analysis Improved Regulatory Decisions?*, 22 J. OF ECON. PERSP. 67, 79 (2008).

C. Substitution

Another possible argument against judicial review is that it would prompt agencies to substitute other, less transparent means of accomplishing regulatory goals to avoid the costs of conducting economic analysis and the risk of reversal based on insufficient analysis. One commonly discussed alternative is case-by-case adjudication, in which the general policy that emerges may be harder for the court to review.³⁸⁸ Other options include guidance, interagency agreements, enforcement activity, interpretation letters, compliance manuals used by agency personnel, warnings to regulated entities, threats conveyed through speeches or meetings, acceptance of private or international standards, exemptive orders, selective waivers of federal preemption of state regulations, hazard determinations, or lawsuit settlements that require issuance of regulations.³⁸⁹ Agencies frequently use many of those methods.

However, the possibility of such substitution is not a reason to reject judicial review of agency regulatory impact analysis. First, it is unclear to what extent agencies would substitute those methods for informal rulemaking in order to avoid judicial review of regulatory impact analysis. A small degree of substitution may be an acceptable cost in exchange for a reform that could make major new regulations more effective or less costly by prompting agencies to conduct more thorough economic analysis. Second, countermeasures are available to reduce the

³⁸⁸ See generally Emerson H. Tiller & Pablo V. Spiller, *Strategic Instruments: Legal Structure and Political Games in Administrative Law*, 15 J.L. ECON. & ORG. 349 (1999).

³⁸⁹ Jerry Brito, “Agency Threats” and the Rule of Law: *An Offer You Can’t Refuse*, 37 HARV. J.L. & PUB. POL’Y 554 (2014); Henry N. Butler & Nathaniel J. Harris, *Sue, Settle, and Shut Out the States: Destroying the Environmental Benefits of Cooperative Federalism*, 37 HARV. J.L. & PUB. POL’Y 579 (2014); John D. Graham & Cory R. Liu, *Regulatory and Quasi-Regulatory Activity without OMB and Cost-Benefit Review*, 37 HARV. J.L. & PUB. POL’Y 425 (2014); Nina A. Mendelson & Jonathan A. Weiner, *Responding to Agency Avoidance of OIRA*, 37 HARV. J.L. & PUB. POL’Y 448 (2014); Stuart Shapiro, *Agency Oversight as “Whac-A-Mole:” The Challenge of Restricting Agency Use of Nonlegislative Rules*, 37 HARV. J.L. & PUB. POL’Y 524 (2014); HESTER PEIRCE, REGULATING THROUGH THE BACK DOOR AT THE COMMODITY FUTURES TRADING COMMISSION (2014), available at <https://www.mercatus.org/system/files/Peirce-Back-Door-CFTC.pdf>.

attractiveness of some substitutes, such as requiring agencies to use notice-and-comment rulemaking for all requirements that are supposed to be binding,³⁹⁰ subjecting major guidance documents to OIRA review,³⁹¹ and increasing court scrutiny of settlements that require issuance of regulations under short deadlines.³⁹²

IX. Conclusion

This paper has offered a proposal for enhancing judicial review of RIAs undertaken by regulatory agencies. The economic analysis currently produced by regulatory agencies often possesses significant limitations. Although agencies are often required by statute or executive order to conduct economic analysis of regulatory decisions, the quality of that analysis is often relatively poor. This deficiency may derive from a number of sources, but a major cause is limited judicial oversight. Under existing law, it is unclear whether non-statutorily-mandated RIAs are subject to judicial review, and the rigor of judicial review varies greatly from case to case.

To test the viability of expanded judicial review, we examined cases involving judicial review of agency RIAs. Our analysis has shown that federal courts are fully capable of assessing RIAs and that the quality of agencies' economic analysis generally improves in the face of a remand.

In that light, we propose a series of targeted statutory reforms designed to enhance judicial review. Under our standard, the court would examine the agency's analysis of the regulatory problem, its development of regulatory alternatives, and its assessment of the

³⁹⁰ Robert A. Anthony, *Interpretive Rules, Policy Statements, Guidances, Manuals, and the Like—Should Federal Agencies Use Them to Bind the Public?*, 41 DUKE L.J. 1311 (1992).

³⁹¹ Graham & Liu, *supra* note 389.

³⁹² Butler & Harris, *supra* note 389, at 623–25. For a more extensive list of possible solutions, see PEIRCE, *supra* note 389, at 20–22.

underlying benefits and costs of the alternatives. The court should not substitute its substantive preferences for those of the agency, but it should scrutinize the record to ensure that the agency relied on the best available evidence in assessing those four factors.

These statutory reforms would largely clarify the reviewability status of agency RIAs and establish standards for review. In so doing, they would improve the prevailing state of affairs, wherein courts review agency RIAs frequently but inconsistently. Nevertheless, we realize that the proposal could spark certain objections. The paper anticipates and responds to three of the more salient objections, including concerns that generalist judges are not qualified to assess RIAs, that expanded judicial review will contribute to regulatory ossification, and that agencies will avoid notice-and-comment rulemaking to circumvent judicial scrutiny of RIAs. Ultimately, we believe that expanding the judicial reviewability of agency RIAs will impose a relatively minimal procedural burden on agencies (and may even clarify their obligations under existing laws) while promoting better regulatory decision-making.

Appendix A. Report Card Criteria

1. Systemic Problem

How well does the analysis identify and demonstrate the existence of a market failure or other systemic problem the regulation is supposed to solve?

- 1A. Does the analysis identify a market failure or other systemic problem?
- 1B. Does the analysis outline a coherent and testable theory that explains why the problem is systemic rather than anecdotal?
- 1C. Does the analysis present credible empirical support for the theory?
- 1D. Does the analysis adequately address the baseline? That is, what would the state of the world likely be in the absence of federal intervention, not just now but in the future?
- 1E. Does the analysis adequately assess uncertainty about the existence or size of the problem?

2. Alternatives

How well does the analysis assess the effectiveness of alternative approaches?

- 2A. Does the analysis enumerate other alternatives to address the problem?
- 2B. Is the range of alternatives considered narrow (for example, some exemptions to a regulation) or broad (for example, performance-based regulation versus command and control, market mechanisms, nonbinding guidance, information disclosure, addressing any government failures that caused the original problem)?
- 2C. Does the analysis evaluate how alternative approaches would affect the amount of benefits or other outcome achieved?

- 2D. Does the analysis identify and quantify incremental costs of all alternatives considered?
- 2E. Does the analysis identify the alternative that maximizes net benefits?
- 2F. Does the analysis identify the cost-effectiveness of each alternative considered?

3. Benefits or Other Desired Outcomes

How well does the analysis identify the benefits or other desired outcomes and demonstrate that the regulation will achieve them?

- 3A. Does the analysis clearly identify ultimate outcomes that affect citizens' quality of life?
- 3B. Does the analysis identify how these outcomes are to be measured?
- 3C. Does the analysis provide a coherent and testable theory showing how the regulation will produce the desired outcomes?
- 3D. Does the analysis present credible empirical support for the theory?
- 3E. Does the analysis adequately assess uncertainty about the outcomes?
- 3F. Does the analysis identify all parties who would receive benefits and assess the incidence of benefits?

4. Costs

How well does the analysis assess costs?

- 4A. Does the analysis identify all expenditures likely to arise as a result of the regulation?

- 4B. Does the analysis identify how the regulation would likely affect the prices of goods and services?
- 4C. Does the analysis examine costs that stem from changes in human behavior as consumers and producers respond to the regulation?
- 4D. If costs are uncertain, does the analysis present a range of estimates and/or perform a sensitivity analysis?
- 4E. Does the analysis identify all parties who would bear costs and assess the incidence of costs?

5. Use of Analysis

Does the proposed rule or RIA present evidence that the agency used the regulatory impact analysis in any decisions?

6. Cognizance of Net Benefits

Did the agency maximize net benefits or explain why it chose another alternative?

Appendix B. Summaries of Court Cases Involving Review of Regulatory Impact Analysis

Cases Involving Reversal and Remand, at Least Partly on the Basis of Flaws in the RIA

Cases introduced with an asterisk (*) discussed agency regulatory impact analysis but were primarily decided on some other basis.

Advocates for Highway & Auto Safety v. Federal Motor Carrier Safety Admin., 429 F.3d 1136 (D.C. Cir. 2005).

Overall summary. The court struck down a rule relating to the provision of training for commercial vehicle operators. Although the agency relied on a study that suggested the need for practical, on-road training, the agency ultimately adopted a rule that contained no such requirements (instead devising a training regimen that covered peripheral issues, such as whistleblower protection and driver health).

Defining the problem. The “adequacy report” the agency developed in connection with the rulemaking identified one problem (the need for practical training), yet the agency ultimately focused on solving an entirely different set of problems (driver qualification, driver wellness, hours of operation, and whistleblower protection).

Assessing benefits. The agency failed to produce any evidence of benefits associated with the rule actually adopted. Instead, it improperly assumed that because one type of training (practical, on-road instruction) produced benefits, any type of training would do the same.

Assessing benefits and costs. In reaching its conclusion, the court highlighted the agency’s finding in the adequacy report (which the RIA completely ignored) that an on-road training regimen would produce benefits in excess of costs (\$4.19–\$4.51 billion in costs, \$5.4–

\$15.27 billion in benefits) and noted the lack of any evidence that benefits would exceed costs for the rule actually adopted.

Am. Equity Inv. Life Ins. Co. v. SEC, 572 F.3d 923 (D.C. Cir. 2009).

Overall summary. The case concerned an SEC rule subjecting a type of variable rate annuity to the securities laws. The court reversed and remanded because of various flaws in the underlying economic analysis.

Defining the problem. The agency claimed that the rule would promote competition but failed to assess the existing level of competition under state regulation or the efficiency of the existing state law regime. As such, the agency failed to demonstrate that the rule is even necessary.

Considering alternatives. In declining to assess the efficiency and competitiveness of current state regulation, the SEC improperly declined to assess the effectiveness of the “no action” alternative.

Assessing benefits. The court rejected the claim that reducing uncertainty associated with whether or not the agency would issue a rule is a “benefit” because that is true of any rule the agency issues (and of declining to regulate).

Business Roundtable v. SEC, 647 F.3d 1144 (D.C. Cir. 2011).

Overall summary. The court struck down an SEC rule requiring companies subject to the Exchange Act proxy rules to include shareholder-nominated candidates for the board of directors in a ballot and related disclosures when certain requirements are met.

Defining the problem. The agency failed to establish a consistent baseline with which to measure the frequency of proxy challenges that would be caused by the rule. In so doing, it failed to properly assess the nature, extent, and cause of the underlying problem.

Considering alternatives. The agency did not assess whether the benefits and costs of applying the rule to investment companies would be different from the benefits and costs of applying it to privately held corporations, an important margin that could have generated a significant alternative.

Assessing benefits. The following flaws characterized the agency's assessment of regulatory benefits:

- It relied on unpersuasive evidence suggesting the rule would improve the quality of directorial decision-making when more compelling evidence suggested the opposite.
- It discounted regulatory costs but not benefits.

Assessing costs. The following flaws characterized the agency's assessment of regulatory costs:

- Its conclusion that directors might not oppose shareholder-nominated candidates was based purely on speculation.
- It failed to quantify the costs associated with opposing shareholder-nominated candidates (or explain why doing so was impractical).
- It ignored the possibility that the rule would be used by unions and pension funds to extort concessions from the company.
- It misattributed costs of the regulation to preexisting requirements under state law.

Chamber of Commerce of the United States of America v. SEC, 412 F.3d 133 (D.C. Cir. 2005).

Overall summary. The rule at issue required mutual funds to appoint an increased number of independent directors under certain circumstances. The court reversed and remanded because of several flaws in the economic analysis of the rule.

Defining the problem. The court found adopting a rule acceptable as a prophylactic measure, even in the absence of any clear abuse demanding intervention.

Considering alternatives. The agency erred in summarily rejecting a regulatory alternative (disclosure of the lack of directorial independence) offered by two dissenting commissioners.

Assessing benefits. The agency appropriately concluded from past experience and evidence gleaned from public comments that appointing independent directors is beneficial to companies; an empirical study is not required.

Assessing costs. The court held that, although the agency need not undertake an empirical study precisely quantifying regulatory benefits or costs, citing uncertainty is an inadequate reason for failing to make at least some effort to ascertain likely costs (for example, providing a range of possible costs).

Chamber of Commerce of the United States of America v. SEC, 443 F.3d 890 (D.C. Cir. 2006).

Overall summary. Following the remand in the previous case, the agency issued a revised rule, which was again challenged in the instant case. In trying to produce a more detailed estimate of costs, the agency relied on various documents outside the rulemaking record. Those documents provided the sole information available on the average number of directors at large mutual funds, the median annual director salary, and the typical breakdown of the board by size of fund. Given

the critical nature of that information and because outside parties had no opportunity to comment thereon as it was not included in the rulemaking record, the court again reversed and remanded, holding that the public must have an opportunity to comment on the new information. The court also faulted the agency for failing to consider actual cost data from mutual funds that had already complied with the rule.

Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin., 956 F.2d 321 (D.C. Cir. 1992).

Overall summary. The court concluded that the agency improperly ignored the safety effects of failing to reduce fuel economy standards, given that higher standards lead manufacturers to produce smaller (less safe) cars.

Assessing costs. The agency failed to consider an important tradeoff: increasing fuel economy requirements will encourage firms to produce smaller cars, which are less safe and thereby may lead to increased rates of injury and fatality in automobile accidents. The agency speculated that such a result may not occur (as a result of unspecified innovations, increased purchases of older [larger] cars, enhanced safety produced by airbags, and so forth), but it produced no hard evidence to back up those claims.

Corrosion Proof Fittings v. EPA, 947 F.2d 1201 (5th Cir. 1991).

Overall summary. The court struck down the EPA's total ban on the use of asbestos under the Toxic Substances Control Act standard (which requires adoption of the least restrictive alternative). In so doing, it pointed to various flaws in the economic analysis underlying the rule.

Considering alternatives. The court faulted the EPA's failure to consider alternatives other than an outright ban and no regulation. The court also pointed to the agency's failure to

consider the cancer risks of substitutes for asbestos—if they pose risks as large as those associated with asbestos, then the rule fails to improve health outcomes.

Assessing benefits. The court pointed to the following flaws in the agency’s analysis of regulatory benefits:

- The agency inflated benefits by looking at only two alternatives: an outright ban on asbestos and complete absence of regulation.
- The agency discounted the costs but not the benefits of the rule adopted.
- The agency failed to quantify the benefits of lives saved beyond the year 2000, instead merely citing those lives saved as a large “unquantified benefit.” The absence of that information reflected a failure to develop the evidence to the best of the agency’s ability and an improper use of unquantified benefits as a trump card.

Reviewing the substance of the rule. The court held that the agency effectively ignored the cost side of the equation by issuing a rule with very high expenses per statistical life saved (approximately \$30–40 million).

Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin., 538 F.3d 1172 (9th Cir. 2008).

Overall summary. The decision sets aside various aspects of the fuel economy standards for light trucks as being insufficiently strict. In assessing the agency’s interpretation of the authorizing statute, the court held that a statutory directive to achieve the “maximum feasible” fuel economy standards permits the agency to consider “economic feasibility” (that is, whether a very strict standard would result in unjustified disruptions to the production chain). Nevertheless, the court pointed to various flaws in the economic analysis associated with the rule.

Considering alternatives. The court found error in the agency’s failure to consider whether a “backstop” involving a minimum fuel economy standard for a manufacturer’s entire fleet of vehicles (in addition to a standard for each vehicle model within the fleet) was technologically and economically feasible.

Assessing benefits. The agency made no effort to determine the benefits associated with reduced carbon emissions, instead simply stating that those benefits were uncertain and therefore setting their value at zero. By contrast, the agency did make some effort to quantify other uncertain benefits (for example, reduced crash or noise costs).

Gas Appliance Mfrs. Ass’n v. Dep’t of Energy, 998 F.2d 1041 (D.C. Cir. 1993).

Overall summary. The court, which found various flaws in the benefit-cost analysis related to a heat loss standard for water heaters, reversed and remanded the rule for additional analysis.

Considering alternatives. The agency failed to examine the full range of heaters on the market, instead assuming that its benefit-cost analysis conducted for one product was universally applicable.

Assessing benefits. The court identified the following flaws in the agency’s analysis of regulatory benefits:

- The agency assumed that industry could reduce heat loss associated with fittings without showing any feasible path to compliance. For instance, the agency failed to build a prototype showing that its estimates were reasonable.
- The agency used a different temperature differential in the benefit-cost analysis and in the standard ultimately adopted, consequently overestimating the energy savings in the benefit-cost analysis.

Assessing costs. The court identified the following flaws in the agency’s analysis of regulatory costs:

- The agency provided no evidence supporting its assumption that the cost of modifying heaters in the commercial market would be essentially the same as that in the residential market.
- The agency asserted that other agencies would impose similar requirements in the future and therefore improperly concluded that its rule imposed no marginal costs.

Natural Res. Def. Council v. Herrington, 768 F.2d 1355 (D.C. Cir. 1985).

Overall summary. Numerous states and environmental organizations challenged the Department of Energy’s decision not to set mandatory energy efficiency standards for various household appliances (concluding that doing so would not result in significant energy savings or would not be economically justified). In a massive opinion, the court considered various challenges to that decision, including an objection to the agency’s conclusion that regulation was not economically justified. Applying the “substantial evidence” standard (as required for rules issued under the EPCA, 42 U.S.C. § 6306(b)(2)), the court very closely parsed the agency’s economic analysis and identified the following flaws.

Defining the problem. The court held that the agency was permitted to compare energy efficiency under mandatory standards to a baseline that projected how efficiency would improve in the absence of standards. The court also upheld the agency’s assumption that increasing energy prices would lead to greater efficiency in the absence of a standard and that higher energy prices would induce consumers to value efficiency more highly.

Considering alternatives. The agency did not provide substantial evidence supporting its decision to disregard a number of potential alternatives, including appliance energy efficiency standards based on prototypes, standards involving models that required payback periods exceeding five years, and designs available only in foreign markets. More generally, the court noted that the agency failed to estimate the maximum technologically feasible level of energy savings—in contravention of the requirements of the EPCA.

Assessing benefits. The court largely upheld the agency’s analysis of regulatory benefits. For instance, it held that the agency may use a computer model subject to a high degree of uncertainty as long as it is the best available evidence and as long as the agency readjusts the model as new evidence is gained.

Assessing costs. The court identified numerous flaws with the agency’s analysis of regulatory costs, including the following:

- The agency improperly ruled out using prototype models to assess regulatory costs.
- The agency did not have precise, empirically derived manufacturing costs for the appliances it considered as the basis for standards.
- The agency improperly dismissed foreign products as a source of projected cost information.
- The agency used unrealistically low useful lifespans for the products assessed, which led it to mistake the point at which increased appliance efficiency led to a net gain for the consumer.
- The agency used the 10 percent discount rate identified in an OMB circular without explaining why that rate was appropriate under the circumstances.

- The agency improperly assumed that all firms would absorb increased manufacturing costs through issuance of debt rather than equity, without any basis for that assumption.

The court upheld other aspects of the agency's analysis of costs. For instance, the court deemed it appropriate to consider opportunity costs to firms by noting that investment in greater energy efficiency will draw away resources that might be more profitably used elsewhere. The court also upheld the agency's suggestion that the contemplated changes to products might lead to increased energy consumption, notwithstanding the lack of any hard evidence of such a phenomenon, as long as the agency identified the relevant uncertainties in its analysis.

Natural Res. Def. Council, Inc. v. EPA, 824 F.2d 1258 (1st Cir. 1987).

Overall summary. Flaws in the underlying economic analysis formed one basis for striking down an agency's decision to set a 1,000-year safety standard for storage of nuclear waste, one of several aspects of a rule that was challenged.

Assessing benefits. The agency was required to consider risks of radiation emissions with respect both to the general population and to individuals in close proximity to nuclear waste repositories. The agency ultimately set a standard that would ensure that no person was exposed to radiation above a particular threshold for a period of 1,000 years (rejecting a longer period of time, such as 10,000 years, because the high cost of compliance would not justify any additional health benefits). The court found that, in reaching its conclusion, the agency considered only general population risks and not individual risks, which introduced flaws into its analysis of benefits.

**N.M. Cattle Growers Ass’n v. U.S. Fish & Wildlife Serv.*, 248 F.3d 1277 (10th Cir. 2001).

Overall summary. The case deals with a statutory construction question under the Endangered Species Act. Under the Act, the determination of whether to list a species as “endangered” must be done without any consideration of economic effects; by contrast, designating a “critical habitat” for the species requires consideration of costs and benefits. The agency applied a baseline approach to the critical habitat determination, ignoring any economic costs that did not arise directly from that decision (including costs arising from listing the species as endangered). The court rejected that approach as inconsistent with the intent of the underlying statute, stating that the marginal effect a critical habitat designation will ever have is unclear, and the agency therefore must consider all costs associated with protecting the species.

Owner-Operator Indep. Drivers Ass’n, Inc. v. Fed. Motor Carrier Safety Admin., 494 F.3d 188 (D.C. Cir. 2007).

Overall summary. The case involved a challenge to a rule that set maximum hours for commercial motor vehicle drivers. The court identified various flaws in the RIA on which the agency relied in formulating the rule and reversed and remanded the agency’s decision. These flaws included the following.

Assessing benefits. The agency committed the following errors when ascertaining regulatory benefits:

- The agency failed to explain why it extrapolated the risk of a crash after driving a particular number of hours rather than using a more directly calculated figure.
- The agency failed to explain why it divided the risk by the number of hours driven, which may have given an inaccurate picture of actual risk.

- The agency ignored the risks associated with fatigue arising from driving for multiple consecutive days.
- The agency improperly declined to test electronic monitoring devices, thereby making the benefits of using such devices exceedingly difficult to estimate.

Assessing costs. The agency failed to estimate the costs of electronic monitoring devices, asserting that the market was too small to permit any measurement thereof.

**Owner-Operator Indep. Drivers Ass’n, Inc. v. Fed. Motor Carrier Safety Admin.*, 656 F.3d 580 (7th Cir. 2011).

Overall summary. The court struck down a rule dealing with the use of electronic monitoring devices in commercial trucks as a result of the agency’s failure to consider a statutory factor (ensuring that the devices are not used to harass vehicle operators). Although it therefore did not reach the question of the adequacy of the agency’s benefit-cost analysis, the court noted in dicta that the agency did not seem to have resolved issues identified with the 2004 D.C. Circuit case (see immediately below). The court did not provide any analysis, however, merely stating that “some of the problems [the 2004 decision] identified with the Agency’s cost-benefit analysis of [electronic monitoring devices]—like the failure to estimate [their] benefits . . . by looking at and testing the thousands currently in use—appear not to have been resolved.”

Pub. Citizen v. Fed. Motor Carrier Safety Admin., 374 F.3d 1209 (D.C. Cir. 2004).

Overall summary. This case deals with an FMCSA rule setting driving hours for commercial truck operators. Although the discussion of the agency’s benefit-cost analysis is dicta (because

the court struck down the rule on other grounds), the court pointed to flaws in the agency's economic analysis, including the following:

Assessing benefits. The court indicated that the agency presented no evidence to show that its decision to increase maximum daily driving time from 10 to 11 hours did not increase risks. Although the agency did reduce on-duty time in other respects, it did not show that those changes offset the elevated risk associated with increased daily driving time. The court also found fault with the agency's decision to allow part of the driver rest time to occur in sleeping berths, noting that studies show that sleeping in berths in the truck was less safe than sleeping in beds.

Assessing costs. The agency's efforts to estimate the costs associated with electronic monitoring devices were inadequate. The agency attempted to excuse its failure to assess costs by noting that costs for such devices varied widely, yet it could have tested commercially available models to arrive at an estimate.

Pub. Citizen Health Research Grp. v. Tyson, 796 F.2d 1479 (D.C. Cir. 1986).

Overall summary. A regulation setting standards for ethylene oxide exposure was reviewed under the Occupational Safety and Health Act's "substantial evidence" standard. The court upheld certain portions of the rule but reversed and remanded others, explained as follows.

Defining the problem. In considering whether ethylene oxide posed a health hazard, the court extensively considered various methodological flaws and shortcomings of the studies on which OSHA relied but concluded that a reasonable person could draw the same conclusions OSHA drew. The court also extensively reviewed OSHA's risk assessment, which found that ethylene oxide is a significant hazard. The court upheld OSHA's conclusion, reached after a

supplemental proceeding, that ethylene oxide does not have a different effect when the dose is received over a short period of time.

OSHA argued that issuing a short-term exposure limit was unnecessary because its regulation reducing long-term exposure would also reduce short-term exposure. The court remanded that decision because no evidence in the record indicated that this assumption was true.

Pub. Citizen, Inc. v. Mineta, 340 F.3d 39 (2d Cir. 2003).

Overall summary. The court reversed and remanded the agency’s adoption of a less stringent (but less costly) requirement for installing systems to monitor tire pressure. The flaws in the agency’s analysis included the following:

Assessing benefits. The agency suggested that, although the option it selected was less safe, the technology might evolve over time to reduce the risks; however, the agency cited no evidence to support that conclusion. Furthermore, the safer option would also likely improve over time, such that the safety differential between the two might not decrease.

Reviewing the substance of the rule. Notwithstanding the fact that the more stringent requirement was more socially beneficial on net—that is, it possessed larger net benefits—the agency selected the less protective standard because it was less costly. The court held that, without further justification, this reason was inadequate to justify the rule adopted.

**R.J. Reynolds Tobacco Co. v. FDA*, 696 F.3d 1205 (D.C. Cir. 2012).

Overall summary. The case considered findings of the RIA in connection with a First Amendment challenge to an agency’s requirement that cigarette packages contain graphic images designed to deter smoking. Specifically, applying intermediate scrutiny (which requires

the governmental entity to show that its speech restriction “directly advances” a “substantial interest”), the court used the RIA to show that the health benefits associated with such graphic warnings were *de minimis*.

Assessing benefits. The RIA showed that graphic warnings would reduce smoking rates by only 0.088 percent, which is statistically indistinguishable from zero. That, coupled with other findings, suggested that the agency had not met the intermediate scrutiny standard.

New York v. Reilly, 969 F.2d 1147 (D.C. Cir. 1992).

Overall summary. The court upheld the EPA’s decision to weaken a rule requiring preincineration separation of wastes based on the agency’s conclusion that the costs of a stricter standard would be excessive. Nevertheless, the court struck down the agency’s decision not to ban the burning of lead-acid batteries, holding that the agency should have considered regulatory interventions short of an outright ban rather than simply leaving the activity unregulated. In so doing, the agency made the following findings based on the agency’s economic analysis of the rule.

Considering alternatives. The EPA improperly ignored less restrictive alternatives than an across-the-board ban on burning lead-acid batteries.

Assessing benefits and costs. The evidence suggested that the benefits of material separation were low and the costs were fairly uncertain. The court indicated that it would defer to the agency, notwithstanding the fairly incomplete nature of the benefit-cost analysis, absent any evidence that the agency did not exert reasonable efforts to develop the record.

Cases Upholding the Agency’s Rule in the Face of a Challenge Based Wholly or Partly on the RIA

Alabama Power Co. v. OSHA, 89 F.3d 740 (11th Cir. 1996).

Overall summary. Petitioners challenged a rule precluding workers’ wearing inflammable clothing in power plants, contending, among other things, that the agency failed to consider regulatory costs. Applying a “substantial evidence” standard (as required by statute for OSHA regulations, 29 U.S.C. § 655(f)), the court upheld the agency’s rule in the face of various challenges to its underlying economic analysis.

Assessing benefits. OSHA relied primarily on a video prepared by Duke Power, which demonstrated the vulnerability of certain types of fabric to ignition by electric arcs. The court found that the video constituted substantial evidence that justified OSHA’s finding of significant risk. Broader issues—such as the incidence of clothing ignition or whether employees need a rule dictating what type of clothing they must wear when they choose the clothing and bear the risks—were not addressed in the case. The court also found that OSHA sufficiently articulated the factual evidence and policy conclusions on which it relied because OSHA cited the evidence in the record that supported its decisions.

Assessing costs. The court rejected petitioners’ claim that the standard would impose “tremendous” costs because no evidence in the record indicated that costs would increase at all because employees could wear regular clothing that complies with the standard.

Am. Mining Congress v. Thomas, 772 F.2d 617 (10th Cir. 1985).

Overall summary. Various petitioners challenged a rule regulating mill tailings; relying on the benefit-cost analysis, some asserted that the rule was too weak and others that it was too strong. The court considered and rejected various challenges to that analysis.

Defining the problem. The court decided that the EPA did not need to find significant risk before regulating because, according to the relevant statute, Congress found that uranium mill tailings are a potential and significant hazard and directed the EPA to regulate them. Thus, the agency's failure to analyze that aspect of the problem was not an error because the agency had no legal obligation to conduct such an analysis.

Considering alternatives. Industry petitioners claimed that the EPA failed to consider alternatives that require greater maintenance and monitoring, but the court pointed out that the EPA did consider one such alternative.

Assessing benefits. Faced with conflicting claims about conflicting findings of studies and assumptions used in calculation of benefits, the court decided that the evidence was good enough to support the EPA's calculations. Thus, the court considered whether the EPA relied on authoritative evidence, but it did not compare the strength of the EPA's evidence with the strength of competing evidence.

Several other challenges were rejected because the EPA had done some relevant analysis. The court rejected a challenge to the EPA's decision to allow a greater level of risk in the final rule than in the proposed rule, noting that the EPA evaluated the size of the change in the risk. A slightly more detailed examination involved discrepancies in some data used to calculate risk estimates; the court concluded that the discrepancies were not sufficient to render the EPA's upper-limit risk calculation unsupported by data.

Reviewing the substance of the rule. The authorizing legislation required the EPA to consider benefits and costs; it was not a feasibility standard. The court’s reading of the legislative history suggested that the EPA need not conduct a full benefit-cost analysis or find the optimal benefit-cost tradeoff, but the EPA claimed that the regulation does reflect an optimal tradeoff.

Assessing benefits and costs. The court held that the EPA satisfied the statute’s requirement to consider benefits and costs because the agency made a serious study of both.

Am. Mining Congress v. Thomas, 772 F.2d 640 (10th Cir. 1985).

Overall summary. This is a companion case to the one immediately preceding it in this appendix (with the same underlying facts). The instant case relates to active mill sites, whereas the previous one related to inactive mill sites. Given that the same rationale largely applied in both cases, the court simply reaffirmed (without any additional discussion) its conclusions that (1) a finding of “significant” risk is not a prerequisite to promulgating the regulation and (2) the agency properly considered benefit-cost factors in establishing standards. Although the relevant benefits and costs were somewhat different for the active mill sites, the court concluded that the EPA had adequately considered them and deferred to the EPA’s judgment that the benefits justified the costs.

Am. Trucking Ass’ns, Inc. v. Fed. Motor Carrier Safety Admin., 724 F.3d 243 (D.C. Cir. 2013).

Overall summary. The court summarily rejected various challenges to underlying assumptions used in the agency’s uncertainty analysis to calculate benefits and costs under 18 different scenarios. The court vacated FMCSA’s decision to require a 30-minute break after 7 hours for short-haul as well as long-haul truck drivers, noting that the agency gave no explanation of the

reasons for its decision. Nevertheless, it upheld a requirement for an off-duty break because FMCSA cited a study that found off-duty breaks are most effective in reducing crash risk.

**Arizona Cattle Growers' Association v. Salazar*, 606 F.3d 1160 (9th Cir. 2010).

Overall summary. The petitioner challenged the agency's designation of a critical habitat for the Mexican spotted owl, asserting that it was too expansive. The case deals solely with issues of statutory interpretation and does not apply the "arbitrary and capricious" standard (or delve into the underlying data or analysis). The court rejected the Tenth Circuit's approach in *New Mexico Cattle Growers Ass'n v. Salazar*, which held that the US Fish and Wildlife Service (an agency within the Department of the Interior) could not exclude costs stemming from the decision to list a species as endangered from its analysis of the economic impacts of the critical habitat designation. The court concluded that excluding those costs is more logical because they result from the listing decision, not from the critical habitat designation.

Charter Commc'ns, Inc. v. FCC, 460 F.3d 31 (D.C. Cir. 2006).

Overall summary. Petitioners argued that the agency failed to provide adequate economic justification for a rule relating to the design of cable boxes. The court upheld the agency's economic analysis of the rule.

Defining the problem. The FCC banned cable companies from providing boxes that both descrambled the cable signal and allowed users to navigate channels because the FCC believed that integrated boxes inhibited the development of competing navigation boxes produced by third-party manufacturers. Petitioners claimed that the ban was unnecessary because more than 140 different models of navigation devices were available that allowed users to insert

a card from the cable company that descrambled the signal. The FCC argued that those devices accounted for less than 3 percent of the market. The court essentially agreed that the FCC provided sufficient evidence about the existence of the problem, such that its decision was not arbitrary and capricious.

Assessing benefits. The FCC does not seem to have conducted a very extensive analysis of benefits, but the benefits mentioned include (1) the potential for consumer cost reductions resulting from competition among navigation device sellers and (2) possible technological advances. Because the statute required the FCC to “assure” the availability of devices from competing manufacturers, the FCC was allowed to count the availability of devices from competing providers as a benefit in and of itself. (That does not fit the economist’s typical definition of a benefit, which suggests that the wording of the statute created a very weak requirement that the FCC could easily satisfy).

Chem. Mfrs. Ass’n v. EPA, 870 F.2d 177 (5th Cir. 1989).

Overall summary. The case involves a challenge to an EPA rule dealing with chemical discharges into navigable waters. The court upheld the rule in the face of a wide range of challenges. Those challenges required the court to determine what role the relationship between benefits and costs was supposed to play in the EPA’s decisions. The statute required the EPA to consider cost-effectiveness to a limited extent: “the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application.” The court explicitly held that the statute required no particular quantitative balancing test. The court then went on to consider and reject arguments that certain aspects of the rule imposed costs

disproportionate to the underlying benefits. The court also identified the following flaws in the agency's economic analysis.

Considering alternatives. The court considered numerous challenges related to the EPA's choice among alternatives. It concluded that the EPA's rejection of several alternative technological requirements for treatment of waste streams proposed by the Natural Resources Defense Council was "rational and well supported by the record." The court explicitly deferred to the EPA's determination that the available data failed to support the conclusion that multimedia filtration would improve results across the industry. The court also found that the record supported the EPA's decision to reject industry-proposed alternatives that would have (1) created a separate category of cold-weather plants subject to different standards, (2) categorized plants based on influent biochemical oxygen-demanding substances concentration levels rather than classifying plants based on the industry, (3) created a separate subcategory for plants using waste-stabilization ponds, or (4) created separate subcategories based on other unique characteristics of plants or waste streams. In that connection, the court noted that "it is well established that the Agency's regulatory approach may not be invalidated simply because petitioners purport to have identified an alternative, less burdensome approach."

Assessing benefits. The case addressed several challenges related to the regulation's ability to produce the desired benefits. Those challenges included (1) whether data gathered from 71 plants were sufficient to establish the best practicable technology limits and (2) whether technologies were available to offset the reduced effectiveness of biological treatment in cold weather.

City of Waukesha v. EPA, 320 F.3d 228 (D.C. Cir. 2003).

Overall summary. Petitioners challenged the EPA's standards limiting the concentration of radionuclides in drinking water, contending that the EPA did not discharge its obligation to conduct a benefit-cost analysis. Applying *Chevron* deference, the court decided that the EPA did not need to conduct a benefit-cost analysis of proposed maximum contaminant levels for radium and beta/photons because they were identical to the standards already in place, and Congress exempted existing regulations when it added the benefit-cost analysis requirement in 1996. The court also upheld the agency's economic analysis of the rule.

Considering alternatives. Petitioners argued that the EPA failed to use the best available studies and data to determine which radium exposure standards protect the public with an adequate margin of safety; the court considered and rejected those arguments. The court deferred to the EPA's judgment sometimes because the EPA seemed to make a more convincing case based on the court's reading of the evidence and sometimes simply because the EPA gave reasons or cited studies supporting its decisions.

Assessing benefits and costs. The court found that the scope of the EPA's benefit-cost analysis of its uranium standard satisfied the statutory requirement.

Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin., 45 F.3d 481 (D.C. Cir. 1995).

Overall summary. In 1992, the court remanded the NHTSA's corporate average fuel economy regulations for model year 1990 to consider whether they could be expected to affect auto safety. The NHTSA reopened the rulemaking, asking whether a reduction in the 1990 standards would affect manufacturers' pricing or production decisions and inquiring more generally how it should take safety into account in fuel economy rulemakings. The NHTSA terminated the rulemaking

when it received no comments indicating that a change in the 1990 standard would alter manufacturer behavior. The Competitive Enterprise Institute appealed that decision, but the court upheld the NHTSA's decision because no comments on the record indicated that the 1990 standard would change manufacturer behavior. The court noted, however, that the NHTSA did not give adequate reasons for rejecting the peer-reviewed study by Robert Crandall and John Graham that showed manufacturers decreased the weight of vehicles in response to the fuel economy standards in the 1980s.

Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin., 901 F.2d 107 (D.C. Cir. 1990).

Overall summary. Petitioners argued that the NHTSA should have set lower CAFE standards (which deal with fuel economy for automobiles) because the standards it selected would reduce vehicle weight, which would reduce safety. The court's principal conclusion was that the NHTSA's decision was not arbitrary or capricious because the agency had adequately considered the evidence in the record about the likely effects of its CAFE standards on vehicle safety: "The factual record before the agency on the size-safety-CAFE question is sufficiently equivocal that it was not arbitrary or capricious for the NHTSA to conclude that, on balance, the CAFE standards as set would not have adverse safety consequences." The court upheld the NHTSA's decisions because the agency considered the evidence and made no clear errors.

Consumer Elec. Ass'n v. FCC, 347 F.3d 291 (D.C. Cir. 2003).

Overall summary. A litigant raised various challenges to a rule requiring television sets to transition to digital technology, including a claim that the agency acted unreasonably in its

assessment of regulatory costs. Although the court found the agency's analysis somewhat conclusory, it upheld the agency's rule.

Defining the problem. The court held that the FCC was justified in concluding that adoption of digital tuners was insufficiently rapid because relatively few households had purchased digital tuners by 2001, and the FCC theorized that slow adoption of digital tuners discouraged development of digital programming. The Consumer Electronics Association argued that the FCC imposed a burden unnecessary to address the problem because it required cable and satellite subscribers to buy over-the-air digital receivers that they would not use; the court held that "such a shifting of the benefits and burdens of a regulation is well within the authority of the responsible agency."

Assessing costs. The court held that, although the commission simply concluded that the costs were within an acceptable range without conducting much analysis, its approach "meets the minimum standard for reasoned decision-making."

Ctr. for Auto Safety v. Peck, 751 F.2d 1336 (D.C. Cir. 1985).

Overall summary. The court engaged in a drawn-out examination of the agency's benefit-cost analysis that underlay its conclusion that weakening the standards for car bumpers produced net benefits. The statute directed the NHTSA to maximize net benefits to consumers, and the court examined the NHTSA's decisions under the "arbitrary and capricious" standard. Most of the discussion concerned the accuracy of the underlying scientific studies rather than the economic analysis, but the court entertained and rejected sundry challenges to the latter. Those challenges included various objections to how the agency selected among the available regulatory

alternatives and how it calculated costs and benefits (notwithstanding various harmless errors the court identified in the agency's reasoning).

Defining the problem. The court engaged in an extremely detailed review of the studies and data on which the NHTSA relied in its 263-page RIA. For example, the court approvingly noted the NHTSA's assessment that stronger bumper standards would have prevented only a fraction of the 1 percent of accidents caused by damage to automobile safety systems. The court also noted the NHTSA's reasons for rejecting claims data that State Farm Insurance said proved that tighter bumper standards would reduce damage to safety systems. The court even conducted its own analysis of additional State Farm data in the record that seems to contradict the claim in State Farm's brief. Ultimately, however, the court based its decisions not on a determination that the evidence supported the NHTSA's position better than the petitioners' position but on a determination that such judgment calls are well within the agency's discretion under the "arbitrary and capricious" standard.

Assessing benefits and costs. Equally detailed discussions addressed the objections petitioners raised to the NHTSA's calculations of benefits and costs.

Fla. Manufactured Hous. Ass'n, Inc. v. Cisneros, 53 F.3d 1565 (11th Cir. 1995).

Overall summary. In a challenge to strengthened wind-resistance standards for manufactured homes, the court declined to specify whether findings derived from an RIA prepared under Executive Order 12866 were subject to judicial review. Nevertheless, the court indicated that, even if it were to review the findings of the RIA, it would uphold the agency's rule for the reasons explored below.

Assessing benefits and costs. The court found no errors in the United States Department of Housing and Urban Development’s (HUD’s) finding that the benefits of the regulation exceed the costs because the agency provided a logical explanation for its benefit and cost figures, and its methods were not “flawed or unreasonable.” “The role of this Court is not to decide whether HUD or the manufacturers used the better technical data and methodologies; instead, our task is to determine whether HUD’s explanation of its administrative action demonstrates that it has considered the appropriate factors required by law and that it is free from *clear* errors of judgment” (emphasis in original).

Inv. Co. Inst. v. U.S. Commodity Futures Trading Comm’n, 720 F.3d 370 (D.C. Cir. 2013).

Overall summary. The case concerned a rule reducing the number of entities exempt from certain financial regulations. The court upheld the rule in the face of various challenges to the CFTC’s benefit-cost analysis.

Defining the problem. The court noted that, unlike the SEC’s economic analysis critiqued in *Business Roundtable*, which declined to consider the effectiveness of state regulation, the CFTC did not ignore SEC regulations that might accomplish the same goal as the new CFTC regulations; the CFTC concluded that its regulations were needed to fill gaps in the SEC regulations.

Considering alternatives. Appellants also argued that the CFTC set the threshold too low when it decided that an investment firm is subject to the registration requirement if nonhedging derivatives trades constitute 5 percent or more of its portfolio. The court upheld the CFTC’s decision because the CFTC offered a reasoned explanation for the 5 percent figure; the

CFTC was not required to consider alternative thresholds and then conduct analysis to determine which one was best.

Assessing benefits and costs. The court rejected arguments that the agency counted hypothetical benefits while ignoring hypothetical costs, failed to quantify benefits (which the court deemed unnecessary), and failed to gather relevant data.

La. ex rel. Guste v. Verity, 853 F.2d 322 (5th Cir. 1988).

Overall summary. The case involved a challenge to a rule requiring the modification of fishing nets to limit adverse effects on sea turtles. In addition to various technical challenges to the rule (including (1) the impact of trawling on sea turtle mortality, (2) the efficacy of the rule as applied to inland waters, and (3) the agency's failure to regulate other major causes of sea turtle mortality), the court also considered and rejected appellants' contention that the agency had not shown that the rule's costs justify its benefits.

Defining the problem. Appellants claimed that the agency did not demonstrate that shrimp trawling kills sea turtles, but the court cited numerous studies in the record that demonstrated the harm. The court concluded that the agency did not act arbitrarily or capriciously in relying on those studies, even though 20 years of monitoring by the Louisiana Department of Wildlife and Fisheries found no sea turtles captured by shrimp trawlers. Explaining the high level of deference exhibited, the court noted that the "arbitrary and capricious" standard does not permit the court to "weigh the evidence in the record pro and con." The court further stated that the regulation need not produce the desired outcome to survive judicial review.

Assessing benefits and costs. The court stated that Congress had determined that the benefits of the rule were “incalculable” (quoting from the House Committee on Merchant Marine and Fisheries report that accompanied the Endangered Species Act) and summarily noted that it had not been shown that a less costly means of compliance was available.

**N. Calif. Power Agency v. Fed. Energy Regulatory Comm’n*, 37 F.3d 1517 (D.C. Cir. 1994).

Overall summary. This case dealt not with an RIA but with the Federal Energy Regulatory Commission’s (FERC) calculation of the compensation an investor-owned utility was required to pay municipalities. The appellants claimed that FERC was arbitrary and capricious in using a 15 percent discount rate—intended to reflect consumers’ preferences—to calculate the present value of future benefits to consumers. The court correctly pointed out that a consumer’s discount rate is not necessarily the same as a firm’s discount rate because the consumer’s rate reflects consumer preferences, whereas the firm’s rate reflects the firm’s cost of capital.

Nat’l Truck Equip. Ass’n v. Nat’l Highway Traffic Safety Admin., 711 F.3d 662 (6th Cir. 2013).

Overall summary. The NHTSA’s vehicle roof crush resistance standards for certain types of special-purpose vehicles were challenged, in part, on the grounds that the NHTSA’s RIA found that those vehicles were less prone to injury-causing rollovers. The petitioner thus argued that those vehicles should not be subject to the regulation because the safety problem for them was less severe. The court stated that (1) Executive Order 12866 does not create a right to judicial review of RIAs prepared thereunder and (2) even if the court were to review the RIA, it would uphold the rule because the NHTSA found that those vehicles were not immune from

rollovers; the NHTSA's investigation was sufficient to ensure that its decision was not arbitrary or capricious.

Nat'l Wildlife Fed'n v. EPA, 286 F.3d 554 (D.C. Cir. 2002).

Overall summary. A litigant challenged a rule limiting various emissions in paper production, contending, among other issues, that the agency failed to justify its estimate of the economic impact of the rule. The court upheld the rule in the face of that challenge.

Considering alternatives. The court found that the EPA behaved neither arbitrarily nor capriciously in rejecting several alternative compliance-monitoring methods and in setting the monthly maximum effluent limitation at the 95th percentile of monthly measurements rather than the 99th because the EPA has considerable discretion in making such judgments, and the agency explained its reasons.

Assessing costs. Environmentalist petitioners argued that the EPA artificially inflated the cost of an option it rejected as too costly. The court generally found that the EPA demonstrated it had a rational basis for its cost estimates.

Nw. Env'tl. Advocates v. Nat'l Marine Fisheries Serv., 460 F.3d 1125 (9th Cir. 2006).

Overall summary. An environmental organization challenged an agency's economic analysis prepared in connection with an environmental impact statement for a river-deepening project. The court considered and rejected various allegations that the agency failed to adequately consider certain costs, holding that the US Army Corps of Engineers did indeed consider those costs in its analysis.

Although the case deals with an environmental impact statement rather than an RIA, the claims that the agency ignored certain costs are similar to the kinds of criticisms a litigant might make in challenging an RIA. The court concluded, “It is not the office of this court to pass upon the wisdom of an agency action or to require an agency to study a proposed action *ad infinitum*. Our role is simply to assure that the agency has taken a hard look at the proposed action. In this case, the Corps has demonstrated the hard look by performing exhaustive studies over numerous years, soliciting and accommodating input from stakeholders, and thoroughly re-analyzing areas of particular concern.” (The dissent strongly criticized the agency’s analysis, however, for ignoring possible external costs created by the project and failing to consider how much of the economic benefit would merely constitute diversion of traffic from other ports.)

Quivira Mining Co. v. U.S. Nuclear Regulatory Comm’n, 866 F.2d 1246 (10th Cir. 1989).

Overall summary. Petitioners challenged a Nuclear Regulatory Commission (NRC) rule on mill tailings as being inadequately supported by benefit-cost analysis. The court concluded that the underlying statute required the NRC to determine that the benefits of its regulations have a reasonable relationship to costs (but not necessarily to maximize net benefits). After reviewing the benefit-cost analysis in the NRC’s environmental impact statement, which included consideration of alternatives, the court concluded that the NRC satisfied this requirement.

Radio Ass’n on Defending Airwave Rights, Inc. v. U.S. Dep’t of Transp. Fed. Highway Admin., 47 F.3d 794 (6th Cir. 1995).

Overall summary. Petitioners raised various objections to the benefit-cost analysis of a rule dealing with a ban on radar detectors, including an assertion that the agency ignored certain costs

and a claim that the agency failed to provide adequate evidence for its cost assessment. (See page 805 of the opinion.) The court rather summarily rejected those challenges.

Assessing benefits. Petitioners correctly pointed out that the FHWA's analysis included no evidence that the use of radar detectors increases the number of accidents, but the court noted that the FHWA's benefit calculations were based on studies showing that slower speeds reduce the severity of accidents, not the number of accidents.

Assessing costs. The court held that the agency satisfied the 1984 Safety Act's requirement that it must perform a benefit-cost analysis, even if it declined to include some costs.

Reynolds Metals Co. v. EPA, 760 F.2d 549 (4th Cir. 1985).

Overall summary. In challenging a rule dealing with toxic emissions in auto manufacturing, petitioners questioned the accuracy of the economic impact figures used by the agency and the agency's method of calculating those figures. Although the court found the agency's analysis imperfect, it upheld the agency's determinations without much explanation, emphasizing that the analysis relied on complex, technical fact-finding.

Assessing benefits. Petitioners in effect contended that the regulation could not produce the expected level of effluent reduction benefits; correcting several errors in the EPA's analysis would yield a lower reduction in effluent. The court summarized the differences between the petitioners and the EPA, then sided with the EPA because the EPA provided a rational basis for its conclusions.

Assessing costs. The court likewise dismissed allegations of deficiencies in the EPA's cost analysis, stating that "an agency has a broad discretion in its selection of data and in the

method of calculation, particularly when it involves highly scientific or technical considerations.”

Webster v. U.S. Dep’t of Agric., 685 F.3d 411 (4th Cir. 2012).

Overall summary. Appellants challenged the NEPA analysis associated with an agency’s decision to approve a new dam on various grounds, including alleged reliance on an inaccurate benefit-cost analysis. The appellants pointed to a number of purported technical flaws in the agency’s methodology for calculating benefits and costs. The court, in a rather conclusory decision, dismissed those claims, as examined herein.

Considering alternatives. Appellants argued that the NEPA analysis was incomplete because it excluded several alternative actions or dam locations. The court found that the appellants offered no alternatives that the Natural Resources Conservation Service had failed to consider; in fact, the 2009 environmental impact statement discussed 17 alternatives, including no action.

Appellants also raised a potentially significant issue when they claimed that the Natural Resources Conservation Service failed to consider the benefits and costs of the entire watershed project with and without the disputed dam, arguably a very important margin. The court, however, noted that the environmental impact statement included a chart showing monetary and nonmonetary benefits and costs of the project with and without the dam.