

Financial Regulation and Cost-Benefit Analysis

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I. WHAT GOVERNMENT DOESN'T KNOW

Cost-benefit analysis is best understood as a way for agencies to ensure that their decisions are informed—that they are based on knowledge about likely consequences, rather than on dogmas, intuitions, hunches, or interest-group pressures.¹ But when agencies lack that knowledge, and cannot obtain it, cost-benefit analysis runs into an evident objection. It is tempting to think that financial regulation in particular should not be subjected to cost-benefit analysis, because the problem of insufficient knowledge is pervasive in that domain.² For example, John Coates suggests that because financial regulators inevitably lack relevant information, cost-benefit analysis of financial regulations often faces insuperable obstacles.³

My major goal here is to challenge this view. There is no reason to think that it is always or usually impossible for financial regulators to conduct cost-benefit analysis. And when agencies face serious gaps in knowledge, they should enlist “breakeven analysis,” which provides a method of comparing costs and benefits in the face of such gaps. Breakeven analysis is helpful in many contexts,⁴ and it is fully available to financial regulators. To be sure, it falls short of full cost-benefit analysis, because it is invoked when important variables are missing; but it is nonetheless a means of testing whether a particular measure would improve social welfare.

1. See CASS R. SUNSTEIN, *VALUING LIFE: HUMANIZING THE REGULATORY STATE* (2014).

2. See John C. Coates IV, *Cost-Benefit Analysis of Financial Regulation*, 124 *YALE L.J.* 882, 888 (2015); Jeffrey Gordon, *The Empty Call for Cost-Benefit Analysis for Financial Regulators*, 43 *J. LEGAL STUD.* S351 (2014).

3. Coates, *supra* note 2.

4. See Cass R. Sunstein, *The Limits of Quantification*, 103 *CALIF. L. REV.* 1369 (2014).

A. A Definition

What does cost-benefit analysis entail? A full account would require an elaborate discussion (and for present purposes, its benefits would not justify its costs).⁵ Very briefly, let us understand such analysis to involve an effort (1) to quantify the anticipated consequences of regulatory action and (2) to monetize those consequences in terms of benefits and costs, subject to (3) a feasibility constraint, which is meant to acknowledge that some consequences may be hard or impossible to quantify or monetize.

This understanding is consistent with Executive Order 13,563, which directs executive agencies “to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible,” but which adds that agencies “may consider (and discuss qualitatively) values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts.”⁶ It is important to emphasize that under prevailing Executive Orders, cost-benefit analysis is not merely a procedural requirement. Unless some source of law (such as a statute) requires otherwise, agencies must show that the benefits justify the costs and also that they have chosen the approach that maximizes net benefits.⁷ If these requirements are not met, agencies are not permitted to go forward unless the law requires them to do so.

B. Who Knows?

To undertake cost-benefit analysis, agencies have to overcome what followers of Friedrich Hayek call the “knowledge problem” – the challenge that public officials face in attempting to obtain relevant information, much of which is widely dispersed in society.⁸ Analysis of costs and benefits, especially when undertaken before regulations are issued, often produces daunting challenges because of what agencies do not know. In some cases, agencies might not be able to generate point estimates. With respect to outcomes and their probabilities, they might be able to identify only ranges, and those ranges might be quite wide. In other, more unusual cases, agencies might know the potential

5. The Office of Management and Budget Report offers many details. *Circular A-4*, OFF. MGMT. & BUDGET 30 (Sept. 17, 2003) [hereinafter *OMB Circular A-4*], http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/a-4.pdf [<http://perma.cc/N6AG-W9QG>].

6. See Exec. Order No. 13,563, 76 Fed. Reg. 3821, 3821 (Jan. 18, 2011).

7. *Id.*

8. Daniel Klein offers a good discussion in DANIEL KLEIN, KNOWLEDGE & COORDINATION (2012).

outcomes, but they might be unable to assign probabilities to them. In such cases, involving “Knightian uncertainty,” it is difficult or perhaps impossible to undertake cost-benefit analysis.⁹ In addition, agency biases of various sorts—perhaps involving the sources of information (which may be parochial interests), the motivations of the relevant officials, strong emotions, or cognition itself—may lead to mistakes.

Let us begin with an example that is not generally thought to be uniquely challenging, and that will, for that very reason, cast light on the problem. To set out the costs and benefits of increased fuel economy standards, agencies have to know a great deal.¹⁰ Projections of costs might require some speculation. Technology changes over time; do we really know how much it will cost to produce a fleet-wide average of (say) 40 MPG five years from now? Moreover, consumer demand for new automobiles can be unpredictable, especially in view of the price increases that fuel economy standards will necessarily impose. If cars become more expensive but also more fuel-efficient, will consumers purchase fewer cars, more, or the same number?¹¹ There are also questions about the “rebound effect”: if cars are less expensive to drive, consumers will drive more. But how much more? And what are the safety effects of a more fuel-efficient fleet? With respect to questions of this kind, estimates may turn out to be reliable, but they require a great deal of knowledge, and a degree of imprecision is likely.

Projections of benefits may also require speculation and guesswork. For example, it is exceedingly challenging to monetize the “energy security” benefits that come from a nation’s decreased reliance on foreign oil. If the United States decreases such reliance through higher fuel economy standards, how, exactly, can agencies turn the resulting benefits into monetary equivalents?¹² Nor is it easy to quantify the benefits of reduced air pollution. There are disputes about the mortality and morbidity benefits of reducing emissions of particulate matter, and the current projections depend on observational studies, which predict a wide range of possible benefits and may not be reliable at any rate.¹³

9. See FRANK KNIGHT, *RISK, UNCERTAINTY, AND PROFIT* (1921).

10. Office of Regulatory Analysis & Evaluation, Nat’l Ctr. for Statistics & Analysis, *Final Regulatory Impact Analysis: Corporate Average Fuel Economy for MY 2017-MY 2025 Passenger Cars and Light Trucks*, NAT’L HIGHWAY TRAFFIC SAFETY ADMIN. 49 tbl.13 (2012) [hereinafter *Fuel Economy RIA*], http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/FRIA_2017-2025.pdf [<http://perma.cc/HGH4-CT8L>].

11. A subsidiary question is whether people will herd toward or away from fuel-efficiency. Herding can introduce an especially high degree of unpredictability. On this point, and the limits of prediction, see generally DUNCAN WATTS, *EVERYTHING IS OBVIOUS* (2011).

12. See *Fuel Economy RIA*, *supra* note 10, for an illustration of how the National Highway Traffic Safety Administration (NHTSA) approached this problem.

13. See Francesca Dominici et al., *Particulate Matter Matters*, 344 *SCI.* 257 (2014).

Among the most important benefits of fuel economy standards are reductions in greenhouse gases. To monetize those reductions, agencies use the “social cost of carbon,” a number on which there are intense disagreements among reasonable people.¹⁴ In addition, the vast bulk of the benefits of fuel economy standards come from consumer savings,¹⁵ but the very inclusion of such private benefits in CBA is controversial, because no externality is involved.¹⁶ Agencies must also make projections about how many vehicles will be bought after fuel-efficiency requirements are imposed. They must also ask whether consumers will suffer welfare losses from a more fuel-efficient (but perhaps otherwise less desirable) fleet. In such circumstances, agencies will inevitably be required to use somewhat speculative point estimates and ranges as well.

In light of the wide range of hard questions of this kind, it is tempting to wonder whether cost-benefit analysis is worthwhile. Numerous technical judgments must be made, and technical analysts might well disagree. On the basis of apparently reasonable projections, it is easy to generate exceptionally wide ranges, certainly with respect to benefits. It is also easy for an informed lawyer to argue, credibly, that the agency’s estimates are either too optimistic or too pessimistic, and hence that its regulation is either too stringent or too lenient.¹⁷

But it would be a mistake to take the absence of point estimates, and the potential existence of wide ranges, as a basis for skepticism about cost-benefit analysis as such (and much less as an invitation for close judicial oversight of agency judgments).¹⁸ Some points along the range might not be plausible; they might turn out to be debater’s points, or to reflect the self-serving arguments of well-organized private groups. Even when technical experts disagree, one view might turn out to be implausible or convincing, and agencies are entitled to decide which view falls in which category. Disagreements among experts should not be taken to mean that agencies are at sea. This point applies to financial regulators no less than to regulators of other kinds.

14. See Michael Greenstone et al., *Developing a Social Cost of Carbon for US Regulatory Analysis: A Methodology and Interpretation*, 7 ENVTL. ECON. & POL’Y 23 (2013); Robert S. Pindyck, *Climate Change Policy: What Do the Models Tell Us?* (Nat’l Bureau of Econ. Research, Working Paper No. 19244, 2013), <http://www.nber.org/papers/w19244.pdf> [<http://perma.cc/3LL6-NMJ6>].

15. See Greenstone et al., *supra* note 14.

16. See Ted Gayer & W. Kip Viscusi, *Overriding Consumer Preferences with Energy Regulations* (Mercatus Ctr., George Mason Univ., Working Paper No. 12-21, 2012), <http://mercatus.org/sites/default/files/Overriding-Consumer-Preferences-with-Energy-Regulations-Final.pdf> [<http://perma.cc/3S64-V4FK>].

17. See Cass R. Sunstein, *The Arithmetic of Arsenic*, 90 GEO. L.J. 2255 (2002).

18. See John Graham, *Saving Lives Through Administrative Law and Economics*, 157 U. PA. L. REV. 395 (2008) (arguing that cost-benefit analysis can handle uncertainty).

With cost-benefit analysis, it is at least possible to know what people are disagreeing about, and to isolate the assumptions on which certain steps would or would not be justified. There are more fundamental points. In many cases, the analysis turns out to discipline agencies, showing that certain conclusions are exceedingly difficult to justify, and that others are hard to resist. And without some effort to assess both costs and benefits, it is exceedingly difficult to know whether a regulation is desirable on welfare grounds. The point of the exercise is to help answer that question—to see whether the consequences of a possible regulation are good or bad. Notwithstanding its many limitations, cost-benefit remains the best way to find out.¹⁹

II. SEPARATING QUESTIONS

Should financial regulators engage in cost-benefit analysis? If so, should some institution require them to do so? If so, should that institution be the federal judiciary, the President, or Congress?

It is important to separate these questions. Suppose that we agree that cost-benefit analysis is the best available method for capturing the welfare effects of regulation.²⁰ It would seem to follow that financial regulators should produce cost-benefit analyses and that the outcome of those analyses should influence their decisions. But it need not follow that courts should require such analyses, or review their use.²¹ To know whether courts should take such steps, it is necessary to investigate both the costs of decisions and the costs of errors. It is possible that judicial review would itself fail cost-benefit analysis. Such review would undoubtedly increase the costs of decisions, if only because of the additional time spent on litigation, and also because of the range of additional work, at the agency level, that would have to be undertaken in preparation for judicial review.

With respect to the costs of errors, it is unclear whether judicial review would be helpful or harmful. On the one hand, such review could decrease the likelihood of mistakes on the part of agencies, creating an ex post corrective and an ex ante deterrent for poor policymaking.²² If the prospect of judicial review strengthens the hand of the best analysts, or diminishes the role of politics and interest groups, then it could have quite large benefits. From the stand-

19. See SUNSTEIN, *supra* note 1.

20. See *id.*; Matthew Adler & Eric A. Posner, *New Foundations of Cost-Benefit Analysis*, 3 REG. & GOVERNANCE 72 (2006).

21. For an example of judicial review of cost-benefit analysis, see *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir. 1991) (striking down an EPA rule).

22. A relevant decision is *Business Roundtable v. SEC*, 647 F.3d 1144 (D.C. Cir. 2011), which struck down a regulation as inadequately justified.

point of social welfare, this might be a significant gain. On the other hand, judges might themselves err. They are generalists, not specialists, and their understanding of the complex questions involved in financial regulation is likely to be limited.

Moreover, judges might have some kind of ideological tilt, increasing the risk of unpredictability and mistakes. There is every reason to think that on a three-judge panel consisting of three Republican appointees, an industry challenge to financial regulation will receive a more sympathetic hearing than if the challenge is made before a panel of Democratic appointees.²³ In some cases, both industry and public interest group challengers will win when they ought to lose or lose when they ought to win, and the outcomes will be a product of the composition of the panel.

These points are hardly decisive against judicial review of cost-benefit analysis by financial regulators, but they do introduce serious cautionary notes. If review is in some sense politicized, then a degree of unpredictability will be inevitable, and at least some of the time, judicial decisions will be biased and therefore inaccurate. Under prevailing Executive Orders, executive agencies are generally required to conduct cost-benefit analysis for significant regulations, but it is noteworthy that courts are not authorized to review that analysis.²⁴ Within the executive branch, the existing obligation might be sufficient, and judicial review might be unnecessary. No judgment about this question can be made in the abstract, but it is certainly reasonable to think that the Executive Orders establish the correct allocation of authority. As a general rule, judicial involvement might well make matters worse rather than better.

Suppose that judicial review is or should be unavailable. If so, should the President require cost-benefit analyses by financial regulators to be subject to the process overseen by the Office of Information and Regulatory Affairs (OIRA)? Insofar as the Department of Treasury is responsible, in whole or in part, for a financial regulation, OIRA will have its ordinary role, because the Department of Treasury is an executive agency.²⁵ But if independent agencies are the rulemakers, and if no executive agency is involved, then the OIRA process does not apply.

23. See Thomas J. Miles & Cass R. Sunstein, *The Real World of Arbitrariness Review*, 75 U. CHI. L. REV. 761 (2008) (showing the influence of presidential appointments and copanelists on judicial votes).

24. Exec. Order No. 13,563, 76 Fed. Reg. 3,821 (Jan. 18, 2011); Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993).

25. There is a longstanding exemption, based on practice rather than the text of any relevant Executive Order, for rules from the Internal Revenue Service.

Many people would like to subject independent agencies, including financial regulators, to the OIRA process.²⁶ If cost-benefit analysis is valuable as a way of assessing the welfare consequences of rules, the arguments on behalf of OIRA involvement might turn out to be convincing.²⁷ But here as well, it is necessary to investigate the costs of decisions and the costs of errors, and an argument that seems persuasive in the abstract might turn out to be less so once we consider the details. There is no question that OIRA review would increase the costs of decisions, if only because the process is time-consuming and might produce significant delays. There is also a question of capacity: OIRA's staff is relatively small (around fifty people), and it does not now have a great deal of expertise on financial regulation in particular.²⁸ It would be challenging for OIRA to review financial regulations without adding more personnel, and it is not clear that it has the authority to do that.

With respect to errors, OIRA (along with its numerous collaborators within the executive branch) does specialize in cost-benefit analysis. Its familiarity with the relevant tools, and with the uses and limits of such analysis, would likely produce improvements. And indeed, OIRA has already worked on some occasions with some financial regulators, on an informal basis, to help strengthen their analyses.²⁹ The question is whether those improvements would be large enough to justify a significant, and more formal, institutional reform. A reasonable conclusion is that if OIRA has the personnel to engage in the review process, then there is a strong argument on behalf of including financial regulators within that process – unless there is something in the nature of financial regulation that justifies special restraint.

Finally, and more subtly, some Presidents might be cautious about subjecting financial regulation to the OIRA process, because that step would force the Executive Office of the President, and the President personally, to “own” the decisions of financial regulators. If, for example, the SEC were subject to the OIRA process, the President would be blamed for its decisions, which might be

26. See, e.g., Robert W. Hahn & Cass R. Sunstein, *A New Executive Order for Improving Federal Regulation? Deeper and Wider Cost-Benefit Analysis*, 150 U. PA. L. REV. 1489 (2002).

27. Executive Order 13,579 does not subject independent agencies to OIRA review, but it does say that they “should” follow the requirements of Executive Order 13,563: “Executive Order 13,563 set out general requirements directed to executive agencies concerning public participation, integration and innovation, flexible approaches, and science. To the extent permitted by law, independent regulatory agencies should comply with these provisions as well.” 76 Fed. Reg. 41,587, 41,587 (July 11, 2011).

28. This statement is based on my personal experience as Administrator of OIRA from 2009 to 2012.

29. See *Memorandum of Understanding*, OFF. INFO. & REG. AFF. & U.S. COMMODITY FUTURES TRADING COMM’N (2012), http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/oira_cftc_mou_2012.pdf [<http://perma.cc/XEK4-MGYK>].

an unwelcome complication. It might be better, from the standpoint of the President himself, to be able to maintain a degree of distance from financial regulators' decisions. Such distance could serve as a kind of "enabling constraint" in which the President's authority is, in an important respect, increased if and because the decisions of financial regulators cannot be directly attributed to him. Of course there is a countervailing point, which is that without the OIRA process or some surrogate for it, the President cannot control such decisions, even if he believes them to be misdirected or wrong.

If the President declines to require financial regulators to be subject to the OIRA process, should Congress take steps to mandate cost-benefit analysis? In one form, this question is the same as that faced by the President: should Congress require financial regulations to go through OIRA? The answer to that question should largely turn on the considerations just outlined. In another form, the question would be this: if OIRA review is not mandated, should Congress nonetheless require financial regulators to produce cost-benefit analyses before they regulate?

That question is very close to the question whether financial regulators should produce such analyses on their own,³⁰ and it is my principal topic here.³¹ My central answer is that financial regulators should indeed produce cost-benefit analyses, with a qualification regarding cases of insufficient information; in such cases, breakeven analysis, understood as a way of engaging in cost-benefit analysis when relevant information is missing, will often be both possible and appropriate. Let us now turn to that question.

III. BREAKEVEN ANALYSIS

A. *A Port in a Storm*

Fuel economy standards are not thought to present the most challenging problems for cost-benefit analysis. For all the complexity of the underlying issues, fuel standards do not involve exceptionally or uniquely difficult knowledge problems. Are financial regulations exceptionally or uniquely difficult in that respect?

30. A valuable discussion is Eric Posner & E. Glen Weyl, *Benefit-Cost Analysis for Financial Regulation*, 103 AM. ECON. REV. 393 (2013).

31. See Eric A. Posner & E. Glen Weyl, *Benefit-Cost Paradigms in Financial Regulation*, 43 J. LEGAL STUD. S1, S2 (2014) ("Indeed, BCA would seem more appropriate for financial regulation where data are better and more reliable, and where regulators do not confront ideologically charged valuation problems like those concerning mortality risk and environmental harm. The benefits and costs of financial regulation are commensurable monetary gains and losses, and so can be easily compared.").

Some people think so,³² and there is good reason to believe that some such regulations do present unusually difficult challenges.³³ But we have to be careful here. The universe of financial regulations is very large, and it is far from clear that all such regulations belong in a special category. Some financial regulations do not require especially speculative predictions or present particular challenges in terms of anticipating the behavior of regulated firms. Indeed, financial regulators already engage in a great deal of cost-benefit analysis. As noted, the Department of Treasury is subject to the process of OIRA review, and the regulations that it promulgates have long been accompanied by cost-benefit analyses for economically significant rules. It is probably best to say that, for an important subset of financial regulations, assessment of costs and benefits is challenging or impossible, rather than to say that cost-benefit analysis is exceedingly difficult for financial regulation as such.

To evaluate this view, it would be necessary to study a large number of such regulations. Let us simply stipulate, as some people believe,³⁴ that for some financial regulations, regulators are operating amid a great deal of uncertainty. Suppose, for example, that a regulation is designed to reduce the risk of another financial crisis. Suppose too that the cost of such a crisis, if it should occur, is (according to expert analyses) somewhere between \$500 billion and \$10 trillion. Finally, suppose that the regulating agency cannot specify how much its regulation will contribute to reducing the risk of such a crisis. How should the agency proceed?

Even in the face of a great deal of ignorance, agencies have a time-honored tool with which to answer such questions, a kind of port in a storm: breakeven analysis.³⁵ The central idea is simple. Suppose that a rule costs \$500 million and that the agency cannot specify what the benefits are. By hypothesis, the breakeven point is \$500 million. The agency would therefore ask this question: under what assumptions or conditions might the benefits rise to that level? Suppose that an agency estimates that its rule will save between 60 and 250 lives per year, with 60 being a reasonable lower bound. Because the value of a statistical life is now around \$9 million, the rule survives breakeven analysis.

Breakeven analysis should be seen as a way of engaging in cost-benefit analysis when important information is missing. In ordinary cases, agencies have the information they need to decide whether the benefits justify the costs. When agencies lack relevant information – and in particular, information about the magnitude of the benefits – they can nonetheless specify how high the ben-

32. See, e.g., Coates, *supra* note 2; Gordon, *supra* note 2.

33. See Coates, *supra* note 2, at 997-1002.

34. See Coates, *supra* note 2; Gordon, *supra* note 2.

35. See Sunstein, *supra* note 4.

efits would have to be to justify the costs. That specification can help to discipline the judgment about whether to proceed.

In ordinary life, breakeven analysis is familiar, even if it is only implicit. Imagine that a real estate investment company does not know for how much certain apartments will rent, but it does know that other, less desirable apartments in the area rent for \$900 per month. Suppose too that the company knows that the investment will be worthwhile if it can rent its apartments for more than \$800 per month. If so, it makes sense to proceed. Regulators can use the same kind of analysis. In most cases, agencies do so when they have information about costs but not about benefits, but the inquiry is feasible and illuminating even when information is available about benefits but not costs.³⁶

Consider in this light a difficult problem, one that involves the use of breakeven analysis in an area that is not hypothetical. In 2012, the Department of Justice finalized a rule that was designed to reduce prison rape, and that would cost about \$500 million annually.³⁷ In analyzing benefits, the Department attempted to identify the value of a case of prevented rape using two different methods.³⁸ The first enlisted the results of a contingent valuation study that asked citizens how much they would be willing to pay to prevent a case of rape. That study elicited a value of about \$310,000 per victim, reflecting the willingness to pay of “society.” The second method consulted judicial decisions to find measures of compensation, finding a value of approximately \$480,000 for an adult rape and \$670,000 for a juvenile rape. These numbers generated a range of values for a prevented prison rape.

The Department did not specify the number of rapes that it expected to prevent, but it estimated that the annual cost of prison rape and sexual abuse is approximately \$46.6 billion for prisons and jails and \$5.2 billion for juvenile facilities. Using its estimates of the cost of a prevented rape, the Department concluded that if its rule prevented a mere 1,671 of the 260,000 annual prison rapes, the benefits of the rule would exceed its costs.³⁹ Many questions might be raised about the details here, especially because of the complexity of the normative and empirical questions,⁴⁰ but as long as the agency is engaged in some kind of cost-benefit analysis, the general approach is sound. The central point is that even if an important variable is missing, or if wide ranges are in-

36. If, for example, an agency knows that the benefits are \$500 million but cannot specify the costs, the question is whether on plausible assumptions, the costs might exceed \$500 million. If the answer is no, then the agency has a good reason to proceed.

37. *Regulatory Impact Assessment for PREA Final Rule*, U.S. DEP’T JUST. 1 (May 17, 2012), http://www.ojp.usdoj.gov/programs/pdfs/prea_ria.pdf [<http://perma.cc/LEE5-TXTR>].

38. *Id.* at 40-63.

39. *Id.* at 160-61.

40. For further discussion, see Sunstein, *supra* note 4.

itable, an agency can use breakeven analysis to make seemingly intractable problems more manageable.

B. Breakeven Analysis and Financial Regulators

Now turn to the question of financial regulation.⁴¹ Suppose that the cost of a new regulation, designed to reduce the risk of a financial meltdown, ranges between \$700 million and \$2 billion. Suppose that reasonable economists disagree on where the costs fall within that range, and that the agency is far from certain about how to resolve the disagreement. Suppose that the agency seeks to estimate the cost of a meltdown, should it occur,⁴² but that the relevant range has a low end of \$150 billion and a high end (for some analysts) of \$3 trillion or (for other analysts) \$51 trillion.⁴³ How should the agency proceed?

If the statute requires the agency to act or to refrain from acting, the case is easy. Perhaps the analysis of costs and benefits is legally irrelevant, as indeed it is under some statutes.⁴⁴ But suppose either that agency action is not compelled or that as a matter of practice, the agency will produce an analysis even if its decision will be unaffected by the analysis. What will the analysis look like? Is breakeven analysis feasible?

Here is one possibility. The high-end cost estimate is \$2 billion. If the rule reduces the risk of a meltdown by one percent, it survives breakeven analysis even if (1) we use the low-end meltdown cost estimate (\$150 billion) and (2) we assume that the regulation reduces the risk of a meltdown by a small fraction. If the agency can plausibly say that the percentage contribution and the lower bound estimate are in the requisite vicinity, its approach would appear to survive breakeven analysis. And if the agency believes that the costs of a meltdown might be in the trillions, that conclusion would seem exceedingly reasonable.

We could also imagine cases in which breakeven analysis establishes that a rule is unlikely to be worthwhile. Suppose that the cost of the rule is \$2 billion and that the event that it is designed to prevent would have a cost of between

41. For valuable discussion, see generally Posner & Weyl, *supra* note 31.

42. See *id.* at 2 (“Agreement on a figure in the range \$150 billion to \$3 trillion (viz. a crisis cost between 1% and 20% of US GDP of approximately \$15 trillion) would seem relatively easy to reach given the widely respected estimates of Reinhart and Rogoff. We would advocate a figure in the \$1-2 trillion range.”).

43. See, e.g., Coates, *supra* note 2, at 960-61.

44. See *Inv. Co. Inst. v. CFTC*, 720 F.3d 370, 379 (D.C. Cir. 2013) (“[T]he law does not require agencies to measure the immeasurable. CFTC’s discussion of unquantifiable benefits fulfills its statutory obligation to consider and evaluate potential costs and benefits. Where Congress has required ‘rigorous, quantitative economic analysis,’ it has made that requirement clear in the agency’s statute, but it has imposed no such requirement here.”).

\$5 billion and \$20 billion. With the upper bound of \$20 billion, the question would be: is it possible that the rule would have a 1 in 10 chance of averting the adverse event? If the answer to that question is no, then the rule fails breakeven analysis.

These are, of course, highly stylized examples. In other cases, standard cost-benefit analysis⁴⁵ or breakeven analysis might be much easier, even for financial regulators.⁴⁶ We might therefore suggest a simple conclusion: *In general, financial regulators should adopt the standard approach to cost-benefit analysis if it is feasible, and use breakeven analysis if it is not.*

But some people doubt that such approaches can prove helpful, at least for certain financial regulations.⁴⁷ In their view, these regulations, at least at the present time and perhaps even in principle, create intractable epistemic challenges. In the case above, for example, the idea of a 1 in 75 reduction in the chance of a financial meltdown, for a single rule, might seem both high and speculative—which would mean that we would have to engage other numbers at various points in the range, complicating breakeven analysis. The range of possible costs can also be wide, and the range of possible benefits even wider, to the extent that any effort to compare the two, or even to conduct breakeven analysis, might reflect a kind of pretense to information that regulators simply lack.⁴⁸ Regulated parties might adapt to what regulations do, and these adaptations might be hard to anticipate, thus making cost-benefit analysis especially challenging for regulators.⁴⁹

This skeptical view is merely a claim about how much knowledge is available, and therefore cannot be evaluated in the abstract. Everything depends on what regulators know, or can be expected to know. An investigation of particular areas of financial regulation may or may not justify the conclusion that in that domain, relevant knowledge is uniquely or distinctly unlikely to be available. But it is reasonable to think that for some financial regulators, we are now

45. See Posner & Weyl, *supra* note 30.

46. Gordon, *supra* note 2, argues that because financial regulation is a constructed system, and does not involve a range of natural facts (such as the carcinogenic properties of a chemical), financial regulators cannot engage in cost-benefit analysis. It is true that the behavior of regulated entities may be difficult to anticipate and that the systemic effects of interventions may not be easily calculated. But it is not clear that the “constructed” nature of the financial system means, in principle, that changes in that system cannot be assessed in quantitative terms, at least if agencies have appropriate tools. To be sure, agencies may lack those tools. Note in this regard that in *Business Roundtable v. SEC*, 647 F.3d 1144 (D.C. Cir. 2011), the agency did quantify a number of relevant costs and benefits, though not enough to satisfy the reviewing court.

47. See, e.g., Posner & Weyl, *supra* note 30.

48. See Coates, *supra* note 2.

49. See Gordon, *supra* note 2.

in a period not so unlike that of environmental regulators in the 1970s, when cost-benefit analysis seemed, to many observers and participants, to be impossibly daunting. There is no obvious reason, in principle, that financial regulation cannot be subject to such analysis, either now or in the future.⁵⁰ But we cannot rule out the possibility that for some regulations, no form of breakeven analysis is realistically possible. If so, of course, regulators should be candid about what they do not know, and should identify the assumptions on which their regulation might be justified.⁵¹ That approach promotes transparency and accountability, and also creates an incentive to acquire additional information.⁵²

IV. FIVE STRATEGIES IN THE FACE OF IGNORANCE

Suppose that with respect to costs and benefits, agencies are genuinely at sea, and that breakeven analysis is not helpful. If the law requires agencies to act (or to refrain from acting), and if no one is requiring them to engage in cost-benefit analysis, then the required action is relatively simple. But suppose that the law does not specify what financial regulators should do. Lacking the requisite knowledge, how should they decide whether and how to proceed? Consider five possibilities.

1. Financial regulators might want to adopt a *presumption of liberty*, and announce that they should not and will not proceed unless they are able to meet some kind of burden of proof, grounded in a reasonable projection that the proposed rule will have net benefits. They might follow a kind of precept: *In the absence of reliable evidence to support a reasonable judgment that a rule would have net benefits, do not take action.*

50. A possible counterargument might come from WATTS, *supra* note 11, who emphasizes the impossibility of prediction in cases in which social influences are at work. When such influences move markets—for example, cultural markets—it may be difficult or impossible to make predictions in advance, because the influences, and their effects, cannot be anticipated. Even if the counterargument is convincing, I do not believe that it applies to many regulations. A different counterargument can be found in Gordon, *supra* note 2.

51. See Sunstein, *supra* note 4.

52. Gordon emphasizes that in this domain, “rules will create a new financial system and thus change the assumptions on the basis of which the purported cost and benefits were calculated.” Gordon, *supra* note 2, at 19. It is true that rules change old assumptions, in part because of private adaptation; the question is whether the calculation can be based on new assumptions. That task might well be daunting, for the reasons that Gordon outlines, but at least broadly similar challenges are raised by other kinds of rules, including fuel economy rules, for which cost-benefit analyses are produced as a matter of course. See WATTS, *supra* note 11.

In the abstract, this idea might seem to have considerable appeal. The problem is that the absence of evidence is not evidence of absence. If the benefits of regulation could in fact be very large, the precept seems arbitrary and potentially self-defeating. (In parallel cases, it is hardly irrational to purchase insurance.) Given the large role of government in the financial sector and thus the risk of moral hazard—consider, for example, federal deposit insurance—a presumption against regulation would be especially puzzling.

2. Financial regulators could be asked to *exercise professional judgment*.⁵³ Reasonable people endorse that idea,⁵⁴ but there is a serious problem, namely that professional judgment threatens to be a black box that reflects political or ideological commitments of some kind, or perhaps even biases. One professional might believe that to protect shareholders, outsiders should have access to the ballot for proxy fights. Another professional might believe that such access would harm shareholders and undermine economic growth. Without evidence to predict actual consequences, both beliefs would seem to rest on intuitions. Note in this regard that in the context of financial regulation, professional judgment, generally unaccompanied by a disciplined analysis of costs and benefits, helped to produce the financial crisis in the first place.

Professional judgment is regrettably reminiscent of the performance of the old baseball scouts in Michael Lewis's bestseller *Moneyball*, which demonstrates that it is far better to rely on statistical analysis than on such judgment.⁵⁵ No one denies that some kind of judgment, professional or otherwise, may be inevitable in the face of uncertainty.⁵⁶ But the emphasis on "*professional judgment*" in OMB Circular A-4⁵⁷ is not the most helpful aspect of that otherwise valuable document.

53. See Coates, *supra* note 2, at 895; OMB Circular A-4, *supra* note 5.

54. See Coates, *supra* note 2, at 895 (referring to OMB). The argument for "the pragmatics of regulatory judgment" in Gordon, *supra* note 2, at 19, seems to belong in the same general category. Gordon notes that his rejection of cost-benefit analysis "does not mean that the regulator should give up on the project of applied consequentialism, trying its best to project the new regime and its consequences." *Id.* at 20. The question is whether that projection is possible without an effort to engage in at least some form of cost-benefit balancing, perhaps with the aid of breakeven analysis, and certainly with continuing monitoring of the effects of regulatory interventions. Gordon rightly emphasizes the need for such monitoring and for continuing learning on the part of regulators. *Id.*

55. See MICHAEL LEWIS, *MONEYBALL: THE ART OF WINNING AN UNFAIR GAME* (2003).

56. For the complex verdict, see NATE SILVER, *THE SIGNAL AND THE NOISE: WHY MOST PREDICTIONS FAIL—BUT SOME DON'T* (2012).

57. OMB Circular A-4, *supra* note 5 (emphasis added).

3. Financial regulators might embrace a *precautionary principle*,⁵⁸ and provide protection against risks even if they cannot demonstrate that such risks will transpire. On this approach, financial regulation would move forward in the face of a risk, whether or not the risk could be in any sense quantified. Here as elsewhere, the problem with the precautionary principle is that at least in some forms, it is self-defeating.⁵⁹ Regulations that reduce risks also create risks. It is possible to take precautions against particular risks, but it is not possible to be universally precautionary, because risk-reduction can itself be risky. For example, aggressive regulation of ozone-depleting chemicals may require the phase-out of certain asthma medicines, thus creating risks for those who suffer from asthma. Any use of some kind of precautionary principle would need to be more refined.

4. Financial regulators might follow *the maximin principle*, which means that they would eliminate the worst-case scenario.⁶⁰ On this approach, agencies would identify the worst-case scenario that would result from regulating and the worst-case scenario that would result from not regulating. Suppose that a regulation would reduce the risk of a financial meltdown, but also impose significant costs that would fall at some point along a wide range. Suppose too that at some such points, the costs would be quite high, but that the worst-case scenario connected with imposing them is not nearly as disastrous as a financial meltdown would be. If so, there is a reasonable argument in favor of eliminating the worst of the worst-case scenarios, at least when the agency cannot assign probabilities to various outcomes.

This approach might ultimately be right.⁶¹ The difficulty is that countless measures could be introduced to reduce the risk of catastrophe, and many would be quite expensive. If regulators imposed all of those measures, they might create severe dislocations while producing what might turn out to be a

58. See generally DANIEL STEEL, *PHILOSOPHY & THE PRECAUTIONARY PRINCIPLE* (2014).

59. See Cass R. Sunstein, *Beyond the Precautionary Principle*, 151 U. PA. L. REV. 1003 (2003).

60. For detailed discussion and citations, see JON ELSTER, *EXPLAINING TECHNICAL CHANGE: A CASE STUDY IN THE PHILOSOPHY OF SCIENCE* (1983); CASS R. SUNSTEIN, *WORST-CASE SCENARIOS* (2007).

61. For a broadly related argument, see Nassim Nicholas Taleb et al., *The Precautionary Principle (with Application to the Genetic Modification of Organisms)* (N.Y.U. Sch. of Eng'g Working Paper, 2014), <http://www.fooledbyrandomness.com/pp2.pdf> [<http://perma.cc/7UJM-EARD>].

long series of exceedingly small contributions to the problem. Under circumstances of uncertainty, maximin is a plausible decision rule, but its use creates serious problems. The best response may be to ask regulators to use maximin if they must make a decision in the absence of greater information, but simultaneously to ask them to take steps to acquire the information that would make its use unnecessary.

5. Agencies might have to *pick*, meaning that they might not have reasons for their decisions, and they might be doing the equivalent of flipping a coin.⁶² Under standard principles of administrative law, an approach of this kind is arbitrary and therefore unlawful, but in the face of genuine ignorance, it might be the best option.⁶³ If the goal is reasoned decision making, this is the worst-case scenario. But we cannot exclude the possibility that in some cases, regulators will face it.⁶⁴ If so, they might rationally pick, while also being required to be fully transparent about what they know and do not know, and about the basis for their decision, even if it is essentially a coin flip. For obvious reasons, it should be hoped that such cases are exceedingly rare.⁶⁵

V. CONCLUSION

In principle and as a general rule, it makes a great deal of sense for agencies to catalogue the costs and benefits of their proposed courses of action and to proceed only if the benefits justify the costs.⁶⁶ Without such a catalogue, it is exceptionally difficult to know whether and how to proceed, at least if the goal is to promote social welfare. There is also a risk that if agencies fail to describe the costs and benefits of a regulation, they might be legally vulnerable (de-

62. See generally Edna Ullmann-Margalit & Sidney Morgenbesser, *Picking and Choosing*, 44 SOC. RES. 757 (1977) (defining picking in this way and exploring picking as a social practice).

63. See Adrian Vermeule, *Rationally Arbitrary Decisions (in Administrative Law)* 2 (Harv. Pub. L. Working Paper No. 13-24, 2013), <http://ssrn.com/abstract=2239155> [<http://perma.cc/7EDE-UL6F>], particularly this striking claim: “There is a category of agency decisions is [sic] which *it is rational to be arbitrary*, in the sense that no first-order reason can be given for agency choice within a certain domain, yet some choice or other is inescapable, legally mandatory, or both. In some cases, even coin-flipping may be a perfectly rational strategy of decision making for agencies.”

64. Relevant discussion can also be found in Edna Ullmann-Margalit, *Big Decisions: Opting, Converting, Drifting*, 58 ROYAL INST. PHIL. SUPPLEMENT 157 (2006).

65. For valuable observations, see *id.*, which emphasizes the case of individuals, but which also has implications for regulatory judgments.

66. See Posner & Weyl, *supra* note 30.

pending on the relevant statute).⁶⁷ At the same time, agencies sometimes face serious epistemic problems. In the context of at least some financial regulations, those problems can be especially severe, because assessment of the effects of those regulations is highly speculative, and inevitably so.

To the extent feasible, financial regulators, no less than regulators of other kinds, should assess both costs and benefits, and they should proceed only if the benefits justify the costs. When important information is unavailable, such regulators should engage in breakeven analysis. In such cases, the maximin principle might seem appealing. There is a risk, however, that the prospect of a genuine catastrophe might lead agencies to impose a series of expensive requirements—a particular problem if they cannot specify the contribution of those requirements to reducing the relevant risk. This problem suggests the immense importance of continuing to work to acquire information about that contribution. Ignorance is often reduced over time, and one of the advantages of the aspiration to full analysis of costs and benefits is that the aspiration can itself encourage agencies to acquire important information.

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67. *Id.* at 397 (“The importance of developing methods for benefit-cost analysis for financial regulation can scarcely be overstated. In recent years, courts have awakened to the fact that many such regulations lack a sound economic basis and have started blocking them.”).