His Master's Voice: Statutory Rulemaking Considerations and Judicial Review of Regulatory Impact Analysis

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Abstract

Congress is currently considering whether to require regulatory agencies to conduct the basic elements of regulatory impact analysis – analysis of the problem the agency seeks to solve, development of alternative solutions, and estimation of the benefits and costs of alternatives – before adopting major regulations. Legislators are also considering whether to make this analysis subject to judicial review. We examine the effects of requirements already on the books on courts' and agencies' behavior. Our review of 33 cases in which federal appeals courts assessed the quality of the economic analysis accompanying a regulation finds that that courts scrutinize agencies' economic analysis much more closely when the relevant statute either calls for the selection of a particular regulatory alternative identified by the economic analysis or provides a detailed list of economic costs and benefits the agency must consider. Our econometric analysis using a sample of 130 economically significant regulations from executive branch agencies finds that agencies tend to produce higher-quality analysis and offer more extensive claims of how the analysis affected decisions when the statute authorizing the regulation provides more specific guidance on the economic factors the agency must consider. Taken together, these results suggest that agencies are more likely to produce high-quality economic analysis and use it in decisions when Congress specifies the economic factors to be considered and allows courts to review the quality of the agency's analysis.

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INTRODUCTION

A fundamental question any regulator must ask when deciding whether to issue a new rule is whether the proposed intervention does more good than harm.[1] As economists have long recognized, regulation can enhance overall welfare when markets or public institutions fail to produce efficient results. Governments also use regulation to advance distributional or other social goals unrelated to welfare maximization. But regulatory reallocation of resources means that we sacrifice some good things in order to obtain the benefits the regulation provides. To identify whether a prospective regulation does more good than harm and produces desired outcomes in the most cost-effective manner, the regulatory agency should understand the significance and cause of the problem it wishes to solve, examine a range of potential solutions, and understand the likely effects of each of those alternatives.[2]

Though these basic principles are fairly unobjectionable in theory and have obtained nearly universal acceptance among regulators, politicians, and those who study the administrative state,[3] the actual process of integrating them into regulatory decisionmaking has involved a drawn-out history featuring all three branches of government and a number of controversial decisions. Congress often directs specific agencies to consider the economic effects of their regulations or even to select a specific regulatory alternative identified by the economic analysis, but it has not adopted any cross-cutting mandate requiring all federal agencies to conduct economic analyses of proposed rules or take account of such analyses in selecting among regulatory options.

In the last four decades, the president and the courts have rushed to fill this vacuum. Specifically, the president has required certain agencies to conduct regulatory impact analysis of any significant rules they develop and to submit that analysis to a centralized review body. Over the same period of time, the courts have directly reviewed agencies' statutorily-required

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[1] 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, 1499 (2002).
[2] Exec. Order 12,866, § 1(b), 58 Fed. Reg. 51,735, 51,735–36 (Oct. 4, 1993); Office of Management & Budget, Circular A-4 (Sept. 17, 2003), *available at* https://www.whitehouse.gov/omb/circulars_a004_a-4; Reeve T. Bull & Jerry Ellig, *Why Not the Best? Judicial Review of Regulatory Impact Analysis*, __ ADMIN. L. REV. __ (forthcoming Dec. 2017).
[3] *See infra* note 22 (citing executive orders from Republican and Democratic administrations that embrace benefit-cost analysis of agency regulations); *see also* See Hearing on the Nomination of Gina McCarthy to be Administrator of the Environmental Protection Agency, Before the S. Comm. on Env't. and Pub. Works, 113th Cong. 376 (2013) (statement of Sen. Cardin, Member, S. Comm. on Env't and Pub. Works); Press Release, Office of Senator Mark Warner, Warner, Portman, Collins Introduce Bill to Require Cost Analysis of Agency Regulations (June 18, 2015), *available at* https://www.warner.senate.gov/public/index.cfm/2015/6/warner-portman-collins-introduce-bill-to-require-cost-analysis-of-agency-regulations; Press Release, Office of Senator Rob Portman, Portman, Heitkamp Introduce the Bipartisan Senate Regulatory Accountability Act (April 26, 2017), *available at* https://www.portman.senate.gov/public/index.cfm/press-releases?ID=8AF7F04B-E0EC-4D45-84F9-9BF57D48050C; OECD, REGULATORY IMPACT ANALYSIS: A TOOL FOR POLICY COHERENCE 3 (2009), http://www.keepeek.com/Digital-Asset-Management/oecd/governance/regulatory-impact-analysis_9789264067110-en#.WfIx-2hSxdg#page5 ("Since the first OECD member countries adopted Regulatory Impact Analysis (RIA) in 1974 as a means of systematically improving the quality of regulation, growth in its use among members has been rapid. Currently, nearly all member countries now have regulatory management systems which require some form of RIA before new regulations are made.").

economic analyses and, in a handful of cases, even reviewed analyses not required by statute.[4] Moreover, the United States Supreme Court has recently suggested that an agency cannot ignore the economic effects of a rule even in cases in which the statute is silent on regulatory benefits and costs.[5] Some scholars predict that courts are evolving toward a doctrine holding that an agency acts arbitrarily and capriciously if it fails to consider benefits and costs when the legislation authorizing the regulation gives the agency discretion to do so.[6]

As the doctrine continues to evolve in the agencies and the courts, Congress has recently shown a keen interest in playing a more active role in shaping regulatory policymaking. Beginning in the early days of the Obama administration and extending to the present, lawmakers from both sides of the aisle have introduced dozens of bills that would reshape the regulatory process in many important respects.[7] Several of these bills would require that all agencies conduct an economic analysis of significant rules that would include an explicit definition of the underlying problem and an assessment of the benefits and costs of the proposed solution as well as key alternatives.[8] These proposals also explicitly authorize the federal courts to review the underlying economic analysis when assessing whether the agency has offered sufficient justification for a rule.[9]

As we have argued elsewhere, Congress's revived interest in providing more explicit direction to agencies on how to conduct and use economic analysis is a welcome development, as the ad hoc process currently playing out in the agencies and courts leaves many unanswered questions that create significant uncertainties for regulators and regulated parties alike.[10] Nevertheless, how Congress goes about enacting such reform is critical, as merely layering on additional vague analytical requirements has the potential of doing more harm than good. In this Article, we examine court decisions and agency regulatory impact analyses to determine how courts and agencies have in fact responded to diverse statutory instructions pertinent to economic analysis of regulations.

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[4] *See generally* Bull & Ellig, *supra* note 2; Caroline Cecot & W. Kip Viscusi, *Judicial Review of Agency Benefit-Cost Analysis*, 22 Geo. Mason L. Rev. 575 (2015).

[5] Michigan v. Envtl. Prot. Agency, 135 S. Ct. 2699, 2707 (2015) (interpreting the exceedingly "capacious[]" statutory mandate to adopt "appropriate and necessary" regulation to require the agency to pay "at least some attention to cost"), 2716–17 (Kagan, J., dissenting) (suggesting that it is per se arbitrary and capricious to ignore regulatory costs when a statute does not affirmatively prohibit an agency from doing so).

[6] Caroline Cecot & W. Kip Viscusi, *Judicial Review of Agency Benefit-Cost Analysis*, 22 GEO. MASON L. REV. 575, 591–605 (2015); Jonathan S. Masur & Eric A. Posner, *Cost-Benefit Analysis and the Judicial Role*, __ Univ. Chi. L. Rev. 32–37 (forthcoming 2018); Cass R. Sunstein, *Cost-Benefit Analysis and Arbitrariness Review* (Harvard Pub. Law Working Paper No. 16–12, 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2752068.

[7] *See generally* Memorandum from Administrative Conference Interns to Research Director Reeve T. Bull, Regulatory and Administrative Reform Legislation (Jan. 30, 2017), *available at* https://www.acus.gov/sites/default/files/documents/Regulatory%20Reform%20Legislation%20Memo%202-13-2017.pdf.

[8] *See, e.g.*, Independent Agency Regulatory Analysis Act of 2017, S. 1448, 115th Cong. (2017); Regulatory Accountability Act of 2017, S. 951, 115th Cong. (2017); Regulatory Responsibility for Our Economy Act, S. 69, 115th Cong. (2017); Regulations from the Executive in Need of Scrutiny Act of 2017, S. 21, 115th Cong. (2017); Regulations from the Executive in Need of Scrutiny Act of 2017, H.R. 26, 115th Cong. (2017); Regulatory Accountability Act of 2017, H.R. 5, 115th Cong. (2017).

[9] *See id.*

[10] Bull & Ellig, *supra* note 2, at __.

To determine how statutory language affects the review conducted by courts when agencies' rules are challenged, we examined the roughly thirty opinions from the federal courts of appeals assessing agencies' economic analyses in rulemakings that have emerged in the last thirty years.[11] Our analysis, which appears in Section II *infra*, suggests that courts scrutinize agencies' economic analysis much more closely when the relevant statute either provides a specific list of economic costs and benefits the issuing agency must consider, or calls for the selection of a particular regulatory alternative meeting criteria articulated in the statute (such as the least restrictive option).

To identify how regulatory agencies respond to analytical requirements in statutes, we examine data evaluating the quality and claimed use of regulatory impact analysis for the 130 economically significant, prescriptive regulations proposed by executive branch agencies between 2008 and 2013.[12] This data set was produced as part of the Regulatory Report Card project at the Mercatus Center at George Mason University.[13] Our econometric analysis in Section III *infra* reveals that when statutes require or prohibit agencies from considering specific factors – such as benefits or costs – agencies tend to conduct more thorough analysis of the factors they are required to consider and less thorough analysis of the factors they are not required to consider or are prohibited from considering. When agencies are required to consider economic factors, they also tend to offer more thorough explanations of how they used the regulatory impact analysis in their decisions. Moreover, agencies tend to do this to a greater degree when the statute offers more specific guidance about the benefit or cost factors they must consider.

Taken together, these findings suggest that the threat of judicial review is a key element that induces agencies agencies to respond to analytical requirements written into statutes. Prior research has found that agencies tend to evade mandated rulemaking procedures that are less frequently enforced by judicial review.[14] We are aware of no study, however, that examines the level of scrutiny applied by courts depending on the type of statutory economic analysis requirement imposed. We also are aware of no study examining whether more specific statutory analytical requirements are systematically associated with higher-quality economic analysis for a relatively large sample of regulations. This Article provides those answers.

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[11] This sample of cases was the same as that used in the authors' earlier study of judicial review of regulatory impact analyses, Bull & Ellig, *supra* note 2, which in turn drew heavily on a sample of cases created by Caroline Cecot and Kip Viscusi, Cecot & Viscusi, *supra* note 4.

[12] "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. "Prescriptive" regulations contain mandates or prohibitions. They are distinct from budget regulations, which implement federal spending programs or revenue-collection measures. See Eric A. Posner, *Transfer Regulations and Cost-Effectiveness Analysis*. 53 DUKE L.J. 1067 (2003).

[13] The Regulatory Report Card's methodology is explained in Jerry Ellig & Patrick A. McLaughlin, *The Quality and Use of Regulatory Analysis in 2008*, 32 RISK ANALYSIS 855 (2012). The full 2008-2013 data set is described in Jerry Ellig, *Evaluating the Quality and Use of Regulatory Impact Analysis* (Mercatus Ctr. at Geo Mason Univ., Working Paper, 2016).

[14] Connor Raso, *Agency Avoidance of Rulemaking Procedures,* 67 ADMIN. L. REV. 65 (2015).

We conclude by exploring the implications of our findings for statutory reform efforts. Though we take no position in this paper on whether Congress should impose more stringent economic analysis requirements on agencies or on what form those requirements should take, we examine the downstream effects of the various standards and urge Congress to consider these effects when contemplating statutory changes. Moreover, we presume that Congress intends that the courts apply a consistent standard of review when interpreting identical or similar statutory language, and we encourage Congress to avoid recycling statutory language that has led to highly inconsistent interpretations by the courts in the past.

I. ECONOMIC ANALYSIS AND THE MODERN REGULATORY STATE

This section provides an overview of the economic analysis requirements under which agencies currently operate, including those imposed both by statute and executive order. It also charts the extent to which agencies' economic analyses are subject to judicial review and highlights the federal courts' increasingly expansive view of their role in this arena. Finally, it sets forth the methodology by which the paper will study the effects of different statutory economic analysis requirements.

A. Existing Economic Analysis Requirements

As the modern administrative state emerged over the course of the late nineteenth and early twentieth centuries, proponents of regulation exhibited at least an inchoate understanding of the economic tradeoffs underlying regulatory decisionmaking: regulatory interventions can combat social ills and even enhance market efficiency by remedying market failures, yet these interventions impose costs on regulated entities, as well as the rest of society.[15] Over this period of time, which included the explosion of federal regulation in the New Deal and post-World War II eras, Congress exhibited a high degree of faith in the experts staffing federal agencies, issuing broad mandates directing regulators to act in the "public interest."[16]

Beginning in the 1960s, numerous high-ranking officials in the executive branch began to doubt that the various federal agencies were capable of independently assessing the effects of their regulations on the national economy. Early in the Nixon administration, the president rolled out an initiative known as the Quality of Life Review, which tasked the Office of Management and Budget with performing a centralized review of regulations emerging from the various agencies and ensuring that the cumulative regulatory burden did not grow too ponderous for businesses to bear.[17] Though President Carter elected not to continue this initiative, he embraced the overall concept of economic analysis of federal regulations and lent it enhanced institutional legitimacy, issuing an executive order on "Improving Government Regulations."[18] Among other things, Carter's executive order directed individual agencies to identify the underlying problem they intend to solve, assess key alternatives, consider the economic effects

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[15] *See, e.g.*, H.R. REP. NO. 81-2489, at 4218-19 (1950) (recognizing the tradeoffs between promoting some social good and restricting economic activity inherent in regulation); H.R. REP. NO. 80-1852, at 1709-10 (1948) (same).
[16] *See, e.g.*, Federal Trade Commission Act of 1914 § 5, 15 U.S.C. § 45(a)(2) (2012) ("The Commission is hereby empowered and directed to prevent [persons and entities subject to statute] from using unfair methods of competition in or affecting commerce and unfair or deceptive acts or practices in or affecting commerce."); National Labor Relations Act of 1935 § 6, 29 U.S.C. § 156 (2012) ("The Board shall have authority from time to time to make, amend, and rescind, in the manner prescribed by subchapter II of chapter 5 of title 5, such rules and regulations as may be necessary to carry out the provisions of this subchapter."); Federal Communications Act of 1934 § 303, 47 U.S.C. § 303(f) (2012) (directing the agency to "[m]ake such regulations not inconsistent with law as it may deem necessary to prevent interference between stations and to carry out the provisions of this chapter").
[17] Jim Tozzi, *OIRA's Formative Years: The Historical Record of Centralized Regulatory Review Preceding OIRA's Founding*, 63 Admin. L. Rev. 37, 44–47 (2011).
[18] Exec. Order 12,044, 43 Fed. Reg. 12,661 (Mar. 23, 1978); Tozzi, *supra* note 17, at 51–52.

of the preferred course of action and the alternatives, and offer a reasoned explanation for the option selected.[19]

Since the initial Carter executive order, every subsequent administration has issued a similar order that has reaffirmed and supplemented the overall framework. President Reagan built upon the basic structure by offering more specific requirements for what a regulatory impact analysis must contain and re-introducing centralized review, requiring that agencies submit rules to the Director of the Office and Management and Budget for assessment, a task ultimately placed in the Office of Information and Regulatory Affairs (OIRA).[20] President Clinton softened the Reagan approach in certain respects, specifying that OIRA would review only "significant" regulations and requiring a full regulatory impact analysis only for "economically significant" regulations, but he left the overall system fundamentally intact.[21] Every subsequent administration has explicitly endorsed the Clinton executive order, though each has elaborated on it in certain important respects.[22] Throughout this entire period, the regulatory review regime has not been applied to so-called independent regulatory agencies (e.g., the Securities and Exchange Commission, Federal Trade Commission, Federal Communications Commission), though presidents have asserted their authority to do so if they choose.[23]

During this period, Congress has been comparatively less active in promoting regulatory economic analysis, tacitly blessing the regime created by the executive branch but enacting relatively few statutory reforms. In a number of instances, Congress has updated statutory language to require specific agencies to perform economic analysis when preparing certain rules. For instance, Congress amended various statutory provisions governing the Securities and Exchange Commission to require the agency to consider "efficiency, competition, and capital formation" when determining whether rules are in the public interest.[24]

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[19] Exec. Order 12,044, § 3(b)(1), 43 Fed. Reg. 12,661, 12,663 (Mar. 23, 1978).
[20] Exec. Order No. 12,291, § 3(e), 46 Fed. Reg. 13,193, 13,194 (Feb. 17, 1981).
[21] Exec. Order No. 12,866, §§ 1(b)(6), 3(f)(1), 6(a)(C), 58 Fed. Reg. 51,735, 51,736, 51,738, 51,741 (Oct. 4, 1993).
[22] Exec. Order No. 13,258, 67 Fed. Reg. 9385 (Feb. 28, 2002) (George W. Bush); Exec. Order No. 13,422, 72 Fed. Reg. 2763 (Jan. 23, 2007) (George W. Bush); Exec. Order No. 13,563, § 1(b), 76 Fed. Reg. 3821, 3821 (Jan. 21, 2011); Exec. Order No. 13,771, § 3, 82 Fed. Reg. 9339, 9339–40 (Feb. 3, 2017).
[23] *See* Christopher C. DeMuth & Douglas H. Ginsburg, *Commentary: White House Review of Agency Rulemaking*, 99 HARV. L. REV. 1082-83 n. 13 (1986); Sally Katzen, Former Administrator of the OMB Office of Information and Regulatory Affairs, Opening Remarks at the Resources for the Future Conference: Can Greater Use of Economic Analysis Improve Regulatory Policy at Independent Regulatory Commissions? at 2-3 (April 7, 2011), *available at* http://www.rff.org/files/sharepoint/Documents/Events/Workshops%20and%20Conferences/110407_Regulation_KatzenRemarks.pdf. The authors of EO 12291 and EO 12866 have both taken this position. See C. Boyden Gray, *The President's Constitutional Power to Order Benefit-Cost Analysis and Centralized Review of Independent Agency Rulemaking*, Working Paper, Mercatus Center at George Mason University (2017) https://www.mercatus.org/publications/cost-benefit-analysis-centralized-review-independent-agency-rulemaking-trump, and Sally Katzen, *OIRA at Thirty: Reflections and Recommendations*, 63 ADMIN. L. REV. (SPECIAL EDITION) 103, 109–10 (2011). But see also Curtis W. Copeland, Economic Analysis and Independent Regulatory Agencies 20-25 (2013), *available at* https://www.acus.gov/report/economic-analysis-final-report.

[24] 15 U.S.C. §§ 77b, 78c(f), 80a-2(c) (2012). This requirement was added to these statutes by the National Securities Market Improvement Act of 1996, Pub. L. No. 104-290, 110 Stat. 3416. The Gramm-Leach-Bliley Act of 1999, Pub. L. No. 106-102, 113 Stat. 1338, added the language to the Investment Advisers Act of 1940. *See* 15 U.S.C. § 80b-2.

Congress has also extensively debated the merits of imposing a cross-cutting economic analysis requirement and empowering the courts to review agencies' compliance therewith. In 1981, a bipartisan group of senators introduced the Regulatory Reform Act.[25] Among other things, the bill would have required all major rules to undergo a regulatory impact analysis (i.e., an analysis that defines the underlying problem, identifies alternative approaches, and assesses the benefits and costs of the alternatives) and would have authorized courts to review agency rules in light of the findings of that analysis.[26] In subsequent sessions of Congress over the following decades, some variation of the Regulatory Reform Act of 1981 was repeatedly reintroduced.[27] Though these bills typically drew bipartisan support, the legislation never passed.

Most recently, the last several sessions of Congress have considered a bill known as the Regulatory Accountability Act.[28] The bill includes numerous changes to the Administrative Procedure Act. With respect to economic analysis, it would require agencies to define the problem they intend to solve and to consider "a reasonable number of alternatives" for *all* proposed rules.[29] For major rules, agencies would also be required to consider the benefits and costs of the potential alternatives.[30] In addition, the Act directs the agency to rely on "the best reasonably available scientific, technical, or economic information."[31] As to judicial review, much like the Regulatory Reform Act of 1981, the economic analysis is considered as part of the entire record, along with any other information undergirding a rule.[32]

In addition to its procedural requirements, the Regulatory Accountability Act also includes a substantive decisionmaking standard for all major rules. The agency must make a determination that the benefits of the rule "justify the costs" and that "no alternative considered would achieve the relevant statutory objectives in a more cost-effective manner than the rule."[33] The bill does not define the terms "justify" or "cost-effective," so it is unclear whether it would require net-benefit maximization or selection of the least costly alternative or whether the agency simply must provide a rational explanation for why it selected the option it did, whether or not the option selected is the one favored by the benefit-cost analysis.

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[25] S. 1080, 97th Cong. (1981).
[26] *Id.* § 3; Bull & Ellig, *supra* note 2, at __.
[27] *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); Bull & Ellig, *supra* note 2, at __.
[28] The most recent versions of the bill are S. 951, 115th Cong. (2017), and H.R. 5, 115th Cong. (2017). For previous iterations of the bill, see Memorandum from Administrative Conference Interns to Research Director Reeve T. Bull, Regulatory and Administrative Reform Legislation (Jan. 30, 2017), *available at* https://www.acus.gov/sites/default/files/documents/Regulatory%20Reform%20Legislation%20Memo%202-13-2017.pdf.
[29] Regulatory Accountability Act of 2017, S. 951, 115th Cong. § 3(3) (2017).
[30] *Id.*
[31] *Id.* § 3(f)(3).
[32] *Id.* § 4.
[33] *Id.* § 3(f)(2)(D). The Senate version of the bill limits the applicability of the cost-justification requirement to instances in which another statute does not impose a different standard, S. 951, 115th Cong. § 3 (2017), whereas the House version contains no such limitation, H.R. 5, 115th Cong. § 103 (2017).

In short, the existing framework is a patchwork in which many agency rules must undergo some form of economic analysis but significant interstices exist. For instance, so-called independent regulatory agencies are currently exempt from the presidential regulatory review process, though various statutory provisions direct many of those agencies to perform some form of economic analysis for certain rules. For agencies subject to the presidential review regime, only "economically significant" rules must be accompanied by a full regulatory impact analysis that quantifies benefits and costs of the rule and alternatives. For "significant" rules, an explanation of the need for, and benefits and costs of, the rule is sufficient.[34] Reform bills such as the Regulatory Accountability Act would greatly expand and clarify the scope of economic analytical requirements, but the decisionmaking standard would still leave a number of unanswered questions.

B. The Scope of Judicial Review

Judicial review of agency economic analysis can take two different forms. One form of judicial review involves examining the rulemaking record to ensure that the agency fully developed the evidence on which it relied and reached a rational conclusion in light of the available evidence. Though this type of review is often referred to as "procedural," it involves more than simply ensuring that the agency checked all of the relevant boxes.[35] The court also assesses the quality of the agency's evidence and ensures that the conclusions reached flow logically from the information on which the agency relied.[36] Nevertheless, the court must not substitute its judgment for that of the agency and must defer to any rational conclusion.[37] By contrast, when applying what has traditionally been referred to as "substantive" review, the court seeks to determine whether the agency followed the decision-making rule specified in the statute. For instance, if a statute requires net benefit maximization, the court will actually parse the evidence to ensure that the agency selected the option with the largest net benefits.[38]

Courts have been conducting the former type of review with respect to agencies' economic analyses for quite some time.[39] In statutory regimes in which Congress has explicitly directed agencies to conduct some form of economic analysis, courts have assessed agencies' evidence to ensure that they performed each of the required steps of a regulatory impact analysis (definition of problem, identification of alternatives, assessment of benefits and costs of key alternatives) and reached a rational conclusion on the basis of the evidence available.[40] Interestingly, though it is far less common, courts have also occasionally conducted this sort of review *even in the absence of a statutory requirement to assess a rule's economic effects*. For instance, in *Charter Communications, Inc. v. FCC*,[41] the court examined the agency's evidence concerning the costs of a ban on certain types of set-top converter boxes, notwithstanding the fact that the relevant statute contained no requirement to consider those costs.[42] Courts have

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[34] Exec. Order No. 12,866, §§ 3(f)(1), 6(a)(C), 58 Fed. Reg. 51,735, 51,738, 51,741 (Oct. 4, 1993).
[35] Bull & Ellig, *supra* note 2, at __.
[36] *Id.* at __.
[37] Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983).
[38] Bull & Ellig, *supra* note 2, at __.
[39] *Id.* at __.
[40] *Id.* at __.
[41] 460 F.3d 31 (D.C. Cir. 2006).
[42] *Id.* at 41–42.

been more equivocal on whether the findings of a regulatory impact analysis prepared pursuant to an executive order requirement are reviewable,[43] though this evidence likely can be considered to the extent the agency relies on it in justifying a rule.[44]

Courts have also conducted the latter type of review in cases in which there is a statutory standard for them to apply. For instance, in *Corrosion Proof Fittings v. EPA*,[45] the court reviewed an agency's decision to ban the production and use of asbestos.[46] At the time, the relevant statute, the Toxic Substances Control Act, contained language directing the agency to adopt the "least burdensome requirement."[47] The court concluded that the agency had completely failed to justify its decision under this strict standard, as it adopted the *most burdensome* possible approach (an outright ban) and failed to explain why potentially less restrictive alternatives were infeasible.[48]

Interestingly, in recent years, the courts have also shown a willingness to examine the substantive aspects of an agency's economic analysis even in the absence of a statutory requirement to adopt a specific regulatory alternative. The most prominent example of this line of reasoning appears in the Supreme Court's recent decision in *Michigan v. EPA*.[49] The majority opinion engages in a fairly straightforward exercise of statutory interpretation, concluding that statutory language directing the agency to adopt a rule that is "appropriate and necessary" requires some attention to regulatory costs.[50] Justice Kagan's dissent, though more generous to the agency with respect to its interpretation of the statute at hand, actually goes quite a bit further in suggesting that an agency that fails to consider regulatory costs when not statutorily proscribed from doing so necessarily behaves arbitrarily and capriciously.[51] Kagan further suggests that a rule imposing significant costs while creating few benefits will not survive judicial review.[52]

Whether this line of reasoning has placed a gloss on the Administrative Procedure Act's (APA) "arbitrary and capricious" standard that requires agencies both to conduct some species of economic analysis and to provide at least some justification for the economic effects of proposed rules is an open question.[53] Nevertheless, given this trend in the federal courts, agencies will likely feel compelled to give at least passing consideration to the economic effects of a proposed

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[43] *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)
[44] *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); Bull & Ellig, *supra* note 2, at __; Cecot and Viscusi, *supra* note 4 at 603-05, note that since the analysis is part of the record, it is potentially subject to review when a court reviews the reasonableness of an agency's decisions.
[45] 947 F.2d 1201 (5th Cir. 1991).
[46] *See generally id.*
[47] *Id.* at 1214.
[48] *Id.* at 1215–16.
[49] 135 S. Ct. 2699 (2015).
[50] *Id.* at 2707.
[51] *Id.* at 2716–17 (Kagan, J., dissenting).
[52] *Id.* at 2717 (Kagan, J., dissenting).
[53] Cass Sunstein, *Cost-Benefit Analysis and Arbitrariness Review*, Harvard Public Law Working Paper No. 16-12 (March 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2752068.

rule and to offer some justification couched in economic terms for the rule they ultimately adopt, except in those rare instances in which an agency is statutorily foreclosed from doing so.

C. Structure of Study

As the foregoing subsections make clear, under existing law, agencies confront a number of uncertainties in deciding how to apply economic analysis in developing their rules. An agency may face some or all of the following questions when conducting a rulemaking:

- In the absence of a statutory economic analysis requirement, will any such analysis conducted pursuant to executive order or prepared voluntarily be subject to judicial review?
- How stringently will a court review an agency's economic analysis?
- Does the "arbitrary and capricious" standard of the APA implicitly impose an economic analysis requirement?
- Do different statutory standards require different levels of analysis? For instance, does a statute requiring an agency to "consider benefits and costs" mandate a more rigorous analysis than a statute merely directing the agency to adopt a regulatory intervention that is "feasible"?
- Short of a directive to select a particular regulatory alternative (e.g., that which maximizes net benefits or minimizes economic costs), does vague statutory language requiring that the agency "justify" the regulatory benefits and costs or adopt a "cost effective" alternative meaningfully limit the range of options an agency can consider?

As noted above, Congress has recently exhibited great interest in implementing statutory reforms that would address some or all of these questions. Though statutory reform could bring much needed clarity to a rapidly evolving area of law, it could also introduce even greater uncertainty if not done carefully.

In an earlier paper, we took on the first two questions posed above. We recommended that Congress amend the APA to define the elements of a regulatory impact analysis and to clarify that courts are to review rules in light of this analysis to ensure that the agency relied on the best available evidence in reaching its ultimate conclusion.[54] We also recommended that Congress clarify that the stringency of review should resemble that deployed by courts applying what has come to be known as the "hard look" standard of "arbitrary and capricious review."[55]

In that paper, we intentionally set aside the question of whether Congress should impose a statutory economic analysis requirement, instead focusing exclusively on how to design an effective judicial review regime. Here, we directly examine statutory economic analysis requirements, though we do not argue in favor of any specific type of standard or even take a position on whether the existence of such a standard is preferable to its absence. Rather, we examine the range of preexisting options and explore their downstream effects both with respect to the rigor of judicial review and the type of analysis conducted by agencies. Our conclusions should be highly relevant to Congress as it grapples with the final three questions posed above.

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[54] Bull & Ellig, *supra* note 2, at __.
[55] *Id.* at __.

Additionally, though we do not advocate any specific standard in this paper, we do assume that Congress would prefer that whatever standard it adopts be applied consistently by the courts. That is, if courts applying identical or very similar standards review rules very rigorously at times and exhibit a high level of deference to agencies at other times, this is undesirable insofar as it creates uncertainty for agencies and undermines Congress's probable intent.

In order to assess the effects of the various statutory standards, we begin by assembling a set of cases that includes nearly all federal court of appeals decisions assessing a rule's economic analysis under the standard announced in the Supreme Court's *State Farm* decision. We classify the various statutory standards into five major categories and then explore how rigorously the reviewing courts have examined agencies' factfinding when applying each standard. Section II presents our findings.

Separately, we have accessed evaluations of the analysis accompanying the 130 prescriptive, economically significant regulations proposed between 2008 and 2013. For this data set, we again identify the various statutory economic analysis standards, which line up very closely with the categories identified in section II. We then perform an econometric analysis to determine whether the statutory standards are correlated with the quality and claimed use of analysis performed under each of the standards. Section III sets forth this analysis.

Finally, we compare the results of the caselaw and econometric analyses, exploring the extent to which certain standards trigger higher quality analysis in agencies and/or courts. We conclude with a set of observations that should prove useful to Congress as it considers how best to ensure consistency in the analysis conducted by courts and agencies when applying statutory economic analysis standards.

II. EFFECTS OF STATUTORY STANDARDS ON JUDICIAL REVIEW

This section seeks to determine whether the courts engage in a more searching review of the agency's economic reasoning when the underlying statutory standard is either more prescriptive or more detailed. To do so, we review a reasonably complete sample of federal court of appeals decisions assessing regulatory agencies' economic analysis under section 706 of the APA since the *State Farm* decision articulated the contemporary "hard look" standard in 1983.[56] Most of the cases apply the "arbitrary and capricious" standard of review; a few apply the "substantial evidence" standard.[57] The authors have chosen to use that sample of cases because

[56] This is the same sample of cases used by the authors in a previous paper that evaluated statutory reforms designed to enhance courts' judicial review of agencies' regulatory impact analyses. See Reeve T. Bull & Jerry Ellig, *Judicial Review of Regulatory Impact Analysis: Why Not the Best?*, __ ADMIN. L. REV. __ (forthcoming 2017). Though we made a few additions, the cases we used in the aforementioned piece were drawn primarily from an earlier study by Caroline Cecot and W. Kip Viscusi. Caroline Cecot & W. Kip Viscusi, *Judicial Review of Agency Benefit-Cost Analysis*, 22 GEO. MASON L. REV. 575 (2015).

[57] 5 U.S.C. §§ 706(2)(A), (E). 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

it represents a robust cross-section of decisions over a relatively lengthy period of time (30+ years) and includes opinions reviewing rules promulgated under a wide array of statutes.

In analyzing the cases, we first reviewed each decision to identify the statutory provision(s) authorizing the agency to promulgate the rule at issue. We have focused specifically on those portions of the statutes directing the agency to conduct some form of economic analysis, including any directive that the agency consider the costs or benefits associated with a contemplated rule. At the highest level of generality, the statutes fall into five overarching categories: (a) requirement that the agency select a specific alternative identified by the benefit-cost analysis (e.g., the least restrictive alternative); (b) requirement that the agency consider specific types of economic benefits and/or costs enumerated in a statute; (c) a more general requirement that the agency consider benefits or costs (without any identification of specific types of benefits or costs); (d) requirement that the agency promulgate a rule that is technologically and/or economically feasible[58]; and (e) authorization for regulation without any directive to consider (or ignore) regulatory benefits or costs.[59] None of these judicial decisions involved statutes that prohibit the agency from considering costs.[60]

We then reviewed each decision to assess the rigor with which the court examined the agency's economic analysis in determining if the rule satisfied the relevant statutory standard. We have assigned an impressionistic score to each case, characterizing the review as "detailed," "intermediate," or "minimal" (or "indirect," if the court's review focused only tangentially on the economic aspects of the rulemaking). In assigning that score, we have focused solely on the court's analysis of the agency's factfinding regarding the economic aspects of the rule, ignoring the analysis of other aspects of the rulemaking process such as the scientific factfinding, the procedural aspects of the agency's decision (e.g., whether the agency appropriately sought public comment), and the construction of the underlying statute.

In this light, we excluded a handful of cases that were analyzed in our prior article. Specifically, any case that did not apply section 706 of the APA was excluded from the sample. For instance, several decisions involved only issues of statutory interpretation (applying the

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rules adopted. *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).
pursuant to notice-and-comment procedures.1

[58] In several of the rules analyzed in the following sections, technological and economic feasibility appear to be distinct separate requirements. In the handful of cases we reviewed for this section that dealt with a feasibility standard, the relevant statute required the agency to show that the rule was both technologically and economically feasible.

[59] In the econometric analysis, rules subject to statutory standards of this sort were not treated as a separate category but rather as a baseline.

[60] The absence of any such cases in the sample is understandable. Though a court may apply the *Chevron* standard to determine whether an agency properly interpreted a statute to prohibit consideration of costs, *compare Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 465 (2001) (holding that considerations of economic costs can play no part in the determination of national ambient air quality standards, one of the tasks assigned to the Environmental Protection Agency under the Clean Air Act), *with Michigan v. Envtl. Prot. Agency*, 135 S. Ct. 2699, 2712 (2015) (holding that the Environmental Protection Agency incorrectly interpreted another provision of the Clean Air Act to foreclose consideration of economic costs in the regulation of power plants), a court would not be in a position to examine an agency's factfinding under such a statutory standard, except in a case in which an agency improperly made findings concerning regulatory costs and then allowed that evidence to infect other portions of the record.

Chevron standard) or of compliance with the APA's procedural strictures (e.g., ensuring an adequate opportunity for public comment). The court's evaluation of the agency's economic analysis in these cases was incidental. We also focused solely on cases that examined benefit-cost analyses performed under statutes directing a specific agency (or discrete group of agencies) to consider economic factors when promulgating rules. As such, we excluded cases that dealt solely with analyses mandated by the National Environmental Policy Act or other cross-cutting statutes that impose supplemental analytical requirements on large groups of agencies.

The remainder of this section will explore the rigor of judicial review in cases involving each of the five categories of statutory standards. For each standard, the paper will both offer overarching conclusions concerning all of the cases in the sample that applied that standard and provide a more detailed analysis of several of the relevant cases, illustrating how the statutory standard ultimately affects the rigor of the court's review.[61] The section will then conclude with a discussion of overarching conclusions and of lessons for statutory drafters.

A. Statutes mandating selection of a specific regulatory alternative

Our sample of cases included two decisions in which the relevant statute directed an agency to adopt a specific alternative identified by the underlying benefit-cost analysis. In both instances, the reviewing court examined the agency's economic analysis very carefully, closely parsing the agency's underlying factfinding to ensure that the agency properly interpreted the evidence and reached a logical conclusion on the basis of the information in the rulemaking record. The cases included one reversal and one affirmance.

The first decision, *Corrosion Proof Fittings v. EPA*,[62] involved a challenge to a rule issued by the Environmental Protection Agency (EPA) under the Toxic Substances Control Act (TSCA).[63] In relevant part, TSCA directs EPA to regulate chemicals posing "an unreasonable risk of injury to health or the environment."[64] At the time the *Corrosion Proof* decision was issued, TSCA also contained language (since removed) that required the EPA to "protect adequately against [the] risk" by "using the least burdensome requirement."[65]

The relevant provision of TSCA also sets forth various factors related to the economic effects of a proposed rule that the agency must consider when promulgating a rule. These include "the likely effect of the rule on the national economy, small business, technological innovation, the environment, and public health" as well as the costs and benefits and cost effectiveness of the regulatory alternatives the agency considers.[66] Finally, the statute provides that a court reviewing the agency's rule must find that it is supported by "substantial evidence," a

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[61] The appendix gives an overview of each of the cases analyzed, setting forth the statutory requirement for conducting economic analysis at issue in each case and then providing a brief analysis of the rigor of review applied by the court to the agency's factfinding in response to the statute.
[62] 947 F.2d 1201 (5th Cir. 1991).
[63] 15 U.S.C. §§ 2601–29.
[64] 15 U.S.C. § 2605(a).
[65] 947 F.2d at 1214.
[66] *Id.* § 2605(c)(2)(A)(iv).

standard of review that is sometimes construed as more searching than the baseline "arbitrary and capricious" standard under the APA.[67]

Interpreting this statutory language, the United States Court of Appeals for the Fifth Circuit held that the EPA must determine an "acceptable" level of risk and then adopt the "least burdensome method of reaching that level."[68] As will be seen in section II.C, this type of standard is unusually strict. In most cases in which Congress speaks to regulatory benefits and costs, it simply directs the agency to "consider" the economic effects of the rule or to find a "reasonable relationship" between the benefits and costs. Under the version of TSCA applied in *Corrosion Proof*, by contrast, Congress affirmatively directed the agency to adopt the "least burdensome requirement" available.[69] As such, the EPA could not satisfy this standard merely by considering economic benefits and costs; it had to show that it selected the alternative that imposes the lowest possible costs on regulated industry.

After articulating the standard the EPA must satisfy, the *Corrosion Proof* decision engaged in an incredibly rigorous analysis of the agency's economic factfinding. It began by noting that the agency appeared to have adopted the *most* burdensome possible regulation, an outright ban on the production and use of asbestos.[70] In so doing, the agency took on a nearly impossible task: in order to satisfy the "least burdensome" standard, it must demonstrate that an outright ban is the only possible approach that achieves the regulatory objectives. Pointing to various flaws in the agency's analysis, the Fifth Circuit held that the EPA had most decidedly not met that heavy burden. Among other things, the agency's factfinding contained the following errors:

- Artificially inflating the benefits of the rule by comparing it to a baseline of zero regulation (as opposed to considering the benefits of a less burdensome regulation than an outright ban)[71]
- Discounting projected costs without doing the same for benefits[72]
- Using unquantified benefits (lives saved beyond the year 2000) as a trump card to justify very high costs, even where the agency successfully quantified similar benefits (lives saved prior to the year 2000)[73]
- Ignoring the risks associated with potential substitutes, many of which are known carcinogens[74]
- Tolerating very high costs (upwards of $70 million for every statistical life saved), which suggested that underlying risk of injury is not "unreasonable"[75]

So stringent was the Fifth Circuit's review in the *Corrosion Proof* decision that the case has come to be viewed by many in the administrative law community as a prime specimen of

[67] *Id.* § 2618(c)(1)(B)(i).
[68] *Corrosion Proof*, 947 F.2d at 1215.
[69] *See supra* note 9 and accompanying text.
[70] *Corrosion Proof*, 947 F.2d at 1215–16.
[71] *Id.* at 1216–17.
[72] *Id.* at 1218.
[73] *Id.* at 1218–19.
[74] *Id.* at 1221.
[75] *Id.* at 1222–23.

judicial overreach. In a recent article, Jonathan Masur and Eric Posner characterize *Corrosion Proof* as well as *Business Roundtable v. SEC*[76] (a case analyzed in greater detail below) as forming an "anti-canon" of almost universally reviled judicial opinions.[77] Masur and Posner take up the unpopular task of defending the decision, arguing that the EPA's economic analysis suffered major flaws and that the Fifth Circuit was correct in striking down the asbestos ban.[78] The instant authors have also spoken favorably of at least certain aspects of the *Corrosion Proof* decision.[79] Whether the Fifth Circuit reached the correct outcome in *Corrosion Proof* is of little moment to the present discussion. The key takeaway is that the court applied a level of judicial scrutiny that is universally acknowledged to be exceedingly rigorous.

In so doing, the court was closely guided by the wording of TSCA. The opinion is peppered with references to "unreasonable risk"[80] and the "least burdensome" alternative,[81] evidence that the court took the statutory language very seriously and found various aspects of the agency's analysis insufficient to meet this high bar. In short, the *Corrosion Proof* decision illustrates how courts applying highly prescriptive and detailed statutory standards will often closely parse the agency's factfinding to ensure that it has satisfied its mandate.

The other decision applying a highly prescriptive statutory standard, *Center for Auto Safety v. Peck*,[82] also involved a very rigorous judicial analysis of the agency's rulemaking record, though the court ultimately upheld the agency's rule. The statutes at issue in the case were the National Traffic Motor Vehicle Safety Act of 1966, which authorized the National Highway Traffic Safety Administration (NHTSA) to regulate various aspects of automobile production (here, the degree of force a car bumper must withstand), and the Cost Savings Act, which directed the agency to "seek to obtain the maximum feasible reduction of costs to the public and to the consumer" in promulgating its rules under the preceding Act.[83] The Cost Savings Act also set forth certain benefits and costs that the agency must consider, including the proposed rule's effects on the costs of insurance and legal fees and savings related to consumer time and convenience.[84]

In a highly detailed opinion that closely analyzed NHTSA's scientific and economic factfinding, the United States Court of Appeals for the DC Circuit considered and rejected various objections to the agency's method of assessing regulatory costs. Among other things, the court upheld the following components of the agency's rulemaking analysis:

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[76] 647 F.3d 1144 (D.C. Cir. 2011).
[77] Jonathan S. Masur & Eric A. Posner, *Cost-Benefit Analysis & the Judicial Role*, 85 U. CHI. L. REV. __ (forthcoming 2018).
[78] *Id.* at __.
[79] Bull & Ellig, *supra* note 56, at __.
[80] *See, e.g.*, *Corrosion Proof*, 947 F.3d at 1222–23 (analyzing the value of statistical life used by EPA and suggesting that the excessive regulatory costs imply that the underlying risk is not "unreasonable").
[81] *See, e.g.*, *id.* at 1220 ("[T]he EPA bears a tough burden indeed to show that under TSCA a ban is the least burdensome alternative . . . ."), 1221 ("Considering that many of the substitutes that the EPA itself concedes will be used in the place of asbestos have known carcinogenic effects, the EPA not only cannot assure this court that it has taken the least burdensome alternative, but cannot even prove that its regulations will increase workplace safety.").
[82] 751 F.2d 1336 (D.C. Cir. 1985).
[83] *Id.* at 1339. The sections of the Cost Savings Act discussed in the case have since been rescinded by Congress, so the paper will cite the version of the statute reprinted in the case.
[84] *Id.*

- Excluding low and high estimates for bumper weight submitted by certain manufacturers[85]
- Rejecting flawed survey data that suggested that the agency underestimated the cost of inconvenience occasioned by being involved in a vehicular accident[86]
- Conducting detailed analysis to decide upon a standard that optimally balanced benefits and costs[87]

In conducting its detailed review, the court did not find the agency's analysis to be flawless, but any errors the court uncovered were deemed to be harmless.[88] As in *Corrosion Proof*, the court paid careful attention to the statutory mandate in parsing the agency's evidence. It spent several pages examining the agency's cost estimates prior to concluding that the agency satisfied the strict cost minimization standard imposed by the Cost Savings Act. It also considered the agency's factfinding on matters such as savings related to consumer convenience that the agency was explicitly tasked with analyzing under the Act. In short, though the *Center for Auto Safety* court ultimately upheld the agency's rule, its analysis was equally as rigorous as that applied by the *Corrosion Proof* court.

B. Statutes mandating consideration of specific benefits or costs

The next subsection considers cases addressing a statute that sets forth specific economic benefits or costs that an agency must consider (rather than simply directing the agency to consider benefits or costs more generally, as do the statutes analyzed in the following subsection).[89] Each of the statutes analyzed in the preceding subsection also enumerated economic benefits and costs the relevant agency must consider in adopting a rule. Since those statutes also directed the agency to adopt a specific regulatory alternative, unlike the statutes discussed in this subsection, they were analyzed separately.

All told, five decisions involved statutes that enumerate specific economic factors to consider as part of the overall benefit-cost analysis. As a general matter, these cases featured robust analysis by the reviewing court, though the level of scrutiny was somewhat weaker than that seen in the cases examined in the preceding subsection.

Three of the cases arose under a set of statutory provisions requiring the Securities and Exchange Commission (SEC) to consider "efficiency," "competition," and "capital formation" when promulgating rules.[90] In one of these decisions, *American Equity Investment Life*

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[85] *Id.* at 1353.
[86] *Id.* at 1362.
[87] *Id.* at 1362–68.
[88] *Id.* at 1366.
[89] Several decisions in the overall sample also featured statutes directing an agency to consider factors other than economic costs and benefits, such as environmental impacts, consumer safety, etc. Though these factors qualify as "costs" and "benefits," they are not cast in economic terms. The additional factors enumerated in the statutes analyzed in this subsection include things such as "efficiency" and "competitiveness," terms that refer specifically to the economic effects of the rule.
[90] 15 U.S.C. §§ 78c(f), 78w(a)(2), 80a-2(c), 776(b).

Insurance Co. v. SEC,[91] the DC Circuit very carefully analyzed the SEC's factfinding under each of these factors. The case concerned the SEC's decision to subject fixed indexed annuities to the federal securities laws (determining that they do not qualify for an exception).

The court found the agency's "competition" analysis inadequate insofar as the agency concluded that the rule would enhance competition by reducing the uncertainty associated with the lack of regulation. Though perhaps true, the agency's reasoning proves too much: adopting any rule, however unreasonable, would reduce the uncertainty associated with agency inaction.[92] The court also noted that the agency failed to ascertain the level of competition under existing state regulations, thereby failing to establish the baseline necessary to determine if federal regulation is needed to increase competition to acceptable levels.[93] The court found the "efficiency" analysis inadequate for similar reasons. The agency asserted that applying securities laws to fixed indexed annuities would result in greater disclosure and thereby allow investors to make more informed decisions (thereby enhancing overall market efficiency), but it again failed to determine whether state regulation was already achieving the desired effect.[94] Finally, the court rejected the agency's "capital formation" analysis because it relied on the same flawed assumptions as the "efficiency" analysis.[95]

A second decision, *Chamber of Commerce of the United States v. SEC*,[96] struck down an SEC rule that required mutual funds engaged in certain transactions to have a board that consists of at least 75% independent directors and to have an independent chairman. Though the *Chamber* court did not parse the statutory language so closely as did the *American Equity* court, it nevertheless held that the statutory terms referring to "competition," "efficiency," and "capital formation" required the agency to consider costs that might impede those goals. In assessing the agency's examination of costs, the court found various flaws. First, the agency failed to put forth its best efforts in quantifying the magnitude of the rule's costs; though it may not have been capable of assigning an exact number, it at least could have set forth a range.[97] The agency also gave short shrift to a possible regulatory alternative, mandating that mutual funds disclose the lack of an independent chairman rather than affirmatively requiring one, notwithstanding the fact that two dissenting commissioners proposed it.[98]

At the same time, the court deferred to various aspects of the SEC's decisionmaking. For instance, the court stated that the agency could rely on its own expertise in concluding that independent chairmen provide benefits to mutual funds rather than conducting an empirical study to determine whether that is in fact the case.[99] Ultimately, the *Chamber* court exhibited a somewhat higher level of deference than the *American Equity* court, striking down the rule as a result of gaping omissions in the agency's analysis while largely deferring to the agency's overall decisionmaking methodology.

[91] 572 F.3d 923 (D.C. Cir. 2009).
[92] *Id.* at 935.
[93] *Id.* at 935–36.
[94] *Id.* at 936.
[95] *Id.*
[96] 412 F.3d 133 (D.C. Cir. 2005).
[97] *Id.* at 143–44.
[98] *Id.* at 144–45.
[99] *Id.* at 142.

A third decision, *Business Roundtable*, examined an SEC rule requiring public companies to include information in their proxy materials about shareholder-nominated candidates for boards of directors. The rule was subject to the same statutory language referring to "efficiency," "competition," and "capital formation" that was at issue in the preceding two cases. Whether as a result of exasperation at having to correct shoddy analysis by the SEC for the third time in a period of a few years[100] or simply of exceedingly close scrutiny by the courts under the relevant statutory provision, the court engaged in a very searching review of the agency's economic factfinding. Indeed, as noted previously, many administrative law scholars have come to the consensus that the DC Circuit went too far in the *Business Roundtable* decision, overstepping the court's proper role in assessing an agency's rulemaking under the nominally forgiving "arbitrary and capricious" standard.[101] Among the many flaws in the SEC's rule identified by the court are the following:

- Ignoring the costs that companies would likely incur in opposing shareholder-nominated candidates[102]
- Improperly dismissing studies that suggested that firms run by shareholder-nominated candidates underperform firms that are not and relying on less persuasive studies that suggest the opposite[103]
- Discounting the rule's costs but not its benefits[104]
- Failing to address the possibility that unions and pension funds would use the rule to achieve goals unrelated to maximizing corporate profitability[105]
- Tolerating internal analytical inconsistencies, such as estimating a high rate of invocation of the rule for assessing benefits and a low rate for assessing costs[106]

As in *Chamber*, the *Business Roundtable* court did not focus as closely as the *American Equity* court on the actual language of the statute, instead pointing to logical flaws in the agency's benefit-cost analysis. Nevertheless, the highly rigorous review suggests that the court interpreted the relevant statute as providing authority to carefully parse the agency's rule and require the agency to conduct a more thorough factfinding on remand.

Another decision in this category of cases, *Investment Company Institute v. CFTC*,[107] is considerably more deferential to the agency's factfinding than the other decisions analyzed. The case concerned a rule by the Commodity Futures Trading Commission (CFTC) that expanded the number of firms subject to the agency's rules. In issuing the rule, the CFTC was required to

[100] *Business Roundtable v. SEC*, 647 F.3d 1144, 1148 (D.C. Cir. 2011); *see also* Paul Rose & Christopher Walker, The Importance of Cost-Benefit Analysis in Financial Regulation 33 (Center for Capital Markets Competitiveness 2013).
[101] Masur & Posner, *supra* note 77, at __; Rose & Walker, *supra* note 100, at 32–33. Masur and Posner also defend the *Business Roundtable* decision, contending that the court's rigorous review was justified in light of the poor quality of the SEC's regulatory analysis. Masur & Posner, *supra* note 77, at __.
[102] *Business Roundtable*, 647 F.3d at 1150.
[103] *Id.* at 1150–51.
[104] *Id.* at 1151.
[105] *Id.* at 1152.
[106] *Id.* at 1152–54.
[107] 720 F.3d 370 (D.C. Cir. 2013).

comply with a statute that directs it to consider regulatory costs and benefits and enumerates several specific benefits and costs the agency must consider (including the efficiency, competitiveness, and financial integrity of futures markets; price discovery; and sound risk management practices).[108]

The court summarily upheld several aspects of the agency's factfinding. It rejected a challenge that the agency failed to take into account the effect of existing regulations, noting that the CFTC carefully demonstrated the marginal benefits its rule provides.[109] The court also observed that the agency analyzed each of the costs and benefits enumerated under the statute, rejecting a challenge based on a "hypothetical cost[] that may never arise."[110] Finally, the court rejected the argument that the agency must quantify benefits and costs, noting that Congress has explicitly called for quantification when it intends to impose that requirement.[111] In short, though the court exhibited a much greater willingness to summarily defer to the agency's conclusions than did any of the previous decisions, it nevertheless demonstrated great solicitude for the language of the statute and ensured that the agency gave proper consideration to each of the factors listed therein.

C. Statutes mandating that the agency consider benefits or costs

In the sample of cases analyzed, the most common statutory directive by far was some mandate to "consider" regulatory costs and, in some cases, regulatory benefits. The statutes examined feature several permutations of that basic standard, including: (a) a requirement to consider both benefits and costs (which courts sometimes interpret as implicitly requiring the agency to find a reasonable relationship between benefits and costs); (b) a requirement to consider costs (without any explicit mention of benefits); and (c) a requirement to set a "reasonable" or "practicable" standard, which implies that the agency is to give some consideration to regulatory benefits and costs.

Among the cases arising from statutes featuring one of these standards, the rigor of judicial review varied widely from case-to-case. Some decisions applied a level of scrutiny every bit as exacting as that observed in the more demanding decisions discussed in the previous subsections, whereas others exhibited a very high degree of deference to the agency's factfinding. Interestingly, the precise verbal formulation in the statute of interest did not appear to make much of a difference, nor did the existence of previous judicial precedents interpreting a benefit/cost "consideration" requirement as a mandate to find some reasonable relationship between the two. As the chart in the appendix makes clear, cases applying each of the permutations of a benefit/cost consideration requirement run the gamut from highly detailed review to highly deferential.

The courts also exhibited much less solicitude for the precise language of the statute than was the case in the decisions examined in the previous two subsections. As a matter of logic, this result is not terribly surprising, as none of the permutations of the benefit/cost consideration

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[108] 7 U.S.C. § 19(a)(2).
[109] 720 F.3d at 377–78.
[110] *Id.* at 378.
[111] *Id.* at 379.

requirement gives the court much of a standard to apply. So long as there is some evidence that the agency actually grappled with evidence concerning the economic effects of the rule, the agency has presumably satisfied the "consideration" requirement. The rigor of review therefore depends entirely on how closely the court wishes to parse the agency's evidence. In some instances, the court carefully examines the evidence to ensure that the agency did not commit any significant errors in its assessment of benefits and costs and that it did not reach an irrational conclusion in light of the evidence before it. In other cases, the court simply describes what the agency did and announces that it will defer to the agency's determination without any additional explanation. The remainder of this subsection will review representative samples of cases under each of the permutations of the benefit/cost consideration standard, providing examples of relatively detailed and relatively forgiving review for each.

1. Benefit/cost consideration (with or without a "reasonable relationship" requirement)

In several of the decisions, the underlying statute requires the agency to consider both benefits and costs, and the court interprets that language as requiring that the agency find a reasonable relationship between the benefits and costs. The precise dimensions of a "reasonable relationship" are never fleshed out in any detail. For instance, no decision articulates the exact level of disproportion between benefits and costs that will lead a particular rule to be deemed arbitrary and capricious. Rather, the court simply scrutinizes the economic evidence undergirding the rule and ensures that the agency provided some explanation for why it believes the benefits justify the costs.

In *Quivira Mining Co. v. United States Nuclear Regulatory Commission*,[112] the court very closely parsed the Nuclear Regulatory Commission's (NRC) evidence, though it ultimately upheld the agency's rule. Interestingly, the statutory provision at issue referred only to costs, requiring the agency to provide "due consideration of the economic costs" when promulgating rules dealing with treatment of uranium tailings in nuclear power plants.[113] Relying in part on the legislative history of the relevant statutory provision, the court interpreted this language as imposing a "benefit-cost rationalization" standard, which requires the agency to show that costs and benefits are "reasonably related."[114] The court then proceeded to apply that standard, carefully discussing the benefits and costs the agency weighed and assessing the agency's efforts to balance the costs against the benefits for each aspect of its rulemaking.[115] The court considered and rejected various challenges to the agency's methodology, ultimately concluding that the approach the agency took was perfectly rational if not ideal in every respect.[116] For example, the court noted that the agency failed to consider the cost of land that regulated parties would be required to purchase to meet the rule's requirements, but it concluded that this error was harmless as the land at issue was located in remote areas and was likely to be very inexpensive.[117]

[112] 866 F.2d 1246 (10th Cir. 1989).
[113] 42 U.S.C. § 2114(a)(1).
[114] *Quivira*, 866 F.2d at 1250. The court distinguished "cost-benefit rationalization" from the stricter "cost-benefit optimization" standard. The latter "requires quantification of costs and benefits and a mathematical balancing of the two to determine the optimum result." *Id.*
[115] *Id.* at 1254–1258, 1260.
[116] *Id.*
[117] *Id.* at 1257.

The rigor of review applied in *Quivira* contrasts starkly with that in two cases applying a similar statutory standard. These decisions, both titled *American Mining Congress v. Thomas*,[118] were companion cases decided simultaneously the Tenth Circuit. As in *Quivira*, the cases involved the treatment of uranium tailings, though the statute at issue dealt with the EPA's (rather than the NRC's) role in regulating the problem. The relevant statutory language was quite similar to that applicable to the NRC, directing EPA to consider "environmental and economic costs" when setting standards.[119] As in *Quivira*, the court looked to the legislative history and held that the statute at issue required the agency to find a "reasonable relationship" between benefits and costs (notwithstanding the fact that the precise statutory language refers only to costs).[120]

American Mining I contained most of the court's analysis in applying that standard. After dismissing various technical challenges to the agency's rule,[121] the court addressed the question of whether the EPA found a "reasonable" relationship between the regulatory benefits and costs. The court simply recited the agency's conclusions and then asserted that they were "reasonable" with little to no additional discussion. For instance, the court noted that the final standard permitted radiation levels ten times greater than the original standard, but simply asserted that this judgment was "within a zone of reasonableness."[122] Similarly, though the court noted that the overall costs imposed by the rule were quite significant ($314 million), it suggested that Congress was aware that the costs would be high and summarily deferred to the agency's judgment.[123]

American Mining II, in turn, largely relied on the reasoning in *American Mining I*. The court again entertained the argument that the regulatory costs were too high for the benefits achieved and again summarily deferred to the agency, reemphasizing that Congress was aware of the likelihood of significant costs when it tasked the EPA with drafting rules.[124] Though *American Mining I* and *II* both defer almost complete to the agency's judgment, it is difficult to fault the court in light of the vague statutory standard at play: Congress merely directed the EPA to "consider" the costs (and, by implication, the benefits), and the EPA clearly satisfied that mandate, making explicit findings as to both benefits and costs and explaining why the former justified the latter. Nevertheless, the contrast to the *Quvira* case, in which the court carefully assessed the agency's reasoning and grappled with and rejected each of the challenger's arguments, is striking. Given that both cases derive from what is effectively the same statutory standard, this contrast provides a stark illustration of the degree to which the rigor of review under a benefit/cost consideration standard depends upon any given court's appetite for closely parsing the evidence.

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[118] Am. Mining Congress v. Thomas, 772 F.2d 617 (10 th Cir. 1985) [hereinafter "*American Mining I*"]; Am. Mining Congress v. Thomas, 772 F.2d 640 (10th Cir. 1985) [hereinafter "*American Mining II*"].
[119] 42 U.S.C. § 2022(a).
[120] *American Mining I*, 772 F.2d at 631–632.
[121] *Id.* at 632–36.
[122] *Id.* at 637.
[123] *Id.* at 638.
[124] *American Mining II*, 772 F.2d at 646.

In other cases, the relevant statute directs the agency to consider benefits and costs, and the court is silent as to whether the agency must find a "reasonable relationship" between the two. Given the nearly infinite malleability of the "reasonable relationship" standard seen in the preceding cases, one would not expect the judicial analysis under this set of decisions to differ much from that under the previous set, and the actual cases bear out this intuition. *Radio Association on Defending Airwave Rights v. United States Department of Transportation*[125] stands at the highly deferential end of the spectrum. The relevant statutes, the Motor Carrier Act of 1935 and the Motor Carrier Safety Act of 1984, required the Federal Highway Administration to conduct a benefit-cost analysis prior to issuing its rule banning the use of radar detectors in commercial vehicles.[126] The petitioners had raised various objections to the agency's benefit-cost analysis, contending that it had ignored costs incurred by states and that it failed to provide a factual basis for its assumption that a radar ban would reduce the incidence and severity of vehicular accidents.[127] The court summarily rejected these arguments, merely reciting the agency's responses and indicating that it performed "'some type' of cost-benefit analysis" and thereby satisfied the statutory mandate.[128]

Gas Appliance Manufacturers Assocation v. Department of Energy[129] is at the opposite end of the spectrum. The Energy Conservation Standards for New Buildings Act (ECSNBA) directed the Department of Energy to issue energy efficiency standards while taking due account of "economic cost and benefit."[130] Applying that law, the Department of Energy (DOE) issued a rule dealing with heat loss standards for water heaters.[131]

Prior to delving into the rulemaking record, the DC Circuit observed that the relevant statute directed DOE to consider a number of non-economic factors in addition to economic benefits and costs, including "energy efficiency," "stimulation of use of nondepletable sources of energy," "institutional resources," "habitability," and "impact upon affected groups."[132] Of these factors, the court concluded that "economic benefits and costs" was the only one that lent itself to detailed judicial review, and it asserted that "any override of a negative cost/benefit analysis would seem to require a very careful justification."[133] Though the court did not elaborate on what a "negative cost/benefit analysis" would entail (possible options would include failure to maximize net benefits or issuance of a rule in which the quantified costs exceed the quantified benefits), the opinion seems to imply that the agency bears a fairly heavy burden for justifying its rule, imposing a standard more akin to that seen in the cases analyzed in the first subsection.

Precisely how the court wrung such an exacting standard out of the vague statutory language of the ECSNBA, which contains a benefit/cost consideration requirement that closely

[125] 47 F.3d 794 (6th Cir. 1995).
[126] *Id.* at 805. The statutory provisions at issue in the case have been rescinded by Congress since the opinion was issued, so the paper will cite to the court's decision rather than the U.S. Code.
[127] *Id.*
[128] *Id.* at 806.
[129] 998 F.2d 1041 (D.C. Cir. 1993).
[130] *Id.* at 1043. As in the previous case, the relevant statutory provision has since been rescinded, so the paper again cites to the decision rather than the U.S. Code.
[131] *Id.*
[132] *Id.* at 1043–45.
[133] *Id.* at 1045.

resembles that seen in the other cases in this subsection, is unclear. In this respect, the case effectively illustrates how benefit/cost consideration mandates provide little guidance to the courts as to Congress's intent. Including such a provision clearly signals to the courts that economic analysis is somehow relevant to the agency's decision and that the agency must present some evidence on regulatory benefits and costs, but the court is then free to impose a standard ranging from benefit-cost optimization (as the DC Circuit seems to be applying here) to per se deference to the agency's conclusions (which is roughly the standard applied in *Radio Association*).

Applying this rigorous standard, the DC Circuit easily found the DOE's economic analysis inadequate. The court engaged in a detailed review of various aspects of the agency's technical and economic factfinding, but the fundamental flaw in the agency's analysis boiled down to its failure to demonstrate precisely how an actual water heater could achieve the energy conservation targets that the agency's computer model predicted were attainable.[134] The agency also assumed without any explanation that production costs in the residential and commercial markets were the same.[135] Though these rather egregious errors in the agency's analysis may have proven fatal even if the court had not announced a strict benefit-cost balancing requirement, the rigor with which the court reviewed the rulemaking record stands in stark contrast to the *Radio Association* case.

2. Cost consideration requirement

Two of the decisions studied involved statutes directing the agency to consider regulatory costs, making no mention of regulatory benefits. The first such decision, *New York v. Reilly*,[136] featured a fairly rigorous review of the agency's factfinding. Among other things, the case involved a decision by the EPA not to ban the burning of lead-acid batteries. The relevant provision of the Clean Air Act directed the EPA to adopt the "best" system of emission reduction that has been "adequately demonstrated" while "taking account of the cost."[137] Though the court upheld certain aspects of the agency's rule, it struck down the decision not to regulate the burning of lead-acid batteries.[138] In so doing, the court faulted the agency for considering only the most extreme regulatory alternatives, i.e. failure to regulate and an outright ban, directing the agency to consider less restrictive alternatives on remand.[139]

In addition to illustrating relatively stringent judicial review in response to a fairly open-ended statutory cost-consideration requirement, the *Reilly* decision is also interesting insofar as it shows a court reading additional analytical requirements into a statutory provision that only explicitly mentions costs. In essence, the *Reilly* court faulted the EPA for failing to consider an adequate range of regulatory alternatives and of placing excessive emphasis on costs while overlooking potentially large benefits. Consideration of alternatives and weighing costs against

[134] *Id.* at 1046–47.
[135] *Id.* at 1047–48.
[136] 969 F.2d 1147 (D.C. Cir. 1992).
[137] 42 U.S.C. § 7411(a)(1).
[138] *Reilly*, 969 F.2d at 1153.
[139] *Id.*

benefits are important elements of a full regulatory impact analysis,[140] but the statute only speaks to costs. As in *Gas Appliance*, the *Reilly* court shows that courts sometimes interpret vague statutory directives to consider benefits or costs as requiring a full-blown benefit-cost analysis of both the regulation adopted and the key alternatives.

Florida Manufactured Housing Assocation v. Cisneros,[141] by contrast, demonstrates a very high level of deference under a similar statute. The case concerned wind resistance standards for manufactured homes issued by the Department of Housing and Urban Development (HUD).[142] The relevant statute directed HUD to consider a number of factors in promulgating these standards, including any regulation's effects on "the cost of the manufactured home to the public."[143] Prior to delving into the record evidence, the court considered a claim that HUD improperly considered certain benefits of the regulation (including minimization of property damage caused by flying debris peeling off mobile homes during a storm) in addition to the increased costs for mobile homes, since the statute refers only to the latter.[144] Like the *Reilly* court, the Eleventh Circuit took an expansive view of the factors the agency might consider under the statute, though its liberal interpretation here had the effect of expanding the agency's discretion rather than constraining it.[145]

In reviewing HUD's factfinding, the court entertained and summarily rejected various objections to the agency's cost calculations. The court dismissed a claim that HUD relied on flawed cost data, asserting that the agency was entitled to rely on its own experts rather than those quoted in the materials furnished by the challengers.[146] It also briefly described the evidence proffered by the challengers and concluded that none of it was sufficient to demonstrate any clear error in the agency's analysis.[147]

Though *Reilly* and *Florida Manufactured* differ in terms of the rigor of review with which the court parses the agency's factfinding, they both stand for the proposition that statutory requirements to consider costs are often interpreted broadly, permitting and in some instances requiring agencies to perform a more thorough regulatory impact analysis that considers regulatory alternatives and benefits as well as costs.

3. "Reasonableness" or "practicability" requirement

The final group of cases involves statutes that direct an agency to adopt a "reasonable" or "practicable" standard, which courts often interpret as imposing some form of benefit-cost analysis requirement. The sample set included two such decisions, one of which involved fairly rigorous review and one of which did not.

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[140] Exec. Order No. 12,866, § 1(b), 58 Fed. Reg. 51,735, 51,735–36 (Oct. 4, 1993); Office of Management & Budget, Circular A-4 § E (Sept. 17, 2003); Bull & Ellig, *supra* note 56, at __.
[141] 53 F.3d 1565 (11th Cir. 1995).
[142] *Id.* at 1568–69.
[143] *Id.* at 1569. As in several previous cases, the statutory provision at issue has since been rescinded, so the paper quotes to the case rather than the U.S. Code.
[144] *Id.* at 1577.
[145] *Id.* at 1577–78.
[146] *Id.* at 1580.
[147] *Id.* at 1578–81.

Public Citizen, Inc. v. Mineta[148] featured relatively stringent review by the court. The case involved a standard for monitoring tire pressure.[149] The relevant statute directed NHTSA to adopt standards that are "reasonable, practicable, and appropriate," including no additional language on regulatory benefits or costs.[150] The agency ultimately adopted a standard that its benefit-cost analysis found to be less expensive than but also to provide fewer benefits than an alternative approach.[151] The court faulted the agency's excessive focus on cost, asserting that a more protective alternative approach was "more cost effective" (i.e., the dollar cost per life saved or injury prevented would be smaller).[152] The court also criticized the agency for overlooking the potential technology-forcing effect of the more stringent standard, suggesting that the compliance costs were likely to diminish over time.[153]

The *Public Citizen* court may well have reached the better conclusion and more faithfully carried out Congressional intent by directing the agency to reconsider the more stringent standard, but the decision comes perilously close to substituting the court's preferred policy outcome for that of the agency. Nothing in the underlying statute speaks of requiring the agency to adopt the "most cost effective" alternative. Though selecting the least costly option may have been a poor decision from a public policy perspective, it requires a fairly aggressive reading of the statute to conclude that the agency's decision was not "reasonable" and therefore was "arbitrary and capricious." Thus, *Public Citizen* further illustrates the enormous malleability of benefit/cost consideration requirements, which seem to provide a blank canvas on which the court can paint whatever benefit/cost balancing standard it deems appropriate.

Continuing the theme of wildly divergent standards of review, the other decision interpreting a "reasonableness"/"practicability" requirement, *National Truck Equipment Association v. National Highway Traffic Safety Administration*,[154] undertook a very forgiving analysis of the agency's economic factfinding. The case involved a NHTSA rule strengthening the requirements for passenger compartment roofs in certain vehicles. The relevant statute was the same provision at issue in *Public Citizen*, which directed the agency to adopt "reasonable, practicable, and appropriate" automobile safety standards.[155] The challengers asserted that the standard NHTSA adopted was not "practicable" because it imposed excessive costs on certain regulated parties that alter mass-produced vehicles.[156] The court gave this argument fairly short shrift, noting that the agency had designed the rule with certain flexibilities designed to minimize costs for companies that modify mass-produced cars and summarily concluding that those concessions were adequate.[157]

[148] 340 F.3d 39 (2d Cir. 2003).
[149] *Id.* at 43.
[150] 49 U.S.C. §§ 30111(a)–(b).
[151] *Public Citizen*, 340 F.3d at 56–57.
[152] *Id.* at 58 ("The notion that 'cheapest in best' is contrary to *State Farm*.").
[153] *Id.* at 59–60.
[154] 711 F.3d 662 (6th Cir. 2013).
[155] *Id.* at 663–64, 670 (citing 49 U.S.C. §§ 30111(a)–(b)).
[156] *Id.* at 671.
[157] *Id.* at 672–74.

The contrast between the *Public Citizen* and *National Truck* decisions is striking, especially given the fact that both cases applied the same statutory standard. Whereas *National Truck* completely deferred to the agency's judgment, acknowledging that the agency's decision would increase costs but asserting that it is within the agency's jurisdiction to do so, *Public Citizen* overturned an agency's decision to select a regulatory alternative the court deemed sub-optimal. These widely divergent results demonstrate the amorphousness of the "reasonableness"/"practicability" standard.

D. Technological and economic feasibility

"Technological feasibility" and "economic feasibility" are conceptually distinct standards, though statutes often require agencies to satisfy both standards prior to regulating. "Technological feasibility" refers to the ability of regulated parties to meet a particular standard in light of the current state of technology: if the technology that would enable a regulated entity to satisfy any given regulatory requirement does not yet exist, then the regulation is not "technologically feasible"[158] "Economic feasibility" refers to the ability of the regulated industry to absorb the costs of a technologically feasible regulation: if a rule is so strict that it would bankrupt a large number of firms and thereby devastate a sector of the economy, it is not "economically feasible."[159]

The latter standard involves a species of benefit-cost analysis, but the focus is not on whether the monetized benefits exceed the monetized costs. Indeed, a rule may qualify as "economically feasible" even if the costs outstrip the benefits by several orders of magnitude, or it may be economically infeasible even if the societal benefits exceed the costs to industry. Rather, the focus is solely on whether the costs are too high for market players to continue to operate.

Statutes do not always combine technological and economic feasibility.[160] Many statutes impose one standard or the other, and several statutes combine one of those standards with an additional benefit-cost consideration requirement. The judicial decisions in our sample, however, all involved statutes that combined technological and economic feasibility.

As in the case of benefit/cost consideration requirements, the rigor of review varied significantly from case to case. Certain courts latched onto the economic feasibility prong and effectively treated it as a de facto benefit-cost analysis requirement. Other courts largely deferred to the agency's analysis, ensuring that the agency presented some evidence of economic costs and benefits but deferring to the agency's weighing of that evidence. Interestingly, none of the cases dedicated much attention to what it means for a regulation to be "economically feasible." None of the cases dealt with evidence concerning whether a particular rule would bankrupt an industry. Ultimately, the cases closely resembled those applying a benefit/cost consideration standard, meaning that some cases took a fairly hard look at the agency's economic evidence to ensure that the agency did not commit any logical errors whereas others deferred almost completely to the agency's judgment.

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[158] Natural Res. Def. Council v. Herrington, 768 F.2d 1355, 1392 (D.C. Cir. 1985).
[159] Am. Iron & *Steel Inst. v. Occupational Safety & Health Admin., 939 F.2d 975, 980–81 (D.C. Cir. 1991).*
[160] *See* Table ___ *infra.*

The cases in the sample feature three decisions addressing precisely the same problem: whether setting a higher automobile fuel economy standard will induce manufacturers to produce smaller cars, which will in turn increase the rate of injuries and fatalities as small cars tend to fare poorly in automobile accidents. The three opinions provide a perfect case study in the malleability of the technological/economic feasibility standard, as the three decisions (all issued by different panels of the DC Circuit) reached very different conclusions. Specifically, one panel struck down the agency's decision to set a higher standard, citing the increased safety risk, whereas the other two panels upheld the agency's rule.

All three decisions involved a provision of the Energy Policy and Conservation Act known as the Corporate Average Fuel Economy Standards. The statute set a baseline fuel economy standard of 27.5 mpg and required NHTSA to set the "maximum feasible average fuel economy level," which might entail moving that target up or down.[161] The statute further specified that NHTSA must adopt a standard that is "technologically feasible" and "economically practicable."[162] NHTSA ultimately decided to reduce the 1987–88 standard to 25 mpg, reduce the 1989 standard to 26.5 mpg, and leave the 27.5 mpg standard in place for 1990.[163]

The DC Circuit first reviewed this regulation in a decision issued in 1990 (which will be referred to as *Competitive Enterprise I*, as each of the three cases was titled *Competitive Enterprise Institute v. NHTSA*). In that decision, the Competitive Enterprise Institute challenged NHTSA's 1987–88 and 1989 fuel economy standards, arguing that the agency should have reduced the target even further in order to protect against the risk of manufacturers' producing smaller (and less safe) cars.[164] The court disagreed, asserting that the record evidence was equivocal and that the agency grappled with the potential problem of downsizing and adequately explained why the risk was tolerable.[165] For example, the agency presented evidence that the rate of automobile fatalities had declined over time notwithstanding the fact that many manufacturers had produced smaller cars.[166] It also noted that the petitioner's evidence contained internal flaws and inconsistencies.[167] The court therefore upheld the agency's standards for 1987–88 and 1989.[168]

A couple of years later, the DC Circuit revisited the same issue in a challenge to NHTSA's 1990 fuel economy standards. This time, whether a result of sloppier factfinding by

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[161] Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin., 956 F.2d 321, 322 (D.C. Cir. 1992) [hereinafter "*Competitive Enterprise II*"]. Per past practice, the paper cites to the case rather than the U.S. Code where the statutory provision at issue has since been rescinded.
[162] Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin, 901 F.2d 107, 114 (D.C. Cir. 1990) [hereinafter "*Competitive Enterprise I*"].
[163] *Competitive Enterprise II*, 956 F.2d at 323; *Competitive Enterprise I*, 901 F.2d at 110.
[164] *Competitive Enterprise I*, 901 F.2d at 119–20.
[165] *Id.* at 120–22.
[166] *Id.* at 121. The court did not consider whether automobile fatalities may have declined even further had manufacturers not moved to producing a smaller fleet of vehicles. In *Comeptitive Enterprise II*, by contrast, the court explicitly addressed that problem and faulted the agency for failing to consider the effects of higher fuel economy standards in isolation from other variables. 956 F.2d at 325–27.
[167] *Competitive Enterprise I*, 901 F.2d at 121.
[168] *Id.* at 124.

the agency or more rigorous judicial review, the court did not find the agency's explanation convincing.[169] The court described the agency's factfinding as "statistical legerdemain" and indicated that the agency "made conclusory assertions that its decision had no safety cost at all."[170] The court briefly acknowledged *Competitive Enterprise I* and suggested (with little to no explanation) that the agency's factfinding for the 1987–88 and 1989 standards was more thorough.[171]

Notwithstanding the *Competitive Enterprise II* court's efforts to distinguish the facts of *Competitive Enterprise I*, the second panel appears to have applied a much more rigorous standard of review. For instance, whereas the first panel accepted the agency's argument that certain improvements in vehicle safety would compensate for any reductions in safety caused by a shift to smaller cars, the second panel repeatedly faulted the agency for making such an argument, observing that it completely ignored the additional gains in safety that might emerge from setting a lower fuel economy target.[172] Though the agency may have been lulled into complacency by the original win and put forth less effort in justifying its 1990 standards, it also seems that the court applied a closer level of scrutiny in *Competitive Enterprise II*.

Following the remand, NHTSA conducted additional factfinding on the effects of higher fuel economy standards on the size and safety of cars.[173] During the rulemaking, no manufacturer presented evidence suggesting that a higher fuel economy standard would reduce the production of or increase the price of larger, safer cars.[174] In reviewing the agency's reissued rule, the DC Circuit faulted the agency for inadequately distinguishing a study that suggested that increased fuel economy standards would lead manufacturers to produce smaller cars, but it pointed to the lack of any evidence from manufacturers as sufficient justification for the agency to conclude that that result would not occur in the real world, and it upheld the agency's rule.[175]

As this trio of decisions illustrates, even the same court applying an identical statutory provision to a series of standards addressing an identical problem can reach very different conclusions. Though NHTSA's 1990 standard appears to have suffered from somewhat shoddy analysis vis-à-vis the 1987–88 and 1989 standards, the *Competitive Enterprise II* panel also seems to have applied a much more searching standard of review than either the earlier or later panels.

The decisions also illustrate a phenomenon that arose in the other cases in the sample that applied a feasibility standard. Courts reviewing a rule for "economic feasibility" tend to parse the agency's economic analysis as if they were applying a benefit/cost consideration standard, rather than searching for evidence of whether the rule will bankrupt the industry. The level of deference ranges from fairly low (e.g., *Competitive Enterprise II*) to quite high (*Competitive*

[169] The panel of DC Circuit judges that heard the first case (Wald, Ruth Bader Ginsburg, and Douglas Ginsburg) did not feature any overlap with the panel that decided the second case (Mikva, Williams, and Thomas).
[170] *Competitive Enterprise II*, 956 F.2d at 324.
[171] *Id.* at 325.
[172] *See supra* note 166.
[173] Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin., 45 F.3d 481, 483–84 (D.C. Cir. 1995).
[174] *Id.* at 483.
[175] *Id.* at 484–86.

Enterprise I), but the cases are fairly uniform in treating "economic feasibility" as some form of a benefit/cost consideration requirement.

E. Statutes with no mention of benefits or costs

The final two cases in the sample involved statutes that made no mention of benefits or costs, nor did they include words such as "reasonableness" or "practicability" that imply a requirement to consider benefits or costs. In both instances, the agency chose to cite economic evidence in support of its rule, and the courts addressed that evidence, notwithstanding the lack of any statutory mandate to consider it. In both instances, the courts exhibited a very high level of deference, policing against any irrational conclusions or clear flaws in the data cited but otherwise affording the agency significant leeway in deciding how to use the evidence.

The first such decision, *Charter Communications, Inc. v. FCC*,[176] concerned the Federal Communications Commission's (FCC) decision not to rescind a rule that prohibited cable operators from offering set-top converter boxes that bundle security and non-security functions.[177] The relevant statute directed the FCC to "assure the commercial availability" of certain devices to allow users to access multichannel video programming.[178] It made no mention of regulatory benefits or costs. In its rulemaking, the FCC decided that the evidence concerning the costs of the ban was equivocal, that those costs were likely to diminish over time, and that there were significant benefits associated with promoting competition in the market for access devices.[179] The court simply recited those arguments and concluded without any additional discussion that the agency's decision was reasonable.[180]

The second decision, *Consumer Electronics Association v. FCC*,[181] involved an FCC rule that mandated that new television sets larger than 13-inches contain a device allowing them to receive both over-the-air and digital television signals.[182] The relevant statute simply authorized the FCC to require that televisions include an "apparatus" capable of "receiving all frequencies allocated by the [FCC] to television broadcasting."[183] Like the previous statute, it said nothing of benefits or costs. The challenger objected to the FCC's calculation of the costs imposed by requiring digital tuners.[184] While acknowledging that the agency's cost calculations were "hardly a model of thorough consideration," the court concluded that the agency's analysis met the minimum standards of rationality.[185] In essence, the agency concluded based on past experience that the costs of digital tuners would decline rapidly over time.[186] Though the agency cited little evidence suggesting that was likely to occur in this case, other than its experience with

[176] 460 F.3d 31 (D.C. Cir. 2006).
[177] *Id.* at 34. The overall goal of the regulation was to promote market competition by enabling third parties to sell devices that allow users to access multichannel programming. *Id.* at 42.
[178] 47 U.S.C. § 549(a).
[179] *Charter Commc'ns*, 460 F.3d at 41–42.
[180] *Id.*
[181] 347 F.3d 291 (D.C. Cir. 2003).
[182] *Id.* at 293.
[183] 47 U.S.C. § 303(s).
[184] *Consumer Elecs.*, 347 F.3d at 302.
[185] *Id.*
[186] *Id.* at 302–03.

past innovations, the court deferred to the agency's judgment.[187] The court also summarily stated that it would not disrupt the agency's balancing of benefits and costs.[188]

F. Overall conclusions

The caselaw analysis supports several overarching conclusions. First, courts take specific statutory language very seriously: when agencies are directed to select a regulatory alternative favored by benefit-cost analysis or given a detailed list of economic benefits and costs to consider, the courts closely review the record to ensure that the agencies have successfully carried out their statutory mandate. Nearly all of the cases featuring either of these types of statutes closely parsed the record, regardless of whether the court ultimately upheld or vacated the agency's decision.

Second, when confronted with statutes that broadly direct agencies to consider benefits or costs or that task agencies with regulating if doing so is "economically feasible," the courts treat the standard as an open invitation to apply as rigorous or lax a review as they deem appropriate. In many instances, the court goes well beyond the precise language of the statute. For example, as explored above, statutory requirements to consider costs are generally interpreted as implicitly requiring some consideration of benefits as well.[189] Similarly, though few statutes explicitly refer to comparing the benefits and costs associated with the preferred regulatory option to those of key alternatives, numerous decisions require the agency to do so.[190] And in cases involving an "economic feasibility" requirement, the courts generally conduct the same type of review that is seen in cases involving a benefit/cost consideration requirement rather than looking for evidence of whether a particular rule will bankrupt an industry.[191]

Cases examining rules issued under a benefit/cost consideration or feasibility standard also tend to run the gamut in terms of rigor of review. Of the opinions in the sample, many applied a level of review every bit as searching as that seen in cases involving stricter statutory standards whereas others deferred almost completely to the agency.

Third, in instances in which the statute says nothing of benefits or costs, the courts will review any economic evidence actually cited by the agency, notwithstanding the lack of any statutory directive to produce such evidence. Nevertheless, in such cases the courts tender a very high level of deference to the agency's decisionmaking and will not overturn the agency's conclusions absent overwhelming evidence of some material error.

[187] *Id.*
[188] *Id.* at 303–04.
[189] *See supra* section IV.C.2.
[190] *See, e.g.*, Chamber of Commerce v. Sec. Exch. Comm'n, 412 F.3d 133, 144–45 (D.C. Cir. 2005); New York v. Riley, 969 F.2d 1147, 1153 (D.C. Cir. 1992).
[191] *See supra* Section IV.D.

III. STATUTORY DIRECTIVES AND AGENCY ACTIONS

The prior section found that courts consistently examine agency economic analysis most carefully when the statute specifies how the agency should use that analysis to choose among alternatives or lists specific benefit and cost factors the agency must consider. The rigor of courts' assessments vary widely when the statute contains more general requirements to consider benefits and costs or to consider feasibility. Finally, courts are consistently deferential to agency economic analysis when the statute fails to require economic analysis at all.

Rational agencies seeking to avoid judicial reversal could be expected to exhibit a similar pattern. Specific statutory instructions about benefits and costs to consider or the benefit-cost decision rule to follow could be expected to motivate more complete economic analysis and more extensive explanations of how that analysis affected decisions. More general statutory requirements to consider benefits, costs, and economic or technological feasibility may motivate some degree of analysis or explanation that exceeds the norm, but not as much as the more specific requirements could be expected to generate. Finally, statutes that fail to mention economic factors or prohibit the consideration of some economic factors (such as costs) could be expected to have the least extensive economic analysis of all.

This section tests those hypotheses by investigating whether varying statutory provisions related to economic analysis are correlated with the quality of regulatory impact analysis or the extent to which the agency claims the analysis was used in its decisions. The data we use come from the Mercatus Center's Regulatory Report Card.[192]The Report Card project assessed the quality of regulatory impact analyses accompanying the 130 economically significant, prescriptive regulations proposed by executive branch agencies that cleared OIRA review between 2008 and 2013. Each assessment covered the four major elements of regulatory impact analysis: analysis of the problem the regulation sought to solve, development of alternatives to the regulation, and estimation of the benefits and costs of the regulation and the alternatives.

Two additional criteria assessed how well the agency explained how it used the analysis in decisions and how well the agency explained the role of net benefits (benefits minus costs) in its decisions. Since the evaluators could not observe the actual decision-making process inside the agencies, the two criteria are necessarily assessments of the extent to which the agency claimed to use the analysis.[193]

A. Statutory considerations of interest

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[192] For a description of the Report Card projects and assessment data, see Ellig & McLaughlin, *supra* note 13, and Ellig, *supra* note 13.

[193] One might expect that evaluations on these two criteria would generate a lot of "false positives" as agencies claim to use the analysis in decisions even if they did not. But the data demonstrate that, in the majority of cases, federal agencies do not claim to have used the RIA at all. See Ellig, *supra* note 13, at 15-16. There may well be a countervailing tendency for false negatives, because an agency's RIA can be challenged in court if the agency relies on it to justify decisions about a regulation. See Cecot and Viscusi, *supra* note 6, at 591.

Reviewing the NPRMs for the 130 regulations in the Report Card dataset, we have identified five types of factors that statutes either require or prohibit the agency from considering. Each type of statutory consideration directs or implies that the agency should conduct specific types of analysis. In addition, each type of statutory consideration involves a different decision-making rule for the agency to follow.

Table 1 lists the five statutory considerations in order, from the consideration most likely to encourage more thorough regulatory impact analysis and explanation of how it was used, to the consideration least likely to do so.

Table 1: Statutory considerations that may affect the quality or use of economic analysis

Statutory consideration	Examples	Analysis required	Decision rule
Consider enumerated benefits and costs	EPCA – DOE appliance energy efficiency standards	Benefits, costs, and other factors specified in the statute	Regulate if benefits exceed burdens
Consider benefits and costs	CWA OSHA PHMSA CAA – Source emission standards FMCSA PREA	Benefits, costs, and other factors identified by the agency	Regulate if the regulation is cost-effective or if benefits bear some other relationship to costs that the agency decides is reasonable
Economic feasibility (or practicability)	EPCA – CAFE CWA OSHA MSHA	Costs compared to industry revenue; other large changes that might result from costs	Regulate if the regulation's costs will not create significant adverse effects (e.g., bankruptcy of industry)
Cost consideration prohibited	CAA – NAAQS	Benefits – health effects	Set standards based solely on health considerations
Technological feasibility	EPCA CWA OSHA MSHA PHMSA CAA – Source emission standards	Widely available technology	Regulate if technology required for compliance is widely available or will become widely available

SOURCE: Agency descriptions of statutory authority in the NPRM for each of the 130 regulations, supplemented by consultation of the relevant statute when the description in the NPRM was unclear. The 130 regulations are listed in Jerry Ellig, *Evaluating the Quality and Use of Regulatory Impact Analysis* (Mercatus Ctr. at Geo Mason Univ., Working Paper, 2016). Copies of NPRMs are available at www.mercatus.org/reportcards.

1. Consider enumerated benefits and costs

Under the EPCA, DOE can issue an energy efficiency standard only if it determines that the proposed standard is technologically feasible and economically justified. To identify whether the standard is economically justified, DOE determines whether the benefits of the standard exceed the burdens by considering seven statutory factors: (1) The economic impact on manufacturers and consumers; (2) Consumer operating cost savings compared to any initial cost increase; (3) Total projected energy and/or water savings; (4) Any lessened utility or performance of the product; (5) The impact of any lessening of competition; (6) The need for energy and water conservation; and (7) Other factors the secretary considers relevant.[194]

This list clearly highlights major benefit and cost factors that DOE's analysis ought to include. Factors 1, 2, 4, and 5 affect benefits or costs to consumers or manufacturers. Factors 3 and 6, related to resource savings and conservation, could also affect benefits to these parties or to society as a whole. If DOE follows the statutory mandate, it should produce significant analysis of benefits and costs.

The EPCA's requirement is not quite a benefit-cost test, because not all of the factors that count as "benefits" and "burdens" under the statute are economic benefits and costs. Factors 3 and 6 could be interpreted to allow decision-makers to assign a value to resource savings or conservation that differs from the value a well-informed, rational consumer would place on them. Factor 7 allows DOE to consider issues other than benefits or costs, even in determining whether the regulation is "economically justified." Thus, the list deviates from a pure benefit-cost test because it allows factors other than economic benefits and costs to affect the determination of whether a regulation is economically justified. (We are aware of no regulation that was issued under a statute requiring a benefit-cost test as the sole factor determining whether the regulation is adopted or which alternative is adopted.) Nevertheless, the instruction to consider several factors that are significant benefits or costs leads us to expect that DOE would also explain how they affected decisions about the regulation.

2. Consider benefits and costs

A number of statutes require agencies to consider benefits and costs without requiring a specific benefit-cost test. For example, the Clean Water Act gives the EPA wide discretion to determine whether the additional costs of additional required effluent reductions are justified by the benefits, unless a proposed reduction is "wholly out of proportion to the costs of achieving such marginal levels of reduction."[195] When the EPA considers adopting emissions standards for sources of hazardous air pollutants that go beyond what EPA has determined is the "Maximum Achievable Control Technology," it must consider costs and customarily assesses the cost-effectiveness of additional control measures.[196] Under the Occupational Safety and Health Act, a workplace safety standard must be cost-effective; that is, it must be the least costly of the available alternatives that offers the same level of protection.[197] The Prison Rape Elimination Act requires the attorney general to adopt national standards intended to reduce prison rape, but the standards may not impose additional substantial costs on federal, state, or local prison authorities.[198]

[194] 42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII).
[195] *American Iron and Steel Institute* v. *EPA*, 526 F. 2d 1027, 1051 (3rd Cir. 1975).
[196] Environmental Protection Agency, Standards of Performance for New Stationery Sources and Emission Guidelines for Existing Sources: Sewage Sludge Incineration Units; Proposed Rule, 75 Fed. Reg. 63,260, 63,267 (Oct. 14, 2010).
[197] *ATMI*, 453 U.S. at 514 n. 32; *International Union, UAW v. OSHA*, 37 F.3d 665, 668 (D.C. Cir.1994) (''LOTO III'').
[198] 42 U.S.C. 15607(a)(3).

Because these kinds of provisions require agencies to consider benefits and costs, they may motivate agencies to offer a more thorough assessment of costs and a more thorough comparison with benefits. They may also prompt agencies to provide a more careful explanation of how benefits and costs were relevant to regulatory decisions, for two reasons: (1) the agency must demonstrate that it considered benefits and costs, and (2) the agency must explain how it interpreted this requirement and how it compared benefits and costs.

3. Economic feasibility (or practicability)

In some cases, an agency must consider whether a regulation is "economically feasible" or "economically practicable." This kind of standard assesses whether many or most of the regulated entities could comply without serious adverse economic consequences.

For example, the Occupational Safety and Health Act's definition of economic feasibility means that the "industry can absorb or pass on the costs of compliance without threatening its long-term profitability or competitive structure."[199] Similarly, mine safety standards must be feasible, and the Mine Safety and Health Administration considers economic feasibility as part of its feasibility determination. The agency presumes the regulation is economically feasible if the costs are less than one percent of industry revenues.[200] Corporate average fuel economy standards for automobiles must be within the financial capability of the industry as a whole and cannot lead to adverse economic consequences such as significant job losses or unreasonable elimination of consumer choice.[201]

An economic feasibility requirement could be expected to motivate some additional analysis of compliance costs and assessment of whether the regulated entities can "afford" to comply. It may not produce any significant improvement in discussion of how the agency's analysis affected decisions, other than a checkoff that the regulation is economically feasible.

4. Cost consideration prohibited

It is rare for a statute to prohibit an agency from considering costs at all. The only regulations in our sample accompanied by such a prohibition are the five EPA regulations that set NAAQS standards under the Clean Air Act. If an agency is prohibited from considering costs, we would logically expect that it would produce a less thorough cost analysis (or no cost analysis at all), provide a less thorough explanation of how its regulatory impact analysis affected decisions, and provide no explanation of how the net benefits of alternatives affected its decisions. Because the CAA instructs the EPA to set air quality standards solely based on health considerations, it may motivate the agency to produce a more extensive analysis of the benefits of the proposed regulation.

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[199] See *ATMI*, 452 U.S. at 530 n.55; *AISI*, 939 F.2d at 980.

[200] Department of Labor, Mine Safety and Health Administration, Lowering Miners' Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors; Proposed Rule, 75 Fed. Reg. 64,412, 64,477 (Oct, 19, 2010).

[201] Environmental Protection Agency and National Highway Traffic Safety Administration, 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 76 Fed. Reg. 74,854, 74,897 (Dec. 1, 2011).

5. Technological feasibility

Some regulations must pass a technological feasibility determination. This may be explicitly labeled a technological feasibility analysis, as when NHTSA determines whether a given technology to improve fuel efficiency will be available for commercial application in a particular model year.[202] Or it may be an implicit assessment of technological feasibility, such as the analysis the EPA undertakes when it establishes the MACT floor when regulating emissions from a source of hazardous air pollutants. The MACT floor for new and existing sources is based on emissions reductions actually achieved by the best-performing sources.[203] Thus, the floor depends on emissions reductions achieved by a technology that has been placed in practice – an implicit feasibility determination.

In both types of cases, feasibility depends only on the availability of the relevant technology for widespread use, not on the cost of the technology. Thus, we should not expect a technological feasibility requirement to improve the quality or use of economic analysis. Indeed, such a requirement may be associated with less thorough or less thoroughly explained economic analysis, if only because it diverts scarce analytical resources from economic to technological assessments.

B. Data Analysis and Results

1. Data on the quality and claimed use of regulatory impact analysis

In the Regulatory Report Card project, trained evaluators assessed the analysis accompanying each regulation on each of the six criteria using a 0 – 5 scale, with 0 indicating no relevant content, and 5 indicating reasonably complete analysis.[204] Inter-rater reliability tests indicate that the evaluations are consistent across evaluators.[205] These data have been used as indicators of the quality of regulatory impact analysis in multiple prior published articles.[206]

Table 2 compares the mean scores of the regulations issued under statutes with each of the five considerations of interest with the mean scores for regulations issued under statutes that do not include each consideration. Some regulations were issued under statutes that include more than one of the five considerations. For example, a number of regulations were issued under regulations that require an assessment of technological feasibility but also require an assessment

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[202] Id. at 74,897.

[203] Environmental Protection Agency, National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units; Proposed Rule, 76 Fed. Reg. 24, 976, 24,981 (May 3, 2011).

[204] For a complete explanation of the Report Card evaluation method, see Ellig & McLaughlin, *supra* note 13.

[205] *See* Jerry Ellig, Patrick A, McLaughlin & John F. Morrall III, *Continuity, Change, and Priorities: The Quality and Use of Regulatory Analysis Across U.S. Administrations*, 7 REG. & GOVERNANCE 153, 159-60 (2013).

[206] *See. Id.*; Jerry Ellig & Rosemarie Fike, *Regulatory Process, Regulatory Reform, and the Quality of Regulatory Impact Analysis*, 7 J. BENEFIT-COST ANALYSIS 523 (2016); 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); 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).

of economic feasibility or require the agency to consider benefits and costs in some indeterminate way. The final line of the table shows the mean scores for the 81 regulations issued under statutes that include none of the five considerations.

Table 2: Comparison of Means

	Problem	Alternatives	Benefits	Costs	Explanation of Use	Cognizance of Net Benefits
Enumerated benefits and costs						
Yes (n=16)	1.6	3.9	3.7	3.6	3.9	4.4
No (n=114)	2.2	2.6	3.1	2.5	2.0	2.2
Consider benefits and costs						
Yes (n=21)	2.0	2.5	3.6	2.9	2.4	2.2
No (n=109)	2.2	2.8	3.1	2.6	2.2	2.5
Economic feasibility						
Yes (n=13)	2.4	2.5	3.6	3.2	2.9	2.8
No (n=117)	2.1	2.7	3.1	2.5	2.2	2.4
Cost consideration prohibited						
Yes (n=5)	3.2	3.2	4.2	2.6	0.8	2.0
No (n=125)	2.1	2.7	3.1	2.6	2.3	2.4
Technological feasibility						
Yes (n=38)	2.0	3.7	3.7	3.3	3.0	3.2
No (n=92)	2.2	2.6	3.0	2.3	2.9	2.1
Regulations with none of these statutory considerations (n=81)	2.2	2.5	2.9	2.3	1.9	2.0

A simple comparison of means suggests that the five statutory considerations are often accompanied by more thorough analysis or explanations of how the agency used the analysis. The difference is largest and most consistent for the statutory consideration that enumerates the types of benefits and costs the agency must consider, which is associated with more thorough analysis of alternatives, benefits, and costs, as well as more thorough explanations of how the agency used the analysis in decisions. Interestingly, a prohibition on consideration of costs appears to be associated with more thorough analysis of the problem, alternatives, and benefits, but no difference in the analysis of costs and less thorough explanations of how the agency used the analysis in decisions. All of these conclusions must be regarded as tentative, however, because a comparison of means does not control for other factors that might affect the quality of claimed use of analysis.

2. Control variables

This study employs a battery of control variables used in prior research papers that seek to explain variations in Report Card scores.[207] Table 3 lists the variables and offers brief explanations.[208]

Table 3: Control variables

[207] See, e.g., Ellig, *supra* note 13; Ellig & Fike, *supra* note 206; Ellig & Conover, *supra* note 206; Ellig, McLaughlin & Morrall, *supra* note 205.

[208] For more extensive explanations and justifications of these variables, see Ellig, *supra* note 13, and references cited therein.

Obama	Indicates that OIRA concluded review of the proposed regulation during the Obama administration
Presidential priority	Indicates that the regulation is related to a legacy presidential priority (homeland security for Bush, healthcare for Obama)
Agency policy preference	A scale developed by Clinton and Lewis that indicates whether the mission, culture, and policy views of the agency are more "conservative" or "liberal." The sign of the scores is reversed for the Obama administration. Thus, the variable tests whether agencies tend to produce better analysis or more thorough explanations of how they used the analysis when the agency's policy preference is more closely aligned with the administration's.
Bush midnight regulations	Indicates that the final regulation was issued during the "midnight period" of the Bush administration between Election Day 2008 and Inauguration Day 2009. Separate variables indicate whether the proposed regulation cleared OIRA review before or after June 1, 2008, to test whether there is a difference for rushed midnight regulations.
Bush leftover regulations	Indicates that the regulation was proposed but not finalized during the Bush administration. Separate variables indicate whether the proposed regulation cleared OIRA review before or after June 1, to test whether there is a difference for rushed leftover regulations.
Obama potential midnight regulations	Indicates that the regulation was proposed but not finalized by the Obama administration prior to Election Day 2012. These regulations thus could have become midnight regulations if the election of 2012 had turned out differently. As with the Bush midnight regulations, separate variables indicate whether the proposed regulation cleared OIRA review before or after June 1, 2012, to test whether there is a difference for rushed midnight regulations.
Public comments and public comments squared	Tests whether the political salience of the regulation is correlated with the quality of claimed use of regulatory impact analysis. The squared term controls for the possibility of diminishing marginal returns.
Petition	Indicates that the regulation was proposed in response to a petition from an interested party.
Statutory deadline	Indicates whether the statute authorizing the regulation included a deadline for promulgation.
Judicial deadline	Indicates whether the regulation was issued pursuant to a court-ordered deadline.
Regulation required	Indicates whether a statute required the agency to issue the regulation.
Prescribed form	Indicates whether a statute prescribed the type of regulation to be issued – e.g., a disclosure requirement or an emission standard.
Prescribed stringency	Indicates whether a statute largely prescribed the stringency of the regulation, or whether the statute gave the agency significant authority to determine this.
Prescribed coverage	Indicates whether a statute largely prescribed what entities are covered by the regulation, or whether the statute gave the agency significant authority to determine this.
Acting OIRA administrator	Indicates whether the proposed regulation cleared OIRA review when OIRA was headed by an acting administrator rather than a presidential appointee.
Effects exceed $1 billion	Indicates whether the agency indicated that the benefits, costs, or other economic effects of the regulation exceeded $1 billion annually.
Year dummy variables	Indicates the year the proposed regulation cleared OIRA review. There is no dummy for 2009 because the regressions include a dummy for the Obama administration. Thus, the year variables test whether the quality or claimed use of regulatory impact analysis is different from the first year of the Obama administration.

Source: Ellig, *supra* note 13.

3. Econometric method

The dependent variable is ordinal. An analysis of the systemic problem that receives a score of 2 points, for example, is not necessarily twice as good as an analysis that receives a score of 1 point. Since the dependent variable is ordinal, the most appropriate econometric method is ordered logit.

Prior research demonstrates that it is also advisable to control for agency-specific fixed effects. Fixed effects ordered logit, however, may not be a consistent estimator when the number of observations in each group is small.[209] For this reason, we used the "blow up and cluster" ordered logit estimator developed by Baetschmann, Staub, and Winkelmann.[210] They demonstrate that this estimator is consistent, reasonably efficient, and remains unbiased for small sample sizes. The method receives its name because the sample is "blown up" by creating K-1 copies of each observation, where K is the number of possible values the dependent variable could take. (This is why the econometric results reported in the tables below have several hundred observations even though there are only 130 regulations.) Each of the copies is dichotomized at one of the different possible values of the dependent variable. Standard errors are clustered by observation, since each of the K-1 copies are obviously related to each other. Conditional maximum likelihood is applied to the entire blown-up set of observations.

4. Econometric results

Table 4 shows econometric results for the statutory considerations of interest, controlling only for agency-specific fixed effects. Table 5 includes the additional control variables listed in Table 3. Since the results are similar, we discuss each variable's results from both tables simultaneously.

a. Consider enumerated benefits and costs

This variable is positively correlated with three of the four regulatory impact analysis criteria and with both criteria explaining how the analysis affected decisions. The correlations are highly statistically significant. These results suggest that the clear and specific statutory directions in EPCA have motivated DOE to devote extensive effort to estimation of benefits and costs, explanation of how these calculations affected decisions, and explanation of how the net benefits of alternatives affected decisions.

This inference is further bolstered by the results for analysis of the systemic problem. The score for this criterion is lower in Table 4, and this difference is highly statistically significant. The score is also lower in Table 5, but the difference is not statistically significant. EPCA does not require DOE to provide an evidence-based demonstration of the existence and cause of the problem the regulation seeks to solve. Indeed, DOE has been criticized by other scholars for failing to demonstrate the existence of a market failure that would motivate the regulations. Instead, the analysis for energy efficiency regulations routinely assumes that consumers *and business firms* irrationally discount the value of future energy savings.[211] Thus, DOE's analysis is no better, and possibly worse, for the one criterion for which EPCA requires no economic analysis.

b. Consider benefits and costs

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[209] Gary Chamberlain, *Analysis of Covariance with Qualitative Data*, 47 REV. ECON. STUD. 225 (1980).
[210] Gregori Baetschmann, Kevin E. Staub, and Rainer Winkelmann, *Consistent Estimation of the Fixed Effects Ordered Logit Model*, 178 J. ROY. STAT. SOC. A, PART 3 685 (2015).

[211] Ted Gayer & W. Kip Viscusi. *Overriding Consumer Preferences with Energy Regulations*, 43 J. REG. ECON. 248 (2013); Brian F. Mannix & Susan E. Dudley, *The Limits of Irrationality as a Rationale for Regulation*, J. POL'Y ANAL. & MGT. 705 (2015).

Both tables reveal that when agencies are directed to consider benefits and costs, they provide more through explanations of how the regulatory impact analysis affected decisions. Table 5 shows that, after controlling for other factors, a regulation issued under a statute requiring the agency to consider benefits and costs is also accompanied by a more thorough analysis of alternatives. This suggest that, when faced with a requirement to consider benefits and costs, the agency makes some additional effort to compare benefits and costs of alternatives, not just compare the benefits and costs of the proposed regulation.

When required to consider benefits and costs, the agency might also provide a more thorough explanation of how net benefits affected its decisions; the variable is marginally significant in Table 5 (p-value = 0.06). The contrast of this result with the result for the *Enumerated benefits and costs* requirement discussed in section III.D.1 immediately above is informative. In addition to listing benefits and costs that must be considered, EPCA explicitly requires that the benefits of the regulation must exceed the burdens. The *Enumerated benefits and costs* variable is highly statistically significant in the *Cognizance of net benefits* equation, indicating that the EPCA regulations are definitely accompanied by more thorough explanations of how net benefits affected regulatory decisions. This suggests that EPCA's requirement that benefits must exceed burdens motivates a more thorough explanation of the role of net benefits in decisions than a more ambiguous requirement that the agency must consider benefits and costs.

c. Economic feasibility

Economic feasibility is primarily a cost issue, and an economic feasibility requirement is indeed positively correlated with the regulation's score for analysis of costs. The correlation is marginally statistically significant in Table 4 and highly statistically significant in Table 5. Table 4 implies that an economic feasibility requirement is also positively correlated with the thoroughness of the agency's explanation of how it used the analysis in decisions, but this correlation disappears after controlling for other factors in Table 5.

Both tables show that an economic feasibility requirement is negatively correlated with analysis of the problem the regulation seeks to solve. This result is not surprising, since demonstrating that a regulation is economically feasible has no necessary relationship to demonstrating that a problem exists or that the regulation solves the problem.

d. Cost consideration prohibited

The results in both tables indicate that the Clean Air Act's prohibition on consideration of costs when setting air quality standards is associated with less thorough analysis of costs. For these regulations, the EPA also provides less thorough explanations of how the analysis affected decisions and how net benefits affected decisions. On the other hand, the EPA also provides a more thorough analysis of the underlying problem and the benefits of the regulation. Apparently the EPA allocates its analytical effort based on the requirement that it set air quality standards based on health effects and avoid consideration of costs.

e. Technological feasibility

A technological feasibility requirement is associated with less thorough analysis of alternatives and less thorough explanation of how the net benefits of alternatives affected regulatory decisions. Table 5 also indicates that regulations subject to a technological feasibility requirement are accompanied by less thorough analysis of costs. This is precisely what one would expect when the agency is following a directive to assess technological, rather than economic, possibilities.

f. Summary

The foregoing econometric analysis suggests that when a statute requires agencies to consider or ignore specific factors that are typically covered in a regulatory impact analysis, the agencies pay attention. When the statute requires the agency to consider benefits, costs, or both, the agency tends to produce more thorough analysis of these factors and more thorough explanations of how they affected decisions. When the statute explicitly requires that benefits must exceed burdens, the agency offers a more thorough explanation of how net benefits affected its decisions. When the statute requires the agency to consider only benefits and ignore costs, the agency produces more thorough analysis of benefits, less thorough analysis of costs, and less thorough explanations of how the relationship between benefits and costs affected decisions.

Table 4: Statutory considerations with agency fixed effects

	Problem	Alternatives	Benefits	Costs	Explanation of Use	Cognizance of Net Benefits
Enumerated benefits and costs	**-2.55 (0.00)**	**18.22 (0.00)**	**14.06 (0.00)**	**15.99 (0.00)**	**19.12 (0.00)**	**18.47 (0.00)**
Consider benefits and costs	-0.47 (0.46)	0.36 (0.49)	0.79 (0.25)	0.06 (0.88)	**1.18 (0.04)**	0.19 (0.56)
Economic feasibility	**-1.04 (0.06)**	0.58 (0.23)	0.20 (0.88)	**1.47 (0.09)**	**2.23 (0.10)**	1.21 (0.30)
Cost consideration prohibited	**2.78 (0.00)**	**0.27 (0.03)**	**2.57 (0.00)**	**-1.32 (0.00)**	**-2.04 (0.00)**	**-0.59 (0.00)**
Technological feasibility	**1.34 (0.06)**	**-1.49 (0.00)**	0.40 (0.75)	-0.09 (0.89)	**-2.03 (0.06)**	**-1.38 (0.00)**
Number of observations	309	363	301	293	369	421
Pseudo R-squared	0.06	0.08	0.06	0.07	0.09	0.07

NOTE: P-values are in parentheses. Boldfaced values are statistically significant at the 90 percent level or greater.

Table 5: Statutory considerations with agency fixed effects and additional control variables

	Problem	Alternatives	Benefits	Costs	Explanation of Use	Cognizance of Net Benefits
Enumerated benefits and costs	-2.49 (0.15)	**21.38 (0.00)**	**12.55 (0.00)**	**19.83 (0.00)**	**22.28 (0.00)**	**27.03 (0.00)**
Consider benefits and costs	-0.36 (0.58)	**1.38 (0.00)**	0.14 (0.84)	-0.09 (0.89)	**2.80 (0.01)**	**2.15 (0.06)**
Economic feasibility	**-1.01 (0.00)**	0.34 (0.39)	0.46 (0.50)	**1.44 (0.00)**	0.34 (0.78)	0.90 (0.32)
Cost consideration prohibited	**4.23 (0.00)**	0.12 (0.81)	**2.90 (0.00)**	**-2.81 (0.00)**	**-3.83 (0.00)**	**-1.31 (0.04)**
Technological feasibility	0.57 (0.40)	**-2.86 (0.00)**	0.86 (0.35)	**-1.08 (0.00)**	-2.80 (0.11)	**-3.22 (0.00)**
Obama	-2.43 (0.17)	-0.51 (0.72)	-0.63 (0.41)	-0.72 (0.67)	1.57 (0.16)	-17.13 (0.00)
Presidential priority	-0.11 (0.91)	**1.84 (0.00)**	0.65 (0.12)	0.50 (0.92)	**3.55 (0.00)**	-0.59 (0.43)
Agency policy preference	0.32 (0.54)	-0.01 (0.97)	-0.83 (0.09)	0.12 (0.75)	**-0.75 (0.00)**	0.16 (0.61)
Bush post-June 1 midnight regulation	**-7.50 (0.00)**	0.38 (0.77)	-2.86 (0.16)	-1.43 (0.37)	1.35 (0.18)	**-16.75 (0.00)**
Bush pre-June 1 midnight regulation	1.10 (0.67)	**-3.97 (0.00)**	**-2.23 (0.01)**	**-1.96 (0.07)**	**-1.23 (0.08)**	**-17.62 (0.00)**
Bush post-June 1 leftover	**-2.62 (0.05)**	**-2.35 (0.00)**	-1.33 (0.15)	-0.60 (0.55)	1.50 (0.17)	**-17.70 (0.00)**
Bush pre-June 1 leftover	-1.10 (0.50)	0.0004 (1.00)	**12.00 (0.00)**	**15.39 (0.00)**	**4.99 (0.00)**	**16.32 (0.00)**
Obama post-June 1 potential midnight regulation	**-3.33 (0.01)**	-0.30 (0.82)	-1.33 (0.15)	-1.26 (0.32)	1.54 (0.51)	-0.58 (0.75)
Obama pre-June 1 potential midnight regulation	**-2.00 (0.00)**	0.76 (0.21)	-0.24 (0.79)	-0.49 (0.39)	1.71 (0.15)	**1.51 (0.01)**
Public comments	-0.00004 (0.17)	0.00002 (0.63)	**0.0001 (0.00)**	-0.00002 (0.44)	0.00003 (0.33)	-0.00001 (0.74)
Public comments squared	1.35e-10 (0.28)	-3.66e-11 (0.80)	**-3.99e-10 (0.00)**	5.58e-11 (0.59)	-8.86e-11 (0.51)	9.80e-11 (0.57)
Petition	**1.16 (0.05)**	-0.13 (0.91)	0.64 (0.47)	-0.05 (0.96)	-0.36 (0.68)	-1.84 (0.25)
Statutory deadline	-0.76 (0.24)	-0.76 (0.20)	-0.12 (0.90)	-0.06 (0.96)	**1.61 (0.01)**	0.30 (0.68)
Judicial deadline	-0.34 (0.71)	0.47 (0.22)	**1.14 (0.08)**	0.39 (0.59)	-1.07 (0.22)	-0.16 (0.77)
Regulation required	-0.04 (0.95)	**0.70 (0.06)**	-0.18 (0.71)	-072 (0.35)	**-1.01 (0.06)**	**-0.73 (0.00)**
Prescribed form	0.52 (0.54)	-0.81 (0.24)	0.67 (0.34)	**1.32 (0.06)**	0.36 (0.73)	-0.65 (0.51)
Prescribed stringency	0.72 (0.04)	**-1.33 (0.03)**	0.41 (0.59)	**-0.96 (0.10)**	-0.59 (0.33)	**-1.26 (0.04)**
Prescribed coverage	0.59 (0.25)	-0.52 (0.21)	0.70 (0.11)	-0.54 (0.41)	-0.35 (0.44)	**0.51 (0.06)**
Acting OIRA administrator	-0.54 (0.16)	**-2.04 (0.02)**	**-1.43 (0.05)**	-0.76 (0.36)	**-1.47 (0.03)**	-1.28 (0.12)
Effects exceed $1 billion	**2.41 (0.00)**	**1.46 (0.08)**	**1.67 (0.02)**	**1.20 (0.05)**	**1.94 (0.01)**	1.57 (0.12)
Year 2010	-0.67 (0.31)	**-2.05 (0.00)**	-0.54 (0.25)	**-2.01 (0.06)**	**-1.98 (0.00)**	-1.34 (0.25)
Year 2011	-0.62 (0.60)	**-3.57 (0.00)**	-0.77 (0.28)	-1.11 (0.28)	**-3.37 (0.00)**	-2.18 (0.13)
Year 2012	**2.67 (0.06)**	**-2.92 (0.02)**	0.27 (0.77)	-0.76 (0.55)	-2.16 (0.19)	-1.83 (0.28)
Year 2013	1.53 (0.19)	-1.44 (0.13)	-0.81 (0.22)	-1.02 (0.27)	0.17 (0.76)	**-1.68 (0.10)**
Number of observations	309	363	301	293	369	421
Pseudo R-squared	0.38	0.34	0.26	0.28	0.41	0.33

NOTE: P-values are in parentheses. Boldfaced values are statistically significant at the 90 percent level or greater.

IV. CONCLUSION

As the foregoing discussion makes clear, statutory language matters. In both the caselaw and econometric analyses, stricter and more detailed statutory standards were correlated with more careful scrutiny by the courts and higher-quality analysis by the agencies. We make no claim concerning any causal link between the two trends. It is certainly reasonable to assume that more thorough review by the courts would create a strong incentive for agencies to conduct better economic analyses, and our earlier paper highlighted a handful of instances in which an agency improved its analysis in a specific rule in response to a judicial remand.[212] Nevertheless, the results are also consistent with courts' and agencies' independently responding to stricter statutory language by enhancing the quality of their analysis. For purposes of our thesis, the precise causal link, if any, is irrelevant. It is sufficient to note simply that stricter and more detailed statutory standards are associated with more thorough analysis by courts and agencies alike.

In one sense, this result is not terribly surprising: courts and agencies seem to be responding properly to congressional directives. But when scrutinized more closely, our results suggest that this is only true on the far ends of the spectrum. More detailed statutory standards are associated with more thorough analysis by both courts and agencies, and statutory silence is associated with less detailed analysis by agencies and highly deferential review by courts. The results in the middle ranges, however, are troubling. Though agencies are perhaps responding as Congress intended, conducting an intermediate level of analysis when the statute requires them to consider benefits and costs or to assess economic feasibility, the thoroughness of judicial review is much less predictable.

Specifically, each of the various benefit/cost consideration standards and the economic feasibility standard lead to a wide array of outcomes on judicial review. Some courts rigorously examine not only the agency's analysis of regulatory costs and benefits but also the thoroughness with which the agency addressed other topics associated with a high-quality regulatory impact analysis, such as identifying a regulatory baseline and assessing a full range of alternative approaches. Other courts more or less defer completely to the agency, merely ensuring that the agency checked the appropriate boxes by citing some evidence regarding benefits or costs but not independently assessing the quality of the evidence or the cogency of the agency's conclusions. And still other courts apply an intermediate level of analysis. This creates significant uncertainty for agency officials and regulated entities alike, as neither can reliably predict how thoroughly a reviewing court will assess an agency's economic analysis simply by looking to the statutory standard. It also almost certainly undermines congressional intent: regardless of whether members of Congress desired strict or lax judicial review, they presumably intended the courts to apply consistent standards from case to case.

To make matters worse, the vaguer statutory economic analysis standards appear to predominate. Of the 33 cases we analyzed, 23 involved an underlying statute that required the agency merely to "consider" regulatory costs and/or benefits or to assess the economic feasibility

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[212] Bull & Ellig, *supra* note 2, at __.

of the rule. About one-third of the regulations in the data set for the econometric analysis were issued under statutes requiring the agency to consider costs and/or benefits or to assess the economic feasibility of the rule. Given that agencies issue a significant number of rules under those statutory regimes, and rules issued under those regimes tend to produce large number of cases on judicial review, it is safe to assume that both agency officials and regulated parties encounter significant uncertainty in many cases.

The scope of uncertainty could well grow in coming years. In the past, statutes that neglected to mention benefits or costs appeared to give the agency a high degree of discretion in considering or ignoring a rule's economic effects. However, *Michigan v. EPA* and similar cases have likely shifted that dynamic, creating a presumptive benefit/cost consideration requirement in the absence of a statutory prohibition on cost consideration.[213]

Though Congress has traditionally been very reluctant to grasp the nettle and provide regulatory agencies with detailed guidance on the quality and use of economic analysis,[214] the last few sessions have witnessed numerous calls for Congress to recapture some of the policymaking powers it has ceded to agencies[215] and several bills that would provide greater guidance to agencies as they assess the effects of their rules.[216] If Congress seeks to clarify the role of benefits and costs in regulatory decisionmaking, a statutory benefit-cost "consideration" requirement or an economic feasibility requirement may at first glance appear to be a workable compromise between proponents and opponents of robust economic analysis in agency rulemaking. Our findings suggest, however, that both sides will likely be disappointed by this compromise in the long term. In some instances, courts will apply a version of "hard look" review that is likely highly undesirable to opponents of economic analysis, and in others, courts will exhibit a level of deference to agency decisionmaking that proponents of economic analysis are likely to consider excessive. In addition, the resulting uncertainty will complicate matters for both agencies and regulatory stakeholders.

We do not take any position in this paper on which statutory economic analysis standard, if any, Congress should adopt, or whether it would be better for Congress to announce a cross-

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[213] *See supra* notes 49–52 and accompanying text.
[214] *See, e.g.*, Larry Alexander & Saikrishna Prakash, *Delegation Really Running Riot*, 93 VA. L. REV. 1035, 1041 (2007) ("Some scholars claim that under the Constitution, early Congresses enacted all manner of broad conventional delegations. One might argue that ever since then, Congress has repeatedly resorted to broad delegations of lawmaking authority as a means of effectuating congressional powers and purposes."); *see also* Evan J. Criddle, *When Delegation Begets Domination: Due Process of Administrative Lawmaking*, 46 GA. L. REV. 117, 120 (2011); Thomas W. Merrill, *Rethinking Article I, Section 1: From Nondelegation to Exclusive Delegation*, 104 COLUM. L. REV. 2097, 2131 (December 2004).
[215] *See, e.g.*, Michelle Cottle, *Mike Lee's New Crusade*, THE ATLANTIC (Feb. 12, 2016), https://www.theatlantic.com/politics/archive/2016/02/mike-lee-article-one-project/462564 (describing Senator Mike Lee's Article I project, an initiative designed to "reclaim [Congress's] status as "the first branch"); *see also* Christopher J. Walker, *Modernizing the Administrative Procedure Act*, 69 ADMIN. L. REV. 629, 648 (2017) ("Since the new Congress arrived in January, we have seen a wide range of legislation introduced to reform the administrative state. Legislation in both the House and the Senate has been introduced to limit the use of settlements to force agency regulatory activities, to better facilitate congressional review of midnight rules, and to codify the Trump Administration's one-in, two-out executive order.").
[216] *See supra* note 7 and accompanying text.

cutting standard or tailor the standard to individual cases.[217] But we do encourage Congress to take note of our findings when deciding how to craft such a standard. If Congress seeks to impose a robust economic analysis requirement that will be carefully reviewed by the courts, it can best accomplish this goal by directing the agency to select a certain regulatory alternative, providing a list of economic benefits and costs the agency must consider, or both. If Congress does not want economic analysis to play a significant (and perhaps dominant) role in agency decisionmaking, then it should articulate precisely what consideration (if any) the agency should give to economic factors.

[217] This is not inconsistent with the recommendation of our earlier paper, wherein we urge Congress to amend the APA to enumerate the elements of a regulatory impact analysis and to direct courts to ensure that agencies are relying on the best available evidence when conducting judicial review of such analyses. In that paper, we took no position on whether Congress should impose a cross-cutting economic analysis requirement. Instead, we focused solely on how judicial review should be conducted in those instances in which an agency elects or is directed to prepare a regulatory impact analysis, whether by statute, executive order, or an implicit requirement of the APA.

APPENDIX

The following chart lists each of the cases analyzed in Section IV, providing the case name and citation, a summary of the statute that directed the agency to consider the economic effects of the rule, and an overview of the level of analysis applied by the reviewing court. The cases are ordered based on the prescriptiveness of the statutory standard, with stricter standards listed first.

Case Name	Statute/Type of BCA Mandate (if any)	Rigor of Analysis
Corrosion Proof Fittings v. Envtl. Prot. Agency, 947 F.2d 1201 (5th Cir. 1991)	**Least Restrictive Alternative Analysis** --TSCA [15 U.S.C. § 2605(a)] --Agency must adopt least restrictive alternative --Rule is analyzed under "substantial evidence" standard (15 U.S.C. § 2618(c)(1)(B)(i))	**Detailed (reversal)** Court faults agency for only considering the extreme alternatives (no regulation and outright ban); also points to various flaws in the agency's analysis (e.g., discounting costs but not benefits, treating unquantified benefits as trump cards, failing to consider risks of substitutes, and tolerating a very high VSL) Court closely parses the analysis in light of statutory requirements (including "least burdensome" alternative, "substitutes," and "unreasonable risk")
Ctr. for Auto Safety v. Peck, 751 F.2d 1336 (D.C. Cir. 1985)	**Maximum Feasible Cost Reduction** --National Traffic Motor Vehicle Safety Act [15 U.S.C. §§ 1391(1), 1392(a)—since repealed] --Statute mandates that the agency seek the "maximum feasible reduction of costs to the public and to the consumer" --Statute also makes specific costs relevant to the analysis	**Detailed (affirmance)** The court notes that the agency considered a wide range of costs and actually delves into the calculations, considering and rejecting various quibbles with the agency's methodology (also finds a few flaws but notes that they are harmless)

	(e.g., insurance costs, legal fees)	
Am. Equity Inv. Life Ins. Co. v. Sec. & Exch. Comm'n, 572 F.3d 923 (D.C. Cir. 2009)	**Detailed Enumeration of Economic Benefits and Costs** --15 U.S.C. § 776(b) --SEC must consider "efficiency, competition, and capital formation"	**Detailed (reversal)** Court identifies flaws in competition, efficiency, and capital formation analyses, closely analyzing the quality of the agency's factfinding on each element
Business Roundtable v. Sec. & Exch. Comm'n, 647 F.3d 1144 (D.C. Cir. 2011)	**Detailed Enumeration of Economic Benefits and Costs** --15 U.S.C. §§ 78c(f), 78w(a)(2), 80a-2(c) --SEC must consider efficiency, competition, and capital formation in determining public interest; must consider if impingement of competition is necessary	**Detailed (reversal)** Court points to numerous flaws in benefit-cost analysis (though does not focus so closely on competition, efficiency, or capital formation analysis as *American Equity*)
Chamber of Commerce v. Sec. & Exch. Comm'n, 412 F.3d 133 (D.C. Cir. 2005)	**Detailed Enumeration of Economic Benefits and Costs** --15 U.S.C. § 80a-2(c) --SEC must consider efficiency, competition, and capital formation in deciding what is in the public interest	**Intermediate (reversal)** Court is somewhat forgiving (e.g., permits adopting rule as a prophylactic even in the absence of evidence of existing problem), but it fairly closely parses the agency's evidence, striking down the rule since the agency ignored an alternative raised by two dissenting commissioners; court also states that the agency cannot simply point to "uncertainty" as a justification for failure to quantify costs—must try to give a range if possible
Inv. Co. Inst. v. Commodity Futures Trading Comm'n, 720 F.3d 370 (D.C. Cir. 2013)	**Detailed Enumeration of Economic Benefits and Costs** --Commodity Exchange Act [7 U.S.C. § 19(a)(2)] --Statute directs agency to consider benefits and costs as	**Minimal (affirmance)** Court rather summarily rejects various challenges to the agency's analysis, noting that the agency considered the required statutory factors;

	well as related factors such as “efficiency” and “competitiveness”	the court also explicitly blesses the agency’s consideration of unquantifed benefits
Natural Res. Def. Council v. Herrington, 768 F.2d 1355 (D.C. Cir. 1985)	**Detailed enumeration of economic benefits and costs** --EPCA [42 U.S.C. §§ 325(c), (d), (i)] --Agency must set energy efficiency standards at the highest level that is technologically feasible and economically justified --Statute sets forth specific economic benefits and costs agency must examine, including economic impact on product manufacturers and consumers, savings in operating costs over life of covered products, projected energy savings, reduction of utility of covered products, and any reduction in market competition --Substantial evidence standard of review	**Detailed (reversal)** Court engages in an incredibly rigorous, drawn-out analysis of the technological feasibility and economic justifiability of the standard adopted for eight different appliances Court examines the assumptions underlying the agency’s models, concluding that several assumptions were unjustified and that the agency over-generalized; the court also finds that the agency failed to explain certain decisions (e.g., using a 10% discount rate); at the same time, the court defers to various findings of the agency, asserting that various minor errors were harmless
Quivira Mining Co. v. U.S. Nuclear Regulatory Comm’n, 866 F.2d 1246 (10th Cir. 1989)	**Benefit/Cost Rationalization** --42 U.S.C. § 2114(a) --Statute requires NRC to write rules protecting public health “with due consideration of the economic costs” --Partly relying on the legislative history, the court interprets this language as imposing a “benefit-cost rationalization” standard, which requires that costs bear a “reasonable relationship” to the benefits	**Detailed (affirmance)** Court goes into a fairly detailed discussion of the types of benefits and costs the NRC considered, finding the analysis comprehensive and appropriate; the court excused the agency’s overlooking certain costs as harmless error

Am. Mining Congress v. Thomas, 772 F.2d 617 (10th Cir. 1985)	**Reasonable Relationship Between Benefits and Costs** --42 U.S.C. § 2022(a) --Agency must consider costs and determine whether they bear a reasonable relationship to the benefits	**Minimal (affirmance)** Court requires simply that EPA consider benefits and costs (which it did) and that it give some explanation for why the balance between the two is reasonable (which it also did)—court must defer to actual balance struck by the agency
Am. Mining Congress v. Thomas, 772 F.2d 640 (10th Cir. 1985) (companion case to preceding entry)	**Reasonable Relationship Between Benefits and Costs** --42 U.S.C. § 2022(a) --Agency must consider costs and determine whether they bear a reasonable relationship to the benefits	**Minimal (affirmance)** Court summarily dismisses claim that costs are too high, simply noting that Congress did not require mathematical balancing between costs and benefits
Chem. Mfrs. Ass'n v. Envtl. Prot. Agency, 870 F.2d 177 (5th Cir. 1989)	**Reasonable Relationship Between Benefits and Costs** --Clean Water Act [33 U.S.C. § 1314(b)] --There are essentially three different levels of regulatory stringency, each of which requires consideration of costs and some of which require consideration of relationship between benefits and costs	**Intermediate (affirmance)** The overall analysis is very thorough, but the actual rigor of analysis of benefits and costs is fairly forgiving: for most points, the court simply describes what the agency did and rather summarily affirms that it was reasonable In so doing, the court repeatedly notes that the statute merely requires the agency to take costs into account, which it clearly did
Nat'l Wildlife Fed'n v. Envtl. Prot. Agency, 286 F.3d 554 (D.C. Cir. 2002)	**Reasonable Relationship Between Benefits and Costs** --Clean Water Act [33 U.S.C. § 1314(b)] --There are essentially three different levels of regulatory stringency, each of which requires consideration of costs and some of which require	**Intermediate (affirmance)** Court rejects various challenges to agency's economic analysis (e.g., a suggestion that agency must consider each firm's costs rather than the overall costs to the industry), going through the agency's

	consideration of relationship between benefits and costs	analysis in some detail to show why it was reasonable In those areas in which the EPA need only consider costs (rather than the relationship between benefits and costs), the court explicitly noted that it was applying this weaker standard (demonstrating that the precise wording of the statute does matter)
Reynolds Metals Co. v. U.S. Envtl. Prot. Agency, 760 F.2d 549 (4th Cir. 1985)	**Reasonable Relationship Between Benefits and Costs** --Clean Water Act [33 U.S.C. § 1314(b)] --There are essentially three different levels of regulatory stringency, each of which requires consideration of costs and some of which require consideration of relationship between benefits and costs	**Minimal (affirmance)** Court largely defers to the agency, notwithstanding fairly compelling evidence that the agency's analysis was flawed (e.g., challenger submitted evidence indicating that actual costs were 350 times higher than agency's estimate); court overlooks certain errors that are deemed harmless, noting that agency's analysis on other issues was reasonably thorough
Advocates for Highway & Auto Safety v. Fed. Motor Carrier Safety Admin., 429 F.3d 1136 (D.C. Cir. 2005)	**Consider Benefits and Costs** --Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) [105 Stat. 1914, 2151]; Commercial Motor Vehicle Safety Act [49 U.S.C. § 31301] --ISTEA § 4007—Plain language seems to require BCA only if agency decides not to proceed (agency did perform analysis even though it did proceed); does not say anything as to required relationship between benefits and costs	**Minimal (reversal)** Court does not question benefit or cost estimates; it strikes down rule because agency engaged in illogical course of action (designed rule correcting a different problem than the one it identified in regulatory analysis)

Gas Appliance Mfrs. Ass'n v. Dep't of Energy, 998 F.2d 1041 (D.C. Cir. 1993)	**Consider Benefits and Costs** --Energy Conservation Standards for New Buildings Act [42 U.S.C. § 6839 (since repealed)] --Agency directed to achieve the "maximum practicable improvement in energy efficiency" --Agency must analyze economic costs and benefits, among other factors	**Detailed (reversal)** Court indicates that the "economic costs and benefits" term is the only one that is susceptible to detailed analysis by the courts; it suggests that the agency must shoulder a heavy burden to justify a rule that performs unfavorably on a benefit-cost analysis Court engages in a rigorous analysis of the agency's rule, concluding that the agency has not shown that its standard is attainable at a reasonable cost; among other things, the agency failed to produce any prototype (thereby rendering it impossible to determine if standard is practicably attainable at reasonable cost) and did not respond to legitimate objections about the translatability of residential figures to the commercial market
Owner-Operator Indep. Drivers Ass'n, Inc. v. Fed. Motor Carrier Safety Admin., 494 F.3d 188 (D.C. Cir. 2007)	**Consider Benefits and Costs** --Motor Carrier Act of 1935 & Motor Carrier Safety Act of 1984 --Agency must consider benefits and costs, among several other factors	**Detailed/Indirect (reversal)** Court engages in a very extensive analysis of the underlying data, focusing especially on flaws in the technical factfinding; the analysis of benefits and costs is fairly indirect
Pub. Citizen v. Fed. Motor Carrier Safety Admin., 374 F.3d 1209 (D.C. Cir. 2004)	**Consider Benefits and Costs** --Motor Carrier Act of 1935 & Motor Carrier Safety Act of 1984	**Detailed/Indirect (reversal)** Court strikes down rule because the agency failed to consider a statutorily mandated factor: effect of rule on drivers

	--Relevant statutory provision is 49 U.S.C. § 3102(d) (since repealed) --Agency must consider benefits and costs, among several other factors	The rest of the case is dicta, but the court points to various flaws in the agency's analysis: assuming that time a driver spends resting is as tiring as time spent driving; failing to weigh benefits and costs of monitoring devices; etc.
Radio Ass'n on Defending Airway Rights, Inc. v. U.S. Dep't of Transp., 47 F.3d 794 (6th Cir. 1995)	**Consider Benefits and Costs** --Motor Carrier Act of 1935 & Motor Carrier Safety Act of 1984 --Relevant statutory provision is 49 U.S.C. § 3102(d) (since repealed) --Agency must consider benefits and costs, among several other factors	**Minimal (affirmance)** Court largely defers to the agency—it notes that the agency overlooked certain costs but indicates that this error does not rise to the level of reversal, given the high degree of discretion the agency enjoys
Am Trucking Ass'ns, Inc. v. Fed. Motor Carrier Safety Admin., 724 F.3d 243 (D.C. Cir. 2013)	**Consider Benefits and Costs** --Motor Carrier Act of 1935 & Motor Carrier Safety Act of 1984 --Agency must consider benefits and costs, among several other factors	**Minimal (affirmance)** Court summarily rejects various challenges to agency's rule, including contentions that agency changed its position (which court notes agency is free to do based on new evidence), that agency improperly relied on benefit maximization standard, and that agency committed various errors in its benefit-cost analysis Court states that benefit-cost analysis is reviewed very deferentially and that it must "unquestionably defer" to agency's expertise in weighing scientific studies
New York v. Reilly, 969 F.2d 1147 (D.C. Cir. 1992)	**Consider Costs** --42 U.S.C. § 7411(a)(1)	**Intermediate (reversal)** Court explicitly states that it will defer to the agency's

	--Section 111 of Clean Air Act directs agency to adopt "best" system of emission reduction that has been "adequately demonstrated" while "taking into account the cost"	findings on the issue of cost (so long as the agency actually considered it), since the statute does not indicate the weight that factor is to be accorded Court strikes down agency's decision not to regulate lead acid battery burning, as the agency considered only the extreme alternatives of no regulation and a complete ban
Fla. Manufactured Hous. Ass'n, Inc. v. Cisneros, 53 F.3d 1565 (11th Cir. 1995)	**Consider Costs** --42 U.S.C. § 5403(f) --Statute directs agency to consider costs, among other factors	**Minimal (affirmance)** The court rather summarily rejects various challenges to the agency's cost calculations, including the assertion that the agency overlooked various costs (responding that agency did consider such costs and that the court must defer to the agency's conclusions) Part of the agency's analysis was contained in an RIA prepared under EO 12866; the court declines to consider whether that analysis was directly reviewable, simply noting that there is no reversible error in the agency's analysis
Pub. Citizen, Inc. v. Mineta, 340 F.3d 39 (2d Cir. 2003)	**Reasonableness/Practicability** --49 U.S.C. § 30111(b) --Statute does not refer to benefits or costs but requires agency to set "reasonable" and "practicable" standards	**Detailed (reversal)** Discussion of benefits and costs is fairly vague, but the court faults the agency for summarily selecting the lowest cost alternative without explaining why it was the optimal option (in the face of a benefit-cost

		analysis that showed that a more rigorous standard had higher net benefits)
Nat'l Truck Equip. Ass'n v. Nat'l Highway Traffic Safety Admin., 711 F.3d 662 (6th Cir. 2013)	**Reasonableness/Practicability** --National Traffic and Motor Vehicle Safety Act of 1966 [49 U.S.C. §§ 30111(a)–(b)] --Statute requires that the standard adopted be "reasonable" and "practicable"; a court decision cited in the case indicates that the "reasonable" term requires consideration of costs	**Minimal (affirmance)** Court summarily affirms the rule, noting that agency presented compelling evidence of a problem and that it made certain accommodations requested by manufacturers The court suggests that an RIA prepared under EO 12866 is not reviewable, but it indicates that the agency's rule was justified in light of the RIA
La. ex rel. Guste v. Verity, 853 F.2d 322 (5th Cir. 1988)	**Unclear** --Endangered Species Act [16 U.S.C. § 1533(b)(2)] --The quoted provision imposes a net benefit standard, but it is unclear whether that provision is actually being applied here	**Minimal/Indirect (affirmance)** It is unclear precisely which statutory standard the court is applying Court notes that Congress declared that benefits of wildlife preservation were "incalculable" and therefore defers to the agency's decision to regulate notwithstanding evidence of significant costs (though it indicates costs might be a relevant consideration under another fact pattern)
Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin., 956 F.2d 321 (D.C. Cir. 1992)	**Technological and Economic Feasibility Analysis** --CAFE [15 U.S.C. § 2002(a)(4)—since repealed] --When modifying statutory 27.5 mpg standard up or down, agency must set new standard	**Detailed (reversal)** Court faults agency for ignoring a major aspect of the problem: higher fuel economy standard may cause manufacturers to produce smaller, less safe cars (risk-risk tradeoff)—agency failed

	at “maximum feasible average fuel economy level” --Regulation must be “technologically feasible” and “economically practicable”	to address this aspect of costs
Competitive Enter. Inst. v. Nat’l Highway Traffic Safety Admin., 45 F.3d 481 (D.C. Cir. 1995)	**Technological and Economic Feasibility Analysis** --CAFE [15 U.S.C. § 2002(a)(4)—since repealed] --When modifying statutory 27.5 mpg standard up or down, agency must set new standard at “maximum feasible average fuel economy level” --Regulation must be “technologically feasible” and “economically practicable”	**Intermediate (affirmance)** Court defers to the agency’s conclusion that raising fuel economy standards will not cause manufacturers to produce smaller cars, thereby reducing safety—agency cited various statements by manufacturers indicating that this was unlikely to occur
Competitive Enter. Inst. v. Nat’l Highway Traffic Safety Admin., 901 F.2d 107 (D.C. Cir. 1990)	**Technological and Economic Feasibility Analysis** --CAFE [15 U.S.C. § 2002(a)(4)—since repealed] --When modifying statutory 27.5 mpg standard up or down, agency must set new standard at “maximum feasible average fuel economy level” --Regulation must be “technologically feasible” and “economically practicable”	**Minimal (affirmance)** Court defers to agency’s decision to maintain a relatively high mpg requirement: agency was entitled to consider factors other than the effect of fuel economy on car size (and safety of smaller cars), and agency responded to challenger’s evidence that increased fuel economy requirements would reduce safety
Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin., 538 F.3d 1172 (9th Cir. 2008)	**Technological and Economic Feasibility Analysis** --CAFE (Title V of EPCA) [49 U.S.C. §§ 32902(a), 32902(f)] --Agency must consider “technological feasibility” and “economic practicability”	**Detailed (reversal)** Court begins with *Chevron* analysis, noting that agency can weigh technological feasibility against economic practicability; this standard permits but does not mandate net benefit maximization Court finds various flaws in the agency’s economic analysis (among other things,

		the agency ignored the benefits of carbon reduction (uncertainty is not a reason to ignore something entirely))
Natural Res. Def. Council, Inc. v. Envtl. Prot. Agency, 824 F.2d 1258 (1st Cir. 1987)	**Technological and Economic Feasibility Analysis** --SDWA [42 U.S.C. § 300g-1(b)(1)(B)] --Must set drinking water contaminant limit at highest level that is technologically and economically feasible	**Indirect (reversal)** Court did not focus too closely on economic analysis; rather, it faulted the agency for only analyzing population risk when the rule purported to address both population and individual risk
Pub. Citizen Health Research Grp. v. Tyson, 796 F.2d 1479 (D.C. Cir. 1986)	**Bifurcated Feasibility Analysis ("significance" threshold, followed by "reasonableness" analysis)** --OSHA [29 U.S.C. §§ 652(8), 655(b)(5)] --Must make threshold finding of a significant risk, then determine if regulation is "reasonably necessary" --Substantial evidence standard	**Intermediate (reversal)** Fairly detailed analysis of "significance" of risk, though court defers to agency's reliance on flawed studies Court upholds most of rule but finds fault with agency's failure to set a short term exposure limit (agency assumed a long term limit alone was adequate)
Ala. Power Co. v. Occupational Safety & Health Admin., 89 F.3d 740 (11th Cir. 1996)	**Bifurcated Feasibility Analysis ("significance" threshold, followed by "reasonableness" analysis)** --OSHA [29 U.S.C. §§ 652(8), 655(b)(5)] --Must make threshold finding of a significant risk, then determine if regulation is "reasonably necessary" --Substantial evidence standard	**Minimal (affirmance)** Court rather summarily affirms that a video showing risk of clothes' catching fire counted as "substantial evidence" of a "significant" risk; the court's analysis of the "reasonableness" of the regulation is also fairly pro forma, simply noting that challengers had not shown that the regulation will impose any costs (as workers may already wear flame-resistant clothing)

Charter Commc'ns, Inc. v. Fed. Commc'ns Comm'n, 460 F.3d 31 (D.C. Cir. 2006)	**No Mention of Benefits or Costs** --47 U.S.C. § 549(a) --Statute says nothing about benefits or costs, instead simply directing agency to "assure the commercial availability" of certain devices	**Minimal (affirmance)** Court discusses agency's benefit-cost analysis (which it was apparently not required to do), deferring to the agency's efforts to quantify highly uncertain costs and to try to minimize costs where possible
Consumer Elec. Ass'n v. Fed. Commc'ns Comm'n, 347 F.3d 291 (D.C. Cir. 2003)	**No Mention of Benefits or Costs** --All Channel Receiver Act [47 U.S.C. § 303(s)] --Statute says nothing of benefits or costs	**Minimal (affirmance)** Court is highly deferential: suggests that agency's evidence that cost of digital tuners would decline was adequate and indicates that that the agency properly concluded that the benefits justified the costs The case suggests that, if agency cites evidence of benefits and costs (whether or not it is required to do so), the court will consider this evidence