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Eric Posner

E. Glen Weyl

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## COST-BENEFIT ANALYSIS OF FINANCIAL REGULATIONS: A RESPONSE TO CRITICISMS

*Eric A. Posner and E. Glen Weyl*

THE LAW SCHOOL  
THE UNIVERSITY OF CHICAGO

May 2014

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

Eric A. Posner & E. Glen Weyl<sup>1</sup>

May 14, 2014

**Abstract.** Financial regulators should use cost-benefit analysis (CBA) to evaluate financial regulations. Finance is an ideal domain for CBA because the direct costs and benefits of financial activity can be easily monetized, and a huge amount of data exists for calculating the relevant valuations. John Coates and others have argued that in fact the valuations are too difficult to determine because of unique features of financial markets that distinguish them from other types of markets where CBA is used. We respond that these features are present in other markets, and that financial valuations are difficult to determine at present only because academic research on them is at an early stage.

In two recent articles, we urged financial regulators to use cost-benefit analysis (CBA) to evaluate financial regulations.<sup>2</sup> John Coates has emerged as a leading critic of this view.<sup>3</sup> Doubts can also be found in a recent paper by Jeffrey Gordon.<sup>4</sup> In this Essay, we survey their objections and respond to them.

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

Second, Coates makes a series of theoretical arguments that valuation difficulties do not arise merely from the paucity of academic research but 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 this explains why valuation problems cannot be surmounted. Gordon makes a similar argument that CBA of financial regulations cannot work because financial markets are “constructed” or artificial. We argue the opposite: that because financial markets generate a huge amount of data, and because most of the relevant valuations are monetary in nature, financial

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<sup>1</sup> Kirkland & Ellis Distinguished Service Professor, University of Chicago Law School; Assistant Professor, Department of Economics, University of Chicago. Thanks to Cass Sunstein for comments, and to Jullia Park for research assistance.

<sup>2</sup> Eric A. Posner & E. Glen Weyl, *Benefit-Cost Analysis for Financial Regulation*, 103 AM. ECON. REV. (PAPERS & PROC.) 393 (2013), available at <http://ssrn.com/abstract=2188990>; Eric A. Posner & E. Glen Weyl, *Benefit-Cost Paradigms in Financial Regulation*, J. LEGAL STUD. (forthcoming, 2014), available at [http://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1647&context=law\\_and\\_economics](http://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1647&context=law_and_economics).

<sup>3</sup> John C. Coates, IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications* (Harvard Law Sch. Eur. Corp. Governance Inst. Law Working Paper No. 234, 2014), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2375396](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2375396).

<sup>4</sup> Jeffrey N. Gordon, *The Empty Call for Benefit-Cost Analysis in Financial Regulation* (Colum. Law & Econ. Working Paper No. 464, 2013), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2378562](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2378562).

regulations are ideal for CBA, much more than regulations of the environment and health and safety.

Third, Coates fails to provide plausible alternatives to CBA. In some places, he advocates “expert judgment,” 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,” which we believe is also inferior to conventional (quantitative) CBA. Gordon advocates “pragmatism.” 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 argue that none of them is a normatively defensible alternative to CBA.

Finally, Coates claims that judicial review would “camouflage” discretionary choices by regulators rather than discipline them. Many other scholars have criticized judicial review that demands that financial regulators perform CBAs. We are more sympathetic with this argument than with Coates’ 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 thus argue for further development of institutional support for CBA in the executive branch, which should draw on the expertise of private consultancies. Judicial review can be limited to ensuring that regulators take advantage of that support once it is in place.

## **I. Criticisms and Responses**

### **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, are noisy, or if no plausible identification strategy has been developed, regulators will not be able to determine valuations with any confidence. This creates a dilemma. Regulators may be unable to regulate even when it is widely understood that regulation is socially desirable; or they may regulate but then they must disregard CBA and rely on guesswork.

Consider bank capital requirements. Banks are required to maintain a ratio of equity to assets. Should this ratio be 4 percent or 5 percent, or 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, the bank must raise interest rates, which will result in less lending and lower profits. Calculating the lost profits 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 on profits.<sup>5</sup>

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<sup>5</sup> Coates lists a set of generic problems with predicting the effect of regulations on profits, but these exist for non-financial regulation as well. If taken seriously, it would be hard to imagine how any firms could function. Moreover,

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, and 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 economic downturns. The question about whether reliable valuations can be used boils down to whether there are enough data that exhibit sufficient regularities or not. Coates believes that the data are too sparse and noisy. To prove this point, he shows that different studies make different estimates of the relevant variables across large ranges.<sup>6</sup>

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 5 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 5 percent number will be consistent with a relatively narrow range of expected benefits in the form of avoided financial crises. Then the question arises 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 plausible. We believe it is far better that the public and economists know which studies are currently driving policy so that one can criticize the policy if the studies are flawed and support it if they 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.

Furthermore, Coates takes a far too static view of academic research. That the studies generate a range of valuations does not mean that all valuations are equally good. Researchers can criticize studies because they make unreasonable assumptions, or 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, are ubiquitous in social science and even scientific research. Often, they can be addressed straightforwardly with additional research. When multiple studies are conducted, it will often be reasonable to discard outliers as statistical artifacts.

We would require the Fed to perform and disclose its cost-benefit analysis so that the numbers it implicitly relies on can be scrutinized by academics. The Fed should also sponsor additional research that evaluates its assumptions and methods. Even if, in the end, a huge range

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he confuses the problem of calculating the costs to banks (which is simple) and social costs, which means performing the entire cost-benefit analysis. Coates, *supra* note XX, at 67-68.

<sup>6</sup> *Id.* at 60.

of valuations exists, and the Fed has no choice but to choose a valuation from within the range, the exercise is valuable because it shows where additional research is necessary. CBA itself will not impose much discipline in those circumstances, but the Fed will 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 continues to adjust the capital ratio, this precedent will help constrain it. If it traditionally chooses from the middle of the range, and then one day chooses an outlier, people will demand an explanation. The Fed should be required to provide one. This can only improve the quality of regulation.

The problem of uncertain valuations is a commonplace of regulation.<sup>7</sup> Indeed, finance is less about individuals' subjective valuations than are other areas of regulation. 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 methodology of any kind presently exists.<sup>8</sup> 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 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 17<sup>th</sup> century) and the area most firmly understood by economists.

## B. The Centrality of Finance

Coates argues that financial regulators should not use CBA because “finance is at the heart of the economy.”<sup>9</sup> This argument is paradoxical. 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 an area of regulation is so peripheral to the economy that investments in improving policy-making in that area are not worth making. Indeed, this view is reflected in the longstanding rule that only “major” regulations require CBA—those with an annual economic impact of at least \$100 million. But an area being central to the economy is precisely what justifies making such investments. Thus we view the centrality of finance as an important motivation for CBA of financial regulations.

It becomes clear that Coates is worried about a slightly different problem. 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

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<sup>7</sup> See, e.g., Cass R. Sunstein, *The Limits of Quantification*, CALIF. L. REV. (forthcoming 2014). A recent conference on this topic, *Developing Regulatory Policy in the Context of Deep Uncertainty: Legal, Economic, and Natural Science Perspectives*, is forthcoming in the *Journal of Legal Studies*.

<sup>8</sup> 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).

<sup>9</sup> Coates, *supra* note XX, at 88.

lower wages. Consumers and workers then might purchase fewer goods, hurting still others farther down the causal chain, who in turn will change their behavior, and so on.

This is a generic problem for CBA,<sup>10</sup> and so three points must be made. First, like much of Coates' argument, it is better interpreted as a critique of CBA rather than as a critique of *financial* CBA. Second, this 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.<sup>11</sup> Third, *nth*-order effects tend to wash out. A regulation that increases costs for consumers might cause them to spend less, but if the same regulation reduces medical costs for other people, they will spend more. The farther down one goes along the causal chain, the safer it is to ignore the effects of the regulation.

Coates' argument can thus be reinterpreted as a more complicated claim that compared to other areas of regulation, financial regulation will (1) have more *nth*-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. He provides no justification for this conjecture, and it seems to us very likely false. Consider antitrust regulation. The approval of a merger of two large firms could have a huge number of large effects far down the causal chain, which are nearly impossible to identify. Yet the consensus is that mergers can and should be subjected to CBA, and they routinely are. 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.<sup>12</sup> Sometimes CBA analysts will be wrong about this and 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.<sup>13</sup> 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.<sup>14</sup> This type of information is available for financial markets as well, and this suggests that financial markets can similarly 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

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<sup>10</sup> 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).

<sup>11</sup> 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).

<sup>12</sup> See Horizontal Merger Guidelines, U.S. Department of Justice and the Federal Trade Commission (2010), available at <http://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf>

<sup>13</sup> Sonia Jaffe & E. Glen Weyl, *Price Theory and Merger Guidelines*, 3 CPI ANTITRUST CHRONICLE (2011), available at <http://EconPapers.repec.org/RePEc:cpi:atchrn:3.1.2011:i=5864>.

<sup>14</sup> E. Glen Weyl, *Finance and the Common Good* (2013), available at <http://ssrn.com/abstract=2271832>.

with not only economic but also social and political relations.”<sup>15</sup> When a financial regulator designs a regulation of a bank, 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 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.

Again, the distinction is overdrawn. Because financial markets usually involve a huge number of sophisticated agents who have a very narrow objective (to 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 price. They are likely to raise interest rates, and borrowers are likely to look for credit from financial institutions that are not subject to the rules. 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.<sup>16</sup>

Of course, other effects, including the reduction of the risk of a financial crisis, will be difficult to predict and measure. So will be the response of the government if a financial crisis occurs. But these problems exist for regulation generically, and for non-financial CBA as well. When financial regulators use “expert judgment” to determine minimum capital requirements, they cannot avoid speculating about the effect of capital requirements on the probability of a financial crisis. 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, 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 to *worse* chemical Y or Z. Or the risk that the higher prices will cause consumers to substitute 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’ argument is 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, cannot conduct experiments in the lab. Yet CBA-based antitrust regulation is now entrenched.

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<sup>15</sup> *Id.* at 90.

<sup>16</sup> For a good popular treatment of this, see DONALD A. MACKENZIE, AN ENGINE NOT A CAMERA: HOW FINANCIAL MODELS SHAPE MARKETS (Wiebe E. Bijker, W. Bernard Carlson, & Trevor Pinch eds., MIT Press, 2006).



## 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.”<sup>17</sup> Coates again cites the law of physics—gravitational constants remain constant by definition and do not change over time—and compares them with the changeability of financial patterns, like the dividend payout ratio.

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 fairer 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), which 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 climate emission must contend with one of the most unstable and non-stationary systems known to humankind: the earth’s climatic system.<sup>18</sup>

The “underling regularities” in these industries are just as “non-stationary” as those in finance. And so rather than conclude that 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 may 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 temporarily freeze the market. A pharmaceutical company can invent whatever drugs it wants to, but it cannot market them until after it receives FDA approval. The drug is held off the market, giving the FDA the time to engage in a thorough review. We have advocated a similar approach to financial innovations.<sup>19</sup>

There are 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 tax burdens that they should

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<sup>17</sup> *Id.* at 90.

<sup>18</sup> The U.S. government performed a CBA in order to determine the “social cost of carbon.” 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), available at <http://ssrn.com/abstract=1662147>), 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 Moyer, Mark Woolley, Michael Glotter, & David Weisbach, *Climate Impacts on Economic Growth as Drivers of Uncertainty in the Social Cost of Carbon* (2014), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2312723](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2312723)), and will lay groundwork for more precise estimates as the science catches up to policy needs.

<sup>19</sup> Eric A. Posner & E. Glen Weyl, *An FDA for Financial Innovation: Applying the Insurable Interest Doctrine to 21st Century Financial Markets*, 107 NW. U. L. REV. 1307 (2013), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2010606](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2010606)

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.<sup>20</sup> These standards are themselves based on cost-benefit (or, more precisely, cost-effectiveness principles): they ban transactions with minimal economic substance. Similarly, financial regulators could impose sanctions ex post based on cost-benefit principles.

Another straightforward response to the problem of “non-stationarity” is to provide adequate staff and budgeting to regulatory agencies. This enables them 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 in the shadows.

### **E. The Artificiality of Finance**

Gordon argues that the financial economy is constructed from laws and regulations, unlike the “real economy” of goods and services. Like Coates, Gordon thinks that CBA may be appropriate for regulations that apply to physical process rather than social groups, but Gordon’s major point is that because financial transactions are themselves endogenous to the regulatory framework, further adjustments of the regulatory framework based on cost-benefit principles would lead to bad or arbitrary outcomes.

We find this argument puzzling. Let’s consider Gordon’s thought-experiment. Imagine a state of nature or lightly regulated state of nature, where 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 along cost-benefit principles. Presumably this means that if the government fears that unregulated credit might lead to financial crisis, 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 were now 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. And so on.

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 their investments. 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 the financial crisis of a mutual fund industry that holds

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<sup>20</sup> David A. Weisbach, *An Economic Analysis of Anti-Tax-Avoidance Doctrines*, 4 AM. LAW & ECON. REV. 88 (2002), available at <http://ssrn.com/abstract=228536>.

incrementally safer investments. Another problem—and this is what we think Gordon has in mind—is that one would need to also 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 will, at the margin, give up the benefits of liquidity in order to obtain a higher return. Others might put the 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? A first point is that 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 regulatory arbitrage, similar again to the problem that if the government regulates airplanes too strictly, consumers will substitute to more-dangerous automobiles, and if they regulate automobiles too strictly, 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. Alternative Decision-Procedures**

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. None of these alternatives makes much sense on their own terms, but they are particularly inappropriate for financial regulation. Risk-risk and QALY analysis directs 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. It is hard to imagine how such a decision-procedure could be used in financial regulation, and no one has suggested that it should be.

Coates argues that financial regulators should use their “expert judgment”; he also argues that they should use what he calls “conceptual CBA.” But neither of these proposals are plausible. The invocation of expert judgment is circular. To see why, suppose the experts themselves asked researchers how they can improve regulatory decision-making. If researchers replied by telling them to use their “expert judgment,” the experts will be no more enlightened than in the past. 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 both becomes more difficult for the public to understand and challenge the reasoning and for future experts, attempting to learn from the past, to make the best decisions 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 them to quantify and defend their assumptions, CBA can help correct for these mistakes.<sup>21</sup>

We are also puzzled by Coates' confidence in "conceptual CBA." In a paper mostly devoted to attacking CBA, it is more than a surprise that at the end of the paper we learn 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 length of the factors on each side; some weight must be put on each. And if such is done then that is CBA, albeit of a very coarse form. If "conceptual CBA" is an accounting exercise rather than a decision-procedure, it is not an alternative to ordinary CBA.

Another possibility is that conceptual CBA is a species of what one of us has called "intuitive balancing."<sup>22</sup> 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. Perhaps that is what regulators already do, but do we want regulation based on guesswork? Coates denounces standard CBA for being "little more than guesswork" 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 it provides a reasonable justification. OIRA guidance documents for regulators that currently use CBA provides a variety of methods for addressing uncertainty.<sup>23</sup> How conceptual cost-benefit analysis improves on these methods is unclear. In cases where better data are available, conceptual CBA is clearly worse than ordinary CBA as it fails to incorporate this greater precision by refusing to admit quantitative measurements of factors and instead relying on guesswork.

Coates also invokes the Taylor Rule, 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. After all, the Fed's actions must themselves have been based on some kind of

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<sup>21</sup> Cass R. Sunstein, *Cognition and Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1059 (2000).

<sup>22</sup> MATTHEW D. ADLER & ERIC A. POSNER, *NEW FOUNDATIONS OF COST-BENEFIT ANALYSIS* (Harvard Univ. Press 2006).

<sup>23</sup> See OFFICE OF MANAGEMENT & BUDGET, EXECUTIVE OFFICE OF THE PRESIDENT, CIRCULAR A-4, ¶. A, E.7.B (2003), [http://www.whitehouse.gov/omb/circulars\\_a004\\_a-4](http://www.whitehouse.gov/omb/circulars_a004_a-4); OFFICE OF MGMT. & BUDGET, EXECUTIVE OFFICE OF THE PRESIDENT, REGULATORY IMPACT ANALYSIS: A PRIMER 12-13, [http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4\\_regulatory-impact-analysis-a-primer.pdf](http://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4_regulatory-impact-analysis-a-primer.pdf).

decision-procedure. Since the Taylor Rule had not yet been formulated, those actions could not have been based on the Taylor Rule.

Furthermore, few, if any, serious central bankers believe in a slavish adherence to the Taylor Rule; we doubt Coates does either. Most serious macroeconomists believe it is at best a good anchor for thinking about policy decisions.<sup>24</sup> 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 opposing CBA; at one point he critiques CBA for considering too few factors and allowing too little discretion; in the case of the Taylor Rule he appears to advocate far less discretion and far more mechanical policy. Which way would he have it?

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 therefore use those rules. But plainly the capital adequacy rules that existed during that period may not have had a causal effect on economic conditions. While historical data may useful inform a CBA, simply extending regulations that are correlated with past economic prosperity is a bad idea.

Gordon suggests another approach to financial regulation, which he calls pragmatism. 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 institutions 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.<sup>25</sup>

One can dismiss several of these principles. Regulators already possess the power to make regulatory modifications; the question is how they should determine whether to do so. And 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. 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, financial institutions, while blocked from free-riding,

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<sup>24</sup> See, e.g., Michael Woodford, *The Taylor Rule and Optimal Monetary Policy*, 91 AM. ECON. REV. (PAPERS & PROC.) 232 (2001); Lars E. O. Svensson, *What is Wrong with Taylor Rules? Using Judgment in Monetary Policy through Targeting Rules*, 41 J. ECON. LIT. 426 (2003).

<sup>25</sup> Gordon, *supra* note XX, at 17.

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. He argues that political constraints are sufficient to block regulations that are clearly not cost-justified; CBA will not otherwise constrain regulators because they can select from the wide range of valuations; indeed, regulators will use CBA to camouflage their discretionary choices; CBA itself may not satisfy a cost-benefit test; experience already shows that judicial review of CBA does not generate useful information; the materials used to generate a CBA, including any interagency discussions, will create a larger record that will be used against the regulator in litigation; regulators will go to Congress in order to obtain statutory mandates so that they are not blocked by CBAs; and all of this will not provide information to the public, will slow down regulation, deregulation, and regulatory reform, increase polarization, and damage public confidence in the courts.<sup>26</sup>

Chicken Little could hardly paint a bleaker picture. But it can’t be the case that CBA is so flexible that regulators can do what they want while camouflaging their choices, and yet also enables courts to strike down regulations for failing CBA. Nor is the limited experience with financial 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. And Coates’ 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, he says;<sup>27</sup> yet he fails to draw the obvious conclusion: that they were grossly undercapitalized because of the mistakes of regulators. Rather than draw the obvious implication—that there is something wrong with how the regulators operate—he argues that they 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 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 whatever configuration of ideology, interest group influence, and technical sophistication 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 unwilling to enforce CBA honestly because the judges

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<sup>26</sup> Coates, *supra* note XX, at 90-91.

<sup>27</sup> *Id.* at 54.

are ideologically motivated, or they may not be able to understand how it works. At a theoretical level, the tradeoff is indeterminate.<sup>28</sup>

That said, we agree with Coates, albeit with less confidence, that judicial review is premature at the current time. Given how little experience that financial regulators have with CBA, a statutory requirement that they use CBA probably would bring financial regulation to a halt, which we do not think is 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. 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 would put much of the burden for making the case for a new product on the proposing party.<sup>29</sup>

### Conclusion

While there is much of value in Coates' 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. His theoretical arguments that financial regulation is unique, and hence not susceptible to CBA unlike other types of regulation, are weak, and in fact suggest the opposite. CBA is at least as well suited to financial regulation as to other forms of regulation, and possibly more 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 or of determining the impact of chemicals on health when dose-response curves are incomplete. Second, the valuations relevant to financial CBAs are almost all monetary, and thus 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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<sup>28</sup> For good treatments of this issue and related institutional issues, see Robert P. Bartlett, *The Institutional Framework for Cost Benefit Analysis in Financial Regulation: A Tale of Four Paradigms?*, J. LEGAL STUD. (forthcoming); Prasad Krishnamurthy, *Rules, Standards, and Complexity in the Cost Benefit Analysis of Capital Regulation*, J. LEGAL STUD. (forthcoming).

<sup>29</sup> Posner and Weyl, *supra* note XX.

Readers with comments should address them to:

Professor Eric A. Posner  
[eric\\_posner@law.uchicago.edu](mailto:eric_posner@law.uchicago.edu)



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