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Cost-Benefit Analysis and the Judicial Role

Jonathan S. Masur[†] & Eric A. Posner^{††}

The two most vilified cases in administrative law are Business Roundtable v Securities and Exchange Commission and Corrosion Proof Fittings v Environmental Protection Agency. In Business Roundtable, the DC Circuit struck down the SEC's proxy access rule because the agency's cost-benefit analysis of the regulation, in the court's view, was defective. In Corrosion Proof Fittings, the Fifth Circuit struck down an EPA regulation of asbestos products on the same grounds. Nearly all scholars who have written about these cases have condemned them. We argue that the courts acted properly. The regulators' cost-benefit analyses were defective, seriously so; and the courts were right to require the agencies to show that their regulations passed an adequate cost-benefit analysis. We further argue that the trajectory of law and policy is consistent with our view. Corrosion Proof Fittings and Business Roundtable are harbingers rather than errors—harbingers of an era of enhanced judicial review of cost-benefit analysis.

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INTRODUCTION

Consider the following scenario: A proregulatory president serves two terms, during which his administration issues a significant number of regulations. Most of these regulations are cost-benefit justified, in the sense that they produce greater benefits to well-being than costs.¹ Then, after eight years, a new antiregulatory president² assumes office and vows to dismantle many of his predecessor's regulations, beginning with a regulation meant to curb the emission of greenhouse gases.³ A president who wishes to deregulate must promulgate a new regulation that repeals the existing one, just as Congress must pass a new statute to repeal an existing statute. So this president issues a regulation canceling the greenhouse gas rule. But the new deregulatory regulation is not cost-benefit justified. It repeals an earlier regulation that produced more benefits than costs, and thus itself generates costs in excess of benefits.⁴ If the new regulation is challenged, how

¹ During the eight years of the Obama administration, the regulations promulgated by administrative agencies produced estimated aggregate benefits in excess of costs. See *Exit Memo* (OMB, Jan 5, 2017), archived at <http://perma.cc/X2JK-BYDZ>. See also Jonathan S. Masur and Eric A. Posner, *Unquantified Benefits and the Problem of Regulation under Uncertainty*, 102 *Cornell L Rev* 87, 101 (2016) (finding that most regulations produced benefits in excess of costs, even when they failed to fully quantify those benefits).

² See Executive Order 13771 § 2, 82 *Fed Reg* 9339, 9339 (2017) (ordering that two regulations be repealed for every new regulation that is promulgated).

³ See Kyle Feldscher, *Trump Would Repeal Clean Power Plan, Other Big EPA Regs* (Wash Examiner, Sept 15, 2016), archived at <http://perma.cc/Q98H-6DQ6>. See also Daniel Abebe and Jonathan S. Masur, *International Agreements, Internal Heterogeneity, and Climate Change: The "Two Chinas" Problem*, 50 *Va J Intl L* 325, 344 (2010) (describing the centrally controlled US administrative apparatus, in contrast to other countries like China).

⁴ See Environmental Protection Agency, *Regulatory Impact Analysis for the Clean Power Plan Final Rule* *ES-21 (Aug 2015), archived at <http://perma.cc/KT8R-BYCV>

should a court respond? Should it permit a regulation—here, a regulation that dismantles earlier regulations—that would do more harm than good?

This scenario is of course not hypothetical. But the problem is general and spans the entirety of the regulatory state. When courts are asked to review regulations issued by government agencies, how closely should they scrutinize the agency's reasons for regulating? At one extreme, courts could examine the regulations de novo, in effect delegating to the agency the task of collecting evidence and providing an initial assessment, but then replacing the agency's judgment with their own. Call this level of review "high." At the other extreme, courts could rubber-stamp any regulation as long as the agency provides reasons for it that are prima facie plausible, or even if the agency provides no reasons at all—call this level of review "low." High and low are ends of a spectrum: one could endorse any intermediate level as well. The courts have struggled to articulate the proper level, leading scholars to suspect that they do not review regulations in a consistent way.⁵ Scholars themselves offer a multitude of interpretations—often unhelpful restatements of the arbitrary-and-capricious standard in the Administrative Procedure Act⁶ (APA)—using different but equally ambiguous words.⁷ More than seventy years after the APA placed the question of judicial review at the center of administrative law, no one agrees how it should operate.

Scholars do agree on one thing: that the courts went too far in two notorious cases, *Corrosion Proof Fittings v Environmental Protection Agency*⁸ and *Business Roundtable v Securities and Exchange Commission*.⁹ The interesting thing about these cases is that they both involved cost-benefit analysis (CBA), a decision

(analyzing the Clean Power Plan and finding that it produces significantly greater benefits than costs).

⁵ See Kevin M. Stack, *Interpreting Regulations*, 111 Mich L Rev 355, 360 (2012) (stating that when interpreting regulations, "[c]ourts not only lack a consistent approach but also generally invoke one interpretive tool or another without stating reasons for doing so"). See also generally Thomas J. Miles and Cass R. Sunstein, *The Real World of Arbitrariness Review*, 75 U Chi L Rev 761 (2008) (providing evidence that Supreme Court justices apply the arbitrary-and-capricious standard in a way that reflects their ideological biases).

⁶ 60 Stat 237 (1946), codified in various sections of Title 5.

⁷ See R. George Wright, *Arbitrariness: Why the Most Important Idea in Administrative Law Can't Be Defined, and What This Means for Law in General*, 44 U Richmond L Rev 839, 851 (2010).

⁸ 947 F2d 1201 (5th Cir 1991).

⁹ 647 F3d 1144 (DC Cir 2011).

procedure that most agencies use to evaluate major regulations but that rarely provides the basis for rigorous judicial scrutiny. The Environmental Protection Agency (EPA) used a CBA to justify regulations that limited the use of asbestos products, while the Securities and Exchange Commission (SEC) used a CBA to justify a regulation that required corporations to place certain shareholder nominees to board positions on proxy ballots. The courts struck down both regulations because the CBAs were, in the courts' views, defective. Almost all scholars who have written about these cases agree that the courts acted wrongly by requiring the agencies to justify their regulations with valid CBAs.¹⁰

In this Article, we seek to refute this conventional wisdom, and also to shed light on the controversy over levels of review. We argue that both cases were correctly decided. The CBAs really were inadequate, and the courts were right to strike down the regulations. Our larger point concerns the relationship between judicial review of regulations and quantitative methods of evaluating policy, of which CBA is the leading (but not the only) example.¹¹ We argue that when quantitative methods are appropriate for evaluating regulations, a "high" level of judicial review is justified.¹²

To understand why, we begin with the basic trade-off involved in judicial review of regulations, which has been repeated ad infinitum in the literature but is accurate as far as it goes.¹³

¹⁰ See notes 79–82, 123–24 and accompanying text.

¹¹ There are other quantitative methods, including reliance on subjective well-being surveys. See generally John Bronsteen, Christopher Buccafusco, and Jonathan S. Masur, *Well-Being Analysis vs. Cost-Benefit Analysis*, 62 Duke L J 1603 (2013). In principle, feasibility analysis could be quantified though it never is, at least not fully. See Jonathan S. Masur and Eric A. Posner, *Against Feasibility Analysis*, 77 U Chi L Rev 657, 675–80, 684–87 (2010) (describing examples of feasibility analysis and the lack of quantification).

¹² We are not the first to take this position. See Michael Abramowicz, Book Review, *Toward a Jurisprudence of Cost-Benefit Analysis*, 100 Mich L Rev 1708, 1731–32 (2002); Fred Anderson, et al, *Regulatory Improvement Legislation: Risk Assessment, Cost-Benefit Analysis, and Judicial Review*, 11 Duke Envir L & Pol F 89, 109 (2000); Reeve Bull and Jerry Ellig, *Judicial Review of Regulatory Impact Analysis: Why Not the Best?*, 69 Admin L Rev 725, 792–93 (2017). See also generally Catherine M. Sharkey, *State Farm "with Teeth": Heightened Judicial Review in the Absence of Executive Oversight*, 89 NYU L Rev 1589 (2014) (suggesting that heightened review should guide courts' evaluations of CBAs performed by independent agencies not subject to review by the Office of Information and Regulatory Affairs review). A cautious but favorable view can be found in Caroline Cecot and W. Kip Viscusi, *Judicial Review of Agency Benefit-Cost Analysis*, 22 Geo Mason L Rev 575, 608 (2015).

¹³ For a recent lucid statement, see Cass R. Sunstein, *Cost-Benefit Analysis and Arbitrariness Review*, 41 Harv Envir L Rev 1, 11–13 (2017). See also generally Adrian Vermeule, *Law's Abnegation: From Law's Empire to the Administrative State* (Harvard 2016).

The major difference between judges and agency officials is that judges are generalists and agency officials are experts. Because experts know more about their field than generalists do, generalists should defer to the judgment of experts, all else equal. This is the major argument for a low level of review. But all else is not equal. Agency officials may make mistakes and, more important, they may be biased—consciously or unconsciously—and their biases may influence how they evaluate regulations. Their biases could be ideological, of course; but they could also reflect other inclinations—for example, to act rather than to remain passive under public pressure¹⁴ or to advance the partisan interests of political masters like the president or members of Congress.¹⁵ In contrast, there is reason to think that the federal judiciary on the whole is less biased than agency leadership—the federal judiciary is normally bipartisan while agency leadership is rarely so, and judges cannot be fired while agency leaders can be. Accordingly, a “high” level of judicial review is most clearly justified when agencies are more biased and their level of expertise is less significant.

To be sure, bias is complicated, and judges can be biased, too.¹⁶ But the posture of the debate is one of offering advice to the judiciary, which assumes that the judiciary is unbiased enough to accept this advice in good faith. (If not, claims on both sides of the argument are idle.) That said, the relative level of bias and open-mindedness as between judiciary and bureaucracy is an empirical question, and no doubt different intuitions about the empirics help explain why scholars disagree about the proper level of review. Nonetheless, the expertise-neutrality trade-off remains a useful device for exploring arguments about judicial review, and we employ it here.

Our major claim is that quantification—reflected in CBA and other methods—changes the terms of the debate. The unique feature of quantification is that it facilitates review. When regulators eschew quantification in their explanations for regulations, they typically put forth boilerplate that is difficult to evaluate. It is

¹⁴ See Cass R. Sunstein, *Risk and Reason: Safety, Law, and the Environment* 79–81 (Cambridge 2002) (describing an example of how public fixation on well-publicized risks can produce unnecessary governmental overreactions).

¹⁵ Elena Kagan, *Presidential Administration*, 114 Harv L Rev 2245, 2303–15 (2001) (describing how the executive uses federal regulation to accomplish objectives that are blocked by Congress).

¹⁶ For evidence, see Miles and Sunstein, 75 U Chi L Rev at 782–84 (cited in note 5) (providing evidence that judges decide administrative-law cases at least partially in line with their political preferences).

tempting, for example, for a regulator to say that a pollution regulation is justified because pollution causes harm, and less harm is good. Such a justification can be applied to any regulation, so if it were accepted by courts, regulators would be immunized from review as long as they satisfy procedural requirements and avoid making any provably false statements of fact. If regulators are biased or sometimes biased, they would be free to regulate in a biased fashion rather than for the public good. Courts would be unable to stop them.

By contrast, quantification forces regulators to put their decisionmaking into a format that can be evaluated by generalist superiors. This process is hardly unfamiliar: it is the way that (for example) the heads of corporations evaluate the work of their subordinates. A CEO must contend with the claims of the division heads who seek approval for their projects. The CEO is a generalist; the division heads are specialists. Rather than throw up their hands and approve any project that a division head proposes as long as the division head gives “reasons,” CEOs demand that the reasons take a particular quantified form. The division head must perform a net present value (NPV) analysis, which is an estimate of the benefits and costs of the project for the firm. As in the case of agency regulations, some benefits and costs are easier to quantify than others. Money pouring in from future sales can be easily quantified, but the effect of a project on the brand and legal risk are often conjectural.

Imagine that the division head of a pharmaceutical company proposes a drug that may produce side effects that give rise to litigation and harm the reputation of the company as a whole. The division head needs to use judgment to evaluate these complex risks, but in the end the risks will be quantified and folded into an overall NPV analysis of the project, which acknowledges the uncertainty of certain estimates but relies on them nonetheless. The value of this exercise—even when certain predictions are not much better than guesswork—is that it isolates the risks, allowing for careful consideration of them, and that it preserves the predictions for later review, allowing executives to learn from past mistakes and to evaluate the predictive abilities of their staffs. With the NPV in hand, the CEO can approve or disapprove the project based on firm-wide considerations that the division head may be unaware of or inclined to ignore.

Quantification occurs in many other contexts as well. Firms are required to follow accounting rules, which help shareholders,

creditors, governments, and other interested parties to evaluate the business. The grading of students is another form of quantification that facilitates evaluation by hiring committees; so is the evaluation of teachers with ratings systems. Cars, books, kitchen utensils, and other consumer goods are given quantified ratings. Universities are ranked; borrowers are assigned credit scores; banks are given CAMELS ratings.¹⁷ Quantified evaluation is ubiquitous because quantification enables generalists—frequently superiors, but also consumers—to evaluate the claims of specialists. Given the ubiquity of quantified evaluation in daily life, the claim that government regulations and projects cannot be subject to similar forms of quantified evaluation is bizarre.

Courts should ensure that regulatory agencies perform the quantified evaluation of their regulations adequately, just as they do when they evaluate the accounting statements of businesses accused of fraud and citizens accused of failing to pay taxes. But what does “adequate” mean? This is a tricky question, and we suspect there is no general answer to it. Courts should insist that regulators quantify benefits and costs, but courts should also take seriously arguments that certain estimates require judgment calls that the regulator is in a better position to make than a court is. In some cases, the regulator must reconcile conflicting academic studies, and a court may properly conclude that the regulator’s judgment is reasonable even if the court does not share it. In other cases, quantification may be impossible or pointless, as we discuss below. But the key thing to understand is that at the current moment in the development of the regulatory state, CBAs tend to be low quality rather than high quality, suggesting that greater judicial involvement will cause more good than harm.¹⁸ At some future time, this may no longer be true, but we are a long way from that happy condition.

Critics of judicial CBA mandates of the sort introduced in *Corrosion Proof Fittings* and *Business Roundtable* argue that courts are not qualified to evaluate the expert determinations of agencies.¹⁹ They draw on an old distinction between procedure

¹⁷ The CAMELS rating is used by bank regulators to quantify their impressions of a bank’s soundness, facilitating comparison and evaluation. See Jose A. Lopez, *Using CAMELS Ratings to Monitor Bank Conditions* (Federal Reserve Bank of San Francisco Economic Letter No 1999-19, June 11, 1999), archived at <http://perma.cc/5W6T-EHSA>.

¹⁸ See Masur and Posner, 102 Cornell L Rev at 90–92 (cited in note 1) (criticizing the quality of current CBAs and their failure to fully account for benefits and costs).

¹⁹ See Part II.A.1; Part II.B.1.

and substance. Courts are capable of forcing regulators to comply with procedural rules—notice requirements, for example. But they are in a weak position to second-guess substantive determinations like valuations. However, CBA is foremost a decision *procedure*.²⁰ If courts can review agencies for procedural violations, then they can review agencies for their compliance with the rules of CBA. The genius of CBA, in common with other quantitative decision procedures, is that it cabins the decisionmaker's discretion by forcing it to comply with certain rules. The courts in *Corrosion Proof Fittings* and *Business Roundtable* correctly pointed out that the regulators violated the rules of CBA. There does remain a residuum of substantive discretion that the rules of CBA do not eliminate. With respect to these substantive judgments, courts do need to tread carefully, for all the conventional reasons, which we discuss below.

We start in Part I with a brief reprisal of the normative case for CBA and then argue that judges are as capable of evaluating CBAs as they are of evaluating any other decision or action that comes before them. In Part II, we discuss *Corrosion Proof Fittings* and *Business Roundtable*. We argue that the agencies performed CBA badly and that the courts properly struck down the regulations. Part III turns to the law. We argue that there is a strong legal trajectory in favor of CBA, reflected in judicial decisions, executive orders, and even in the regulators' independent judgments. This trajectory is bipartisan or even nonpartisan, a long overdue form of bureaucratic rationalization that addresses the question of what agencies should attempt to accomplish when they regulate. The answer that has emerged over decades of debate and reform is: produce benefits that exceed costs.

While many scholars have claimed that CBA is ideologically biased toward antiregulatory outcomes, we show that this claim is mistaken.²¹ This point is of particular importance at the current time as we move from a presidential administration that was friendly to regulation to one that has committed itself to deregulation. In order to deregulate, agencies must formally issue new regulations that eliminate or relax earlier regulations. If they are required to conduct CBAs, then those CBAs will need to show that the benefits from deregulation exceed the costs. If the agency fails to take this step, or if the CBA is inadequate, a reviewing court

²⁰ Matthew D. Adler and Eric A. Posner, *New Foundations of Cost-Benefit Analysis* 62–100 (Harvard 2006).

²¹ See text accompanying notes 36–50.

should strike down the deregulation and leave the existing regulation in place. CBA is not a one-way ticket to the night-watchman state.

I. COST-BENEFIT ANALYSIS AND JUDICIAL REVIEW

A. A Primer on CBA

CBA is a decision procedure whose normative basis is what Professor Matthew Adler and one of us has called *weak welfarism*.²² Welfarism is the principle that the well-being of people is morally important. The word “weak” in “weak welfarism” acknowledges that other considerations, such as deontological principles, also may have moral importance. But while agencies might take account of those principles when deciding whether to regulate, they are not accounted for in CBA. Thus, CBA does not commit an agency to utilitarianism or any other strong welfarist philosophy, but, because it does not address deontological constraints, its *scope* will be determined by the type of behavior that the government regulates.²³

Not everyone believes that the government should advance social welfare.²⁴ But most people do, and this premise is unquestioned in debates about how regulatory agencies should behave.²⁵ The trickier question is how to define and measure welfare. Most economists believe that welfare increases whenever people are better able to satisfy their preferences, as measured by willingness to pay.²⁶ Most philosophers reject this view, as do we. People’s preferences, especially when ill informed or distorted by social influences, do not necessarily reflect their welfare; and the reliance on the money metric introduces further distortions because of the diminishing marginal utility of money.²⁷ However, CBA, based on willingness to pay, *typically* approximates welfare

²² Adler and Posner, *New Foundations of Cost-Benefit Analysis* at 26 (cited in note 20). The other one of us subscribes to this normative foundation for CBA as well. See Bronsteen, Buccafusco, and Masur, 62 *Duke L J* at 1611–12 (cited in note 11).

²³ We do not discuss here whether agencies should take account of moral considerations other than those embodied in the CBA. Our view is that agencies should very rarely do so, but in some circumstances it may be appropriate.

²⁴ See generally, for example, Robert Nozick, *Anarchy, State, and Utopia* (Basic Books 1974).

²⁵ See Sunstein, 41 *Harv Envir L Rev* at 41 (cited in note 13).

²⁶ See Adler and Posner, *New Foundations of Cost-Benefit Analysis* at 33 (cited in note 20).

²⁷ See *id.* at 124–31.

for a range of plausible definitions to a greater degree than competing approaches, such as feasibility analysis.²⁸ This is the justification for using CBA as a decision procedure. The analogy to NPV is useful here: no one thinks that an NPV calculation settles the question whether a commercial project is wise. A decision procedure like CBA or an NPV calculation formalizes the process of decisionmaking so as to maximize the probability that a correct decision will be made. It does so by helping agents remember to consider all relevant factors, and, by requiring a common metric, facilitating comparison of those factors.

Regulatory statutes direct agencies to advance the public good in their areas of expertise—the environment, health and safety, financial regulation, and so on. While statutes usually do not explicitly direct regulators to use CBA, they almost always direct regulators to consider the costs as well as the benefits of a regulation, as we describe in more detail below.²⁹ Because CBA is the most natural way to consider costs and benefits, the White House has directed regulators to use CBA.³⁰

Many commentators have criticized CBA. The criticisms in the law-and-policy literature reach back to the 1980s.³¹ The criticisms in the welfare-economics literature reach back even further.³² None of these criticisms has carried the day. CBA is more entrenched in government than ever.

We will not rehearse all the criticisms and responses here. We discuss just two of the criticisms pertinent to the current discussion. The first criticism is that for many, possibly most regulations, the costs and (especially) benefits are largely guesswork.³³ Quantification is arbitrary and adds nothing to the decisionmaking process.

²⁸ See Masur and Posner, 77 U Chi L Rev at 699–707 (cited in note 11).

²⁹ See Part III.B.1.

³⁰ See Executive Order 13563 § 1(a) (2012), 3 CFR 215, 215.

³¹ See generally Adler and Posner, *New Foundations of Cost-Benefit Analysis* (cited in note 20).

³² *Id.* at 19–24.

³³ See Frank Ackerman and Lisa Heinzerling, *Priceless: On Knowing the Price of Everything and the Value of Nothing* 37–40 (New Press 2004). See also John C. Coates IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications*, 124 Yale L J 882, 891–98 (2015) (advocating for “nonquantified” CBA). We think it is best to avoid confusion by not referring to Coates’s approach as a style of CBA, which, in its essence, requires quantification. Adler and one of us have called approaches like Coates’s “intuitive balancing.” See Adler and Posner, *New Foundations of Cost-Benefit Analysis* at 98 (cited in note 20).

Our view is that if regulators cannot determine whether a regulation will generate net benefits, then they should usually not issue the regulation. But there may be close cases in which the regulator, based on hard-to-articulate staff expertise,³⁴ reasonably believes that the benefits are positive but cannot settle on a precise estimate because of the absence of hard data and of the high cost of obtaining additional evidence through surveys and other methods. In that case, the regulator should go ahead and regulate, but also be required to publish an estimate so that its claim to tacit expertise can be evaluated retrospectively, along with an explanation of why an estimate cannot be derived from empirical evidence.³⁵ Once the regulator goes on record with its estimate of hard-to-quantify benefits, and adds them to the empirically verified benefits and costs, the regulator may issue the regulation if the aggregate benefits, including the estimates in question, exceed the costs.

The second criticism is that CBA is a politically biased decision procedure—and biased in favor of ideologically conservative outcomes.³⁶ This view is partly based on CBA's association with the Reagan administration. President Ronald Reagan campaigned for office promising deregulation, and one of his first acts was to sign an executive order that requires regulators to conduct CBA. Proregulation forces argued that the CBA requirement was intended as a bureaucratic hurdle that would delay or block

³⁴ See Jacob Gersen and Adrian Vermeule, *Thin Rationality Review*, 114 Mich L Rev 1355, 1396–97 (2016).

³⁵ See Masur and Posner, 102 Cornell L Rev at 125 (cited in note 1) (arguing that agencies should be required to estimate costs and benefits and justify those estimates). We find ourselves in agreement with the otherwise critical account of Professors Jacob Gersen and Adrian Vermeule, who argue that agencies cannot credibly appeal to tacit knowledge to rationalize bad regulations in the long term: “[T]he pretext problem is self-limiting, because agencies that constantly base their decisions on (putatively) nontransmissible tacit expertise will encounter increasing skepticism from reviewing courts over time.” Gersen and Vermeule, 114 Mich L Rev at 1401 (cited in note 34).

³⁶ This argument has been made for decades, but for a recent version, see Gregory C. Keating, *Is Cost-Benefit Analysis the Only Game in Town?* *2 (USC Gould School of Law Center for Law and Social Science Research Paper Series No CLASS16-33; Legal Studies Research Paper Series No 16-37, Dec 5, 2016), archived at <http://perma.cc/53MY-SYCN>. Professor Gregory C. Keating claims that CBA is conservative because it is welfarist and conservatives are welfarist, while liberals are deontologists who reject welfarism. There are many problems with this view, but take just one example: welfarists going back to Bentham usually endorse radical redistribution of wealth because of the declining utility of the dollar. Deontologists sometimes do, but many—including philosophical libertarians like Nozick—do not.

needed regulations.³⁷ But CBA is foremost a tool of good government and falls into a long tradition of using quantitative methods to persuade the government and public to accept progressive change.³⁸ The rejection of quantitative methods—and of science and statistics—is more closely associated with the right (as well as the extreme left), as a matter of history. Whatever the intentions of Reagan administration officials, the *effect* of the CBA requirement, if conscientiously carried through, need not be any more ideological than a requirement that the government budget office follow the rules of accounting.

One version of the criticism is that because CBA discounts unquantified (or unquantifiable) benefits, it must lead to underregulation, which is an outcome favored by conservatives.³⁹ This view seriously misunderstands CBA. One source of error is the tendency to confuse the “market” and the status quo. If the status quo is an unregulated market, and regulation must pass a CBA, then the CBA requirement might slow down regulation relative to a procedure that allows regulators to disregard evidence that does not support regulation. But the status quo almost always involves a regulated market; CBA can slow down *deregulation* (which is actually a form of regulation that strips away restrictions on market behavior) as well as regulation because CBA requires deregulation to be based on quantified evidence as well. For instance, consider President Donald Trump’s stated plans to roll back Obama-era environmental regulations. The vast majority of these Obama-era regulations are cost-benefit justified. Repealing them would require new regulatory action by the EPA, and this new regulatory action would not pass a cost-benefit test. Moreover, if the argument were taken seriously, it would suggest that any type of government decisionmaking that rested on analysis and evidence is inherently conservative in an ideological

³⁷ For the most prominent exceptions, see generally Stephen Breyer, *Regulation and Its Reform* (Harvard 1982); Cass R. Sunstein, *The Cost-Benefit State: The Future of Regulatory Protection* (ABA 2002).

³⁸ See William Davies, *How Statistics Lost Their Power—and Why We Should Fear What Comes Next* (The Guardian, Jan 19, 2017), archived at <http://perma.cc/S3GS-J7FU>; Richard L. Revesz and Michael A. Livermore, *Retaking Rationality: How Cost-Benefit Analysis Can Better Protect the Environment and Our Health* 9–19 (Oxford 2008).

³⁹ See, for example, Ackerman and Heinzerling, *Priceless* at 35–36 (cited in note 33); Amy Sinden, Douglas A. Kysar, and David M. Driesen, Book Review, *Cost-Benefit Analysis: New Foundations on Shifting Sand*, 3 Reg & Governance 48, 59 (2009).

sense. Such an argument would sweep in procedural requirements like those in the APA, and indeed the normal rules for legislation of all kinds.

Another source of error is the view that real but difficult-to-quantify benefits are benefits that liberals value more than conservatives, as a result of which CBA is biased toward conservative outcomes. For example, liberal critics of CBA have complained that CBA disregards many of the hard-to-value benefits of environmental regulation.⁴⁰ When a regulator performs a CBA of an environmental regulation, it can easily gather data about costs from industry, while it can only with difficulty place valuations on the health and recreation benefits of a cleaner environment. If regulators must comply with CBA, then they will produce environmental regulations that are weaker than optimal, according to these critics.

There are serious problems with this argument. First, the premise of the argument—that measurement problems tend to result in weak regulation because benefits are harder to measure than costs—is incorrect. Retrospective reviews of regulations show that CBA typically undercounts both costs and benefits in roughly equal measure.⁴¹ Even if it is more difficult for regulators to quantify benefits than costs, the remedy is for regulators to invest additional resources in quantifying benefits. If regulators have undercounted benefits in the past, that is a failing of those regulators, not a general problem with CBA. If a regulator cannot quantify a particular benefit or cost with precision, the regulator should offer its best estimate.⁴²

In addition, the mandate to avoid doubtful valuations is just a standard of proof: it applies with equal force to the claims made by preregulation and antiregulation forces. Business interests, for

⁴⁰ See generally Ackerman and Heinzerling, *Priceless* (cited in note 33) (arguing that CBA does not account well for nonmarket goods, such as health or environmental harms). See also Sinden, Kysar, and Driesen, Book Review, 3 Reg & Governance at 64 (cited in note 39) (similar).

⁴¹ For an overview of various agencies' reviewing processes, see Richard D. Morgenstern, *The RFF Regulatory Performance Initiative: What Have We Learned?* *8 (Resources for the Future, Oct 2015), archived at <http://perma.cc/H25D-K2WV>; Winston Harrington, *Grading Estimates of the Benefits and Costs of Federal Regulation: A Review of Reviews* *34 (Resources for the Future, Sept 2006), archived at <http://perma.cc/H3MK-BEZJ>. But see *Validating Regulatory Analysis: 2005 Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities* *48–49 (Office of Management and Budget), archived at <http://perma.cc/XN6A-X5KW>.

⁴² See Masur and Posner, 102 Cornell L Rev at 120 (cited in note 1).

example, often complain that regulations generate economic uncertainty, which interferes with planning and thus increases costs. In recent years, they have made this argument about regulations issued under the Affordable Care Act⁴³ and the Dodd-Frank Wall Street Reform and Consumer Protection Act⁴⁴ (“Dodd-Frank”).⁴⁵ The argument is not crazy; maybe it is even true. And if it is true, then a CBA of a regulation should take account of the uncertainty costs that it creates in addition to the costs of compliance. But, as far as we know, regulators have not taken account of uncertainty costs of this sort.

Another mistake is the assumption that regulation always advances the interests of liberals. Consider Trump’s plan to build a wall along the Mexican border in order to block illegal entry into the United States. Trump’s major argument is that the wall would reduce crime and terrorism. However, the evidence that the wall would have any effect on crime or terrorism is nil. If the Department of Homeland Security were required to perform a CBA before building the wall,⁴⁶ it would be required to concede that the evidence indicates that illegal immigrants commit crimes at about the same rate as US citizens, which is very low.⁴⁷ Because the wall itself would cost billions of dollars while generating trivial benefits in terms of crime reduction, it would fail a CBA. We suspect that similar types of analysis would indicate that many harsh forms of law enforcement are not cost justified.⁴⁸

As a final example, consider the case of capital regulations, which limit the amount of debt that banks can use to fund their investments and loans.⁴⁹ Nearly everyone agrees that capital regulations make sense; the ideological divide concerns how high they should be.⁵⁰ When capital regulations were very low, CBA

⁴³ Patient Protection and Affordable Care Act, Pub L No 111-148, 124 Stat 119 (2010).

⁴⁴ Pub L No 111-203, 124 Stat 1376 (2010).

⁴⁵ See, for example, Carter Wood, *Dodd-Frank, Whence Uncertainty Springs* (BRT Blog, Sept 27, 2012), archived at <http://perma.cc/Z52G-MPC3>.

⁴⁶ As it would likely be required to do if Trump relied on the Secure Fence Act of 2006, Pub L No 109-367, 120 Stat 2638, rather than a new statute, as suggested by news reports. See Daniel Hemel, Jonathan Masur, and Eric Posner, *How Antonin Scalia’s Ghost Could Block Donald Trump’s Wall* (NY Times, Jan 25, 2017), online at <http://www.nytimes.com/2017/01/25/opinion/how-antonin-scalias-ghost-could-block-donald-trumps-wall.html> (visited Nov 12, 2017) (Perma archive unavailable).

⁴⁷ See *id.*

⁴⁸ See Darryl K. Brown, *Cost-Benefit Analysis in Criminal Law*, 92 Cal L Rev 323, 352 (2004).

⁴⁹ See Eric A. Posner, *How Do Bank Regulators Determine Capital-Adequacy Requirements?*, 82 U Chi L Rev 1853, 1860–62 (2015).

⁵⁰ See *id.* at 1862–64.

would have required that they be increased—a “liberal” outcome. Now that they are much higher, it is possible that CBA could require that they be reduced—a “conservative” outcome. The apparent ideological valence of CBA is an illusion generated by the location of the status quo regulation in ideological space; CBA does not itself have an inherent ideological character.

B. Are Judges Capable of Evaluating CBAs?

It is possible to hold the view that regulators should conduct CBAs but that when judges review regulations, they should not evaluate the regulation on the basis of the quality of the CBA. It would be left for the White House or Congress to discipline regulators who issue regulations that fail CBAs. The Office of Information and Regulatory Affairs (OIRA) and the Office of Management and Budget (OMB) sometimes play this role, but for various reasons—political or otherwise—they sometimes permit regulations whose costs exceed their benefits.⁵¹ The argument against involving judges is based on traditional notions of judicial review: judges, as generalists, are in a weak position to evaluate the work of experts.⁵² We see this argument in many different contexts; for example, the business judgment rule and notions that judges should defer to legislative factfinding or executive-branch judgments in the field of foreign relations.

While we sympathize with this view,⁵³ the argument overlooks the ways that CBA facilitates judicial review. Judicial review of CBA can be divided into two components, one procedural and the other substantive. In reviewing procedure, the court verifies that the regulator has quantified all the costs and benefits of the regulation and translated them into comparable units (dollars), and that the quantified benefits exceed the quantified costs. If the regulator fails to quantify any benefits, then the regulation cannot be approved on the basis of those alleged benefits, though it may be approved if the quantified benefits exceed the quantified costs. Judicial review is an accounting procedure that any judge

⁵¹ See Masur and Posner, 77 *U Chi L Rev* at 667–68 (cited in note 11); Masur and Posner, 102 *Cornell L Rev* at 97 (cited in note 1).

⁵² See Gersen and Vermeule, 114 *Mich L Rev* at 1357–58 (cited in note 34). See also Sunstein, 41 *Harv Envir L Rev* at 11–14 (cited in note 13) (suggesting that courts should play a minimal role in reviewing CBA, rather than no role); Robert J. Jackson Jr., Comment, *Cost-Benefit Analysis and the Courts*, 78.3 *L & Contemp Probs* 55, 56–58 (2015).

⁵³ One of us once (tentatively) held this view. See Eric A. Posner and E. Glen Weyl, *Cost-Benefit Analysis of Financial Regulations: A Response to Criticisms*, 124 *Yale L J F* 246, 261 (2015) (mea culpa).

can undertake. It is no harder than verifying that the deadlines for notice-and-comment rulemaking have been obeyed.

The SEC in *Business Roundtable* and the EPA in *Corrosion Proof Fittings* both failed to comply with the procedural elements of CBA: they did not report estimates of the monetary benefits or the overall cost-benefit comparison.⁵⁴ Many other regulators routinely fail to quantify costs and benefits in the full and rigorous way that is required by CBA.⁵⁵ Even if courts were to enforce only the procedural requirements of CBA, they would improve the performance of agencies.

But enforcement of CBA procedure may not be sufficient. Regulators may be tempted to comply formally with the rules but invent valuations or put insufficient effort into calculating valuations. To review valuations on substantive grounds, courts need to second-guess judgments that lie at the heart of the agencies' expertise. But while substantive review may often be challenging, it need not be. Regulators often make easily identifiable substantive errors, including: failing to consider the trade-offs that regulation would require, including the cost of substitutes, as the EPA did in banning asbestos;⁵⁶ failing to discount over time or discounting inconsistently (for example, discounting costs but not benefits);⁵⁷ and failing to cite or discuss relevant peer-reviewed studies.⁵⁸ If courts did no more than demand that agencies comply with these basic forms of good practice, CBAs would be considerably better than they have been.⁵⁹

⁵⁴ See *Business Roundtable*, 647 F3d at 1148–49; *Corrosion Proof Fittings*, 947 F2d at 1218–19.

⁵⁵ See Masur and Posner, 102 Cornell L Rev at 89 (cited in note 1).

⁵⁶ See Environmental Protection Agency, Asbestos; Manufacture, Importation, Processing, and Distribution in Commerce Prohibitions, 54 Fed Reg 29460, 29483 (1989), amending 40 CFR Part 763.

⁵⁷ See *Corrosion Proof Fittings*, 947 F2d at 1218 (discussing the EPA's inconsistencies in discounting). See also generally Edward R. Morrison, Comment, *Judicial Review of Discount Rates Used in Regulatory Cost-Benefit Analysis*, 65 U Chi L Rev 1333 (1998) (discussing inconsistencies in discount rates used by agencies and arguing that courts should correct them).

⁵⁸ See generally, for example, 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, 77 Fed Reg 9304 (2012), amending 40 CFR Parts 60, 63.

⁵⁹ For an analysis of two deficient regulations that do not comply with these standard practices, see Masur and Posner, 102 Cornell L Rev at 128–36 (cited in note 1). Sunstein offers a more limited list of errors that should lead a court to overturn a regulation, nearly all of which involve errors more egregious than the ones we describe above. Sunstein, 41 Harv Envir L Rev at 21–22 (cited in note 13). We do not think that anything turns on the

But there are also harder cases. What should courts do when the regulator cites conflicting studies and concludes that one study is more plausible than the other, as in the case of the proxy access rule?⁶⁰ We think that regulators should not regulate when the empirical evidence for regulation is thin, but can imagine situations in which courts should defer to the regulator's judgment on the quality of academic studies because of the complexity of the issues involved. One study can be better than the other because of subtle methodological differences that experts on the agency's staff understand and courts do not. In addition, under some conditions an agency may be able to justify a weak CBA based on resource constraints. While the articulation of benefits and costs is not itself expensive, a plausible CBA may require an expensive and time-consuming survey or other study that cannot be accomplished within budgetary constraints and statutory deadlines. As is so frequently the case in litigation, the right answer depends on the circumstances. But courts deal with expert studies in private litigation all the time.⁶¹ Because both sides typically submit expert reports with different conclusions, the court must evaluate both of them, even though the reports may involve statistical, scientific, and other technical reasoning. It cannot "defer" to two inconsistent reports. In the case of judicial review of agency regulation, courts should draw on the same skills that they use in private litigation.

In a recent paper, Professors Jacob Gersen and Adrian Vermeule criticize strict judicial review of agency action. Although their major point is that "rationality review" does not imply searching inquiry of agency rulemaking, many of their criticisms apply to judicial review of CBA as well, as they note.⁶² Among other things, they point out that regulators often legitimately rely on "tacit knowledge" that they cannot document for the benefit of courts;⁶³ that regulators must make trade-offs between speed and

distinction between the procedure an agency uses in conducting CBA and the substance of that CBA, and we do not place any weight on it except as a way of thinking about review. The crucial distinction is between easily identifiable errors that are relatively ministerial, and judgment calls, as we address below.

⁶⁰ See Part II.B.

⁶¹ See Kelli M. Hinson, Jennifer Evans Morris, and Elizabeth A. Snyder, *Civil Evidence*, 59 SMU L Rev 965, 965 (2006) ("This Survey period found the courts reviewing expert cases more than any other topic.").

⁶² Gersen and Vermeule, 114 Mich L Rev at 1370–71 (cited in note 34).

⁶³ *Id* at 1396.

accuracy that cannot be quantified;⁶⁴ that they face subtle questions about how to value risk;⁶⁵ and, most of all, that regulators must make decisions in the face of extreme uncertainty when the risks cannot be reliably quantified.⁶⁶

While all these problems create challenges for regulators and courts, they are not insurmountable. The tacit knowledge problem is just a restatement of the problem of valuation: often valuations are difficult to determine. As we have argued, that problem is best addressed institutionally, with a requirement that agencies go on record with estimates and then evaluate the accuracy of those estimates at a future time.⁶⁷ As noted, we agree that agencies that face deadlines or have good reason to act quickly may need to be excused from a CBA requirement. There is a subtle question as to how much time an agency should spend gathering information before it conducts a CBA, one that can be answered only with common sense and in light of experience, and here again judicial review should be deferential. But this is more a problem of theory than of practice.

Risks can usually be quantified and valued. When they cannot be, the problem is not for judicial review but for regulation itself. When uncertainty makes it impossible to know whether a regulation will improve welfare, the agency should not regulate. As we have argued elsewhere, when regulators believe that they have strong reasons to value regulatory benefits but lack statistical evidence that permits a valuation, they should make estimates and provide for retrospective review at a future date, when the uncertainty has been resolved.⁶⁸

The ability of courts to review the substantive determinations of agencies is in the end an empirical question.⁶⁹ That has

⁶⁴ *Id.* at 1394–95.

⁶⁵ *Id.* at 1387–88.

⁶⁶ Gersen and Vermeule, 114 *Mich L Rev* at 1388 (cited in note 34).

⁶⁷ Masur and Posner, 102 *Cornell L Rev* at 125–26 (cited in note 1).

⁶⁸ Most such examples are straightforward; for example, a pollutant is known to produce headaches in the exposed population, but the regulator does not know how to value a headache. There are standard methods for making reasonable estimates in such circumstances. In other cases, the exposed population is not known and, without an expensive epidemiological study, can only be guessed at. In both cases, the agency should be allowed to make estimates subject to a subsequent review. See *id.*

⁶⁹ An impressively rigorous paper that reviews thirty-eight judicial opinions that evaluate CBAs concludes that “[t]he performance of the courts has been sufficiently competent that entrusting greater responsibility to courts may be beneficial. There is no evidence of courts overstepping their proper scope of authority in this area.” Cecot and Viscusi, 22 *Geo Mason L Rev* at 608 (cited in note 12). Two other authors reviewed an overlapping

not stopped critics of CBA from pointing to *Corrosion Proof Fittings* and *Business Roundtable* as evidence that courts are incapable of reviewing the substance of CBAs. In the next Part, we evaluate their arguments.

II. REGULATION AND COST-BENEFIT ANALYSIS IN THE COURTS

If there is an “anticanon” in administrative law,⁷⁰ it includes *Corrosion Proof Fittings* and *Business Roundtable*. Those cases are regularly held up as examples of judicial review run amok—of courts substituting their (less informed) judgments for those of the expert agencies they were reviewing, with disastrous consequences. According to this line of thinking, forcing agencies to conduct CBAs, and allowing courts to review those CBAs and reject them if they are inadequate, is sure to lead to rampant invalidations of regulations that should be allowed to stand. The academic consensus against *Corrosion Proof Fittings* and *Business Roundtable* is nearly complete.

But the critics do not come to grips with a significant fact about the cases: the CBAs that supported the EPA and SEC regulations at issue in those two cases were defective. The agencies failed to quantify important costs and benefits, and when they did, their analyses suggested that at least parts of the regulations were producing more costs than benefits. Moreover, the Fifth Circuit in *Corrosion Proof Fittings* and the DC Circuit in *Business Roundtable* proved themselves capable of evaluating the agencies’ CBAs and pinpointing their errors. The judicial opinions are not perfect, but the agencies’ work was far from perfect as well, as the courts aptly demonstrated. The two cases are examples of cogent judicial reasoning in the face of agency error.

A. *Corrosion Proof Fittings*

1. The regulation, the court decision, and the academic response.

In 1989, the EPA promulgated a rule under the Toxic Substances Control Act⁷¹ (TSCA) that banned the manufacture,

group of cases and came to the same conclusion. Bull and Ellig, 69 Admin L Rev at 767 (cited in note 12).

⁷⁰ For an analysis of the conventional constitutional anticanon, see generally Jamal Greene, *The Anticanon*, 125 Harv L Rev 379 (2011).

⁷¹ Pub L No 94-469, 90 Stat 2003 (1976), codified at 15 USC § 2601 et seq.

importation, and sale of nearly every product containing asbestos—twenty-seven products in all.⁷² The TSCA gives the EPA the authority to regulate any chemical substance that presents an “unreasonable risk” to health or the environment, and it directed the agency to select the “least burdensome requirements” that would alleviate the risk.⁷³ By the time the EPA set out to regulate asbestos, it had accumulated evidence to indicate that it was a “highly potent carcinogen.”⁷⁴ The EPA imposed a near-complete ban on asbestos, believing that there were no acceptably safe uses, rather than banning its use in particular products, imposing labeling requirements, or opting for some other less stringent regulatory response.

Two years later, in *Corrosion Proof Fittings*, the Fifth Circuit struck down the EPA’s asbestos regulation. It held that the agency had failed to demonstrate that this was the least burdensome means of regulating the health hazards posed by asbestos.⁷⁵ The court performed a detailed examination of the EPA’s CBA and concluded that the agency had made numerous errors in selecting its level of regulation.⁷⁶ These included banning products when costs were likely to exceed benefits and failing to account for risk-risk trade-offs.⁷⁷ Rather than reconsider and repromulgate the regulation after the Fifth Circuit’s decision, the EPA largely abandoned its attempts to regulate asbestos under the TSCA and relied instead on a constellation of other statutes (and other agencies).⁷⁸

The scholarly response to the Fifth Circuit opinion was scathing and uniformly negative, and it has remained so in the twenty-five years since the case was decided. Shortly after it was handed down, one commentator described *Corrosion Proof Fittings* as a

⁷² 54 Fed Reg at 29461–62 (cited in note 56).

⁷³ 15 USC § 2605(a).

⁷⁴ 54 Fed Reg at 29467 (cited in note 56).

⁷⁵ *Corrosion Proof Fittings*, 947 F2d at 1217.

⁷⁶ *Id.* at 1218–19.

⁷⁷ *Id.* at 1220–22.

⁷⁸ See Jessica N. Schifano, Ken Geiser, and Joel A. Tickner, *The Importance of Implementation in Rethinking Chemicals Management Policies: The Toxic Substances Control Act*, 41 *Envir L Rptr* 10527, 10533–34 (2011) (describing the difficulties the EPA has faced in regulating under the TSCA).

“tragedy”;⁷⁹ nearly twenty years later, it was still being characterized as a “*bête noire*” of environmentalists.⁸⁰ In between, academic commentary regarding the decision has remained negative, even from scholars who otherwise tend to support CBA.⁸¹ Most of the criticism has centered around the argument that the court substituted its own views regarding environmental regulation for the (more expert) EPA’s in contravention of the proper role of courts in administrative review.⁸²

Scholars have been wrong to treat *Corrosion Proof Fittings* as an administrative-law bugbear. The *Corrosion Proof Fittings* court wasn’t perfect, but it got more right than it got wrong, and it exposed serious flaws in the EPA’s CBA. As we demonstrate, *Corrosion Proof Fittings* should be celebrated as a high watermark of judicial rationality.

2. The EPA’s CBA.

The EPA’s CBA was based on a comparison between two states of the world: one in which the agency took no action to regulate asbestos, and one in which it regulated by banning a wide range of different products. For each of the twenty-seven products to be regulated, the EPA calculated the reduction in fatal cases of cancer among workers who would otherwise have come into contact with products made from asbestos.⁸³ On the cost side of the

⁷⁹ Linda Stadler, Note, *Corrosion Proof Fittings v. EPA: Asbestos in the Fifth Circuit—a Battle of Unreasonableness*, 6 *Tulane Envir L J* 423, 433 (1993).

⁸⁰ Daniel A. Farber, Book Review, *Rethinking the Role of Cost-Benefit Analysis*, 76 *U Chi L Rev* 1355, 1380 (2009).

⁸¹ See, for example, Cass R. Sunstein, *Is the Clean Air Act Unconstitutional?*, 98 *Mich L Rev* 303, 363 n 272 (1999); Thomas O. McGarity, *Some Thoughts on “Deossifying” the Rulemaking Process*, 41 *Duke L J* 1385, 1423 (1992); David M. Driesen, *Regulatory Reform: The New Lochnerism?*, 36 *Envir L* 603, 630–31 (2006); Robert B. Haemer, *Reform of the Toxic Substances Control Act: Achieving Balance in the Regulation of Toxic Substances*, 6 *Envir Law* 99, 116–19 (1999); Thomas O. McGarity, *The Courts and the Ossification of Rulemaking: A Response to Professor Seidenfeld*, 75 *Tex L Rev* 525, 544–49 (1997). But see Eric A. Posner, *Controlling Agencies with Cost-Benefit Analysis: A Positive Political Theory Perspective*, 68 *U Chi L Rev* 1137, 1195–96 (2001) (enumerating the many problems with the EPA’s CBA).

⁸² See, for example, McGarity, 75 *Tex L Rev* at 547–48 (cited in note 81); McGarity, 41 *Duke L J* at 1423 (cited in note 81) (describing the opinion as “virtually indistinguishable from the documents that OMB prepares in connection with its oversight of EPA rulemaking,” as if to highlight how out of place such an analysis was in a judicial opinion).

⁸³ See 54 *Fed Reg* at 29485–86 (cited in note 56). Among the many grounds on which the Fifth Circuit criticized the EPA was the fact that it calculated costs and benefits only through the year 2000. *Corrosion Proof Fittings*, 947 *F2d* at 1218. In addition, the fact that the EPA evaluated only the mortality risks of asbestos means that the agency left unquantified a variety of other regulatory benefits, including nonfatal diseases caused by asbestos

ledger, the agency quantified the costs to consumers of purchasing more expensive asbestos-free products and the costs to manufacturers (lost profits).⁸⁴

The EPA's first misstep was its failure to analyze any less stringent alternatives to a complete asbestos ban, such as permitting the use of asbestos so long as it was labeled with appropriate warnings,⁸⁵ or permitting its use but requiring protective equipment, such as respirators, for anyone working with the substance.⁸⁶ The agency did not conduct a CBA of any of these alternatives, and from the regulation it does not appear that it even considered them in any systematic way.⁸⁷

This oversight was significant for two reasons. First, the statute explicitly directs the agency to select the "least burdensome" type of regulation that would ameliorate the risks from asbestos. Without having examined the regulatory alternatives, the agency could not establish that it had done so. This is the primary basis on which the court rejected the regulation, and it might have determined the outcome even had the agency made no other errors.⁸⁸ Many commentators have criticized the Fifth Circuit for this aspect of its decision and argued that the statute does not in fact require the agency to choose the least burdensome mode of regulation, the plain language of the statute notwithstanding.⁸⁹ We agree that it is asking a lot of an agency—too much, in all likelihood—to require it to select the optimal regulation, as opposed to choosing the best regulation from among a finite set of options or simply

(emphysema, bronchitis, or even nonfatal cancers), reduced medical costs, reduced asbestos exposure in the general population (as opposed to employees who worked with asbestos), and cancer cases that might occur after the year 2000. This continues a trend we have observed of agencies quantifying only mortality-related benefits and not morbidity-related ones. See Masur and Posner, 77 U Chi L Rev at 701 (cited in note 11). Extending the analysis to capture these overlooked costs and benefits would have ambiguous effects; we do not know whether the CBA would have appeared more or less favorable to the regulation had it been more comprehensive.

⁸⁴ 54 Fed Reg at 29483–84 (cited in note 56). It also did not quantify the costs of lost jobs for workers who were employed in asbestos-related industries, which we have similarly observed to be typical of administrative agencies. See Jonathan S. Masur and Eric A. Posner, *Regulation, Unemployment, and Cost-Benefit Analysis*, 98 Va L Rev 579, 593 (2012). See also generally Jonathan S. Masur and Eric A. Posner, *Unemployment and Regulatory Policy*, in Cary Coglianese, Adam M. Finkel, and Christopher Carrigan, eds, *Does Regulation Kill Jobs?* 207 (Pennsylvania 2013).

⁸⁵ 15 USC § 2605(a)(3).

⁸⁶ 15 USC § 2605(a)(5) (permitting the agency to regulate "any manner or method of commercial use of such substance or mixture").

⁸⁷ 54 Fed Reg at 29487–89 (cited in note 56) (discussing the alternatives considered).

⁸⁸ *Corrosion Proof Fittings*, 947 F2d at 1217.

⁸⁹ See, for example, McGarity, 75 Tex L Rev at 545–47 (cited in note 81).

settling on a regulation that produces more benefits than costs. The problem here was that the EPA did not consider *a single alternative* in its CBA. It is difficult to see how the agency fulfilled its statutory mandate without performing a thorough analysis of at least one alternative mode of regulation.

Second, the EPA's decision to ignore alternatives, such as requiring workers to use protective equipment, affected the CBA's "zero regulation" baseline. In calculating the costs and benefits of regulating, the agency assumed that, in the absence of regulation, workers who came into contact with asbestos would not use available protective equipment. This had the effect of maximizing the apparent benefits of complete regulation, as compared with the baseline of zero regulation and zero workplace safety protections.⁹⁰

And yet despite the EPA's having stacked the deck in its favor, the costs of banning many asbestos-related products well outweighed the benefits, even by the EPA's own calculations. For instance, the EPA estimated that it would cost \$128.03 million to eliminate asbestos pipe, but doing so would save only 4.38 lives, for a cost of \$29.23 million per life saved.⁹¹ The EPA does not use or report a value of a statistical life (VSL) anywhere within the regulation. The Fifth Circuit did not focus on this oversight, but it is unquestionably an error—how can the agency know whether the benefits of the regulation exceed the costs without converting the two quantities into the same unit? Regardless, the \$29.23 million figure is far greater than any value that the EPA has ever

⁹⁰ See 54 Fed Reg at 29474 (cited in note 56). The Fifth Circuit declared that the agency had thus "artificially inflated" the benefits of the regulation. *Corrosion Proof Fittings*, 947 F2d at 1216–17.

⁹¹ 54 Fed Reg at 29484–85 (cited in note 56). This is the EPA's estimate of the number of fatal cancer cases avoided. As with many regulations, these benefits would have been realized only years into the future. The EPA reported its estimates of lives both undiscounted (that is, a discount rate of 0 percent) and discounted at 3 percent. *Id.* at 29485. The Fifth Circuit criticized this sharply and argued that if the EPA discounted costs, it must discount benefits as well. *Corrosion Proof Fittings*, 947 F2d at 1218. In turn, academic commentators have harshly criticized the court for requiring that the number of lives saved be discounted. This is a highly complex and technical issue, with no obvious resolution. See Richard L. Revesz, *Environmental Regulation, Cost-Benefit Analysis, and the Discounting of Human Lives*, 99 Colum L Rev 941, 977–81 (1999). See also generally Cass R. Sunstein and Arden Rowell, *On Discounting Regulatory Benefits: Risk, Money, and Intergenerational Equity*, 74 U Chi L Rev 171 (2007). For our purposes, resolving this disagreement is unnecessary. Deciding whether or not to discount benefits affects the cost-benefit calculus with respect to several of the twenty-seven products at issue, but there are still multiple products that fail a cost-benefit test even under the most generous interpretation. Here and elsewhere within the text we report the EPA's undiscounted estimate of the number of lives that would be saved in order to provide the agency with the greatest possible benefit of the doubt.

used. In 1984, five years before the asbestos regulation, the EPA used a VSL of \$4.6 million;⁹² in 1997, it used a value of \$5.75 million;⁹³ and the current EPA VSL is \$7.4 million.⁹⁴ If the EPA had used a VSL of \$5.75 million, it would have found that the ban on asbestos pipe produced benefits of only \$25.19 million, and thus costs that were more than \$100 million greater than the benefits.

Similarly, the EPA estimated that its ban on asbestos shingles would save 0.32 lives at a cost of \$23.57 million, or \$73.66 million per life.⁹⁵ At a VSL of \$5.75 million, this product ban would produce costs that exceed benefits by more than \$20 million. The EPA also estimated that its ban on asbestos coatings (for roofs and other surfaces) would save 3.33 lives at a cost of \$46.29 million, or \$13.3 million per life.⁹⁶ With the VSL set at \$5.75 million, this part of the regulation was expected to produce costs that exceeded benefits by roughly \$27 million. It is difficult to imagine the modern EPA, which incorporates VSL figures into its CBAs, making such mistakes.⁹⁷

The Fifth Circuit, drawing on case law from the DC Circuit and the Supreme Court, held that the statute's requirement that a risk be "unreasonable" explicitly called for cost-benefit balancing: a risk was "unreasonable" and thus subject to regulation only if the benefits of eliminating that risk exceeded the costs.⁹⁸ The court thus concluded that the EPA had acted outside of its statutory authority by regulating products that did not pose unreasonable harms.

Academic commentators who are otherwise hostile to CBA have criticized the court on this point, arguing that it improperly substituted its judgment for the agency's. As a matter of policy,

⁹² *Mortality Risk Valuation* (EPA), archived at <http://perma.cc/24QZ-GRNT>. The EPA reports this value in 2001 dollars. We report it here undiscounted again in order to provide the EPA with the benefit of the doubt.

⁹³ Environmental Protection Agency, *Economic Analysis for the National Emission Standards for Hazardous Air Pollutants for Source Category; Pulp and Paper Production; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards: Pulp, Paper, and Paperboard Category—Phase 1* *8–12 (Oct 27, 1997), archived at <http://perma.cc/HD8W-C5RP> ("Pulp and Paper Analysis"). Here, the EPA utilized a range of \$2.5 million to \$9.0 million in 1995 dollars. We report the median figure, again undiscounted.

⁹⁴ *Mortality Risk Valuation* (cited in note 92). The EPA reports this value in 2006 dollars.

⁹⁵ 54 Fed Reg at 29484–85 (cited in note 56).

⁹⁶ *Id.*

⁹⁷ See, for example, Pulp and Paper Analysis at *8–12 (cited in note 93) (employing a VSL figure to calculate the benefits of regulating pulp and paper producers).

⁹⁸ *Corrosion Proof Fittings*, 947 F2d at 1222.

that criticism is misplaced—the Fifth Circuit was right to reject the parts of the regulation that did not pass a cost-benefit test. As a matter of law, it is certainly possible to quarrel with the Fifth Circuit’s interpretation of “unreasonable” even though that word is often understood in other legal contexts, such as tort law, to require balancing the benefits and costs of precautions. But this is unimportant to our ultimate point, which is the court’s evaluation of the EPA’s CBA. The Fifth Circuit may have been tougher on the EPA than the statute required, but it hardly lacked the capacity to check the agency’s work.

The EPA’s final mistake was its failure to account for the fact that substitute nonasbestos products might carry their own risks to health and safety. If substitutes for asbestos will also lead to loss of life, those lives should be offset from the benefits (in lives saved) of the asbestos ban. Yet the EPA failed to perform this necessary step for several products for which the substitutes presented nontrivial risks to life. For instance, the EPA had “credible evidence ‘that a ban on asbestos use in the aftermarket for brake systems designed for asbestos friction products will compromise the performance of braking systems designed for asbestos brakes’” yet failed to account for the possible additional lives lost if brakes failed.⁹⁹ Similarly, the EPA acknowledged that PVC pipe, the most widely used substitute for asbestos pipe, *also* caused cancer among the workers who manufactured it, perhaps even to the same extent as asbestos pipe.¹⁰⁰ Nonetheless, it maintained (against evidence) that this cancer threat was likely overstated and did not factor it into the CBA.¹⁰¹ Here, again, critics have faulted the Fifth Circuit for its “overly” searching review. But even on the EPA’s own terms, it makes no sense to replace one unreasonable risk with another. The agency was wrong to regulate without evaluating the full effects of its regulation, not merely the benefits of eliminating one type of product in isolation.

To be sure, many of the asbestos product bans would likely have produced benefits in excess of costs—though it is difficult to be certain without a full evaluation of the benefits and costs of substitutes. For instance, the agency found that the ban on asbestos brakes for new automobiles would save 19.68 lives at a cost of \$12.97 million, or roughly \$660,000 per life saved.¹⁰² On the

⁹⁹ Id at 1225, citing 54 Fed Reg at 29494 (cited in note 56).

¹⁰⁰ See 54 Fed Reg at 29497 (cited in note 56).

¹⁰¹ Id at 29498.

¹⁰² Id at 29484–85.

whole, the EPA calculated that its regulation would save 202 lives at a cost of \$458.89 million, or \$2.27 million per life saved.¹⁰³ Nevertheless, the fact that some of the product bans were reasonable did not, and should not, insulate the others from review, particularly given that it was fully within the EPA's control to decide which products to regulate. The agency originally considered regulating thirty-seven possible products and eventually selected twenty-seven of them.¹⁰⁴ It should have selected fewer.

3. Lessons.

Corrosion Proof Fittings does not support the argument of its critics that generalist courts lack the capacity to review the work of technocratic agencies. On most technical points, the court got it right and the agency got it wrong. The court did not second-guess the agency's economic models or the peer-reviewed research the agency relied on, nor should it have. The court relied instead on simple logic and even simpler arithmetic, which are hardly foreign to even the most generalist judges. No specialized training in science or economics was required.

If the Fifth Circuit went too far, it was in demanding formal CBA when the law (as best understood in 1991) did not obviously require it. In this respect, the Fifth Circuit might have been prescient, as we explain in Part III. But even if the court was not, these were errors of law, not errors in evaluating the agency's CBA. In a similar vein, some commentators have criticized the Fifth Circuit's choice of remedy, arguing (for instance) that the court should have remanded the regulation to the EPA but let it remain in force in the interim, rather than vacating it.¹⁰⁵ The court did not have the authority to strike down some aspects of the regulation while letting others stand, as courts sometimes do with statutes. Here, it was all or nothing. Perhaps the court would have been better advised to allow the regulation to stand while the EPA improved it on remand. But the choice of remedy again has nothing to do with the court's competence to review the EPA's

¹⁰³ Id at 29468. Of course, the Fifth Circuit did not criticize these aspects of the regulation—about the ban on brakes, it wrote that “the EPA did the most impressive job in this area, both in conducting its studies and in supporting its contention that banning asbestos products would save” many lives. *Corrosion Proof Fittings*, 947 F2d at 1224.

¹⁰⁴ See Environmental Protection Agency, *Regulatory Impact Analysis of Controls on Asbestos and Asbestos Products: Volume I* ES-3 (Jan 19, 1989), archived at <http://perma.cc/23HF-2RQE>.

¹⁰⁵ See, for example, Sunstein, *The Cost-Benefit State* at 122 n 2 (cited in note 37).

CBA, which is the issue that concerns us. On that score, the Fifth Circuit's much-maligned opinion in *Corrosion Proof Fittings* is grounds for confidence.

B. *Business Roundtable*

1. The regulation, the court decision, and the academic response.

Corporate voting takes place at shareholder meetings, but because few shareholders attend the meetings, they are allowed to vote "by proxy." The corporation sends a proxy ballot to the mailing addresses of all shareholders. Shareholders who wish to vote fill out the ballot and mail it back to the corporation. (Proxy voting can also occur via the internet.) Their votes are then registered during the shareholder meeting. Because the corporation designs the proxy ballot (subject to various legal constraints, including disclosure requirements), the corporation can decide whose names are placed on the ballot for director positions.¹⁰⁶ Corporations typically include only the names of incumbents or replacements who are endorsed by the incumbents.¹⁰⁷ When the SEC began considering the proxy access rule, corporations were not required to include the names of "dissidents" nominated by shareholders, and rarely did.¹⁰⁸ In order to elect dissidents, shareholders who supported them were required to prepare their own proxy ballots and mail them directly to shareholders.¹⁰⁹ This was an expensive and time-consuming process that only the largest and most sophisticated shareholders could afford. Critics of the system argued that corporations should be required to give "proxy access" to shareholders, or some of them, so that dissidents would be placed on the proxy ballot mailed by the corporation to shareholders.¹¹⁰

The SEC undertook notice-and-comment rulemaking and ultimately issued Rule 14a-11 in 2010.¹¹¹ The rule was intended to

¹⁰⁶ *Business Roundtable*, 647 F3d at 1146–47.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.* at 1147.

¹⁰⁹ *Id.* at 1152.

¹¹⁰ See, for example, Lucian A. Bebchuk and Scott Hirst, *Private Ordering and the Proxy Access Database*, 65 *Bus Law* 329, 336 (2010); Bo Becker, Daniel Bergstresser, and Guhan Subramanian, *Does Shareholder Proxy Access Improve Firm Value? Evidence from the Business Roundtable's Challenge*, 56 *J L & Econ* 127, 154 (2013).

¹¹¹ Securities and Exchange Commission, *Facilitating Shareholder Director Nominations*, 75 *Fed Reg* 56668, 56677–78 (2010), amending 17 *CFR* Parts 200, 232, 240, 249.

improve corporate governance, and hence the value of the corporate form, by reducing the cost of electing “dissident” directors who were not supported by the leaders of a corporation. The final rule provided that a corporation must include information about a shareholder nominee in the proxy materials and put the nominee’s name on the proxy ballot if the nominee is nominated by a shareholder or group of shareholders who have held at least 3 percent of the voting power of the corporation for at least three years. If more than one shareholder or group of shareholders is eligible, then only the person or group with the largest voting power may take advantage of the proxy access rule. Various other limits and procedural requirements were also imposed.

The DC Circuit struck down Rule 14a-11 in *Business Roundtable*.¹¹² The legal bases for its holding were the APA, which bars “arbitrary” and “capricious” rulemaking,¹¹³ and the Securities Exchange Act of 1934¹¹⁴ (“Exchange Act”) and the Investment Company Act of 1940,¹¹⁵ which require the SEC to take account of “efficiency, competition, and capital formation” when issuing a new rule.¹¹⁶ The court interpreted these provisions as requiring the SEC to show that Rule 14a-11 passed a cost-benefit test, and held that the SEC’s CBA was defective.

The court found numerous errors in the SEC’s CBA. First, the SEC failed to “estimate and quantify” the costs that result when companies oppose shareholder nominees in election contests, and failed to state in the alternative that these costs could not be estimated.¹¹⁷ Second, the SEC relied on “insufficient empirical data” for its conclusion that Rule 14a-11 would, by increasing the likelihood that dissidents would sit on corporate boards, improve the performance of corporations. The studies on which the SEC relied provided only “mixed” support.¹¹⁸ Third, the SEC discounted the costs of the rule by improperly assuming that the board and management would not be distracted by election contests because they were required by state law to allow them in any event, ignoring the fact that Rule 14a-11 may make these battles more common.¹¹⁹ Fourth, the SEC disregarded the risk

¹¹² *Business Roundtable*, 647 F3d at 1156.

¹¹³ 5 USC § 706(2)(A).

¹¹⁴ 48 Stat 881, codified at 15 USC § 78a et seq.

¹¹⁵ 54 Stat 789, codified at 15 USC § 80a-1 et seq.

¹¹⁶ 15 USC §§ 78c(f), 80a-2(c).

¹¹⁷ *Business Roundtable*, 647 F3d at 1150.

¹¹⁸ Id at 1150–51, quoting 75 Fed Reg at 56761 (cited in note 111).

¹¹⁹ *Business Roundtable*, 647 F3d at 1151.

that Rule 14a-11 would enable “[s]hareholders with [s]pecial [i]nterests”—unions and pension funds—to use their voting power to achieve goals unrelated to shareholder value, such as higher wages.¹²⁰ Fifth, the SEC failed to properly estimate the incremental effect of Rule 14a-11 on the number of election contests and frequency of nominations relative to the status quo.¹²¹ Finally, the SEC ignored the special circumstances of investment companies, which are subject to independent regulatory requirements that may reduce the benefits of shareholder nominations.¹²²

The academic response was swift and furious. Scholars argued that the court disregarded the law, which had never required the SEC to show that its regulations passed a formal CBA.¹²³ Many earlier judicial opinions had deferred to the SEC on a range of issues—including its evaluation of empirical studies. Administrative law imposes numerous procedural requirements on agencies like the SEC—requirements that they give notice, that they explain their decisions, and so on—and the court did not identify a significant failure to comply with any of these requirements. Moreover, scholars argued that the court mishandled the studies—giving weight to a literature survey conducted by experts hired by the petitioners while dismissing high-quality peer-reviewed articles that lent support to the SEC’s position.¹²⁴

2. The CBA and its problems.

The SEC reported a CBA in the materials accompanying the proposed rule, and then updated it in light of comments. The latter document, which we focus on, accompanies the final rule. The

¹²⁰ Id at 1151–52.

¹²¹ Id at 1153–54.

¹²² Id at 1154.

¹²³ The critical literature on *Business Roundtable* is too large to cite. We counted twenty-five articles that explicitly attack the opinion in the text; dozens of others make critical comments in footnotes. The articles make similar arguments. See generally, for example, Grant M. Hayden and Matthew T. Bodie, *The Bizarre Law and Economics of Business Roundtable v. SEC*, 38 J Corp L 101 (2012); James D. Cox and Benjamin J.C. Baucom, *The Emperor Has No Clothes: Confronting the D.C. Circuit’s Usurpation of SEC Rulemaking Authority*, 90 Tex L Rev 1811 (2012). See also, for example, Michael E. Murphy, *The SEC and the District of Columbia Circuit: The Emergency of a Distinct Standard of Judicial Review*, 7 Va L & Bus Rev 125, 159–66 (2012). For a rare defense, see Garrett F. Bishop and Michael A. Coffee, *A Tale of Two Commissions: A Compendium of the Cost-Benefit Analysis Requirements Faced by the SEC & CFTC*, 32 Rev Bank & Fin L 565, 621–24 (2013).

¹²⁴ See, for example, Hayden and Bodie, 38 J Corp L at 121–23 (cited in 123).

CBA is seriously deficient. It does not adequately quantify either the benefits or the costs of the rule.

In the CBA, the SEC identifies four categories of benefit: (1) facilitating shareholders' ability to nominate and elect directors; (2) creating a "minimum uniform procedure" for voting; (3) "potentially" improving board and company performance; and (4) creating more informed voting.¹²⁵ However, the only benefit the SEC quantifies is the cost savings for shareholders, who on average save \$18,000 per election contest in avoided printing and postage costs.¹²⁶

Moreover, as the SEC seems to acknowledge, the key question is not the (*de minimis*) postage and printing cost savings, but the effect of the rule on corporate performance.¹²⁷ To evaluate this question, the SEC would need to quantify three key variables: the rule's effect on the probability that shareholders will nominate dissidents; its effect on the probability that the dissidents will be elected; and the effect of the dissident's occupation of a board seat on the corporation's behavior and ultimately its profits. It quantifies none of these variables.

For the first, the SEC argues that the proxy rule increases the probability that dissidents will be nominated because the cost savings encourage shareholders to nominate directors in the first place.¹²⁸ But while simple economics suggests that if the cost of nomination declines, the frequency of nomination will increase, the minimal cost savings mean that the change in frequency will also be minimal. For the rule to have beneficial effects, the dissident nominee must also be elected—and presumably that will occur less than 100 percent of the time because other shareholders may prefer to vote for management nominees.

With respect to the second, the SEC does not estimate the probability that dissident nominees will be elected. A typical large shareholder of a large public corporation rarely owns more than 5 to 7 percent of the firm. The shareholder will be outvoted unless it can convince other shareholders to join it. This probability might be small, even tiny.

The third question is whether a corporation that includes a dissident on its board will make higher profits than a corporation that lacks such a dissident. An initial concern is that the dissident

¹²⁵ 75 Fed Reg at 56755 (cited in note 111).

¹²⁶ *Id.* at 56756.

¹²⁷ *Id.* at 56760.

¹²⁸ *Id.* at 56757.

will always be outvoted by the incumbents and will otherwise not exert much influence on corporate decisions. However, it is also possible that incumbent directors will work harder and display greater loyalty to shareholders because they fear the greater chance of being replaced by dissidents. The SEC cites academic papers that it says support this position, but the two major studies it relies on provide no real evidence in support. One study, by Chris Cernich and colleagues, claims that firms with hybrid boards outperform those that do not, but it does not include a statistical test of the data it relies on.¹²⁹ The other, by Professors J. Harold Mulherin and Annette B. Poulsen, is statistically rigorous but focused on a different question. The authors show that firms that face proxy contests gain more value than a control group of firms that do not, but their study does not test the relevant hypothesis that lowering the cost of proxy contests increases the value of corporations.¹³⁰ Moreover, because proxy contests are most likely to occur at the most poorly managed corporations, the positive effect they find reflects variation in management and so does not reflect the benefits (or costs) for firms with better management.¹³¹ In any event, the SEC does not estimate the effect of Rule 14a-11 on corporate performance; it merely says that it is positive.

The SEC examines three categories of potential costs: possible adverse effects on company performance; additional complexity; and the costs of preparing, printing, and mailing additional proxy materials. It acknowledges all of these possible costs but

¹²⁹ See generally Chris Cernich, et al, *Effectiveness of Hybrid Boards* (IRRC Institute, May 2009), archived at <http://perma.cc/NX74-R5G8>.

¹³⁰ See generally J. Harold Mulherin and Annette B. Poulsen, *Proxy Contests and Corporate Change: Implications for Shareholder Wealth*, 47 J Fin Econ 279 (1998).

¹³¹ As the SEC acknowledges. See 75 Fed Reg at 56762 n 921 (cited in note 111). The empirical literature on corporate governance provides mixed evidence that extending the “shareholder franchise,” that is, making it easier for shareholders to vote, increases the value of corporations. Compare generally David Yermack, *Shareholder Voting and Corporate Governance*, 2 Ann Rev Fin Econ 103 (2010); Jonathan M. Karpoff, Paul H. Malatesta, and Ralph A. Walkling, *Corporate Governance and Shareholder Initiatives: Empirical Evidence*, 42 J Fin Econ 365 (1996); and John G. Matsusaka, *Why Do Managers Fight Shareholder Proposals? Evidence from No-Action Letter Decisions* (Harvard Law School Forum on Corporate Governance and Financial Regulation, Jan 20, 2017), archived at <http://perma.cc/8UEY-3UFH>, with Vicente Cuñat, Mireia Gine, and Maria Guadalupe, *The Vote Is Cast: The Effect of Corporate Governance on Shareholder Value* (NBER Working Paper No 16574, Dec 2010), archived at <http://perma.cc/8VCE-EVRC>; and Vicente Cuñat, Mireia Gine, and Maria Guadalupe, *Corporate Governance and Value: Evidence from “Close Calls” on Shareholder Governance Proposals*, 25 J Applied Corp Fin 44 (Winter 2013).

addresses only the third category in quantitative terms.¹³² In a confusing passage, the SEC makes various estimates of the costs in time and money for companies (and in some cases, shareholders) to make relevant disclosures, evaluate proposals for their legal compliance, print and mail proxy materials, and fight against a shareholder nominee.¹³³ However, in some cases it is unclear whether the SEC agreed with commentators' estimates, and in any event, it does not conclude with a formal aggregate estimate.

The SEC's CBA was plainly inadequate. Because it did not include estimates of (quantified) aggregate costs and benefits, it did not provide a basis for the conclusion that the rule was efficient. The court properly struck down the rule on cost-benefit grounds.

What should the SEC have done? The major question is whether Rule 14a-11 would improve the value of corporations by more than the cost of compliance. On the benefit side, proxy access will improve the value of a corporation if, by improving corporate governance, it reduces the cost of capital. To evaluate the prospect for such improvement, two questions must be answered. First, how many firms—and what kind of firms—are likely to add dissident directors as a result of the proxy access rule? Second, to what extent will dissident directors affect the performance of a firm?

We suspect that the major obstacle to the rule is that it is implausible that, by reducing the cost of nominating a director by \$18,000, the rule would produce more than a trivial likelihood that dissidents will be nominated and elected over the baseline. This amount of money is pocket change for shareholders who own 3 percent of a large firm. If they expect to gain financially from the election of a dissident, this amount of money will not show up on the radar screen. And if the increased likelihood of election of a dissident director is trivial, then the overall effect of the rule will be trivial as well. While the SEC cites a study that suggested that proxy contests (but not necessarily contests involving dissident nominees) increase firm value, it does not derive an estimate of this benefit for use as an input in the CBA of the proxy access rule.¹³⁴ It matters to the CBA whether the improvement in corporate performance is great or small. Finally, the academic literature does not provide much support for the SEC's claim that large shareholders cause firms to maximize profits rather than serve

¹³² See 75 Fed Reg at 56764–70 (cited in note 111).

¹³³ *Id.* at 56669–70.

¹³⁴ *Id.* at 56762.

those shareholders' private interests.¹³⁵ Theory suggests that the shareholder has a weak incentive to maximize profits because most of the gains accrue to other shareholders.

The best argument for the SEC is that the cost of complying with the rule is likely small. The only clearly identifiable costs are the printing and mailing costs, which are very small. Indeed, they are likely to be zero or even negative in aggregate given that the rule transfers the burden from the shareholder to the corporation, which must merely augment the proxy materials, unlike the shareholder who must produce a separate mailing.

A more difficult question is how to estimate the cost of proxy battles that erupt when the corporation takes steps to fight the dissident nominee. We think that the best approach would have been to survey corporations and ask how much they have spent in these cases. Some commentators claimed costs as high as \$14 million.¹³⁶ While the SEC may have been justified in disregarding these numbers—which may have been unrepresentative or self-serving—it should have used a rigorous method to estimate costs.

Finally, the SEC should have addressed the argument that the proxy access rule would have been exploited by labor unions and pension plans to push through dissident directors uninterested in maximizing corporate profits. Here, we suspect that the SEC was right to reject this argument, though it should have explained why. If, as we suggest above, the incremental savings of \$18,000 will increase the probability of a dissident election by only a trivial amount, and if a dissident director will normally be outvoted, especially if it is true that he or she will try to transfer corporate resources to a favored constituency, then the harm done would be insignificant. But this argument implies that the benefits of the rule are low as well, and so if it is sound, the rule would probably still fail a CBA.

3. Lessons.

The reason that the court in *Business Roundtable* acted rightly in striking down the proxy access rule is not that the rule was obviously a bad one but that the SEC failed to supply an adequate CBA. The SEC's CBA was inadequate because it did not calculate aggregate benefits and costs in quantified form. If the

¹³⁵ Id at 56766.

¹³⁶ 75 Fed Reg at 56770 (cited in note 111).

court had upheld the rule, the SEC would have been given no incentive to take CBA seriously. There is also strong evidence that, as a result of *Business Roundtable*, the SEC has significantly improved its CBAs.¹³⁷

The case would have been a great deal more difficult if the SEC had supplied estimates of the benefits and the costs derived from the studies that it cited. If it had conducted the surveys that we suggest, the petitioners would have attacked the quality of those surveys, and the court would have been required to evaluate them. We believe that the regulator should be given the benefit of the doubt when it interprets ambiguous survey results or must reconcile inconsistent findings of high-quality studies performed by academics or government researchers. It is possible, as some commentators argue, that the DC Circuit signaled that the SEC would be required to satisfy unrealistic standards, and, if so, it should be criticized. But because the SEC omitted the relevant cost and benefit estimates, the court's ruling was correct, and we are left without information as to whether the court would have approved a higher-quality CBA.

C. A Broader Perspective

The critics of *Corrosion Proof Fittings* and *Business Roundtable* have much to say about law and precedent but do not come to grips with the real driver of the cases: the CBAs of the EPA and SEC were shoddy. The courts were right to insist that if the EPA and SEC use CBA, then they should use it properly. The most significant errors of the EPA were its failure to monetize benefits, its insistence on banning products when the costs exceeded the benefits, and its failure to consider the costs of alternatives. In the case of the SEC, the failure to quantify the major benefits and costs of the regulation was decisive. As a result of the cases, both agencies have improved the quality of their CBAs.¹³⁸

¹³⁷ See Jerry Ellig, *Improvements in SEC Economic Analysis since Business Roundtable: A Structured Assessment* *2 (Mercatus Center Working Paper, Dec 2016), archived at <http://perma.cc/FFY2-CGBS> ("Although substantial room for improvement still exists, the court decisions appear to have motivated the SEC, in just a few years, to close the gap between the quality of its economic analysis and the average quality of economic analysis produced by executive branch agencies.")

¹³⁸ For information on the SEC, see *id.* See also Masur and Posner, 102 *Cornell L Rev* at 100–18 (cited in note 1). In the latter paper, we examine the CBAs accompanying every major regulation promulgated from 2010–2013. We criticize them for omitting relevant benefits (and sometimes costs), but we did not observe a single CBA that was as poorly executed as the CBA in *Corrosion Proof Fittings*.

What accounts for the criticism of these cases? Both judicial opinions included some questionable reasoning. The Fifth Circuit seemed to imply that it would keep striking down EPA regulations until the EPA chose the single socially optimal regulation. We can see why commentators might worry that the EPA would never be able to satisfy this standard, and so if the court were taken literally, regulation would become impossible or enormously difficult. However, the commentators read too much into the opinion. Once the court satisfied itself that the CBA was inadequate, it was obviously tempted—perhaps reasonably so—to identify all the problems that it saw with the EPA’s reasoning so that the EPA would not repeat these mistakes the next time around. The court did not say that any one of these problems, taken on its own, would have been fatal to the regulation. Moreover, whether or not the Fifth Circuit erred in demanding too much of the agency, it demonstrated that it was capable of reviewing the EPA’s analysis.

The DC Circuit also said more than it needed to in *Business Roundtable*. Commentators leapt on a brief passage in which the Court appeared to rely on a report prepared by the petitioners’ experts while disregarding a peer-reviewed study.¹³⁹ We agree that the Court should have given more attention to the academic study and less attention to the expert report. That said, the study did not support the regulation, while the expert report seems to have adequately summarized the literature. Given that the SEC did not quantify the relevant benefits and costs, the Court’s error was of no significance.

Commentators also argued that both courts disregarded precedents and misinterpreted statutes. Their argument boils down to the claim that the APA commands courts to be “deferential” and that the two panels did not defer to the judgments of the regulators.¹⁴⁰ The problem with this argument is that the APA makes no such command: it is entirely ambiguous. The Supreme Court and the lower courts have from time to time in dicta announced that courts should “defer” to the judgments of agencies, but this requirement has always been empty.¹⁴¹ It, at most, rules out the

¹³⁹ See, for example, Hayden and Bodie, 38 J Corp L at 121 (cited in note 123), citing *Business Roundtable*, 647 F3d at 1150–51.

¹⁴⁰ See, for example, David Zaring, *More on the DC Circuit’s Proxy Access Decision* (The Conglomerate, Aug 4, 2011), archived at <http://perma.cc/G5R3-VKY4>.

¹⁴¹ Compare generally Miles and Sunstein, 75 U Chi L Rev 761 (cited in note 5) (describing the many cases in which courts strike down regulations for surprising reasons),

extreme end of the spectrum—the “high” or de novo level of review. In the cases themselves, the rulings are all over the place: sometimes courts strike down regulations based on seemingly minor disagreements with regulators, at other times they uphold regulations even after expressing doubts about major determinations by the regulators.¹⁴² We are firmly of the view that there is no way to derive a “rule” from this riot of case outcomes. But you can’t prove a negative. Maybe there is, and it is invisible or has not yet been discovered.

We think that CBA offers a way out. Courts really can scrutinize CBAs in a consistent way, just as they can scrutinize whether agencies follow procedural requirements like notice and comment. While judgment calls cannot be eliminated, they can be confined to a small portion of the decision space. The courts in *Corrosion Proof Fittings* and *Business Roundtable* were the first to understand this point.

III. COST-BENEFIT ANALYSIS AND THE LAW

We see *Corrosion Proof Fittings* and *Business Roundtable* as harbingers rather than errors—harbingers of an era of enhanced judicial review of CBA. This conviction is fortified by developments in the Supreme Court. While the Supreme Court has not gone as far as the Fifth and DC Circuits, it has laid out a path in this direction. The Court has suggested that under broad conditions, agencies should conduct CBAs and regulate on the basis of those CBAs, and that courts should ensure that they do so.

A. CBA in the Supreme Court

The story begins inauspiciously for CBA. In the 2001 case *Whitman v American Trucking Associations, Inc.*,¹⁴³ the Supreme Court addressed national ambient air quality standards promulgated by the EPA under § 109 of the Clean Air Act.¹⁴⁴ That statute directs the EPA to establish “ambient air quality standards the attainment and maintenance of which in the judgment of the EPA

with Gersen and Vermeule, 114 Mich L Rev 1355 (cited in note 34) (arguing that judicial review has largely been deferential, but nonetheless highlighting multiple cases in which it has not).

¹⁴² See note 141.

¹⁴³ 531 US 457 (2001).

¹⁴⁴ See Clean Air Act, Pub L No 88-206, 77 Stat 392 (1963), codified as amended at 42 USC § 7401 et seq; Clear Air Amendments of 1970, Pub L No 91-604, 84 Stat 1676; Clear Air Act Amendments of 1977, Pub L No 95-95, 91 Stat 685.

administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health.”¹⁴⁵ Trade groups challenging EPA standards for ozone and particulate matter argued that the agency should have taken costs into account when setting air quality standards.¹⁴⁶ But the Court held that this part of the Clean Air Act did not permit the EPA to use CBA when regulating. Justice Antonin Scalia, writing for the majority, explained: “[W]e find it implausible that Congress would give to the EPA through these modest words the power to determine whether implementation costs should moderate national air quality standards.”¹⁴⁷ “The language,” the Court said, “is absolute.”¹⁴⁸

Eight years later, however, the Court took a very different approach to CBA. Section 316(b) of the Clean Water Act,¹⁴⁹ which governs thermal discharge and cooling water intake, directs the EPA administrator to promulgate regulations that “reflect the best technology available for minimizing adverse environmental impact.”¹⁵⁰ The EPA balanced costs against benefits in determining the appropriate level of regulation.¹⁵¹ In *Entergy Corp v Riverkeeper, Inc.*,¹⁵² the Court upheld the EPA regulation as a valid exercise of agency discretion under *Chevron U.S.A., Inc v National Resources Defense Council, Inc*¹⁵³ against challengers who argued that the agency should not have been permitted to use CBA.¹⁵⁴ As the Court explained,

“[B]est technology” may also describe the technology that *most efficiently* produces some good. In common parlance one could certainly use the phrase “best technology” to refer to that which produces a good at the lowest per-unit cost, even

¹⁴⁵ 42 USC § 7409(b).

¹⁴⁶ *American Trucking*, 531 US at 464–69.

¹⁴⁷ *Id* at 468.

¹⁴⁸ *Id* at 465, citing David Currie, *Air Pollution: Federal Law and Analysis* 4–15 (Callaghan 1981).

¹⁴⁹ Federal Water Pollution Control Act Amendments of 1972, Pub L No 92-500, 86 Stat 816, codified at 33 USC § 1321 et seq.

¹⁵⁰ 33 USC § 1326(b).

¹⁵¹ See generally Environmental Protection Agency, National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 69 Fed Reg 41576 (2004), amending 40 CFR Parts 9, 122–25.

¹⁵² 556 US 208 (2009).

¹⁵³ 467 US 837 (1984).

¹⁵⁴ *Entergy*, 556 US at 218–19.

if it produces a lesser quantity of that good than other available technologies.¹⁵⁵

While the Court did not hold that CBA was required—an issue that was not before the Court—the holding was of great significance. Section 316(b) instructs the EPA to minimize adverse environmental impact without regard to costs or any other economic side constraint. Language that could have been interpreted to ban CBA—especially after *American Trucking*—was instead interpreted as permissive. After *Entergy*, it seems that courts will not block an agency from using CBA, except perhaps if there is an explicit statutory prohibition.¹⁵⁶ Because the White House requires most agencies to use CBA for most regulations when statutes allow them,¹⁵⁷ *Entergy* means that CBA is more entrenched than ever.

Why did the Court undergo an about-face after *American Trucking*? We do not know the answer, but a possible explanation is that it has realized that CBA is a routine rather than exceptional practice for agencies, and a good one at that. This recognition seems to be shared by all of the ideological positions on the Court. The dissenters in *Entergy* said that another provision of the Clean Water Act—§ 301(b), which requires that the EPA mandate “the best practicable control technology”¹⁵⁸ and directs the agency to consider “the total cost of application of technology in relation to the effluent reduction benefits to be achieved”¹⁵⁹—required (rather than merely permitted) the agency to use CBA despite the ambiguity of the language.¹⁶⁰

The Court adopted a similar approach five years later in *Environmental Protection Agency v EME Homer City Generation, LP*.¹⁶¹ That case concerned the EPA’s interpretation of a section of the Clean Air Act that prohibited states from emitting pollutants

¹⁵⁵ Id at 218.

¹⁵⁶ See John D. Graham and Paul R. Noe, *A Paradigm Shift in the Cost-Benefit State* (Regulatory Review, Apr 26, 2016), archived at <http://perma.cc/P89W-CT4P> (describing *Entergy* as having “nullified” the “ostensible presumption against cost-benefit balancing”). This view is further supported by a subsequent case, *Environmental Protection Agency v EME Homer City Generation, LP*, 134 S Ct 1584 (2014).

¹⁵⁷ See Executive Order 12866 (1993), 3 CFR 638; *Circular A-4: Regulatory Analysis*, OMB, Sept 17, 2003), archived at <http://perma.cc/VFU5-629N>.

¹⁵⁸ 33 USC § 1311(b)(1)(A).

¹⁵⁹ 33 USC § 1314(b)(1)(B).

¹⁶⁰ *Entergy*, 556 US at 242 (Stevens dissenting).

¹⁶¹ 134 S Ct 1584 (2014). See also Cecot and Viscusi, 22 Geo Mason L Rev at 586–87 (cited in note 12).

that would travel across state lines and “contribute significantly” to air quality problems in other states.¹⁶² The EPA elected to interpret this provision of the statute as incorporating a type of cost-benefit balancing, despite the fact that it is silent as to costs and benefits. The Supreme Court upheld the EPA’s decision as permissible under *Chevron*. Wrote the Court, “The Agency has chosen, sensibly in our view, to reduce the amount easier, *i.e.*, less costly, to eradicate, and nothing in the text of the Good Neighbor Provision precludes that choice.”¹⁶³ This case is further evidence of the extent to which CBA has come to transcend ideology: Justice Ruth Bader Ginsburg, one of the dissenters in *Entergy*, wrote the majority opinion in *EME Homer City*.

In 2015, the Supreme Court took one step further. Section 112 of the Clean Air Act, which governs regulation of certain hazardous air pollutants, instructs the EPA to regulate airborne emissions from power plants if it believes that regulation is “appropriate and necessary.”¹⁶⁴ In the course of defending a regulation governing mercury emissions, the EPA argued that it need not take costs into account when deciding whether the regulation was “appropriate and necessary.”¹⁶⁵ The Supreme Court rejected that view, *Chevron* notwithstanding. The Court held:

The Agency must consider cost—including, most importantly, cost of compliance—before deciding whether regulation is appropriate and necessary. We need not and do not hold that the law unambiguously required the Agency, when making this preliminary estimate, to conduct a formal cost-benefit analysis in which each advantage and disadvantage is assigned a monetary value.¹⁶⁶

What does it mean to require an agency to take into account “cost” but not to conduct a “formal” CBA? It is not clear, but there is reason to believe that the Court thinks—or will soon think—that a formal CBA is required as well.¹⁶⁷ The Court did not reach

¹⁶² 42 USC § 7410(a)(2)(D)(i)(I).

¹⁶³ *EME Homer City*, 134 S Ct at 1607.

¹⁶⁴ 42 USC § 7412(n)(1)(A).

¹⁶⁵ *Michigan v Environmental Protection Agency*, 135 S Ct 2699, 2705 (2015) (“*Michigan v EPA*”).

¹⁶⁶ *Id* at 2711.

¹⁶⁷ But see generally Amy Sinden, *A ‘Cost-Benefit State’? Reports of Its Birth Have Been Greatly Exaggerated*, 46 *Envir L Rptr* 10933 (2016). The Supreme Court’s posture is also in contrast to the approach taken by the courts of appeals before *Michigan v EPA*. See, for example, *National Association of Manufacturers v Securities and Exchange Commission*, 748 F3d 359, 369 (DC Cir 2014) (“An agency is not required ‘to measure the

the question of whether a full CBA was mandated only because the EPA had taken the extreme position that it need not consider costs at all. In addition, the Court not only said that the agency must “consider” costs, but added that “[n]o regulation is ‘appropriate’ if it does significantly more harm than good.”¹⁶⁸

Professor Vermeule has suggested that the Court required only that agencies “consider” costs (in some fashion) and stopped short of requiring that they quantify or monetize those costs.¹⁶⁹ But determining whether a regulation “does significantly more harm than good,” as the Court demands, necessarily requires comparing the magnitudes of costs and benefits.¹⁷⁰ The only way for an agency (or court) to compare costs and benefits is to quantify them and translate them into comparable units—in effect, to monetize them. Thus, even though it does not say so explicitly, the Supreme Court has for all practical purposes created a rule that agencies must quantify and monetize costs and benefits.

Even if we are wrong and Vermeule is right, the other problem with his argument is that agencies (other than independent agencies) *are* required to conduct CBA—by the White House. And the White House normally requires that the CBA involve both quantified benefits and quantified costs.¹⁷¹ When a challenge to a regulation reaches a court, then as a practical matter—even if not as a legal matter, if Vermeule is correct—the Court will be in a position to review the agency’s assessment of costs and benefits. That leaves the question whether a court will give the agency a pass if the agency says that costs or benefits exist without quantifying them. The logic of *Michigan v Environmental Protection Agency*¹⁷² suggests that the answer is no. After all, in that case the EPA did not deny that there would be costs, only that it needed

immeasurable,’ and need not conduct a ‘rigorous, quantitative economic analysis’ unless the statute explicitly directs it to do so.”), quoting *Investment Co Institute v Commodity Futures Trading Commission*, 720 F3d 370, 379 (DC Cir 2013).

¹⁶⁸ *Michigan v EPA*, 135 S Ct at 2707.

¹⁶⁹ Adrian Vermeule, *Does Michigan v. EPA Require Cost-Benefit Analysis?* (Notice & Comment, Feb 6, 2017), archived at <http://perma.cc/KQ7R-8HAH>.

¹⁷⁰ Vermeule also seems to suggest that the Court did not require that the EPA always consider costs, only that it consider costs any time it chose to consider benefits. *Id.* (“The Court’s main point, then, was simply that the agency would have to consider both benefits and costs, assuming it considered either.”). This argument would similarly seem to founder in the face of the Court’s insistence that “no regulation is ‘appropriate’ if it does significantly more harm than good,” *Michigan v EPA*, 135 S Ct at 2707, which necessarily demands that the agency consider both benefits and harms.

¹⁷¹ See Executive Order 12866, 3 CFR 638; *Circular A-4* (cited in note 157).

¹⁷² 135 S Ct 2699 (2015).

to quantify or consider them at the initial stage of regulation. This was unacceptable to the Court.

In principle, the EPA could comply with *Michigan v EPA* by issuing a regulation that, it explicitly admits, generates benefits of \$1 billion and costs of, say, \$1.1 billion. But we expect that a regulator would be reluctant to make such an admission; indeed, such an admission could be politically and legally fatal. It is not hard to imagine an oversight hearing in which a member of Congress screams at the agency head: “You admit the regulation will cause more costs than benefits and you issued it *anyway*?” Moreover, a judge, no matter how inclined to be deferential, could strike down a regulation for the same reason. Agencies know this. In all of our research, we have found only a handful of regulatory impact analyses in which an agency admits that the costs of a regulation exceed the benefits, and in all of those instances the agency noted that it was obligated to promulgate the regulation by statute, regardless of cost.¹⁷³ Otherwise, when agencies report quantified costs that exceed the benefits, the agencies *always* insist that unquantified benefits justify the regulation.¹⁷⁴ This critical bit of wiggle room now appears to be foreclosed by the Supreme Court as a practical (if not legal) matter.

It is important to note that the Court in *Michigan v EPA* concluded that the EPA must balance costs and benefits in the face of highly ambiguous statutory text. “Appropriate and necessary” is amenable to a broad range of statutory meanings, and it invokes cost-benefit balancing much less directly than many other regulatory statutes, such as the “best practicable control technology” provision from the Clean Water Act. For the Supreme Court to hold that a statute that nowhere mentions costs nonetheless *requires* consideration of costs—and requires that costs not significantly exceed benefits—represents a significant evolution from its position in *American Trucking*. There are a wide variety of regulatory statutes that use ambiguous language similar to “appropriate and necessary.” There are also many other statutes that use language that seems to invoke CBA even more directly. We survey and catalog some of these statutes in the Appendix.

As in the case of *Entergy*, the Court’s enthusiasm for CBA crossed partisan lines. On the issue at stake in the case, the dissenters agreed that the EPA must consider costs when regulating

¹⁷³ See, for example, Masur and Posner, 102 Cornell L Rev at 101–03 (cited in note 1).

¹⁷⁴ *Id.*

under § 112 of the Clean Air Act. The dissenters departed from the majority because they believed that the agency had in fact done so in the course of regulating.¹⁷⁵ Writing for the four dissenters, Justice Elena Kagan even took the opportunity to offer a ringing endorsement of the importance of considering costs:

Cost is almost always a relevant—and usually, a highly important—factor in regulation. Unless Congress provides otherwise, an agency acts unreasonably in establishing “a standard-setting process that ignore[s] economic considerations.” At a minimum, that is because such a process would “threaten[] to impose massive costs far in excess of any benefit.” And accounting for costs is particularly important “in an age of limited resources available to deal with grave environmental problems, where too much wasteful expenditure devoted to one problem may well mean considerably fewer resources available to deal effectively with other (perhaps more serious) problems.”¹⁷⁶

Kagan’s dissent suggests a default rule: agencies must weigh costs and benefits, at least in some fashion, absent an explicit statement to the contrary.¹⁷⁷ This position is not yet law; the *Michigan v EPA* majority does not comment on it one way or the other. But the fact that even the *Michigan v EPA* dissenters—presumably the justices who are least favorably inclined toward CBA—are willing to make such a statement is an obvious indication of the degree to which the Court now favors CBA.¹⁷⁸

¹⁷⁵ *Michigan v EPA*, 135 S Ct at 2714 (Kagan dissenting). Although we have criticized the EPA’s approach to the regulation, see Masur and Posner, 102 Cornell L Rev at 131–33 (cited in note 1), we tend to agree with Justice Elena Kagan on this point. However, it is immaterial to our broader argument regarding the Court’s endorsement of CBA.

¹⁷⁶ *Michigan v EPA*, 135 S Ct at 2716–17 (Kagan dissenting) (citations omitted).

¹⁷⁷ See Sunstein, 41 Harv Envir L Rev at 15 (cited in note 13) (describing Kagan’s opinion in similar terms).

¹⁷⁸ Lower-court decisions since *Michigan v EPA* have generally adopted similarly favorable postures toward CBA, though they have refrained from the types of decisive statements found in the *Michigan v EPA* majority and dissenting opinions. See, for example, *National Association for Surface Finishing v Environmental Protection Agency*, 795 F3d 1, 10 (DC Cir 2015) (“EPA took into account the statutorily required considerations of, *inter alia*, cost, emissions reductions, and health risk. The agency then provided a transparent, reasoned explanation of its decisions, considering all relevant information in the record.”); *Independent Pilots Association v Federal Aviation Administration*, 638 Fed Appx 6, 7 (DC Cir 2016) (“Thus, it was reasonable for the FAA to consider costs when determining whether the final rule should apply to all-cargo operations. Because the FAA adequately and reasonably considered all relevant factors, we also conclude that the FAA’s cost-benefit analysis was not arbitrary or capricious.”); *Pacific Dawn LLC v Pritzker*, 831 F3d 1166, 1178 (9th Cir 2016) (“NMFS reasonably concluded that the use of the 2003 and 2004

B. The Federal Common Law of the Administrative State

If we are right that CBA is becoming a generic, judicially imposed requirement for regulation, what is the source of law? We see three possibilities.

1. The organic statutes.

Entergy and *Michigan v EPA* tie CBA (or consideration of costs, in the latter case) to the text of the regulatory statutes at issue. This raises the inference that if a general CBA mandate exists, as we have argued, then it must be because Congress has ordered agencies to use CBA in hundreds of regulatory statutes.

If such a position were taken, then a CBA mandate would be nearly universal. Nearly all organic statutes—as far as we have been able to survey—use language that is at least as general as that in *Michigan v EPA*, and a huge number of them use language that requires considerations of cost, like the statute in *Entergy*. We provide numerous examples, with the accompanying language, in the Appendix.

Still, any claim that Congress intended for agencies to use CBA across the board is a fiction. Many statutes, such as the statute whose “appropriate and necessary” provision is at issue in *Michigan v EPA*, do not mention CBA;¹⁷⁹ the general language they use is best interpreted as exhortation to the agency that it take seriously the risks that it is required to regulate, not that it regulate those risks in any particular way.

2. The APA.

Section 706 of the APA authorizes courts to strike down regulations that are “arbitrary” and “capricious.”¹⁸⁰ Most scholars think that this level of review is highly deferential, based on the language itself, the practical limitations on generalist review of expert agencies, and the case law.¹⁸¹ By contrast, Professor Cass

end dates was consistent with National Standards 5 and 7 because the trawl rationalization program as a whole minimized costs and efficiently used fishery resources to the extent practical.”)

¹⁷⁹ 42 USC § 7412(n)(1)(A).

¹⁸⁰ 5 USC § 706(2)(A). See also Sunstein, 41 Harv Envir L Rev at 6 (cited in note 13) (“[W]henver the governing statute authorizes an agency to quantify costs and benefits and to weigh them against each other, its failure to do so requires a non-arbitrary justification.”).

¹⁸¹ See, for example, Gersen and Vermeule, 114 Mich L Rev at 1364 (cited in note 34) (arguing that arbitrary-and-capricious review has traditionally been lax).

Sunstein interprets this provision to require agencies to conduct CBA absent explicit statutory language to the contrary.¹⁸²

Sunstein's argument would make sense of a general trend in the case law that transcends the particular statutes under which agencies regulate. The APA applies to all agency regulation; if the APA requires CBA, then all agencies must conduct CBA. Sunstein also thinks the cases—including *Michigan v EPA*—support his view.¹⁸³

The problem is that none of the opinions in *Michigan v EPA* mention the APA, or even use the words “arbitrary” or “capricious.” *Entergy* similarly lacks even a single mention of the APA, or a single appearance of the words “arbitrary” or “capricious.” Even *American Trucking* mentions the APA only in relation to whether the agency action in that case is final and reviewable.¹⁸⁴ There is no mention of § 706, and the words “arbitrary” or “capricious” do not appear.¹⁸⁵ It is of course possible to construct a reasonable argument that it would be arbitrary and capricious to promulgate a regulation that does not pass a cost-benefit test.¹⁸⁶ But it is hard to see the APA as the source of the judicial momentum behind CBA without so much as a single mention of the statute.

Sunstein places significant weight on Kagan's dissent in *Michigan v EPA*, which we described above. He observes that Kagan's position on CBA does not appear tethered to the Clean Air Act or any other regulatory statute—Kagan is making broad

¹⁸² Sunstein, 41 Harv Envir L Rev at 3 (cited in note 13) (“Whenever an agency fails to calculate costs and benefits and to show that the latter justify the former, a litigant might contend that it has acted arbitrarily.”); Cass R. Sunstein and Adrian Vermeule, *Libertarian Administrative Law*, 82 U Chi L Rev 393, 440–42 (2015) (“Indeed, it would generally seem arbitrary for an agency to issue a rule that has net costs (or no net benefits), at least unless a statute requires it to do so.”); Sunstein, *The Cost-Benefit State* at 127 (cited in note 37).

¹⁸³ Sunstein, 41 Harv Envir L Rev at 14 (cited in note 13) (“In an important decision involving mercury regulation, all nine members of the Supreme Court seemed to converge on a simple principle: *Under the APA, it is arbitrary for an agency to refuse to consider costs.*”).

¹⁸⁴ *American Trucking*, 531 US at 478–80.

¹⁸⁵ In *Corrosion Proof Fittings*, the Fifth Circuit was at pains to explain that APA § 706 did not even apply to that case because Congress had mandated a different standard of review under the TSCA. *Corrosion Proof Fittings*, 947 F2d at 1213–14. Among the critical cases we discuss, only *Business Roundtable* mentions the APA, and there it is largely boilerplate recitation. *Business Roundtable*, 647 F3d at 1148.

¹⁸⁶ See, for example, Sunstein, 41 Harv Envir L Rev at 14–19 (cited in note 13) (arguing that recent cases suggest that “it might be arbitrary for an agency to fail to quantify costs and benefits”).

claims about the role of CBA in administrative regulation more generally.¹⁸⁷ Sunstein then argues that this background principle must derive from the APA.¹⁸⁸ But, like the author of the majority opinion, Kagan does not cite the APA or mention the words “arbitrary and capricious.” Instead, she cites prior Supreme Court opinions, particularly Justice Stephen Breyer’s concurrence in *Entergy*, that also do not cite or mention the APA.¹⁸⁹ There is no textual hook that connects these cases to the APA.

3. Federal common law.

While courts like to tie their decisions to statutes, we think a better explanation of the development of CBA is as a kind of (federal) common law. By this we mean judge-made law that is not necessarily tethered to the language of the APA or any other statute.¹⁹⁰ The courts have awoken to the value of CBA and have increasingly mandated it because they believe that CBA should play a role in regulation. Seen in this perspective, we can reframe Sunstein’s APA argument by interpreting the APA as a general authorization to courts to develop a common law of the administrative state, just as the Sherman Act is today understood as an authorization for courts to develop a common law of antitrust.¹⁹¹ The two statutes are equally ambiguous: they all but insist that courts develop their own standards.¹⁹² Just as the courts groped

¹⁸⁷ *Id.* at 15.

¹⁸⁸ *Id.* at 16.

¹⁸⁹ *Michigan v. EPA*, 135 S Ct at 2717 (Kagan dissenting).

¹⁹⁰ Administrative-law scholars have long accepted the proposition that much of administrative law is judge-made common law. See Kenneth Culp Davis, *Essay in Law, Administrative Common Law and the Vermont Yankee Opinion*, 1980 Utah L Rev 3, 3–7; Kenneth Culp Davis, 1 *Administrative Law Treatise* III–V (West 1st ed 1958); Cass R. Sunstein, *Factions, Self-Interest, and the APA: Four Lessons since 1946*, 72 Va L Rev 271, 271 (1986) (“Much of administrative law is common law.”); Louis L. Jaffe, *Judicial Control of Administrative Action* 328–29 (Little, Brown 1965). See also generally Gillian E. Metzger, *Embracing Administrative Common Law*, 80 Geo Wash L Rev 1293 (2012).

¹⁹¹ See *Leegin Creative Leather Products, Inc v PSKS, Inc*, 551 US 877, 899 (2007) (“From the beginning the Court has treated the Sherman Act as a common-law statute.”).

¹⁹² Vermeule has argued that courts cannot require CBA without a direct statutory mandate because doing so would run afoul of *Vermont Yankee Nuclear Power Corp v Natural Resources Defense Council, Inc*, 435 US 519 (1978). See Sunstein and Vermeule, 82 U Chi L Rev at 446 (cited in note 182); Vermeule, *Does Michigan v. EPA Require Cost-Benefit Analysis?* (cited in note 169). *Vermont Yankee* prohibits courts from devising procedural requirements beyond those outlined in the APA. But as we have argued, it is possible to view the APA itself as having authorized courts to create federal administrative common law, including requiring a CBA. Sunstein has made a similar point. See Sunstein, 41 Harv Envir L Rev at 8 (cited in note 13). Yet even if this is wrong, and Vermeule’s reading is correct, the Supreme Court does not seem to have noticed. The Supreme Court

around blindly for decades before settling on economic principles for guiding antitrust litigation, so have they finally, after much meandering, begun to settle on CBA for regulatory review. Why? It seems likely that courts have come to recognize that the technical advantages of CBA make it a good practice, not much different from keeping records, announcing deadlines, using data rather than anecdotes, using science rather than astrology, explaining decisions, and listening to criticism. The White House's support for CBA over many decades and the increasing sophistication of agencies' CBAs have probably also played a role.¹⁹³

Taking a wide view and relying on hindsight, one can see CBA as the second stage of the rationalization of American government. The first stage was the New Deal, which transferred authority from state legislatures and common-law courts to federal agencies. The agencies were staffed with experts and given broad authority to regulate in the public interest. But from an early stage the New Deal was opposed by people who feared that federal regulators would abuse their discretion. Congress grappled with this problem by imposing procedural requirements on agencies and providing for an ambiguous level of judicial review in the APA.¹⁹⁴ By the 1970s, however, it was clear that the system was unsustainable. Much regulation turned out to be ill conceived and ideologically motivated. A bipartisan deregulatory movement corrected many of the worst errors, but by the 1980s the deregulatory movement splintered into a faction that sought to turn the clock back to 1932 and a faction that sought technocratic rationalization. CBA was born amid these controversies, and it was initially considered a "conservative" decision procedure because of its association with President Reagan. Its survival across Democratic administrations has put that myth to rest.

The natural interpretation of this legal trajectory is that the three branches of government are converging on the view that

is well on its way to requiring that agencies balance costs and benefits absent explicit statutory language to the contrary. If *Vermont Yankee* prohibits this, the Court does not appear to care. Moreover, this is not the only respect in which the Court appears to be ignoring its own admonitions in *Vermont Yankee*. Administrative law is rife with common-law legal rules that do not have obvious statutory warrant. See note 190.

¹⁹³ See Jonathan S. Masur, *CBA at the PTO*, 65 Duke L J 1701, 1705 (2016) (noting that every president from Reagan to Obama has supported CBA).

¹⁹⁴ It may also have been intended to empower judges appointed by Democratic presidents to block deregulation by administrators appointed by Republican presidents, as argued by McNollgast. McNollgast, *The Political Origins of the Administrative Procedure Act*, 15 J L, Econ & Org 180, 182–83 (1999).

regulatory agencies should normally comply with CBA. As a technical matter, the courts have mostly relied on organic statutes rather than on the APA. At the level of legal theory, we think it best to describe this development as one of federal common law. But the end result is the same: cost-justified administrative law.

CONCLUSION

Corrosion Proof Fittings and *Business Roundtable* have long been criticized as egregious examples of judicial overreaching in areas of agency discretion. But the courts should be celebrated for their insight rather than condemned for their hubris. As the Supreme Court has gradually come to recognize, regulatory agencies should use CBA, and courts are capable of forcing them to. CBA is a decision *procedure*: requiring agencies to comply with this procedure is no more difficult than forcing them to comply with the procedural elements of the APA. And while CBA also requires substantive judgments—estimates of valuations—that are more difficult for courts to review, courts can nonetheless contribute to administrative rationality by correcting valuation errors that regulatory agencies commit and demanding that agencies offer explanations for their valuations that go beyond boilerplate.¹⁹⁵ This point applies just as strongly to deregulation as to regulation. If a president seeks to impose new environmental or safety regulations, he must demonstrate that they will create greater benefits than costs. And if a president wishes to dismantle existing regulations, no less is required.

¹⁹⁵ We do not think that it would be useful to state a “level” of judicial deference that is proper for review of CBAs. We have provided some examples in the text of ways that courts can correct errors, while also cautioning that courts should not substitute their own judgment for that of agencies with respect to technical issues.

APPENDIX

This appendix consists of three tables. The first summarizes statutes that explicitly reference costs. The second summarizes statutes with ambiguous language. The third summarizes statutes that reference maximal regulation.

STATUTES THAT EXPLICITLY REFERENCE COSTS

Statute	Codification	Text
Leahy-Smith America Invents Act	35 USC § 316(b)	“shall consider the effect of any such regulation on the economy”
Leahy-Smith America Invents Act	35 USC § 41 note	“the specific rationale and purpose for the proposal, including the possible expectations or benefits resulting from the proposed change”
Clean Air Act	42 USC § 7412(d)(2)	“require the maximum degree of reduction in emissions of the hazardous air pollutants . . . that the Administrator, taking into consideration the cost of achieving such emission reduction . . . determines is achievable”
Clean Air Act	42 USC §§ 7475(a)(4), 7479(3)	“best available control technology” defined as “the maximum degree of reduction . . . which the [EPA] . . . taking into account energy, environmental, and economic impacts and other costs, determines is achievable”

Clean Air Act	42 USC § 7411(a)(1)	“best system of emission reduction which (taking into account the cost of achieving such reduction . . .) the Administrator determines has been adequately demonstrated” ¹⁹⁶
Clean Water Act	33 USC § 1316(a)(1), (b)(1)(B)	“best available demonstrated control technology” . . . “tak[ing] into consideration the cost of achieving such effluent reduction”
Clean Water Act	33 USC §§ 1311(b)(2)(A)(i), 1314 (b)(2)(B)	“best available technology economically achievable” while considering “the cost of achieving such effluent reduction”
Clean Water Act	33 USC §§ 1311(b)(2)(E), 1314(b)(4)(B)	“best conventional pollutant control technology” considering “the reasonableness of the relationship between the costs of attaining a reduction in effluents and the effluent reduction benefits derived”
Clean Water Act	33 USC §§ 1311(b)(1)(A), 1314(b)(1)(B)	“best practicable control technology” considering “the total cost of application of technology in relation to the effluent reduction benefits to be achieved” ¹⁹⁷
Commodity Exchange Act	7 USC § 19(a)	“the Commission shall consider the costs and benefits of the action of the Commission”

¹⁹⁶ This is the section of the statute under which the Obama administration promulgated the Clean Power Plan, which regulates the emission of greenhouse gases. Environmental Protection Agency, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed Reg 64661, 64710 (2015), amending 40 CFR Part 60. And it is the statute under which the next administration is attempting to repeal the Clean Power Plan by regulation. See 82 Fed Reg at 48037 (cited in note 4).

¹⁹⁷ This is the section of the Clean Water Act that the dissenting justices in *Entergy*—Justices Stevens, Souter, and Ginsburg—agreed “specified that the EPA was to conduct a cost-benefit analysis.” *Entergy*, 556 US at 241–43 (Stevens dissenting).

Consumer Product Safety Act	15 USC § 2058(f)(2)(A)	“A description of the potential benefits and potential costs of the rule, including costs and benefits that cannot be quantified in monetary terms, and the identification of those likely to receive the benefits and bear the costs”
Dodd-Frank Act	12 USC § 5512(b)(2)	“In prescribing a rule . . . the Bureau shall consider the potential benefits and costs to consumers and covered persons”
Prison Rape Elimination Act of 2003	34 USC § 30307(a)(3)	“The Attorney General shall not establish a national standard under this section that would impose substantial additional costs compared to the costs presently expended by Federal, State, and local prison authorities”
Riegle Community Development and Regulatory Improvement Act of 1994	12 USC § 4802(a)	“each Federal banking agency shall consider . . . any administrative burdens that such regulations would place on depository institutions . . . and . . . the benefits of such regulations”

STATUTES WITH AMBIGUOUS LANGUAGE

Statute	Codification	Text
Agricultural Marketing Act of 1946	7 USC § 1624(b)	“The Secretary of Agriculture shall promulgate such orders, rules, and regulations as he deems necessary”
Clean Air Act	42 USC § 7409(b)(1)	“requisite to protect the public health” ¹⁹⁸

¹⁹⁸ This is the statutory section at issue in *American Trucking*, 531 US 457.

Clean Air Act	42 USC § 7412(n)(1)(A)	“appropriate and necessary” ¹⁹⁹
Clean Air Act	42 USC § 7502(c)(1)	“reasonably available control technology”
FAA Extension, Safety, and Security Act of 2016	49 USC § 106(f)(3)(A)	“the Administrator is authorized to issue, rescind, and revise such regulations as are necessary”
Fair Credit Reporting Act	15 USC § 1681s(e)(1)	“necessary or appropriate”
Federal Food, Drug, and Cosmetic Act	21 USC § 360j(e)(2)	“shall bear such appropriate statements of the restrictions required . . . as the Secretary may in such regulation prescribe”
FDA Food Safety Modernization Act	21 USC § 350g(o)(3)	“those risk-based, reasonably appropriate procedures, practices, and processes . . . to significantly minimize or prevent the hazards identified”
Child Nutrition Act of 1966	42 USC § 1779(a)	“shall prescribe such regulations as the Secretary may deem necessary”
International Lending Supervision Act of 1983	12 USC § 3907(a)(2)	“necessary or appropriate”
Investment Advisers Act of 1940	15 USC § 80b-2(c)	“necessary or appropriate in the public interest, [including] whether the action will promote efficiency, competition, and capital formation”
Investment Company Act of 1940	15 USC § 80a-2(c)	“the Commission shall also consider . . . whether the action will promote efficiency, competition, and capital formation” ²⁰⁰
Marine Mammal Protection Act of 1972	16 USC § 1373(a)	“necessary and appropriate”

¹⁹⁹ This is the statutory section at issue in *Michigan v EPA*, 135 S Ct 2699.

²⁰⁰ This is the statutory section at issue in *Business Roundtable*, 647 F3d 1144.

Occupational Safety and Health Act of 1970	29 USC § 655(b)(5)	“which most adequately assure[], to the extent feasible . . . that no employee will suffer material impairment of health” and are “reasonably necessary or appropriate to provide safe or healthful employment and places of employment”
Gramm-Leach-Bliley Act	15 USC § 6801(b)	“shall establish appropriate standards”
Secure Fence Act of 2006	8 USC § 1701	“necessary and appropriate” ²⁰¹
Securities Exchange Act of 1934	15 USC § 78w(a)(2)	“shall not adopt any such rule or regulation which would impose a burden on competition not necessary or appropriate”
Telecommunications Act of 1996	47 USC § 1302(a)	“in a manner consistent with the public interest”

STATUTES THAT REFERENCE MAXIMAL REGULATION

Statute	Codification	Text
Clean Water Act	33 USC § 1326(b)	“best technology available for minimizing adverse environmental impact” ²⁰²
Federal Mine Safety and Health Act of 1977	30 USC § 811(a)(6)(A)	“standards which most adequately assure on the basis of the best available evidence that no miner will suffer material impairment”
Surface Mining Control and Reclamation Act of 1977	30 USC § 1265(b)(24)	“minimize disturbances and adverse impacts” of surface mining “to the extent possible using the best technology currently available”

²⁰¹ This is the statutory section under which President Trump proposes to build a wall at the Mexican border. See Executive Order 13767, 82 Fed Reg 8793, 8794 (2017).

²⁰² This is the statutory section at issue in *Entergy*, 556 US 208.