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Cost-Benefit Analysis of Financial Regulations: A Response to Criticisms

Eric A. Posner & E. Glen Weyl

In two recent articles, we urged financial regulators to use cost-benefit analysis (CBA) to evaluate financial regulations.¹ John Coates has emerged as a leading critic of this view.² In this essay, we respond to his objections.

We make several points. First, Coates conflates two separate issues: the advisability of CBA and the uncertainty of CBA valuations. He argues that because scholars have so far disagreed about relevant valuations, regulators should not engage in CBA.³ However, he exaggerates the difficulty of determining valuations. The current level of uncertainty justifies greater investment in academic research, not the abandonment of CBA.

Second, Coates makes a series of theoretical arguments to the effect that valuation difficulties do not arise merely from the paucity of academic research, but also from the nature of financial markets. He argues that financial markets are “central,” “social,” and “non-stationary” in a way that other markets are not, and that this explains why valuation problems in financial markets cannot be surmounted.⁴ In a recent paper, Jeffrey Gordon similarly argues that CBA of financial regulations cannot work because financial markets are “constructed”

1. Eric A. Posner & E. Glen Weyl, *Benefit-Cost Analysis for Financial Regulation*, 103 AM. ECON. REV. (PAPERS & PROC.) 393 (2013), <http://ssrn.com/abstract=2188990> [<http://perma.cc/TUN5-KBNQ>]; Eric A. Posner & E. Glen Weyl, *Benefit-Cost Paradigms in Financial Regulation*, 43 J. LEGAL STUD. S1 (2014). For another recent defense, see Paul Rose & Christopher Walker, *The Importance of Cost-Benefit Analysis in Financial Regulation*, CENTER FOR CAP. MARKETS COMPETITIVENESS (2013), <http://www.centerforcapitalmarkets.com/wp-content/uploads/2010/04/CBA-Report-3.10.13.pdf> [<http://perma.cc/P5P9-89ZA>].

2. John C. Coates IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications*, 124 YALE L.J. 882 (2015).

3. *Id.* at 998.

4. *Id.* at 998-1002.

or artificial.⁵ We argue the opposite: that because financial markets generate a vast amount of data, and because most of the relevant valuations are monetary in nature, financial regulations are ideal for CBA—much more suitable than regulations of the environment and health and safety.

Third, Coates fails to provide plausible alternatives to CBA. At times, he advocates “expert judgment,”⁶ which is an empty if not circular standard for evaluating regulations and could easily be abused in ways that would reduce the transparency of policy-making. In other places, he advocates “conceptual CBA,”⁷ which we believe is also inferior to conventional (quantitative) CBA. Gordon advocates “pragmatism.”⁸ These are not self-defining terms, nor is it clear why anyone would consider them attractive. We survey these and other alternatives to CBA, and we argue that none of them is a normatively defensible alternative to CBA.

Finally, Coates claims that if regulators were required to use CBA, judicial review would “camouflage” discretionary choices by regulators rather than discipline them.⁹ We are more sympathetic to this argument than to Coates’s other arguments. However, our view is that the problem with judicial review is not that it leads to camouflage; it is that judges are not likely to be sophisticated consumers of CBA. We therefore argue for further development of institutional support for CBA in the executive branch—support that should draw on the expertise of private consultancies. Judicial review can be limited to ensuring that regulators take advantage of that institutional support for CBA in the executive branch once it is in place.

I. IS RIGOROUS CBA OF FINANCIAL REGULATIONS IMPOSSIBLE?

A. *Uncertainty of Financial Valuations*

To perform a CBA of a proposed financial regulation, regulators must be able to draw on financial data in order to determine the relevant valuations. If the data do not exist, or are noisy, or if no plausible identification strategy has been developed, then regulators will not be able to determine valuations with any confidence. This creates a dilemma. Regulators must either disregard CBA

5. Jeffrey N. Gordon, *The Empty Call for Benefit-Cost Analysis in Financial Regulation*, 43 J. LEGAL STUD. S351 (2014).

6. Coates, *supra* note 2, at 903-05.

7. *Id.* at 996.

8. Gordon, *supra* note 5, at 17.

9. Coates, *supra* note 2, at 898-900.

and rely on guesswork because of insufficient data or be unable to regulate even when it is widely understood that regulation is socially desirable.

Consider bank capital requirements. Banks must maintain a specified minimum ratio of equity to assets. Should this ratio be four percent? Five percent? Higher? Should different types of equity and different types of assets be treated differently for purposes of calculating the ratio? Should the ratio depend on the type of bank—whether it is large or small, national or regional, too big to fail or not too big to fail?

To answer these questions, a regulator must first determine the cost burden of various ratios (and also of different risk-weighting systems, but we will ignore this complication to keep the exposition clear). As the capital requirement increases, banks must raise interest rates, which will result in less lending and lower profits. Calculating these costs is a straightforward exercise. Since interest rates constantly rise and fall, and banks thus constantly adjust lending practices, ample data are available to calculate the effect of capital requirements on profits.¹⁰

The benefits side of the analysis is more challenging. The major variables are (1) the reduction in the probability of a financial crisis resulting from an incremental increase in the capital ratio; and (2) the economic cost of a financial crisis. The economic cost of a financial crisis in turn depends on how well the government responds to the financial crisis, so one must calculate the cost of a financial crisis conditional on a weak government response, the cost of a financial crisis conditional on a strong government response, and the probability distribution of strong and weak responses.

Are the data available? Many countries have experienced financial crises in recent history, so researchers have been able to estimate the relationship between those countries' regulatory regimes (including capital requirements), the frequency of their financial crises, and the severity of the resulting economic downturns.¹¹ The question about whether this research can be used to generate reliable valuations boils down to whether there are enough data that exhibit sufficient regularities.

10. Coates lists a set of generic problems with predicting the effect of regulations on profits. *Id.* at 963-64. However, these exist for non-financial regulation as well. If taken seriously, it would be hard to imagine how any firms could function. Moreover, he confuses the problem of calculating the costs to banks (which is simple) and social costs (which means performing the entire cost-benefit analysis).

11. For reports surveying the literature, see *An Assessment of the Long-Term Economic Impact of Stronger Capital and Liquidity Requirements*, BASEL COMMITTEE ON BANKING SUPERVISION (2010), <http://www.bis.org/publ/bcbs173.pdf> [<http://perma.cc/64BE-6TZB>]; and Macroecon. Assessment Grp., *Assessing the Macroeconomic Impact of the Transition to Stronger Capital and Liquidity Requirements*, FIN. STABILITY BOARD & BASEL COMMITTEE ON BANKING SUPERVISION, (2010), <http://www.bis.org/publ/othp10.pdf> [<http://perma.cc/WGJ6-LLWH>].

Coates believes that the data are too sparse and noisy.¹² To prove this point, he shows that different studies make different estimates of the relevant variables across large ranges.¹³ We are less impressed by this variation than he is. Our starting point is that a regulator *must* make these estimates, at least implicitly. If the Fed chooses a five percent capital requirement, then all the valuations can be backed out of this rule. As we have seen, the costs to banks can be estimated; once those costs are estimated, the five percent number will imply a minimum expected benefit in the form of avoided financial crises. We can then ask whether the Fed's implicit expected benefit in this hypothetical example is consistent with the studies that Coates mentions. Given the range of studies, no doubt the Fed can find one that supports it. But then the question is whether that study is reliable. As long as the public and economists know which studies are currently driving a policy, they can criticize the policy if the studies behind it are flawed and support it if the studies are not. Otherwise one is left guessing which parameters are being drawn from where, greatly inhibiting the progress of academic research on policy-relevant topics and thus the quality of policy-making.¹⁴

Furthermore, Coates takes a far too static view of academic research. The fact that existing studies generate a range of valuations does not mean that all valuations are equally good or that the state of knowledge will never improve. Researchers can criticize studies because they make unreasonable assumptions, are sensitive to controversial assumptions, use bad data, employ the wrong methodologies, and so on. Problems that are identified in existing studies stimulate more research. The sorts of choices that Coates condemns as arbitrary, like the definition of financial crisis for coding purposes,¹⁵ are ubiquitous in social science and even natural science research. Often, these choices can be addressed straightforwardly with additional research. When multiple studies are conducted, it will often be reasonable to discard outliers as statistical artifacts.

In our hypothetical bank capital requirement example, we would require the Fed to perform and disclose its cost-benefit analysis so that the numbers upon which it implicitly relied could be scrutinized by academics.¹⁶ The Fed should also sponsor additional research that evaluates its assumptions and

12. Coates, *supra* note 2, at 961-62.

13. *Id.* at 962.

14. On the role of CBA in promoting transparency, see Eric A. Posner, *Controlling Agencies with Cost-Benefit Analysis: A Positive Political Theory Perspective*, 68 U. CHI. L. REV. 1137 (2001).

15. Coates, *supra* note 2, at 963.

16. The Basel Committee on Banking Supervision Reports, *supra* note 11, provide an excellent model. See Eric A. Posner, *How Do Bank Regulators Determine Capital Adequacy Requirements?*, 82 U. CHI. L. REV. (forthcoming 2015).

methods. Even if, in the end, a large range of valuations existed, and the Fed had no choice but to choose a valuation from within the range, the exercise would be valuable because it would show where additional research was necessary. CBA itself would not impose much discipline in those circumstances, but the Fed would still need to justify in a qualitative sense why it chose a valuation from one part of the range rather than another. Over time, as the Fed continued to adjust the capital ratio, this precedent would help constrain it. If the Fed traditionally chose from the middle of the range, and then one day chose an outlier, people would demand an explanation. The Fed should be required to provide one.

The problem of uncertain valuations is a commonplace of regulation.¹⁷ Environmental regulations are famously plagued by the problem of valuing intangible assets, such as the existence value of dramatic views and the preservation of unique species of insects, for which no plausible valuation methodology of any kind exists.¹⁸ It has been difficult for regulators to attach valuations to the risk of death, the discomfort of illness, the loss of recreational opportunities, and the pleasure of inhaling clean rather than dirty air. While some mechanisms in finance may be complex, almost all financial benefits and costs can be measured in terms of utility functions over money, the area of economics with the longest history (dating at least back to the seventeenth century) and the area most firmly understood by economists. Moreover, measuring financial costs and benefits does not make people as queasy as efforts to measure death, pain, and lost relationships.

B. *The Centrality of Finance*

Coates argues that financial regulators should not use CBA because “finance is at the heart of the economy.”¹⁹ Yet this consideration actually cuts in the opposite direction. CBA is a costly procedure for generating greater information to make policy-making in an area more precise. A plausible argument against CBA is that a given area of regulation is so peripheral to the economy that it is not worth making investments in improving policy-making in that area. Indeed, this view is reflected in the longstanding rule that only “major”

17. See, e.g., Cass R. Sunstein, *The Limits of Quantification*, 102 CALIF. L. REV. 1369 (2014). The proceedings of a recent conference on this topic, *Developing Regulatory Policy in the Context of Deep Uncertainty: Legal, Economic, and Natural Science Perspectives*, held by the University of Chicago Law School (Apr. 26-27, 2013), are forthcoming in the *Journal of Legal Studies*.

18. The Environmental Protection Agency uses contingent valuation surveys; most economists are skeptical of them. See, e.g., Peter A. Diamond & Jerry A. Hausman, *Contingent Valuation: Is Some Number Better than No Number?*, 8 J. ECON. PERSP. 45 (1994); Jerry Hausman, *Contingent Valuation: From Dubious to Hopeless*, 26 J. ECON. PERSP. 43 (2012).

19. Coates, *supra* note 2, at 1002.

regulations—those with an annual economic impact of at least \$100 million—require CBA. An area’s centrality to the economy is precisely what justifies making such investments. Therefore, we view the centrality of finance as an important factor favoring CBA of financial regulations.

It seems that Coates is worried about a slightly different problem: the complexity of financial phenomena.²⁰ But all regulations, and not just financial regulations, have complex causal effects. Consider a regulation that requires factories to install scrubbers. The regulation has certain, easily identifiable “first-order” effects: the factory must pay money for scrubbers. The reduction in pollution enhances human health. But the regulation also has more complicated “second-order” effects: companies that manufacture scrubbers will make larger profits, while doctors will lose profits. The factory owner might pass on costs to consumers, resulting in higher prices, or to workers, resulting in lower wages. Consumers and workers then might purchase fewer goods, hurting still others farther down the causal chain, and these others in turn will change their behavior, and so on.

This is a generic problem for CBA,²¹ and so three points must be made. First, like much of Coates’s argument, causal complexity is better interpreted as a critique of CBA as such rather than as a critique of *financial* CBA. Second, complexity is a problem for *all forms of regulation*, and in fact all forms of economic analysis, not just for CBA. Coarse assumptions and rules of thumb must attend to second-order and third-order effects if they are significant, as suggested in recent work on general equilibrium effects in CBA of other areas of regulation.²² Third, *n*th-order effects probably wash out. A pollution regulation that increases costs for consumers might cause them to spend less, but the same regulation might reduce medical costs for other people, who will spend more. The further down one goes along the causal chain, the safer it is to ignore the effects of the regulation.

Coates’s argument can therefore be reinterpreted as a more complicated claim that compared to other areas of regulation, financial regulation will (1) have more *n*th-order effects; of (2) a greater magnitude; (3) that cannot be expected to wash out; and (4) that cannot be reliably identified and measured by regulators. Coates does not provide a plausible justification for this conjecture, and it seems to us very likely to be false. Consider antitrust regulation. The approval of a merger of two large firms could have an immense number of large

20. *Id.*

21. See Jonathan S. Masur & Eric A. Posner, *Unemployment and Regulatory Policy*, in *DOES REGULATION KILL JOBS?* (Cary Coglianese, Adam M. Finkel & Christopher Carrigan eds., 2014).

22. Lawrence H. Goulder & Robertson C. Williams III, *The Substantial Bias from Ignoring General Equilibrium Effects in Estimating Excess Burden, and a Practical Solution*, 111 J. POL. ECON. 898 (2003).

effects far down the causal chain, which are nearly impossible to identify. Yet mergers are routinely subjected to CBA.²³ Why? The answer is that the academic literature has progressed to a point that researchers are confident that regulators can safely ignore many effects that are either small or likely to wash out, depending on the structure of markets, and so should focus their attention on certain effects—like economies of scale, product substitution, and so on.²⁴ Sometimes CBA analysts will mistakenly discount an effect that is in fact very large; one of us has written extensively about important effects that are commonly ignored in antitrust CBA.²⁵ However, because of the huge amount of information about prices and industrial behavior, regulators can use statistical techniques that give them a reasonable amount of confidence about their predictions, and these techniques are continually improving the accuracy of policy precisely because the existence of CBA provides incentives for such improvements.²⁶ Similar types and volumes of information are available for financial markets as well, and this suggests that financial markets can also be regulated with CBA and that the techniques for doing so will improve over time.

C. *The Role of People and Social Groups in Finance*

Coates argues that financial regulators should not use CBA because “the main units of variation and change in finance are not things, or even individuals, but *groups* of people—groups with not only economic but also social and political relations.”²⁷ When a financial regulator designs a bank regulation, it must predict how the people who operate the bank will adjust the bank’s portfolio in response to the regulation. By contrast, an environmental regulator focuses on chemistry and physics; it must predict how a change in a manufacturing process, for example, will affect the chemistry of the air. While such a prediction is not necessarily easy, it can be based on known physical laws and information derived from experiments in the lab.

The distinction Coates draws between financial regulation and other types of regulation, however, is overdrawn. Because financial markets usually involve a massive number of sophisticated agents who have a very narrow objective (to

23. See *Horizontal Merger Guidelines*, DEP’T JUST. & FED. TRADE COMMISSION 1 (Aug. 19, 2010), <http://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf> [<http://perma.cc/7RUH-YRGN>].

24. *Cf. id.*

25. Sonia Jaffe & E. Glen Weyl, *Price Theory and Merger Guidelines*, COMPETITION POL’Y INT’L ANTITRUST CHRON., Mar. 2011.

26. E. Glen Weyl, *Finance and the Common Good* 14 (May 29, 2013) (unpublished manuscript), <http://ssrn.com/abstract=2271832> [<http://perma.cc/9KGU-8HAS>].

27. Coates, *supra* note 2, at 1000.

make money), their behavior can often be predicted. If a regulator increases minimum capital requirements beyond banks' current capital-asset ratios, banks will almost certainly respond by selling assets and paying off debt. Their profits will decline, and so will their stock prices. Banks are likely to raise interest rates, and borrowers are likely to look for credit from financial institutions that are not subject to the rules.²⁸ Compared to other areas of economics like industrial organization, which is the foundation of antitrust CBAs, financial economics has a far stronger track record of accurate prediction and precise mathematical modeling.²⁹

The “people” problem that Coates identifies is just the problem of regulating people, as opposed to inanimate objects; it is not a problem that is specific to CBA or finance. It is common to all social sciences, which form the basis for most policy. Moreover, even environmental regulators do not really regulate inanimate objects; they regulate people (and “groups”) as well. When environmental regulators ban the use of chemical *X* as an input in a manufacturing process, they must contend with the risk that producers will substitute *worse* chemical *Y* or *Z*, or the risk that the higher prices will cause consumers to switch to a worse form of behavior. Consider, for example, the ubiquitous worry that excessive regulation of airline safety raises prices, causing consumers to substitute to automobile travel, which is much more dangerous. Even the problem of estimating how *governments* will respond to future events is not unique to financial regulation: that problem is central to regulation of climate emissions, where the cost of mitigation – such as the construction of sea walls by governments – plays a significant role in CBA. Regulators of all kinds cannot avoid regulating, and hence making predictions about the behavior of people. That’s what they are supposed to do.

The weakness of Coates’s argument becomes particularly clear when one turns one’s attention to antitrust regulation. Antitrust regulation is just regulation of people or groups as they buy and sell from each other. In this respect, it is exactly the same as financial regulation. Antitrust regulators do not deal with inanimate objects, cannot rely on the laws of chemistry and physics, and cannot conduct experiments in the lab. Yet CBA-based antitrust regulation is now entrenched.³⁰

28. See sources cited *supra* note 11.

29. For a good popular treatment of this, see DONALD A. MACKENZIE, *AN ENGINE NOT A CAMERA: HOW FINANCIAL MODELS SHAPE MARKETS* (2006).

30. See *Horizontal Merger Guidelines*, *supra* note 23.

D. *The “Non-Stationarity” of Finance*

Coates argues that another problem with financial CBA is that, relative to CBA of regulations of other areas of life, financial CBA must contend with the fact that “the underlying regularities that enable quantification are commonly ‘non-stationary’ in finance – more likely to change over time in finance than in other domains.”³¹ Coates again cites the law of physics – gravitational constants remain constant by definition and do not change over time – and compares the invariance of physical laws to the changeability of financial patterns, like the dividend payout ratio.³²

But Coates is comparing apples and oranges. Physical laws constrain financial transactions, which ultimately involve keystrokes, the movement of electronic impulses, and other physical manifestations, just as they constrain rocket ships. A more accurate comparison would be, for example, changes in how firms manufacture pesticides and changes in how they lend money to each other. Or consider changes in how people communicate with each other (by landline, by cell phone, over the web, using email or Facebook or Twitter, and so on) – changes that have accelerated massively over the last decade. Or consider the agricultural industry, which is constantly tinkering with the genetic composition of organisms. Or the pharmaceutical industry, which is continuously modifying the chemical composition of drugs. Antitrust law must contend with the constantly shifting organizational forms and contractual arrangements of business firms. CBA of emissions controls must contend with one of the most unstable and non-stationary systems known to humankind: the earth’s climate system.³³

The “underlying regularities” in these industries are just as “non-stationary” as those in finance. So rather than conclude that financial CBA is impossible in the face of the Heraclitian flux, we can learn from regulators of other industries how financial regulators should act in the face of rapid change in the regulated activities. The major lesson that emerges is that regulators

31. Coates, *supra* note 2, at 1001.

32. *Id.* at 1001-02.

33. The U.S. government performed a CBA in order to determine the “social cost of carbon.” See *The Social Cost of Carbon*, ENVTL. PROTECTION AGENCY, <http://www.epa.gov/climatechange/EPAactivities/economics/scc.html> [<http://perma.cc/L4LZ-73SX>]. One of us has criticized this CBA, see Jonathan S. Masur & Eric A. Posner, *Climate Regulation and the Limits of Cost-Benefit Analysis*, 99 CALIF. L. REV. 1557 (2011), but there is no doubt that it was an extremely sophisticated and valuable exercise, one that has stimulated important academic research, see, e.g., Elisabeth J. Moyer et al., *Climate Impacts on Economic Growth as Drivers of Uncertainty in the Social Cost of Carbon* (Univ. of Chi. Coase-Sandor Inst. for Law and Econ., Working Paper No. 652, 2014), <http://ssrn.com/abstract=2312770> [<http://perma.cc/K6AC-7SJB>], and will lay groundwork for more precise estimates as the science catches up to policy needs.

should require agents to obtain regulatory approval *before* marketing a new device or process that might cause widespread harm. The effect of this approach is to freeze the market temporarily. A pharmaceutical company can invent whatever drugs it wants to, but it cannot market them until after it receives FDA approval. This gives the FDA the time to engage in a thorough review. We have advocated a similar approach to financial innovations.³⁴

There are also other ways to deal with a rapidly changing environment. In tax law, the IRS must address the same problem that financial regulators face: sophisticated agents constantly invent new transactional structures that enable them to minimize the tax burdens that they bear. Because the IRS could not keep up, Congress finally passed laws that enabled courts to penalize tax evaders *ex post* by imposing significant sanctions under broad standards.³⁵ These standards are themselves based on cost-benefit (or, more precisely, cost-effectiveness) principles: they ban transactions that generate no social value beyond comparable taxable transactions because their entire structure is driven by tax-minimization. Similarly, financial regulators could impose sanctions *ex post* based on cost-benefit principles.

Another response to the problem of “non-stationarity” is to provide adequate staff and budgeting to regulatory agencies. This enables these agencies to pay experts in the industry to alert them to developments, hire researchers to analyze data, and monitor industry players. Bank inspections that currently take place every six months or once a year could be increased; inspections could be expanded to hedge funds and other financial agents that currently operate under more limited regulatory oversight.

E. The Artificiality of Finance

Jeffrey Gordon, like Coates, argues that the financial economy is constructed from laws and regulations, unlike the “real economy” of goods and services.³⁶ Like Coates, Gordon thinks that CBA may be appropriate for regulations that apply to physical processes rather than social groups.³⁷ However, Gordon makes the further point that because financial transactions are themselves endogenous to the regulatory framework, further adjustments of the

34. See Eric A. Posner & E. Glen Weyl, *An FDA for Financial Innovation: Applying the Insurable Interest Doctrine to Twenty-First Century Financial Markets*, 107 NW. U. L. REV. 1307 (2013).

35. See David A. Weisbach, *An Economic Analysis of Anti-Tax-Avoidance Doctrines*, 4 AM. L. & ECON. REV. 88 (2002).

36. Gordon, *supra* note 5, at 6.

37. *Id.* at 5.

regulatory framework based on cost-benefit principles would lead to bad or arbitrary outcomes.³⁸

We find this argument puzzling. Let's consider the thought experiment that Gordon employs. Imagine a society in which people borrow and lend subject only to the rules of property and contract law. Gordon seems to think that such a primitive financial system could be regulated using cost-benefit principles. Presumably this means that if the government fears that unregulated credit might lead to financial crisis, then it could use cost-benefit analysis to determine constraints—taxes or rules like minimum capital requirements—that reflect the expected cost of a financial crisis.

Gordon's major point is that modern financial markets reflect earlier regulatory choices. Money market mutual funds exist today only because banks were forbidden to pay interest to depositors in the 1970s. Pressure emerged for an alternative. Regulators allowed money market mutual funds to pay interest as long as they invested in safe and liquid assets. As a consequence, there emerged two types of depository institutions, albeit subject to different rules. Later banks were allowed to charge interest rates. Still later, they were allowed to combine with investment banks.³⁹

Exactly why this complex pattern of regulation undermines cost-benefit analysis eludes us, but we can make some conjectures. Suppose, for example, regulators decide, in light of the financial crisis, that money market mutual funds are too risky. They consider some regulations that would restrict the investments made by these funds. On the cost side, the mutual funds would lose some money, which could be estimated. Calculating the benefits will be more difficult. One problem is estimating the effect on the probability of a financial crisis of a mutual fund industry that holds incrementally safer investments. Another problem—and this is what we think Gordon has in mind—is that one would also need to estimate the change in the flow of funds. Some investors would withdraw cash from mutual funds and invest them in other financial institutions. Some investors would, at the margin, give up the benefits of liquidity in order to obtain a higher return. Others might put their money in banks, where there are fewer restrictions on withdrawal. The regulator thus would need to take into account the possibility that stricter regulation of mutual funds would lead to more funds in other financial institutions—some of which are riskier or more lightly regulated.

Can a regulator estimate these risks? There is no reason in principle to believe that such estimates are impossible. If they are hard, it is not because financial markets are artificial rather than real; it is because financial markets are complicated. The problem that Gordon identifies is just another species of reg-

38. *Id.* at 10–11.

39. See Gordon, *supra* note 5.

ulatory arbitrage, similar to the problem that if the government regulates airplanes too strictly, then consumers will substitute to more-dangerous automobiles, and if they regulate automobiles too strictly, then consumers will substitute to still more dangerous bicycles. This type of behavior creates complex problems. Should the government respond by regulating cars less strictly or by creating additional protections for bicyclists? Regulatory arbitrage is ubiquitous. The right response is not to abandon cost-benefit analysis, but to try to anticipate arbitrage and counter it as it emerges and is identified.

II. ALTERNATIVES TO COST-BENEFIT ANALYSIS

Critics of cost-benefit analysis must explain what alternative decision-procedure regulators should use. In environmental, health, and safety regulation, alternatives do exist, including risk-risk analysis, quality-adjusted life years (QALY), and feasibility analysis. These alternatives make little sense on their own terms, but they are particularly inappropriate for financial regulation. Risk-risk and QALY analysis direct the regulator to consider the risks of death and morbidity—risks that are not affected by financial transactions. Feasibility analysis directs the regulator to choose the strictest regulation that does not cause excessive unemployment.⁴⁰ It is hard to imagine how such a decision-procedure could be used in financial regulation, and because no one has suggested that it should be, we will not address how these other decision-procedures might be used.

Coates argues that financial regulators should use their “expert judgment”;⁴¹ he also argues that they should use what he calls “conceptual CBA.”⁴² But neither of these proposals is plausible. First, the invocation of expert judgment is circular. To see why, suppose the experts themselves asked researchers how they could improve regulatory decision-making. If researchers replied by telling them to use their “expert judgment,” the experts would be no more enlightened than before. More to the point, the invocation of “expert judgment” is simply an expression of confidence in the status quo and an invitation to complacency. “Expert judgment” did not prevent the financial crisis from taking place; why should we defer to it?

Furthermore, if experts are allowed to make judgments without having to justify those judgments and make explicit their assumptions, it becomes more difficult both for the public to understand and challenge the reasoning and for future experts, attempting to learn from the past, to make the best decisions

40. For a discussion of the literature, see MATTHEW D. ADLER & ERIC A. POSNER, *NEW FOUNDATIONS OF COST-BENEFIT ANALYSIS* 95 (2006).

41. Coates, *supra* note 2, at 903-04.

42. *Id.* at 1008.

going forward. A large cognitive psychology literature has shown that experts, like ordinary people, make predictable errors in reasoning—overreacting to highly salient events, for example. By forcing experts to quantify and defend their assumptions, CBA can help correct for these mistakes.⁴³

We are also puzzled by Coates's confidence in "conceptual CBA."⁴⁴ In a paper mostly devoted to attacking CBA, it is surprising to learn at the end that regulators should use CBA after all. What is the difference between "conceptual CBA" and ordinary CBA? We are not sure. One possibility is that "conceptual CBA" is an accounting exercise rather than a decision-procedure. The regulator identifies the possible effects (or possibly major effects) of a regulation but does not attempt to monetize them when valuations cannot be determined. But then the question is how exactly the regulator determines whether to regulate or not, or how strictly to regulate. Coates does not tell us. It cannot simply be the number of the factors on each side; some weight must be put on each. And if this weighting is done, then that is CBA, albeit of a very coarse form.

Another possibility is that conceptual CBA is a species of what one of us has called "intuitive balancing."⁴⁵ The regulator takes into account the possible effects of a regulation but does not monetize them; it instead simply guesses whether the positive effects outweigh the negative effects. But do we want regulation based on guesswork? Coates denounces standard CBA for being "number-laden guesswork,"⁴⁶ but then he ends up endorsing "guesswork" in the form of conceptual CBA.

When CBA is based on uncertain calculations, conceptual CBA and ordinary CBA do not differ. Under ordinary CBA, when there is a large range of valuations, the regulator is permitted to choose a valuation within this range, assuming the regulator provides a reasonable justification. Office of Information and Regulatory Affairs (OIRA) guidance documents for regulators that currently use CBA provide a variety of methods for addressing uncertainty.⁴⁷ It is unclear how conceptual cost-benefit analysis improves on these methods. In cases for which better data are available, conceptual CBA is clearly worse than ordinary CBA, as it sacrifices precision by refusing to admit quantitative measurements of factors and instead relying on guesswork.

43. See Cass R. Sunstein, *Cognition and Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1059 (2000).

44. Coates, *supra* note 2, at 1009-10.

45. ADLER & POSNER, *supra* note 40, at 98-99.

46. Coates, *supra* note 2, at 998.

47. See, e.g., *Circular A-4*, OFF. MGMT. & BUDGET, EXECUTIVE OFF. PRESIDENT §§ A, E(7)(b) (Sept. 17, 2003), <http://www.whitehouse.gov/sites/default/files/omb/assets/omb/circulars/a004/a-4.pdf> [<http://perma.cc/Q7DX-9BHW>]; *Regulatory Impact Analysis: A Primer*, OFF. MGMT. & BUDGET, EXECUTIVE OFF. PRESIDENT 12-13, http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4_regulatory-impact-analysis-a-primer.pdf [<http://perma.cc/G52H-NCP7>].

Coates also invokes the Taylor Rule,⁴⁸ but we do not see the relevance of this rule to his argument. The Taylor Rule was determined inductively. For a number of years, the U.S. economy enjoyed low inflation and high growth. During this period, the Fed raised and lowered interest rates in a manner that turned out to be relatively consistent; the Taylor Rule describes the Fed's actions as a function of certain economic fundamentals. Whether or not the Taylor Rule can be defended on the basis of an economic analysis, this type of inductive approach is plainly inadequate for financial regulation. Capital adequacy rules also existed during this period of economic prosperity. Applying the Taylor logic that Coates touts, we might accordingly infer that regulators should use those rules. But plainly the capital adequacy rules that existed during that period were not necessarily optimal. While historical data informs an application of CBA, the data must be analyzed with care. Simply extending regulations that are correlated with past economic prosperity is a bad idea.

Indeed, few, if any, serious central bankers believe in always adhering to the Taylor Rule. Most serious macroeconomists believe it is, at best, a good anchor for thinking about policy decisions.⁴⁹ Since the 2007 crash, this rule has fallen into even greater disfavor for its exclusive focus on unemployment and inflation, to the neglect of the sort of “*n*-order” factors that Coates elsewhere claims are important, such as asset prices. In fact, Coates's sympathy towards such rules makes it hard to understand what he is advocating, other than not using CBA.

Gordon suggests another approach to financial regulation, which he calls pragmatism.⁵⁰ The approach at first sounds similar to “conceptual CBA,” but Gordon goes further by arguing that regulators can determine

subsidiary principles of pragmatic design, for example: minimize the extent to which financial institution[s] can free-ride on systemic stability costs paid by others; . . . provide regulators with sufficient information to observe the consequences of their rules; establish regulatory panopticons with authority only to observe the financial system as it evolves and the non-exclusive responsibility of sounding the alarms; grant regulators the power to make regulatory modifications.⁵¹

One can dismiss several of these principles. Regulators already possess the power to make regulatory modifications; the question is how they should de-

48. Coates, *supra* note 2, at 905-06.

49. See, e.g., Lars E. O. Svensson, *What Is Wrong with Taylor Rules? Using Judgment in Monetary Policy Through Targeting Rules*, 41 J. ECON. LITERATURE 426 (2003); Michael Woodford, *The Taylor Rule and Optimal Monetary Policy*, 91 AM. ECON. REV. (PAPERS & PROC.) 232 (2001).

50. Gordon, *supra* note 5, at 17.

51. *Id.*

termine whether to do so. While it makes sense to give regulators information and establish watchdogs, these proposals have nothing to do with the question of whether CBA or some other decision-procedure is superior.

Let us focus on the first principle: minimizing the extent to which financial institutions can free-ride on systemic stability costs paid by others. We agree that regulators should stop financial institutions from free-riding on systemic stability costs. But this just gets us back to where we started. Only regulations can block financial institutions from free-riding, and the question is what form those regulations should take. If they are too weak, then the goal will not be accomplished. But if they are too strong, then financial institutions, while blocked from free-riding, will also be unable to supply credit except at a cost that, in aggregate, harms society. Gordon provides no guidance for making this tradeoff.

III. JUDICIAL REVIEW

Coates believes that judicial review of financial CBAs—whether they are “conceptual” or ordinary CBAs—would be unwise.⁵² He argues that political constraints are sufficient to block regulations that are clearly not cost-justified.⁵³ Moreover, CBA will not otherwise constrain regulators because they can select from a wide range of valuations; indeed, regulators will use CBA to camouflage their discretionary choices.⁵⁴ CBA itself may not satisfy a cost-benefit test, and experience already shows that judicial review of CBA does not generate useful information.⁵⁵ Finally, the materials used to generate a CBA, including any inter-agency discussions, will create a large record that will be used against the regulator in litigation, and in response regulators will go to Congress in order to obtain statutory mandates so that they are not blocked by CBAs.⁵⁶ The upshot is that CBA will not provide information to the public; will slow down regulation, deregulation, and regulatory reform; will increase polarization; and will damage public confidence in the courts.⁵⁷

Chicken Little could hardly paint a bleaker picture. But it can't be the case that CBA is so flexible that it allows regulators to do what they want while camouflaging their choices, and yet so rigid that it enables courts to strike down regulations for failing CBA. Nor is the limited experience with financial

52. Coates, *supra* note 2, at 1003-04.

53. *Id.* at 1003.

54. *Id.*

55. *Id.* at 1004-05

56. *Id.* at 1005.

57. *Id.*

regulation sufficient to draw firm conclusions about the viability of judicial review. Much the same could have been said back in the early 1980s when formal CBA of environmental, health, and safety regulations began. Moreover, Coates's confidence in the status quo, just a few years after a massive financial crisis that the regulators failed to anticipate, and in the wake of a much-criticized reorganization of financial regulators, seems unwarranted. Indeed, the lesson of many of his case studies is how poorly the regulators performed before the financial crisis. Banks "were . . . grossly undercapitalized" in 2008, Coates says,⁵⁸ yet he fails to draw the obvious conclusion: that they were grossly undercapitalized because of the mistakes of regulators.⁵⁹ Rather than accept the obvious implication – that there is something wrong with how the regulators operate – Coates argues that banks should be left alone.

The question of whether courts should enforce CBA of financial regulations boils down to the usual tradeoff between decision costs and error costs, and to considerations of relative institutional competence. If courts do not enforce CBA of financial regulations, then financial regulators may continue to issue regulations that fail cost-benefit tests. These regulations may be excessively strict or excessively lax, depending on the configuration of ideology, interest group influence, and technical sophistication that happens to influence a regulator at any given time. Because most financial regulators are independent agencies, even a well-motivated President may find it impossible to compel them to take CBA seriously. However, if courts do enforce CBA, there is the risk that they will do a poor job, with the result that good regulations will be struck down. Judges themselves may be ideologically motivated and unwilling to enforce CBA properly for that reason; alternatively, they may not be able to understand how CBA works. At a theoretical level, the tradeoff is indeterminate.⁶⁰

That said, we agree with Coates, albeit with less confidence, that judicial review is premature at the current time. Given how little experience financial regulators have with CBA, a statutory requirement that they use CBA probably would bring financial regulation to a halt, and we do not think this would be socially desirable. Instead, we would urge the executive branch to exercise some leadership and begin a process of training financial regulators, setting standards, and providing for an interagency review process modeled on OIRA. As it did in 1981, the executive branch should assert greater control over the fi-

58. *Id.* at 956.

59. See Posner, *supra* note 16.

60. For good treatments of this issue and related institutional issues, see Robert P. Bartlett III, *The Institutional Framework for Cost Benefit Analysis in Financial Regulation: A Tale of Four Paradigms?*, 43 J. LEGAL STUD. S379 (2014); and Prasad Krishnamurthy, *Rules, Standards, and Complexity in Capital Regulation*, 43 J. LEGAL STUD. S273 (2014).

nancial regulators by issuing an executive order requiring them to perform CBAs for major rules. Regulators would be required to submit these rules to OIRA, which would return the proposed rules to the regulators if the CBA is not good enough. Regulators would also be encouraged to develop expertise in CBA, rely on peer-review, and fund research on valuations.

We also believe that regulators should not bear the full burden of CBA: some burden should be borne by objecting regulated parties, who should have to quantify their objections to regulations. Our proposal for pre-approval regulation for new financial derivatives, for example, would put much of the burden of making the case for a new product on the proposing party.⁶¹

CONCLUSION

While there is much of value in Coates's article, we would interpret it as an effort to guide future research toward improvement of valuations for financial CBAs, not as a critique of CBA of financial regulation. Coates's theoretical arguments to the effect that financial regulation is distinctive, and hence not susceptible to CBA unlike other types of regulation, are weak, and in fact much of the evidence he cites suggests the opposite of what he claims. CBA is at least as well suited to financial regulation as to other forms of regulation, and possibly better suited. There are two reasons for this. First, economists understand financial markets at least as well as scientists understand the environment or the human body (consider again the problems of climate change). Second, the valuations relevant to financial CBAs are almost all monetary, and therefore easier to estimate than the valuations that are relevant to environmental, health, and safety regulation, which frequently involve measuring the impact of non-market goods on human well-being.

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61. Posner & Weyl, *supra* note 34.