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Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications

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Abstract

Some members of Congress, the D.C. Circuit, and legal academia are promoting a particular, abstract form of cost-benefit analysis for financial regulation: judicially enforced quantification. How would CBA work in practice, if applied to specific, important, representative rules, and what is the alternative? Detailed case studies of six rules – (1) disclosure rules under Sarbanes-Oxley Section 404, (2) the SEC's mutual fund governance reforms, (3) Basel III's heightened capital requirements for banks, (4) the Volcker Rule, (5) the SEC's cross-border swap proposals and (6) the FSA's mortgage reforms – finds that precise, reliable, quantified CBA remains unfeasible. Quantified CBA of such rules can be no more than "guesstimated," as it entails (a) causal inferences that are unreliable under standard regulatory conditions; (b) using problematic data, and/or (c) the same contestable, assumption-sensitive macroeconomic and/or political modeling used to make monetary policy, which even CBA advocates would exempt from CBA law. Expert judgment remains an inevitable part even of what advocates label "gold-standard" quantified CBA, because finance is central to the economy, is social and political, and is non-stationary. Judicial review of quantified CBA can be expected to do more to camouflage discretionary choices than to discipline agencies or promote democracy.

Keywords: Cost-benefit analysis, financial regulation, nonquantifiable benefits, Securities and Exchange Commission, Commodities and Futures Trading Commission, discounting, Basel III, Sarbanes-Oxley Act, securities regulation, consumer finance, mutual funds, Volcker Rule

JEL Classifications: D02, D61, D73, D78, G18, G38, I3, K22, K23, L51

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John C. Coates IV

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CONTENTS

INTRODUCTION
I. WHAT DO PEOPLE MEAN BY "COST-BENEFIT ANALYSIS"?
- *A. Policy vs. Law*
- *B. Quantities (or Guesstimates) vs. Concepts*
- *C. Camouflage vs. Discipline*
- *D. Alternatives to Quantified CBA/FR*
  - 1. The Alternative of Expert Judgment
  - 2. The Taylor Rule: A Limiting Example

II. HOW IS CBA/FR BEING PROMOTED THROUGH LAW?
- A. *Existing CBA/FR Law*
- *B. Regulatory Initiatives*
- *C. Congressional Oversight*
- *D. Judicial Review*
- *E. Proposed Legislation*

III. HOW MIGHT CBA OF FINANCIAL REGULATION WORK?
- *A. Case Study #1: Control Disclosures For Public Companies*
- *B. Case Study #2: Independent Boards For Mutual Funds*
- *C. Case Study #3: Heightened Capital Requirements For Banks*
- *D. Case Study #4: The Volcker Rule*
- *E. "Gold-Standard" Examples of CBA/FR*
  - 1. The SEC's Cross-Border Swaps Rules
  - 2. The FSA's Mortgage Market Reforms
- *F. Summary of Case Studies*

IV. WHAT ARE THE IMPLICATIONS OF THESE CASE STUDIES?
- *A. CBA/FR Remains a Potentially Valuable Component of Policy Analysis*
- *B. Why is Quantified CBA/FR so Unreliable?*
  - 1. Finance is Central to the Economy
  - 2. Finance is Social and Political
  - 3. Finance is Non-Stationary
- *C. New Legal CBA Mandates Would Be a Bad Idea*
- *D. Existing CBA Laws Are Little Better in Practice*

CONCLUSION

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FOR AND AGAINST COST-BENEFIT ANALYSIS OF FINANCIAL REGULATION

John C. Coates IV[*]

Abstract

Some members of Congress, the D.C. Circuit, and legal academia are promoting a particular, abstract form of cost-benefit analysis for financial regulation: judicially enforced quantification. How would CBA work in practice, if applied to specific, important, representative rules, and what is the alternative? Detailed case studies of six rules – (1) disclosure rules under Sarbanes-Oxley Section 404, (2) the SEC's mutual fund governance reforms, (3) Basel III's heightened capital requirements for banks, (4) the Volcker Rule, (5) the SEC's cross-border swap proposals and (6) the FSA's mortgage reforms – finds that precise, reliable, quantified CBA remains unfeasible. Quantified CBA of such rules can be no more than "guesstimated," as it entails (a) causal inferences that are unreliable under standard regulatory conditions; (b) using problematic data, and/or (c) the same contestable, assumption-sensitive macroeconomic and/or political modeling used to make monetary policy, which even CBA advocates would exempt from CBA law. Expert judgment remains an inevitable part even of what advocates label "gold-standard" quantified CBA, because finance is central to the economy, is social and political, and is non-stationary. Judicial review of quantified CBA can be expected to do more to camouflage discretionary choices than to discipline agencies or promote democracy.

INTRODUCTION

A movement is afoot to impose cost-benefit analysis (CBA) on financial regulation (CBA/FR).[1] The housing and financial crises of 2008 led to the Dodd-Frank Act,[2] which restructured the financial regulatory agencies,

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[1] Throughout, I use the awkward acronym "CBA/FR" to flag that the analysis focuses on CBA of financial regulation, and that my conclusions may but do not necessarily carry over to CBA in other regulatory domains. Part IV.B discusses potential differences between financial and other regulation.

[2] The full title of this statute is the Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (Dodd-Frank Act). A trade group recently sued to enjoin the most prominent rule under the Dodd-Frank Act, the Volcker Rule, in part on grounds that the agencies ignored economic effects of one small part of the rule on small banks. Matthew Goldstein

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mandated more than 200 new rules, and required changes to many older rules.[3] The sweep of regulatory change has reignited criticism of the agencies for failing to base the changes on adequate CBA/FR.[4] Bills have been introduced to provide explicit authority for the President to require CBA/FR from independent agencies,[5] even as critics argue existing law already requires the Securities and Exchange Commission (SEC) and the Commodities and Futures Trading Commission (CFTC) to conduct a particular form of CBA/FR: judicially enforced quantification.[6] One panel of the U.S. Court of Appeals for the District of Columbia Circuit, composed entirely of Republican-appointed judges, has held that existing law requires the SEC to quantify the costs and benefits of its proposed rules,[7] while another judge – subsequently nominated by President Obama for the same D.C. Circuit – held that such quantification is not required, at least where the SEC is required by statute to adopt a rule and the benefits sought to be achieved are humanitarian and not economic in nature.[8]

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and Peter Eavis, Banks' Suit Tests Limits of Resisting Volcker Rule, N.Y. Times (Dec. 24, 2013); the plaintiff's motion for an emergency stay in the case is available at www.aba.com/Issues/Documents/ (last visited Dec. 29, 2013). On the current state of the law of CBA/FR, see Part II.A below; for a discussion of the Volcker Rule and the trade group's lawsuit, see Part III.D below.

[3] See Davis Polk Regulatory Tracker, www.regulatorytracker.com (last visited Nov. 25, 2013).

[4] E.g., COMMITTEE ON CAPITAL MARKETS REGULATION, A BALANCED APPROACH TO COST-BENEFIT REFORM (2013) [hereinafter, ***CCMR Report***] at 3 (citing Dodd-Frank Act as reason for Congress to pass a law requiring CBA by independent agencies) and 9 ("the SEC and the CFTC still often fall short of conducting meaningful cost-benefit analysis of new regulations"); see also Hester Peirce, Economic Analysis by Federal Financial Regulators, 9 J. L. Econ. & Pol'y 569 (2013).

[5] E.g., S. 1173, Independent Agency Regulatory Analysis Act (introduced June 18, 2013), described in Part II below. For other bills, see note 121 infra.

[6] CCMR REPORT at 4 (arguing that the legislative history of the National Securities Markets Improvement Act of 1996, Pub. L. 104-290, 110 Stat. 3416 (codified as amended in scattered sections of 15 U.S.C.) requires the SEC to conduct CBA based on the statutory requirement that the SEC consider "efficiency" as one of a number of factors in rulemaking); PAUL ROSE AND CHRISTOPHER WALKER, THE IMPORTANCE OF COST-BENEFIT ANALYSIS IN FINANCIAL REGULATION, CENTER FOR CAPITAL MARKETS COMPETITIVENESS [hereinafter, ***CCMC Report***] 24–33 (2013). Critics also point to an efflorescence of decisions by the D.C. Circuit striking down SEC regulations as "arbitrary and capricious" under the Administrative Procedure Act (APA), 5 U.S.C. § 101 et seq., for failing to "consider" certain costs as part of its "efficiency" analysis; these cases are discussed in Part II below. Critics also note that the Commodity Exchange Act, Pub. L. No. 74-675, 49 Stat. 1491 (1936) (codified as amended at 7 U.S.C. §§ 1-27f) requires the CFTC to "consider the costs and benefits" of its regulatory actions. The Consumer Financial Protection Bureau is also required to consider the "potential benefits and costs" as part of its rulemaking authority. Dodd-Frank Act § 1022.

[7] Business Roundtable et al. v. SEC, 647 F. 3d 1144 (D.C. Cir. 2011), discussed more in Part II below. This decision was written by Judge Douglas Ginsburg, joined by Chief Judge David Sentelle and Judge Janice Brown, each appointed by a Republican President. Disinterested commentators have uniformly criticized this decision, see note 109 infra, but it remains a binding precedent. For completeness, I note the U.S. Chamber of Commerce, a party to the case, paid two professors to defend the decision. See CCMC Report, supra note 6, at ii ("financial and administrative support").

[8] National Association of Manufacturers et al. v. SEC, -- F. Supp. 2d. --, 2013 WL 3803918 (D.D.C.), discussed more in Part I below. The decision was by Judge Robert L. Wilkins, who was subsequently nominated to the D.C. Circuit by President Obama, only to have his nomination filibustered by Senate Republicans. Senate Blocks Robert Wilkins' Nomination to D.C. Circuit, Legal Times (Nov. 18, 2013), available at bit.ly/1hT5JTy (last visited Nov. 26, 2013). This helped prompt the Senate to abolish filibusters of lower court appointments. Jeremy W. Peters, In Landmark Vote, Senate Limits Use of the Filibuster, N.Y. Times (Nov. 21, 2013). Judge Wilkins is expected to be confirmed to the D.C. Circuit under the Senate's new rules. *Id.* Earlier, a panel of the D.C. Circuit upheld a decision of the Office of Thrift Supervision against a CBA-based challenge, Stilwell v. Office of Thrift Supervision, 569 F.3d 514 (2009), and another Obama-appointed judge upheld a decision of

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This Article critiques efforts to impose CBA on the independent financial agencies, while also attempting to advance the substantive project of quantitative CBA/FR itself. Part I analyzes CBA generally, noting that it can be a framework for policy analysis or a legal means to discipline agencies, and can consist of conceptual analysis or efforts at quantification. Part I also briefly reviews CBA's origins in US legal history to show that it can be used to camouflage as well as to discipline, and uses the Taylor Rule to illustrate why even CBA's advocates do not propose to require CBA for monetary policy, which is left to agency judgment. Expert, discretionary judgment is the primary "alternative" to quantified CBA/FR, or more accurately, a necessary component of any regulatory analysis.

Part II describes existing law relevant to CBA/FR, and describes ongoing efforts to promote quantified CBA/FR. These efforts range from regulatory initiatives, Congressional oversight, judicial review, and proposed legislation. These efforts generally aim to give courts and the White House an expanded role in enforcing a general mandate for the independent agencies (including the financial regulatory agencies) to include quantified CBA as part of their rulemaking procedures.

Part III develops case studies of how quantified CBA/FR might be conducted on six significant, representative, financial regulations, drawing on relevant academic research to outline the tasks that need to be tackled to conduct CBA/FR on those rules. The case studies show that quantified CBA on those rules amounts to no more than "guesstimation," entailing (a) causal inferences that are unreliable under standard regulatory conditions; (b) use of problematic data, and/or (c) the same kind of contestable, assumption-sensitive macroeconomic and/or political modeling used to make monetary policy.

Part IV concludes by reviewing the implications of the case studies. While CBA/FR is a useful conceptual framework, and quantified CBA/FR a worthy long-term research goal, it is not capable of disciplining regulatory analysis in its current state. CBA/FR is about finance – which is at the heart of the economy; it is social and political; and it is non-stationary – all features that undermine the ability of science to precisely and reliably estimate the effects of financial regulations, even retrospectively. CBA/FR should be conducted only to the extent the expert agencies choose to do so – in part because CBA of CBA has itself never been adequately conducted, leaving the first-stage choice of when to conduct CBA/FR itself in the realm of judgment, rather than science. Until evidence is developed to illuminate when CBA/FR passes its own test, courts and secondary agencies should have no role in second-guessing the choice of when to conduct CBA/FR, or the details of CBA/FR when it is used.[9] Not only would a new legal

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the CFTC against a CBA-based challenge in 2012, despite the CFTC's not having quantified the benefits or certain costs of the rule, Investment Company Institute v. Commodities and Futures Trading Commission, 891 F. Supp. 2d 162 (2012).

[9] For a different but consistent critique of judicial review of agency decisions under conditions of uncertainty, see Adrian Vermeule, Rationally Arbitrary Decisions (in Administrative Law),

CBA/FR mandate worsen policy outcomes, but existing interpretations of the APA and financial agencies' governing statutes should be reversed, and a safe-harbor created to shelter the CBA/FR that the agencies choose to conduct, so as to reduce the influence of concentrated interests through litigation and of politically partisan but unaccountable judges on regulatory outcomes.[10]

I. WHAT DO PEOPLE MEAN BY "COST-BENEFIT ANALYSIS"?

The literature on cost-benefit analysis is voluminous and multi-disciplinary.[11] Not surprisingly, writers often talk past one another when they discuss the topic. Three distinctions are often elided: whether by CBA one means policy analysis or law; whether by CBA one means a conceptual framework or quantification; and whether CBA is intended and likely to camouflage or to discipline regulation.[12] In this Part I, a brief typology of CBA is presented to clarify what follows. This Part concludes by sketching briefly the alternatives to CBA.

A. Policy vs. Law

Lawyers instinctively understand the difference between a norm or a policy, on the one hand, and a law, on the other hand, even a law that tracks the norm or policy. They know, for example, that the effects of a law (assumed to be justiciable) ***requiring*** an agency to act reasonably will not simply equate to what an agency, acting reasonably, would do. A requirement imposes a set of burdens on the agency that the demands of reason do not. Law introduces new agents into the picture: courts. Those agents are no more perfect than others, and their decisions will be uncertain. Agencies subject to court oversight will anticipate judicial error (or bias).

A law will lead an agency to keep more careful track of what it does, and why, than would reason on its own. Agencies will incur costs to do this, and to defend decisions against court challenges. They will refrain from

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Working Paper (Mar. 25, 2013) (courts should defer to agencies when agencies must act under conditions of uncertainty, even when the action is arbitrary).

[10] In a related paper, I make recommendations on how law and legal institutions can promote good CBA/FR as policy analysis, without risking the negative consequences of judicially enforced quantification. See John C. Coates IV, Towards Better Cost-Benefit Analysis of Financial Regulation, Working Paper (2014).

[11] For overviews outside the financial regulatory context, see Cass R. Sunstein, Risk and Reason (2003); Cass R. Sunstein, The Cost-Benefit State: The Future Of Regulatory Protection (2002); Matthew D. Adler and Eric Posner, New Foundations of Cost-Benefit Analysis (2006).

[12] Supporters and critics of CBA alike tend to elide distinctions between different meanings of "cost-benefit analysis." Supporters – who, ironically, often defend CBA as promoting transparency – elide these distinctions to make CBA look appealing to the broadest possible audience, including skeptics and optimists about quantification, advocates of regulation and deregulation, regulators and the regulated, intended regulatory beneficiaries and taxpayers. Critics of CBA elide the distinctions because they see efforts to promote CBA as policy as a step on a slippery slope to CBA law. Of late, others have taken a more nuanced position – to support CBA/FR as policy without supporting CBA/FR law. E.g., Bruce Kraus and Connor Raso, Rational Boundaries for SEC Cost-Benefit Analysis, 30 Yale J. on Reg. 289 (2013).

acting when the expected cost of a challenge and record keeping falls below the expected benefit of the action, discounted for the risk that the court will wrongly overturn the decision. These effects arise from enforcement and oversight by courts. Law changes behavior even when a law on its face only requires what someone would try to do anyway.[13]

Lawyers also know that a law requiring an agency to act reasonably will sound innocuous to most non-lawyers – who could be against acting reasonably? Lawyers know non-lawyers systematically underestimate enforcement costs and their effects. They know that a clever way to shape regulation is to propose a law that tracks a general norm, the enforcement of which will have predictable effects that are not intuitive by non-lawyers. The asymmetry in perceived effect will allow political gains at a lower political cost than a straightforward law mandating or forbidding regulation.

When lawyers discuss CBA with non-lawyers, a similar set of different understandings is typical. Specifically, non-lawyers typically mean by CBA the conduct of cost-benefit analysis itself – whether by researchers, or regulators, or courts. Lawyers sometimes use CBA in the same way, to refer to a particular type of policy analysis. But lawyers also often mean by CBA a set of legal requirements aimed at forcing or inducing regulatory agencies or individual regulators to conduct CBA exclusively or as part of their policy analysis in choosing when and how to adopt or change regulations. When lawmakers, for example, describe a proposed law as requiring CBA, many non-lawyers will think of CBA as policy analysis, and if they favor CBA, will assume that the law is a good idea. They will effectively conflate CBA as policy analysis with CBA as a legal requirement. As with a requirement of reasonableness, however, a requirement of CBA will predictably have effects that diverge from what would happen if CBA were simply used as a routine part of an agency's policy toolkit, without such a requirement. (Part IV develops this point.)

B. Quantities (or Guesstimates) vs. Concepts

A second confusion arises even within CBA as policy analysis. Most advocates of CBA expect it to include quantification and monetization, which if supported by strong, consensus theory, reliable research designs, and good, representative evidence could properly be called "***quantified CBA***,"[14] but which, if supported only by weak, contested theory, unreliable

[13] Lawyers negotiating contracts know the difference, too – they do not view a clause requiring a party to act reasonably or the like as innocuous – it is a "get" by the counter party and a "give" by the party subject to the requirement, albeit less binding than a stricter or more precise requirement.

[14] Edward Sherwin, The Cost-Benefit Analysis of Financial Regulation: Lessons from the SEC's Stalled Mutual Fund Reform Efforts, 12 Stanford J. L. Bus. & Fin. 1, 47-48 (2006) ("The SEC's failure to express the costs and benefits of its proposed rulemakings in numerical terms represents a significant shortcoming in its analysis," and critiquing the SEC for limiting most of its CBA to qualitative analysis); see also GAO, Dodd-Frank Act Regulations: Implementation Could Benefit from Additional Analyses and Coordination, GAO-12-151 (Nov. 2011), at 17-18 ("Without monetized or quantified benefits and costs, or an understanding of the reasons they cannot be monetized or quantified, it is difficult for business and consumers to determine if the most cost-beneficial ... alternative was selected...).

research designs, or poor, unrepresentative evidence better deserves the label "***guesstimated CBA***." Robert W. Hahn and co-authors, for example, criticized executive agencies for failure to comply with the Executive Orders requiring CBA for such agencies,[15] based on their assessment that:

> Agencies only quantified net benefits – the dollar value of expected benefits versus expected costs – for 29 percent of forty-eight rules, even though the Executive Order directs agencies to show that benefits of a regulation 'justify' the costs. ... Although agencies may present reasons not to quantify and monetize benefits and costs, ... we believe they should be able to meet the requirements of the Executive Order for a majority of regulations.[16]

Expectations of quantification have found their way into legal decisions overturning financial regulations, as discussed more in Part II. For example, in *Chamber of Commerce v. SEC*, the D.C. Circuit held that the SEC acted arbitrarily and capriciously for failing to undertake some effort to quantify the costs of the mutual fund governance rule changes it had adopted.[17]

Others accept – indeed, often make rhetorical show of conceding[18] – that quantification and/or monetization are not possible in some policy areas, but nonetheless believe that CBA can still function as a disciplined framework for specifying baselines and alternatives, for insuring that (at least conceptually) both costs and benefits of a rule change are considered, and for

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[15] See note 64 infra for the executive orders.

[16] Robert W. Hahn, Assessing Regulatory Impact Analyses: The Failure of Agencies to Comply with Executive Order 12,866, 23 Harv. J.L. & Pub. Pol'y 859, 861 & n.22 (1999-2000) (citing Exec. Order No. 12,866, 3 C.F.R. 638). Hahn et al. acknowledge the agencies were required at 864 to quantify costs and benefits only to "the extent feasible" and at n. 18 that "it is arguably not always possible or desirable to monetize all benefits and costs," citing Exec. Order No. 12,866 § 6(a)(3)(C)(ii), 3 C.F.R. 638, 638-45 (1993) and Office of Management & Budget, Economic Analysis of Federal Regulations under Executive Order 12,866. More recently, supporters of proposed legislative CBA mandates, including former commissioners of some of the independent agencies, argue in favor of the bill on the ground that "not one of the 21 major rules issued by the independent agencies in 2012 was based on a ***complete, quantified" CBA***. Letter dated June 28, 2013 to the Chair and Ranking Member of the Senate Homeland Security and Governmental Affairs Committee, available at www.portman.senate.gov/ public/ index.cfm/ files/ serve?Fileid=8eb0dbd9-5631-4878-bfb2-e040407cf0ba (last visited Nov. 29, 2013), at 2 (emphasis added).

[17] Chamber of Commerce v. SEC, 412 F.3d 133, 144 (D.C. Cir. 2005) ("the Commission violated its obligation under [Section 2(c) of the Investment Company Act] in failing adequately to consider the costs imposed upon funds," because although the SEC stated that it had no "reliable basis for estimating those costs," and although it "may not have been able to estimate the aggregate cost to the mutual fund industry of additional staff [required by the rule change] because it did not know what percentage of funds ... would incur that cost, it readily could have estimated the cost to an individual fund, which estimate would be pertinent to its assessment of the effect [of the rule change] upon efficiency and competition...") subsequent proceeding at 443 F.3d 890 (D.C. 2006). See also Corrosion Proof Fittings v. Environmental Protection Agency, 947 F.2d 1201, 1219 (5th Cir. 1991) ("unquantified benefits" can be considered by the EPA but can only "tip the balance" in favor of a proposed rule "in close cases").

[18] Robert W. Hahn, The Economic Analysis of Regulation: A Response to the Critics, 71 Chi. L. Rev. 1021, 1049-50 (2004) (rebutting critique of CBA by noting that it "does not require that costs and benefits be expressed in the same units or that agencies monetize benefits that may not be quantifiable" and arguing that CBA should "be careful to reflect uncertainties and account for qualitative factors"); Cass R. Sunstein, Nonquantifiable, Working Paper (June 2013).

encouraging the reliance on "evidence" rather than ***solely*** on intuitive judgment.[19] Such CBA may be distinguished from quantified or guesstimated CBA with the label "***conceptual CBA***."

Whether conceptual CBA can be transformed into quantified CBA is not dichotomous: some effects of a given rule may be reliably quantified and monetized, while others cannot. Quantified CBA in its idealized extreme – what some of its advocates refer to as "complete" quantified CBA[20] – entails specification and quantification of all benefits and all costs in a single uniform bottom-line metric (typically, dollars) representing the net welfare effects of a proposed rule. Even CBA supporters acknowledge such an idealized version will not be feasible in "some" instances, and that where it is not feasible, most advocates conceded that more limited CBA – guesstimated CBA – should not determine regulatory outcomes. For example, in a 1996 policy article in *Science,* Kenneth Arrow and ten other economists advocated CBA but were careful to note:

> Benefits and costs of proposed policies should be quantified wherever possible. In most instances, it should be possible to describe the effects of proposed policy changes in quantitative terms; however, not all impacts can be quantified, let alone be given a monetary value. Therefore, care should be taken to assure that quantitative factors do not dominate important qualitative factors in decision-making.[21]

Particularly difficult to quantify or monetize are non-market goods and externalities. In non-financial regulatory domains, non-market goods such as life, health, beauty, and biodiversity have proven difficult to monetize with any degree of precision and confidence.[22]

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[19] Office of Management and Budget guidelines are not entirely consistent on whether CBA entails quantification. On the one hand, they emphasize that CBA should contain, in addition to quantification, the specification of baselines, alternatives, and a ***qualititative*** description of how a rule will produce benefits and what side effects it may have, Office of Mgmt. & Budget, Circular A-4: Regulatory Analysis 2 (Sep. 17, 2003), available at www.whitehouse.gov/omb/Circularsa004a-4 (last visited Nov. 27, 2013) [hereinafter, ***OMB Guidance***], and they explicitly provide that where full monetization of all costs and benefits is not feasible, agencies should relate what can be quantified to what cannot be so as to specify how large unquantified benefits could be, or how small unquantified costs could be, before a rule would "yield zero net benefits" Id. On the other hand, the guidelines contain statements suggesting that CBA entails full quantification – for example, at 10: "A distinctive feature of [CBA] is that both benefits and costs are expressed in monetary units, which allows you to evaluate different regulatory options with a variety of attributes using a common measure."

[20] Letter dated June 28, 2013 to Chair and Ranking Member of the Senate Homeland Security and Governmental Affairs Committee, available at www.portman.senate.gov/ public/ index.cfm/ files/ serve?Fileid=8eb0dbd9-5631-4878-bfb2-e040407cf0ba (last visited Nov. 29, 2013), at 2.

[21] Kenneth J. Arrow, et al., Is There a Role for Benefit-Cost Analysis in Environmental, Health, and Safety Regulation?, 272 Science 221-22 (1996). Neither Arrow et al. nor Hahn et al., supra note 18, provide evidence or cites to research supporting their views that quantification "should be possible" in "most" instances as applied to executive agencies. Sunstein, Nonquantifiable, supra note 18, at 7, likewise asserts without evidence that quantification will be impossible only in "rare" instances ("In the most extreme (and admittedly rare) cases, agencies may be operating under circumstances of *ignorance*, in which they cannot specify either outcomes or probabilities.").

[22] For discussions, see, e.g., David S. Brookshire, Mark A. Thayer, William D. Schulze, and Ralph C. d'Arge. Valuing Public Goods: A Comparison Of Survey And Hedonic Approaches, 72 Am. Econ. Rev. 165 (1982); David S. Bullock, and Nicholas Minot, On Measuring the Value of a

In financial regulation, relevant non-market goods comprise trust, investor confidence, liquidity, and the psychological consequences of unexpected financial losses (discussed in Part III). In non-financial regulation, measurement of externalities has proven difficult, not only because they are often non-market goods, but because simply specifying and estimating their size is difficult. Financial regulation poses equally if not more difficult problems in measuring externalities, in part because financial markets are tightly interconnected systems (hence the now-mainstream phrase "systemic risk"), in which one party's losses can be rapidly transmitted to multiple related parties.[23] As reflected in Part III and discussed in Part IV, full quantification in CBA/FR is likely to be difficult because finance is at the heart of the economy, because it involves activities of groups of people (firms, markets) interacting in complex, difficult-to-study or –predict ways, and because the forces that shape finance change rapidly through history.

Short of full monetization, CBA can include efforts to estimate ranges of costs and benefits, to bound them, to conduct "threshold" analyses comparing a rule's quantified costs to unquantifiable benefits (or vice versa) and, more generally, to use empirical methods and data to generate evidence relevant to quantified or conceptual CBA. While ranges, bounds, threshold analyses, and incomplete but relevant evidence may all be viewed as part of quantified CBA, they begin to move the final result of the CBA towards guesstimation, leaving it a matter of judgment whether and how they should be used in decision-making. For example, guidelines from the Office of Management and Budget (OMB) provide no help on how to conduct threshold analysis if important benefits and costs are both unquantifiable, simply suggesting agencies "exercise professional judgment" in weighing nonquantified elements in the CBA.[24] This recommendation is hard to criticize, but it also suggests there may be circumstances when a feasible but partial quantification will not be cost-justified, if (for example) the quantifiable elements are likely (based on judgment) to be trivial relative to the unquantifiable elements and partial quantification is costly or otherwise would undermine the value of a conceptual CBA.

One can draw a distinction within CBA law analogous to the one between conceptual and quantified CBA as policy, between ***CBA mandates*** and ***CBA process***, although this is not typical in prior CBA scholarship. CBA mandates consists of efforts to require agencies to conduct some or all elements of CBA policy – presumably because legislators believe agencies must be forced to conduct it. CBA mandates include laws subjecting the CBA policy analysis itself to review by another agency (such as the Office of Information and Regulatory Affairs (OIRA), a unit of OMB), or by courts (as

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Nonmarket Good Using Market Data, 88 Am. J. of Agricultural Econ. 961 (2006); Frank Ackerman and Lisa Heinzerling, Priceless: On Knowing The Price of Everything and The Value of Nothing (2004); K. Maler, A Method Of Estimating Social Benefits From Pollution Control, 75 Swedish J. Econ. 121 (1971).

[23] Stephen L. Schwarcz, Systemic Risk, 97 Geo. L.J. 193 (2008).

[24] Supra note 19, at 2.

in review of rules as "arbitrary and capricious" under the APA[25]), to insure the agencies take statutory CBA mandates seriously, and (in theory) to improve the quality of CBA analyses. CBA mandates encompass binding executive orders or other interagency guidelines that specify particular components of CBA policy analysis, such as discount rates, or methods to quantify benefits or costs, with the goal of achieving uniformity across governmental agencies.[26] Finally, CBA mandates can be a component of regulation itself – that is, an agency could require a private actor to demonstrate that a new activity or product would have greater benefits than costs before it could be permissibly sold.[27]

CBA process, by contrast, includes requirements for agencies to publicly disclose any CBA they conduct, or sources of their data, and to solicit public comment and feedback on their CBA analyses (as under the APA[28]). CBA process laws can require agencies to discuss how they took comments into account in their final rulemaking decision, to present their CBAs in particular or standardized formats (tables, etc.), or include specific kinds of information, such as standard statistics or data analyses that bear on the reliability of the primary findings of a quantified CBA, such as confidence intervals, p-values, test statistics, correlation matrices, sensitivity analyses, and the results of "Monte Carlo" simulations. Such "soft law" requirements may be viewed as a means to enhance the quality of the agencies' decisions by encouraging deliberation and care, or as a means to increase public understanding and the legitimacy of rules finally adopted. They can also have less desirable effects, however, including delay, regulatory inertia, ill-informed judicial second-guessing, creation of incentives for agencies to engage in CBA for show, and waste of regulatory resources.

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[25] 5 U.S.C. § 706(2)(A).

[26] E.g., OMB Guidance, supra note 19.

[27] E.g., Eric Posner and E. Glen Weyl, Benefit-Cost Analysis for Financial Regulation, 103 Am. Econ. Ass'n Papers and Proceedings 1, 5 (2013) (arguing that CBA "should be applied to the introduction of new [derivatives] products into markets by private participants"). This approach is close to the one currently reflected by regulation of mutual funds in both the US and the EU, which generally forbids innovation in the design of collective investments without prior regulatory approval, which generally requires the proponent to demonstrate the benefits of the design will outweigh its risks to investors. See John C. Coates IV, Reforming the Taxation and Regulation of Mutual Funds: A Comparative Legal and Economic Analysis, 1 J. Legal Anal. 591 (Summer 2009).

[28] 5 U.S.C. § 553.

Table 1. Two Dimensions of Cost-Benefit Analysis

	Concepts and Process	Quantification and Mandates
Policy	Framework	Point estimates
	Baselines	Monetization
	Alternatives	Causal inferences
	Pros, cons	Non-market goods
	"Evidence"	Externalities
Law	Disclosure	Requirements to conduct CBA policy
	Data sources	Agent-monitors (courts, OIRA)
	Format	Uniformity on key inputs:
	Secondary statistics	Discount rates
	Solicitation of feedback	Models of demand

Putting the first two dimensions of CBA together, Table 1 illustrates the multiple meanings that apparently synonymous uses of "cost-benefit analysis" might have for different speakers or audiences. Table 1 also suggests that it is possible to be an advocate for CBA/FR as form of policy analysis – whether conceptual or quantified – without wanting to entangle it in the legal system. One might be skeptical that CBA/FR law would have any effect.[29] Alternatively, if CBA/FR has clear virtues as policy analysis, one might believe that those virtues would lead agencies to use it, at least sometimes, without being legally required to do so, just as private businesses adopt "best practices" on a voluntary basis. Likewise, one can favor CBA/FR process laws, without agreeing that courts or any other agency should have any substantive role in evaluating or constraining the content of CBA/FR. Alternatively, one could imagine mandating that a second political agent (a specialized court or another agency) conduct the CBA/FR analysis itself, which would then have to be used by the primary agencies as inputs into their rulemaking decisions, without necessarily adding other process-oriented components of CBA/FR law.

C. Camouflage vs. Discipline

A third dimension along which CBA can vary is the motive of the person using it, and its effects on third parties. The conventional, optimistic view of CBA advocates – generally assumed or asserted rather than supported with evidence[30] – is that CBA is an agency cost-control device,

[29] E.g., Matthew D. Adler and Eric A. Posner, Introduction to Symposium Issue, Cost-Benefit Analysis: Legal, Economic, and Philosophical Perspectives, 29 J. Legal Stud. 837 (2000) ("Much has been written about whether the cost-benefit analysis executive orders have actually influenced the behavior of agencies. Knowledgeable scholars in this area seem to doubt that the executive orders have had much influence.").

[30] No published study shows empirically that CBA produces benefits that outweigh its costs – whether CBA in practice passes its own test. Closest are studies assessing whether ex ante quantitative CBA by executive agencies produced CBA that was consistent with retrospective estimates. E.g., Robert W. Hahn et al., Do Federal Regulations Reduce Mortality? (2000) (finding that nine of 24 rules

used by politically accountable representatives to discipline expert but less accountable agencies in their rulemaking efforts. CBA, in this view, will improve the care they use in deciding whether a possible rule change will be good for society and reduce their discretion to adopt welfare-reducing rules.[31] CBA optimists tend to assume or assert that CBA will enhance public understanding of why regulations are adopted (i.e., increase transparency[32]) and engage more people in the democratic process, potentially combating the pernicious rent seeking by special interests.[33] By specifying how a rule will produce benefits, by acknowledging the costs involved, by encouraging the consideration of alternatives, CBA is expected to improve the allocation of governmental resources and reduce the drag of regulation on beneficial activities.[34] Some but not all CBA optimists assert that CBA can mitigate cognitive biases of regulators or the public.[35]

Despite having potential virtues, however, CBA can have a different, darker, or more complex mix of effects. It can serve as camouflage, to reduce the transparency of a rule-making process.[36] More disclosure does

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pass cost-benefit test); Winston Harrington, Richard D. Morgenstern and Peter Nelson, On the Accuracy of Regulatory Cost Estimates, 19 J. Pol'y Anal. & Mgt. 297 (2000) (finding that for 14 of 28 OSHA or EPA rules, total costs were overestimated, while for only three were they underestimated, due to difficulties in determining the baseline and by incomplete compliance). These studies do not provide reliable CBA-relevant evidence of CBA, however, because they do not model the counterfactual of interest — how does regulation under CBA compare to regulation without it? For that analysis, one would need to match rules subject to CBA with those not, and study which did a better at forecasting actual results. One method may be to exploit the fact that "economically significant rules" (ESRs) are subject to more stringent CBA under OMB Guidance, supra note 19, than other rules, so one could compare outcomes for rules just above and below the ESR threshold. Any objection that this question is simply too hard to study should lead to a similar recognition of the conclusion of this Article, that CBA/FR itself is unreliable.

[31] E.g., Matthew D. Adler and Eric A. Posner, Rethinking Cost-Benefit Analysis, 109 Yale L.J. 165 239 (tentatively recommending CBA over "undimensional" or "nonaggregative" decision procedure alternatives).

[32] E.g., Cass R. Sunstein, The Arithmetic of Arsenic, 90 Geo. L.J. 2255 (2002) (defending CBA on ground that, although the bottom-line quantification of arsenic rule was so uncertain that no conclusion can be reached from it, it was successful because it allows the government to be "transparent" about why the rule's net benefits are uncertain). Transparency is often presented as an obviously good thing. Id.; cf. Troy A. Paredes, Blinded by the Light: Information Overload and its Consequences for Securities Regulation, 81 Wash. U. L.Q. 417 (2003) (arguing to the contrary in the context of disclosure obligations imposed on private actors with arguments that would extend to public agencies).

[33] E.g., Cass R. Sunstein, Cost-Benefit Default Principles , 99 Mich. L. Rev. 1651 (2001); Adler and Posner, supra note 31 at 239 (asserting the "inherent transparency of CBA itself" and that oversight bodies such as OMB can prevent misuse of CBA to decrease transparency).

[34] Adler and Posner, supra note 31, at 245-46 ("CBA is a useful decision procedure and it should be routinely used by agencies. CBA is superior to rival method[s] ... [and] allows agencies to take into account all relevant influences on overall well-being ... and ... to weigh the advantages and disadvantages ... in a clear and systematic way...").

[35] Cf. Sunstein, supra note 33 at 1658 ("Unless ... people ... are asked to seek a full accounting, they are likely to focus on small parts of problems ... CBA is a way of producing [a] full accounting... [and] is a natural corrective ... [for] systematic errors ... [and] misperceptions of facts [caused by the use of] rules of thumbs, or heuristics ... [and] intense emotional reactions) with Richard A. Posner, Cost-Benefit Analysis: Definition, Justification, and Comment on Conference Papers, 29 J. Legal Stud. 1153, 1161-62 (2000) (critiquing justification of CBA as corrective for cognitive biases).

[36] Despite being generally in favor of CBA, Adler and Posner, supra note 31, acknowledge this point at 172 ("Agencies sometimes appear to use CBA to rationalize decisions made on other grounds"), but they do not develop it as a theoretical reason to resist legalizing CBA.

not always improve transparency, a point that (ironically) some CBA advocates have made strenuously when resisting disclosure rules for private actors.[37] Beyond the indeterminate effects of CBA soft law on the ability of the public to monitor regulatory agencies, CBA can also be a tool of political struggle over the distribution of rents, and as a means to increase the power of unelected expert agent as a tactic in such a struggle.[38]

The origins of CBA in the US illustrate this more complex set of possibilities. It is commonly asserted that Congress "initiated the use of CBA in 1936, when [it] ordered agencies to weigh the costs and benefits of projects designed for flood control," permitting authorization of such projects only if "the benefits to whomsoever they accrue are in excess of the estimated costs."[39] This origin story fits the optimistic view of CBA outlined above, making it an agency-cost control mechanism used by elected and accountable representatives to control a wayward agency. In fact, however, the use of CBA by the Army Corps of Engineers emerged earlier, on the initiative of the Corps itself, as described in Theodore M. Porter's *Trust in Numbers*.[40] In his telling, the first efforts at CBA emerged in 1902, with the creation of a board within the Army Corps whose CBA and recommendations were intended by opponents of public works spending to "reduce opportunities for purely political choices." Rather than ranking all projects based on CBA, which would have systematized project choice, the

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[37] Parades, supra note 32 ("the specter of information overload casts doubt on the long-held belief and policy choice that more disclosure is better than less"). Parades was a Republican Commissioner at the SEC until 2013, and as Commissioner, Paredes was a strong proponent of CBA. Troy A. Paredes, Remarks at AICPA Council Spring Meeting (May 17, 2012), available at www.sec.gov/News/Speech/Detail/Speech/1365171490500#.UpeXtqXvdK4 (SEC "must engage in rigorous [CBA] when fashioning ... securities law... I have expressed these views several times before in advocating for rigorous [CBA] at the SEC"). See also Alex Admans, Mirko S. Heinle, and Chong Huang, The Real Costs of Disclosure, Working Paper (Oct. 8, 2013) (even if actual act of disclosure is costless, high-disclosure policy can still be costly due to differential verifiability of some kinds of information).

[38] Duncan Kennedy, Cost-Benefit Analysis of Entitlement Problems: A Critique, 33 Stan. L. Rev. 387 (1981) (evaluating CBA as an "arbitrary ... medium for the introduction of political preferences through what seem merely necessary 'practical' assumptions of any analysis. ... The focus on particular problems legitimates arbitrary assumptions and masks their political content."); Amy Sinden, Cass Sunstein's Cost-Benefit Lite; Economics for Liberals, 29 Colum. J. Env. L. 191, 194 ("The danger of CBA ... lies in its false promise of determinacy, its pretense of objectivity and scientific accuracy. ... [T]his false promise ... renders CBA ... vulnerable to manipulation and ... destructive to democratic decision-making, as ... Sunstein's analysis of ... arsenic CBA amply demonstrates.").

[39] Adler and Posner, supra note 31 at 169 & n. 5 (citing AJIT K. DASGUPTA AND D.W. PEARCE, COST-BENEFIT ANALYSIS: THEORY AND PRACTICE 12-13 (1972) and Flood Control Act of 1936, ch. 688, § 1, 49 Stat. 1570, codified at 33 U.S.C. § 701a); Sherwin, supra note 14 at 6 & n. 16 (citing JAMES T. CAMPEN, BENEFIT, COST, AND BEYOND: THE POLITICAL ECONOMY OF BENEFIT-COST ANALYSIS 16 (1986)). Sherwin correctly notes but does not discuss an earlier statute, the Rivers and Harbors Act of 1902, ch. 1079, § 3, 32 Stat. 331, 372 (1902). That statute directed the organization and authorized the funding of a board of engineers reporting to the Chief of Engineers, United States Army, who were directed "so far as in the opinion of the Chief of Engineers may be necessary" to review reports for proposed river and harbor improvements and submit recommendations and "have in view the amount of and character of commerce existing or reasonably prospective which will be benefited by the improvement, and the relation of the ultimate cost of such work ... to the public commercial interests involved, and the public necessity for the work...," and to do the same for past projects upon request by relevant Congressional committees.

[40] Trust in Numbers: The Pursuit of Objectivity in Science and Public Life (1995), ch. 7.

Corps chose to maintain more flexibility, "recognizing, it seems, that congressional choice was the key to congressional favor." Rather than being a tool for the management of the Corps, CBA became a tool by some politicians and by the Corps to manipulate Congress.

As a result, the Corps had developed a "huge civilian labor force" prior to the 1936 Flood Control Act, which mandated a strict CBA test for new projects. That Act, too, Porter concludes, was not aimed at disciplining the Corps, but was "one of the heroic efforts of the United States Congress to control its own bad habits." The Act's requirements, and particularly the delay required, were viewed as a benefit, and not a necessary cost, of conducting CBA. "A preliminary examination and then a full survey, each running through several levels of Corps bureaucracy, required months or years, and could not be completed to satisfy the sudden whim of a legislator." Far from reducing the power of the Corps, the regularization of the project approval process through CBA enhanced it, because neither Congress nor the public exerted the effort needed to evaluate and assess the Corps' numerically impressive but sometimes *ad hoc* analyses. "The numbers were almost never questioned." Only in private did individual representatives attempt to manage the Corps.

One way the Corps could be "managed" to produce outcomes favored by some members of Congress was for a project proponent to find unorthodox benefits to "quantify" (or include in a guesstimated CBA). One local district's engineer, faced with an unfavorable CBA report based solely on flood-control benefits, "developed other benefits that he did not find ... necessary to develop when he wrote his main report," including benefits from downstream power, pollution abatement, and improved water supply. Over time, more benefits were guesstimated, and previously rejected projects were accepted. The result, in Porter's view, was that "Corps economic methods could not, by themselves, determine the outcome of an investigation." This was particularly true when powerful interest groups, such as the utility and railroad industries, or other regulatory agencies, such as units of the Agriculture or Interior Departments, opposed the Corps' initial conclusions.

In sum, CBA can in principle provide public-regarding benefits, by disciplining agencies, increasing transparency, and enhancing the public's engagement with the regulatory process. In theory, CBA can reduce agency costs associated with delegation by politically accountable lawmakers to expert but less-accountable agencies. But CBA can have other effects, beyond direct costs of the CBA itself. These effects include use of technically opaque analytics to obscure the issues at play, to raise the risks for lawmakers to question regulators, to shift power from Congress to regulators, to hide rent seeking, and to favor factions in distributional struggles among lawmakers. One form of camouflage that seems likely to recur is the presentation of guesstimated CBA as quantified CBA – to mislead the public by omitting adequate information about the uncertainty, judgment, and sensitivity of particular numerical results in a CBA.

Depending on one's assumptions about the alignment of agency interests with public interests, these effects may be costly or beneficial. But they should be kept in mind when evaluating a given type of CBA in a given context, and suggest that CBA needs to be itself subject to CBA before being mandated through law. In Part IV, I sketch a third set of effects that CBA policy can have – to stimulate innovation and induce better regulation over time – that differs from both the disciplinary role touted by advocates of CBA law and the camouflaging role illustrated by the Corps history.

D. Alternatives to Quantified CBA/FR

CBA is sometimes promoted on the ground that either that there is no alternative, or no reliable alternative.[41] Leading proponents of CBA/FR in the UK, for example, acknowledge problems with CBA/FR and then argue these problems do "not, however, mean that the best course would be to fail altogether to deploy the techniques of economic analysis."[42] (One would hope not!) Yet viable alternatives exist.

In non-financial areas of regulation, agencies use feasibility analysis, focusing on the technical capacity of private actors to comply with a proposed rule, with some attention to costs, rather than on the rule's full range of costs and benefits,[43] and risk-risk analysis, where the risk addressed by a rule is compared to risks that can be expected to arise as private actors respond to the rule.[44] Another (sometimes included as a component of CBA) is cost-effectiveness analysis, in which costs of different methods of achieving stipulated or assumed benefits are estimated and compared.[45] Another, reflected in some important statutes relevant to financial regulation,[46] is a flat ban on certain kinds of activities – that is, to require agencies to enact and enforce mandatory rules regardless of what an agency's CBA/FR might suggest about their net benefits.[47]

1. The "Alternative" of Expert Judgment

But the primary "alternative" to guesstimated CBA/FR is expert judgment, which will typically include at least some elements of conceptual

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[41] Adler and Posner, supra note 31, at 194 (noting "an argument [they] believe has currency among economists although it is rarely defended in print ... that CBA is desirable because there are no superior alternatives that provide determinate, or relatively determinate, prescriptions").

[42] Isaac Alfon and Peter Andrews, Cost-Benefit Analysis in Financial Regulation: How to Do It and How It Adds Value, FSA Occasional Paper Series 3 (Sep. 1999), at 11.

[43] Sinden, supra note 38, at 1419.

[44] Risk Versus Risk: Tradeoffs In Protecting Health And The Environment (J. Graham & J. Weiner eds., 1995).

[45] HENRY M. LEVIN, COST-EFFECTIVENESS: A PRIMER (1983).

[46] An example is the Bank Holding Company Act of 1956, which bans banks from being owned by or affiliating with companies engaged in non-financial activities. Federal Reserve Board and other banking agency regulations interpreting this statute do not engage in CBA when they evaluate whether an activity is prohibited by the statute.

[47] Despite the repeal in Gramm-Leach-Blilely of the Glass-Steagall Act, banks and companies that control banks are still banned from most non-financial activities and investments under the Bank Holding Company Act of 1956. The Volcker Rule is similar, as discussed in Part III.D infra.

CBA (whether expressed in writing or not), and can be elicited and deployed in a variety of ways. In fact, as OMB Guidance makes clear, judgment is not in fact an "alternative," but a necessary component of guesstimated or quantified CBA.[48] In the context of financial regulation, the judgment of regulatory staff is expert because the appointees of the financial agencies have generally spent their careers in and have developed specialized knowledge of finance, financial institutions and financial markets.[49] They have sharpened their intuitive sense of what kinds of regulations work and why, relative to non-experts, such as generalist judges. Such intuitions can be disciplined and informed in ways other than through formal CBA, such as through discussions with other experts (within or outside an agency); case studies, surveys, and polls; retrospective evaluations, regulatory experiments that are deliberately adopted without specific predictions about how they will turn out; and other forms of knowledge that are not part of quantified CBA/FR.

The experience and expertise of financial regulators of course does not make them infallible – the 2008 financial crisis proves regulators with expertise can lack judgment, particularly when the challenges they face are novel, as with shadow banking, over-the-counter derivatives and (ironically) the complex and unanticipated effects of deregulation.[50] More generally, in many domains, particularly in predicting complex social, political and economic events, experts are no more capable of predicting certain kinds of complex events than non-experts.[51] Nevertheless, in the realm of financial regulation, expert judgment has always played a central role in the setting of monetary policy, which brings us to the Taylor Rule.

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[48] OMB Guidance, supra note 19 (suggesting the use of "judgment" or "professional judgment" fourteen times, including the use of formal methods for eliciting expert seat-of-the-pants estimates through Delphi methods). On Delphi methods, see M.G. Morgan and M. Henrion, Uncertainty: A Guide to Dealing with Uncertainty in Quantitative Risk and Policy Analysis (1990). For a trenchant attack on CBA generally, arguing in favor of the use of "intelligent deliberation" as the alternative, see Henry S. Richardson, The Stupidity of the Cost-Benefit Standard, 29 J. Legal Stud. 971 (2000).

[49] The expertise of the financial agencies includes vastly more firepower than available to OIRA, which has a total staff of less than 50. www.whitehouse.gov/sites/default/files/omb/assets/organization/ fy2013ombbudget.pdf. The Federal Reserve Board alone has more than 220 Ph.D. economists on staff. See www.huffingtonpost.com/2009/09/07/priceless-how-the-federaln278805.html. The SEC has 46 Ph.D. economists. See www.sec.gov/ divisions/ riskfin/economistbios.shtml. For a discussion of the careers of SEC commissioners and staff, see John C. Coates IV, Private vs. Public Choice of Securities Regulation: A Political Cost/Benefit Analysis, 41 Va. J. Int'l L. 531 (2001).

[50] Financial Crisis Inquiry Commission, Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States (January 2011), at 27-82, available at fcic-static.law.stanford.edu/cdnmedia/fcic-reports/fcicfinalreportfull.pdf (last visited Dec. 26, 2013).

[51] Tom Stark, Realistic Evaluation of Real-Time Forecasts in the Survey of Professional Forecasters, Federal Reserve Bank of Philadelphia, Working Paper (May 28, 2010) available at www.phil.frb.org/research-and-data/publications/research-rap/2010/realistic-evaluation-of-real-time-forecasts.pdf (last visited Dec. 26, 2013) (expert economic forecasts beat "no change" forecasts and simple direct and indirect autoregression models, but performance of forecasts falls sharply for predictions more than three months in the future) ; Philip Tetlock, Expert Political Opinion (Princeton U. Press 2005) (expert political opinion commonly wrong).

2. The Taylor Rule: A Limiting Example

To set the stage for case studies of rules in Part III, another "rule" is first described here – the "Taylor Rule," a well-known method proposed to guide US monetary policy. The Taylor Rule illustrates a limiting principle for CBA/FR acknowledged even by CBA/FR's proponents, because even though do not advocate requiring CBA/FR for monetary policy.[52] As will be seen, guesstimated CBA/FR on the Taylor Rule would require conceptual, theoretical and empirical challenges identical in kind to those required by the other rules reviewed in Part III, raising the question of why, precisely, CBA/FR proponents believe a line can or should be drawn between rules for monetary policy and other financial regulations.

The "Taylor Rule" is a principle of monetary policy that stipulates how much the Federal Reserve (or any central bank) should change nominal interest rates in response to changes in prices, output, or other economic quantities. In particular, the Rule stipulates that for a percent increase in inflation, a central bank should raise interest rates by ***more*** than a percentage point.[53] First proposed in its specifics by John Taylor in 1993, the Rule was a practical suggestion for implementing prior calls for central banks to reduce uncertainty and adaptive inefficiency and increase credibility by avoiding frequent changes in monetary policy as a result of the exercise of discretion.[54] The Federal Reserve, it should be emphasized, has never "promulgated" the Taylor Rule, nor has it adopted the Rule in any formal of public fashion.[55] Nevertheless, the Rule does fairly characterize (as a first

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[52] See notes 57 and 121 infra.

[53] More specifically, the Rule calls for the Fed to set the federal funds rate (traditionally its principal instrument for setting monetary policy) at one plus 1.5 times the inflation rate plus 0.5 times the "output gap," defined as the percentage deviation of actual GDP from "potential" GDP. John Taylor, Discretion versus Policy Rules in Practice, 39(1) Carnegie-Rochester Conference Series on Public Policy 195-214 (1993). "Potential" GDP is an estimate of "the trend growth in the productive capacity of the economy ... [i.e.,] an estimate of the level of GDP attainable when the economy is operating at a high rate of resource use ... [i.e., an estimate of] maximum sustainable output – the level of real GDP in a given year that is consistent with a stable rate of inflation." Congressional Budget Office (CBO), CBO's Method for Estimating Potential Output: An Update (August 2001), available at www.cbo.gov/sites/default/files/cbofiles/ftpdocs/30xx/doc3020/potentialoutput.pdf (last visited Dec. 29, 2013). Although models of potential GDP vary, the CBO publishes estimates that are widely used, based on the "Solow growth model," a simple projection of GDP based on two supply-side factors: labor input (hours worked) and accumulation of physical capital (additions to the nation's stock of plant and equipment). Id. at 3.

[54] Id. For prior theoretical work, see Finn Kydland and Edward Prescott, Rules Rather than Discretion: The Inconsistency of Optimal Plans 85 J. Pol Econ. 473-91 (1977).

[55] In fact, Taylor has argued that the Federal Reserve has repeatedly deviated from his rule, while recently departed Federal Reserve Chairman Ben Bernanke and Federal Reserve Board members and staff economists have argued the contrary, and that Taylor's 1993 formulation of his rule difference from his 1999 formulation. Compare John Taylor, A Historical Analysis of Monetary Policy Rules, in Monetary Policy Rules, University of Chicago Press, 319-347 (John Taylor, ed., 1999), and John Taylor, Getting Back on Track: Macroeconomic Policy Lessons from the Financial Crisis, Fed'l Res. Bk. of St. Louis Rev. 165-176 (May/June 2010), with Ben Bernanke, Monetary Policy and the Housing Bubble, Speech at the American Economic Association Meetings (Jan. 3, 2010), Glenn Rudebusch, The Fed's Monetary Policy Response to the Current Crisis, Fed'l Res. Bk. of San Francisco Econ. Ltr. (May 22, 2009) and Laurence Meyer, Dueling Taylor Rules, Monetary Policy Insights, Macroeconomic Advisors (August 20, 2009).

approximation) the monetary policy of the Federal Reserve under Chairman Alan Greenspan.[56]

Suppose, counterfactually, a future Federal Reserve (or Congress) wanted to "adopt" the Taylor Rule in a more formal fashion. Could the Rule be defended through CBA/FR? Among CBA/FR proponents, only a few suggest that it could, or should as a matter of law.[57] The numerous proposed bills in Congress that would extend CBA to the independent agencies have all exempted monetary policy.[58]

Why is monetary policy exempt? Politics and political power plays a role, of course – few politicians want to take on the Federal Reserve directly. History and tradition also play a role: monetary policy has long been (in the US) by consensus an exercise in discretionary judgment, and in the US, it by statute requires balancing multiple goals – full employment, stable prices, financial stability, and an effective payment system,[59] so any strict rule to set monetary policy would have to reverse this tradition and implicitly choose a priority scheme for the goals, which would be (to return to politics) highly unlikely to achieve the supermajority support necessary to enact major legislation in the US.

But policy, too, plays a role here. In a context of high empirical and theoretical uncertainty, multiple, competing macroeconomic models have long co-existed to guide the achievement of these goals, but they are widely conceded to be contestable,[60] and no one model has ever achieved anything close to a consensus even among "mainstream" economists. For this reason, presumably, even the most rule-oriented members of the Federal Reserve have never seriously attempted to persuade the Board to tie its own hands by articulating publicly a "rule" that would eliminate its discretion to set interest rates.

Absent such hands tying, no one would need to exempt monetary policy from the proposed CBA/FR laws. So why have they been exempted? Presumably because CBA/FR proponents recognize that there may be

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[56] Alex Nikolsko-Rzhevskyy and David H. Papell, Taylor's Rule versus Taylor Rules, Working Paper, available at ssrn.com/abstract=1826363 (last visited Dec. 29, 2013), at 1.

[57] Compare Kydlund and Prescott, supra note 54 at 487 (advocating that Congress select a "simple and easily understood" monetary policy rule, and adopt it to take effect prospectively after a two-year delay, although they do not explain how such a law could be made binding on a future Congress) with Ricardo Reis, Central Bank Design, 27 J. Econ. Persp. 17-44 (2013) at 18 (central banks' objectives have usually been "vague"), 19 ("some discretion" may better allow a central bank to achieve even clearly stated objectives) and 26 (central banks "always have some discretion") and John B. Taylor, A Steadier Course for Monetary Policy, Testimony for the Joint Economic Committee on "The Fed at 100: Can Monetary Policy Close the Growth Gap and Promote a Sound Dollar?" (Apr. 18, 2013), available at www.stanford.edu/~johntayl/JEC%20Testimony%20-%20April%2018.pdf (last visited Dec. 29, 2013), at 3-4 (calling for a "return to a more rules-based policy," based on a "gradual exit" from what he criticizes as unfortunate policy decisions, and not for a sudden or strict "rule" to set policy, such that "while discretion would be constrained, it would not be eliminated").

[58] See note 124 infra; see also note 70 infra (monetary policy exempt from CRA).

[59] See www.federalreserve.gov/faqs/about12594.htm (outlining Fed's legal responsibilities and goals).

[60] See Roger E. Backhouse, The Puzzle of Modern Economics: Science or Ideology (2010), at Chapter 7 (describing historical and ongoing debates within economics over whether and how to construct macroeconomic models, and continuing fact of disputes over ability of such models to adequately forecast economic behavior).

welfare enhancing "rules" (in the sense of regularities in the exercise of discretion that might come within the legal definition of "rule" used in the APA[61]) that can discipline regulators that nevertheless cannot be reliably shown to satisfy a cost-benefit test. The idea that a "rule" in the general legal sense of the APA could be valuable without being first validated by quantified CBA/FR holds across many domains of discretionary decision-making: corporate boards of directors may decide to adopt rules (to constrain themselves) about what sorts of investments they want officers to present to the board, rather than to pursue on their own, but such self-imposed rules may not be defensible in any kind of quantitative framework. Rules, in other words, can be a part of the way that discretionary judgment is exercised. Rules can have value if they cannot be supported by evidence showing that their quantifiable benefits exceed their quantifiable costs.

Indeed, CBA/FR's strongest proponents concede that expert judgment is necessary because CBA/FR can only be as good as the expert judgment that informs it.[62] Pro-CBA/FR bills pending in Congress exempt monetary policy, presumably for this reason, and there is no serious call for hard-wiring monetary decisions into legislation or regulation. Even though there are economists who believe that basing monetary policy on simpler rule-like elements may be a good idea, even they suggest that rule-like monetary policy be adopted as a matter of expert discretion by the Federal Reserve Board, and be subject to discretionary exceptions. The only questions are whether discretionary judgment should be confined to monetary policy, or whether it should remain available for financial regulation more broadly; and whether, in fact, quantified CBA/FR is itself actually a real alternative to judgment. To answer that question, a detailed analysis of what CBA/FR might look like is needed.

II. HOW IS CBA/FR BEING PROMOTED THROUGH LAW?

As noted at the outset, a movement is afoot to impose CBA/FR on financial regulation. This movement is flowing through a variety of channels. Interest groups and advocacy organizations have been promoting CBA/FR, as both policy and law.[63] Financial regulators themselves have undertaken to beef up their quantitatively trained staffs, partly out of a belief that CBA/FR can add more benefits than costs to the regulatory process, at least in some contexts, but also to better equip themselves to fight political battles and cope with Congressional oversight, prepare for and respond to

[61] The APA defines a "rule" as any "statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy." 5 U.S.C. § 551. If the pending bills did not exempt monetary policy, then any "statement" by the Federal Reserve Board meant to "implement ... policy" would arguably require CBA/FR under the APA.

[62] OMB Guidance, supra note 19 at 3 ("You will find that you cannot conduct a good regulatory analysis according to a formula. Conducting high-quality analysis requires competent professional judgment.").

[63] For examples, see CCMR Report, supra note 4, and CCMC Report, supra note 6.

litigation, and in anticipation of potential new CBA/FR law. Major developments promoting CBA/FR through law are reviewed briefly here.

A. Existing CBA/FR Law

Formally, independent agencies[64] such as the financial agencies are not subject to explicit CBA/FR law to the same extent as the executive agencies, which since 1981 have by executive order and since 1995 by statute been required to conduct CBA for new rules.[65] The independent agencies were requested by Vice President George H.W. Bush in 1981 to comply with the CBA portions of the executive orders, and some of the financial agencies have at times voluntarily, if incompletely and inconsistently, complied.[66] By contrast, in the United Kingdom, the two main financial regulatory agencies are required by statute to conduct quantified CBA/FR, unless in the opinion of the agencies the costs or benefits "cannot reasonably be estimated" or "it

[64] "Independent agencies" are listed in the Paperwork Reduction Act of 1980, codified at 44 U.S.C. § 3502(5). Not all financial regulation is conducted by independent agencies – the Department of Labor, which is an executive agency, promulgates regulations relevant to pension funds, for example, and is governed by the executive orders listed in note 65 infra.

[65] Exec. Order No. 12,291, 46 Fed. Reg. 13193 (Feb. 17, 1981) (requiring, inter alia, CBA for new regulations), superseded by Exec. Order No. 12,866, 58 Fed. Reg. 51735 (Sept. 30, 1993) (modestly amending prior CBA requirements, with heightened requirements for "significant regulatory action," and further requirements for actions likely to have an economic impact of $100 million per year (hereinafter, an "economically significant rulemaking")), amended by Exec. Order No. 13,258, 67 Fed. Reg. 9385 (Feb. 26, 2002) (eliminating the role of the Vice President in the CBA process), and supplemented by Exec. Order NO. EO 13,563 (Jan. 18, 2011). Under these orders, executive agencies are required to conduct quantified CBA to the extent feasible, to submit significant rules to OIRA in advance, to provide CBAs to OIRA, to wait until OIRA reviews the CBAs before publishing rules for public comment, and to publish CBAs with rules. *Id.* Independent agencies are required only to provide OMB with an annual agenda of significant regulatory actions for the upcoming year, including "to the extent possible," a summary CBA. Sherwin, supra note 14, at 12 reports having reviewed these agenda for the SEC in the period leading up to 2006 and found they did not generally include summary CBA. These executive orders were joined by the Unfunded Mandates Reform Act requirement that executive agencies, but not independent agencies, include written CBA for each economically significant rulemaking. Unfunded Mandates Reform Act of 1995, Pub. L. No. 104-4, 109 Stat. 48 (1995) (codified as amended in scattered sections of 2 U.S.C. (2000)).

[66] E.g., House Financial Services Committee Hearing, Monetary Policy and the State of the Economy (Feb. 27, 2013) (Testimony of Federal Reserve Chairman Ben Bernanke that Federal Open Market Committee purchases of financial assets are conducted "within a [CBA] framework"); SEC Office of the Inspector General, Compliance Handbook (Oct. 1, 1999) at 38-39 (stating that SEC rule proposals should contain CBA), which reflected OMB's "best practices guidance issued in 1996, see, GAO, Dodd-Frank Act Regulations: Implementation Could Benefit from Additional Analyses and Coordination, GAO-12-151 (Nov. 2011), at n. 28; SEC Office of the Inspector General, Office of Audits, Follow-Up Review of Cost-Benefit Analyses in Selected Dodd-Frank Rulemakings, SEC OIG 499 (Jan. 27, 2012) at 5 ("SEC Chairman Arthur Levitt stated that there was an expectation that the SEC would perform cost-benefit analyses as part of the rulemaking process"); Budget Hearing—Securities and Exchange Commission: Hearing Before the Fin. Serv. and Gen. Gov't Subcommittee of the H. Comm. on Appropriations, 112th Cong. (Mar. 15, 2011) (testimony of SEC Chairman Mary Schapiro), Federal News Service, Inc. transcript at 26-27. See generally BARRY D. FRIEDMAN, REGULATION IN THE REAGAN-BUSH ERA: THE ERUPTION OF PRESIDENTIAL INFLUENCE 78 (1995); Peter L. Strauss, The Place of Agencies in Government: Separation of Powers and the Fourth Branch, 84 Colum. L. Rev. 573, 591-93 (1984); Richard H. Pildes & Cass R. Sunstein, Reinventing the Regulatory State, 62 U. Chi. L. Rev. 1, 11-18 (1995).

is not reasonably practicable to produce an estimate," in which case the agency must publish that opinion and explain it.[67]

Three CBA-related statutes cover the independent agencies. The Paperwork Reduction Act (PRA) requires agencies to justify collection of information from the public, to minimize its burden, and maximize the utility of information collected.[68] The Regulatory Flexibility Act (RFA) requires agencies to assess and consider alternatives to the burden of regulation on small entities.[69] The Congressional Review Act (CRA) requires agencies to submit proposed rules – along with any CBA the agencies have conducted – to Congress and the Government Accountability Office (GAO).[70] The statute requires the GAO to submit an assessment to Congress of any "major rules," defined as those having an expected impact of $100 million or more.[71]

As a result of these statutes, independent agencies include some CBA-relevant information in rulemakings, the GAO has been submitting annual reports on CBA for major rules, including rulemakings by independent agencies, and the OMB has collected and reported on the GAO's reports on an annual basis.[72] Analyses under the PRA and the RFA represent only a subset of a full CBA, even conceptual CBA, and the information in these

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[67] Financial Services Act 2012, amending inter alia sections 138I (Financial Conduct Authority) and 138J (Prudential Regulation Authority) of the Financial Services and Markets Act 2000. In striking contrast to the recent US experience, the FSA and its successors' rulemakings and CBA (while subject to judicial review) have not been subjected to numerous court decisions striking down its rules for inadequate CBA. The only example of a court decision that even refers to CBA by the FSA is R (on the application of the British Bankers Association) v. FSA et al. [2011] EWHC 999 (Admin), which rejected a challenge by a banking trade group to the handling of complaints about "payment protection insurance" by the FSA and the Financial Ombudsman Service, which handles consumer financial complaints.

[68] Pub. L. No. 104-13, 109 Stat. 163 (1995) (codified at 44 U.S.C. §§ 3501-3520).

[69] Pub. L. No. 96-354, 94 Stat. 1164 (1980) (codified at 5 U.S.C. §§ 601-612). The RFA was one basis for the recent suit against the Volcker Rule by the American Bar Association. See www.aba.com/Issues/Documents/ (last visited Dec. 29, 2013).

[70] Technically, the reports are submitted to the head of the GAO, the Comptroller General. Contract with America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (codified as amended in 5 U.S.C. § 801 et seq.). This statute exempts monetary policy by the Federal Reserve Board and the Federal Open Market Committee. 5 U.S.C. § 807.

[71] 5 U.S.C. § 804. The statute generally defers for 60 days the effectiveness of major rules, and gives Congress the power to veto "major rules" by joint resolution passed within that period, subject to Presidential veto of the joint resolution. 5 U.S.C. § 801-802. Courts have interpreted this statute to preclude judicial review of agency compliance with the statute, including agency determinations of whether a rule is "major." See, e.g., In re: Operation of the Missouri River Sys. Litig., 363 F.Supp.2d 1145, 1173 (D.Minn.2004) (agency's determination under CRA that a rule is not a "major rule" is not subject to judicial review); Via Christi Reg'l Med. Ctr., Inc. v. Leavitt, 509 F.3d 1259, 1271 n. 11 (10th Cir.2007) ("The Congressional Review Act specifically precludes judicial review of an agency's compliance with its terms."); see also Montanans for Multiple Use v. Barbouletos, 568 F.3d 225 (D.C.Cir.2009); Tex. Sav. & Cmty. Bankers Ass'n v. Fed. Hous. Fin. Bd., 201 F.3d 551 (5th Cir.2000).

[72] E.g., OMB/OIRA, 2012 Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities, Appendix C (assessing CBA of "major rules" issued by independent agencies in prior fiscal year), available at www.whitehouse.gov/sites/default/files/omb/inforeg/2012cb/2012costbenefitreport.pdf (last visited Nov. 29, 2013); GAO, Report under 5 USC § 801(a)(2)(A) on a Major Rule, GAO-14-147R (Oct 30, 2013) (reviewing rule proposal by OCC and Federal Reserve to implement Basel III, discussed more in Part III.C below), available at www.gao.gov/assets/660/658810.pdf (last visited Nov. 29, 2013); GAO, Report under 5 USC § 801(a)(2)(A) on a Major Rule, GAO-03-933R (Jun 25, 2003)(reviewing rule proposal by SEC for implementation of section 404 of the Sarbanes-Oxley Act, discussed more in Part III.A below), available at www.gao.gov/assets/90/83472.pdf (last visited Nov. 29, 2013).

reports is thin, generally simple reports on whether CBA was included, without regard to whether it was conceptual or quantified, extensive or brief, persuasive or perfunctory. Still, the PRA and RFA have generated information used to critique financial rules on CBA-related grounds, and the GAO's and OMB's reports have made the complete absence of voluntary CBA in many rulemakings by independent agencies more salient over time. Together, this information fuelled legislative, inter- and intra-agency, and interest group pressure on the agencies to do more on their own to conduct CBA.

B. Congressional Oversight

While Congress has not mandated CBA for independent agencies, members of Congress, in coordination with minority commissioners of the CFTC and the SEC, have pressured the agencies to do so, by attempting to pass legislation (discussed below) and with soft power, through hearings, information requests, and public criticism. In 1998, the GAO released a critique of current law for failing to improve CBA in agency rulemakings.[73] As discussed in Part III.B, in 2004, Fidelity Management persuaded Congress to require the SEC to justify proposed rules by preparing a report on their potential benefits.[74] In 2007, the House held hearings on the Sarbanes-Oxley Act, in which one witness critiqued the SEC's CBA/FR,[75] a criticism echoed by members of Congress,[76] and more recently, by Republican SEC Commissioner Daniel M. Gallagher.[77]

More recently, Congressional pressure has grown, stimulated by cases reviewed below, by Republican commissioners, and by financial industry lobbies seeking to influence rulemaking under the Dodd-Frank Act. In 2011, Senator Crapo (R-ID) pressed the heads of the major financial agencies to commit to "act on GAO's recommendation to incorporate OMB's guidance on [CBA] into your proposed and final rules [and] interpretive guidance".[78]

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[73] Gen. Accounting Office, Unfunded Mandates: Reform Act Has Had Little Effect On Agencies' Rulemaking Actions 30, GAO Doc. No. GAO/GGD-98-30 (Feb. 1998).

[74] Sherwin, supra note 14, at 27-28 (citing H.R. 4818, 108th Cong. (2004); H.R. REP. NO. 108-472, at 841 (2004); S. 2908, 108th Cong. (2004) (introduced by Senator Gregg (R-NH)); and Consolidated Appropriations Act of 2005, Pub. L. No. 108-447, 118 Stat. 2809 (2004)).

[75] Sarbanes-Oxley 404: Will the SEC's and PCAOB's New Standards Lower Compliance Costs for Small Companies?: Hearing Before the H. Comm. on Small Bus., 110th Cong. (2007) (statement of Hal S. Scott, Dir. of Comm. on Capital Mkts. Regulation) ("The agency's estimate is now known to be have been off by a factor of 48.") As noted in Part III.A below, this criticism was mistaken, but has been repeated by the Committee on Capital Markets Regulation in its 2013 report promoting CBA. CCMR Report, at 9.

[76] Statement of Hon. Patrick T. McHenry, in A Balancing Act: Cost, Compliance and Competitiveness after Sarbanes-Oxley, Hearing Transcript 109-217 (June 19, 2006) at 2 (repeating criticism).

[77] Remarks Before the Corporate Directors Forum (Jan. 29, 2013) ("One example relates to compliance with Section 404 of Sarbanes Oxley, which the Commission estimated would cost on average roughly $91,000 a year to implement."), available at www.sec.gov/ News/ Speech/ Detail/ Speech/ 1365171492142#ednref5 (last visited Nov. 29, 2013).

[78] Hearing of the Senate Banking, Housing and Urban Affairs Committee, Wall Street Reform: Oversight of Financial Stability and Consumer and Investor Protection (Feb. 14, 2011).

Shortly later, ten Senate Banking Committee members requested financial agency inspector generals to report on CBA under the Dodd-Frank Act, "in response to concerns raised by Commissioners at both the CFTC and the SEC."[79] Also in 2011, Congress amended the Dodd-Frank Act to require the GAO to analyze the impact of regulations on the marketplace,[80] and in November 2011, the GAO released a report on the financial agencies' Dodd-Frank Act rulemakings, finding:

> Although most of the federal financial regulators told us that they tried to follow [OMB Guidance] in principle or spirit, their policies and procedures did not fully reflect OMB guidance on regulatory analysis. ... For 7 of ... 10 regulations we reviewed, the agencies generally assessed benefits and costs of the alternative chosen.[81]

The GAO was particularly critical of the financial agencies for not conducting ***quantified*** CBA/FR, noting that:

> [O]ne of the seven benefit-cost analyses monetized the costs of the regulation, but the analysis did not monetize the benefits. None of the other analyses monetized either the benefits or costs, identified the type and timing of them, or expressed them in constant dollars.[82]

Trade groups and political entrepreneurs have picked up these criticisms,[83] as have members of Congress.[84] In 2012, the GAO released another report advocating CBA/FR, including the financial agencies' "more fully incorporat[ing] OMB's guidance into their rulemaking policies."[85]

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[79] See CFTC Office of the Inspector General, A Review Of Cost-Benefit Analyses Performed by the Commodity Futures Trading Commission in Connection with Rulemakings Undertaken Pursuant to the Dodd-Frank Act (June 13, 2011); SEC Office of the Inspector General, Office of Audits, Follow-Up Review of Cost-Benefit Analyses in Selected Dodd-Frank Rulemakings, SEC OIG 499 (Jan. 27, 2012).

[80] Pub. L. No. 112-10, § 1573(a), 125 Stat. 38, 138-39 (2011) (codified at 12 U.S.C. § 5496b).

[81] GAO, Dodd-Frank Act Regulations: Implementation Could Benefit from Additional Analyses and Coordination, supra note 66 at 16-17.

[82] GAO, Dodd-Frank Act Regulations: Implementation Could Benefit from Additional Analyses and Coordination, supra note 66 at 16-17.

[83] See CCMC Report supra note 6 at 9-10; CCMR Report supra note 4 at 7-9. Neither the GAO nor other CBA-proponents have set out examples of how they would suggest that the SEC conduct CBA/FR, limiting themselves to simply counting what share of rulemakings contained CBA/FR of any kind, and what share contained at least some quantification, without regard to whether the quantification is precise, reliable or comprehensive as to either costs or benefits. The CCMR Report, supra note 4, at 13-16 holds up one SEC rulemaking as a "gold-standard" of CBA/FR, as discussed infra at text accompanying notes 305-63.

[84] E.g., Hearings of the Oversight and Investigations Subcommittee of the House Financial Services Committee, Who is Too Big to Fail? (Mar. 14, 2013) (Representative Wagner (R-MO), questions witness from Financial Stability Oversight Council (FSOC) about "GAO report that talked about needing a [CBA]").

[85] GAO, Dodd-Frank Act: Agencies' Efforts to Analyze and Coordinate Their Rules, GAO 13-101 (Dec. 2012).

C. Judicial Review

Powerfully reinforcing the push for CBA/FR through Congressional oversight have been the courts. Despite the fact that CBA/FR is not clearly required of independent agencies, business trade groups have since 2000 invested significant time and resources to persuade courts – primarily the D.C. Circuit – to strike down a series of rules under the APA, in conjunction with statutes authorizing financial regulation. Cited in internal CBA/FR guidance promulgated by the CFTC and the SEC, these decisions have clouded implementation of the Dodd-Frank Act, contributing significantly to the rulemaking delays under that law. These decisions have had an impact on the legislative process, as lawmakers, lobbyists and the agencies themselves have noticed different treatment that the courts have afforded rules that Congress has required the agencies to enact compared to those where Congress gave the agencies discretion and authority to act.

The first in the recent string of judicial interventions was *Chamber of Commerce v. SEC*. In that decision, the court held the SEC failed to comply with the Investment Company Act (ICA). The ICA requires the SEC to "consider ... whether [regulatory] action will promote efficiency, competition, and capital formation,"[86] a requirement added to the SEC's statutory mandates in 1996.[87] As a result, the SEC had also violated the APA.[88] The rules in question – discussed in Part III.B – made exemptions under other rules conditional on mutual funds increasing their boards' independence.

The specific CBA/FR-related failings to which the court pointed were two small parts of the SEC's regulatory analysis. The first was that the SEC declined to quantify costs of requiring more independent directors because it did not know how funds would respond to the rule. This, the court replied, was no excuse, saying that the SEC could have determined "the range within which a fund's cost of compliance [would] fall, depending on how it respond to the condition."[89] Presumably what the court had in mind was that the SEC could quantify costs of each possible response and guesstimate a range based on assumptions about how many funds would choose which options.

The second failing was similar, relating to a requirement that fund boards have an independent chair. There, the SEC declined to quantify costs of the newly independent chairs hiring staff because staffing would be discretionary and the SEC had no basis for knowing how many chairs would hire staff, or how many staff. Again, the court held the SEC needed to guesstimate this subset of costs by presenting a range based on assumptions

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[86] 15 U.S.C. § 80a–2(c), cited at 412 F.3d at 142.

[87] National Securities Markets Improvement Act, Pub. L. 104-290 (Oct. 11, 1996), section 106, codified in Section 2 of the Investment Company Act of 1940 (15 U.S.C. 80a–2). Identical requirements were added to the other federal securities laws. *Id.*

[88] 412 F.3d at 144.

[89] Id. at 143.

about how many funds might hire staff.[90] The court's analysis under the APA was non-existent – because the SEC had not followed the ICA, it therefore violated the APA.[91]

In sum, the court interpreted the requirement that the SEC "consider" a rule's effects on "efficiency" to imply a CBA/FR mandate for a specific type of CBA/FR – to guesstimate the range of one of a rule's costs, rather than merely identifying the type of cost imposed. The court's interpretation of the ICA was based in no prior court decision,[92] no legislative history, and it is in no clear way implicit in the words of the ICA, as "efficiency" is frequently used as a qualitative and not exclusively as a quantified concept.[93] Nowhere did the court cite much less discuss Supreme Court precedent under the APA that had emphasized that courts should be highly deferential in reviewing an agency's judgment under the "arbitrary and capricious" standard.[94] Nor did it address precedents more generally admonishing courts to be mindful in deferring to agencies of the "complex nature of economic analysis."[95]

Nor did the court explain how a crude guesstimate of one conditional component of possible costs of a rule could meaningfully inform the public about the "efficiency" of the rule when the SEC had not quantified the benefits of the rule, and the court did not suggest the SEC try to do so. In other words, the court read general language in the ICA as if it required the SEC to comply with the Executive Orders requiring CBA/FR "to the extent

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[90] The third failing did not raise CBA issues, and arose under the APA directly: the SEC had not formally considered a disclosure alternative to its proposals, in which funds would prominently disclose whether they had independent chairs. Here, the court pointed to the fact that two dissenting Commissioners had suggested the alternative, along with a number of commentators, and the SEC's only stated reasons for not considering it were that it had no obligation to consider every alternative raised, that it did consider other alternatives, and that Congress in the ICA itself had not relied on disclosure to police conflicts of interest in funds. To this the court noted that the ICA does not require disclosure, making disclosure relevant, even if not necessarily sufficient to address the problem the new rules were meant to address. 412 F.3d at 145-46.

[91] 412 F.3d at 144.

[92] The only precedent cited by the court in its critique of the SEC's CBA was Public Citizen v. Federal Motor Carriers Safety Administration, 374 F.3d 1209 (D.C. Cir. 2004), in which an executive (not independent) agency that was specifically required by statute to "consider the costs and benefits" of its regulation was held to have violated a distinct statutory requirement to "deal with ... fatigue-related issues pertaining to ... vehicle safety," which the court there interpreted as requiring the agency to collect and analyze data on the costs and benefits of a specific possible regulation. No specific directive of that kind was at issue in *Chamber of Commerce*, only the open-ended directive for the SEC to consider the effects of its rules on "efficiency, competition, and capital formation."

[93] E.g., A. Mas-Collel, M. Whinston and J. Green, Microeconomic Theory (1995) (advanced text on economic theory, frequently discussing "efficiency" without reference to quantitative data).

[94] See Bowman Transp., Inc. v. Ark.-Best Freight Sys., Inc., 419 U.S. 281, 285–86, 95 S.Ct. 438, 42 L.Ed.2d 447 (1974). Subsequent to *Chamber of Commerce*, the D.C. Circuit has held courts should be "particularly deferential in matters implicating predictive judgments," *Rural Cellular Ass'n v. FCC,* 588 F.3d 1095, 1105 (D.C.Cir. 2009), which led another panel of the D.C. Circuit to hold that the APA "imposes no general obligation on agencies to produce empirical evidence" where it is not in the agency's record. Stilwell v. Office of Thrift Supervision, 569 F.3d 514, 519 (D.C.Cir. 2009).

[95] Nat'l Wildlife Fed'n v. EPA, 286 F.3d 554, 563 (D.C.Cir. 2002). This fact has led another panel of the D.C. Circuit, subsequent to *Chamber of Commerce*, to announce sweepingly that courts should "review ... cost-benefit analysis deferentially." Nat'l Ass'n of Home Builders v. EPA, 682 F.3d 1032, 1040 (D.C.Cir. 2012).

feasible,"[96] and then added an interpretive gloss on OMB Guidance that has little apparent virtue for improving public understanding of the rule. Whatever the merits of the SEC's mutual fund rules – and there are reasons (noted in Part III.B) that suggest that the rules might not be a good idea, on balance – the merits of the court's decision evaluating the SEC's rulemaking under the ICA and the APA are hardly compelling, and do not appear to reflect any meaningful deference to SEC judgment on how to conduct CBA/FR.

Yet this decision was only the first of a rash of judicial interventions into the financial regulatory process, growing steadily less deferential, culminating in the 2011 decision, *Business Roundtable v. SEC*.[97] In the seven years after *Chamber of Commerce*, the D.C. Circuit handed down six more similar decisions, striking down a range of SEC actions, an average of one per year, representing one in seven of the SEC's major rules over that period.[98] The D.C. Circuit has struck down a rule requiring registration of hedge fund advisors under the Investment Advisors Act,[99] a rule exempting broker-dealers from registration under that Act,[100] an order affirming expulsion of an NASD-member firm,[101] and a rule treating a new class of securities-market-linked annuities as securities.[102] The court also struck down the same mutual fund governance rules a second time – the SEC with perhaps tactless speed patched the guesstimated CBA/FR holes in its rule-making analysis, only to have its rule struck down on new grounds.[103] Only one – the most recent – decision since *Chamber of Commerce* has upheld an SEC regulation, *National Association of Manufacturers vs. SEC* [hereinafter,

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[96] See note 65 supra. OMB Guidance, supra note 19, does not specify that an agency engaging in quantification "to the extent feasible" must quantify costs on a conditional basis.

[97] 647 F.3d 1144 (D.C. Cir. 2011).

[98] For the number of major rules, see OIRA 2012 Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local and Tribal Entities (2012) at Appendix C, available at www.whitehouse.gov/ sites/ default/ files/ omb/ inforeg/ 2012cb/ 2012costbenefitreport.pdf (last visited Nov. 28, 2013).

[99] Goldstein v. SEC, 451 F.3d 873 (D.C. Cir. 2006).

[100] Financial Planning Assoc. v. SEC, No. 04-1242 (D.C. Cir. Mar. 30, 2007).

[101] PAZ Securities, Inc. v. SEC, No. 05 1467 (D.C. Cir. July 20, 2007).

[102] American Equity Investment Life Ins. Co. v. SEC, 613 F.3d 166 (D.C. Cir. 2010).

[103] 443 F.3d 890 (2006) (holding that the SEC's reproposal of the mutual fund governance rules after X days violated APA because the SEC relied on materials not in the public record and had not reopened the rule for public comment). Some commentators have suggested that the SEC's rapid re-adoption of its rule with the cost estimates called for by the D.C. Circuit in *Chamber of Commerce I* shows that it was less than "diligent" in failing to provide the cost estimates in the first release. E.g., CCMC Report, supra note 6, at 31; Sherwin, supra note 14, at 164. This criticism is unfair, because it fails to explain why the SEC should have understood that it had an obligation to provide that cost information in its first release, when neither the APA nor NSMIA nor court precedents would have made it apparent that what even the Chamber of Commerce's own report (CCMC Report, supra note 6) concedes were "relatively minor cost considerations" would be an independently important component of its regulatory analysis, or otherwise required to be set forth in its release. It is even more deceptive to imply that the SEC was able in its second release to do something it had said it could not do in its first release, as the CCMR Report suggests at 31 ("the court's incredulity about the SEC's position that the agency could not determine these costs proved true"), because the SEC's position was not that it could not estimate conditional cost estimates, only that these conditional cost estimates could be translated into an actual aggregate compliance estimate, which it never provided, even in its second release.

NAM],[104] while a prior decision upheld a CFTC regulation,[105] and another upheld a decision[106] of the Office of Thrift Supervision against CBA/FR-related challenges.

Worth noting about these decisions are three facts. *First*, a business trade group initiated and funded each of these cases – so far, consumer and investor lobbies have been sitting out these court battles. One-sided use of litigation as a lobbying tactic is not typically a stable feature of enduring battles between interest groups over important regulations. *Second*, not all of the decisions strike down new regulations – one struck down a new ***exemption*** from a regulation, and one overturned an enforcement action. Together, these two facts should give pause to political entrepreneurs using CBA/FR as a way to attack regulation generally, as they suggests that CBA/FR law can be used to slow or stop ***de***regulation as easily as it can slow or stop new regulation, particularly if consumer or investor advocates develop and fund their own CBA/FR-oriented litigation agendas. *Third*, each regulatory action except *NAM* was decided under a general statutory authorization for the SEC to use discretion to adopt regulations in support of the securities laws, and not pursuant to a mandate from Congress to do so. That the most recent decision, in *NAM*,[107] distinguished the string of anti-SEC precedents on the ground that the Dodd-Frank Act mandated the rule in question reinforces this take-away. Under the current CBA/FR legal regime, regulatory agencies are well advised to seek language from Congress in any relevant statute requiring them to adopt rules, or to enforce rule-like legal requirements via enforcement proceedings generally outside judicial review under the APA,[108] rather than to seek discretion and authority in rulemaking

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[104] National Association of Manufacturers et al. v. SEC, -- F. Supp. 2d. --, 2013 WL 3803918 (D.D.C.).

[105] Investment Company Institute v. CFTC, 891 F.Supp.2d 162, 216 (D D.C. 2012) ("While the CFTC did not calculate the costs of the Final Rule down to the dollar-and-cent, it reasonably considered the costs and benefits of the Final Rule, and decided that the benefits outweigh the costs.").

[106] Stilwell v. Office of Thrift Supervision, 569 F.3d 514, 519 (D.C.Cir. 2009).

[107] 2013 WL 3803918, slip op. at 9.

[108] Brandice Canes-Wrone, Bureaucratic Decisions and the Composition of the Lower Courts, 47 Am. J. Pol. Sci. 205, 210 (2003) ("judicial ideology significantly affects bureaucratic decision making" in a dataset of Army Corps of Engineers decisions 1988 to 1996; Yehonatan Givati, Strategic Statutory Interpretation by Administrative Agencies, 12 Am. L. & Econ. Rev. 95 (2010) (in theoretical model, stricter judicial review of agency action can result in "safer" statutory interpretations by agency, depending on relative shift in utility of safe and aggressive interpretations); M. Elizabeth Magill, Agency Choice of Policymaking Form, 71 U. Chi. L. Rev. 1383, 1437-42 (2004) (noting that agencies can and do choose among rulemaking, enforcement, and informal guidance for various reasons, and judicial review is affected by and affects these choices); Matthew C. Stephenson, The Strategic Substitution Effect: Textual Plausibility, Procedural Formality, and Judicial Review of Agency Statutory Interpretations, 120 Harv. L. Rev. 528 (2006) (procedural formality substitutes for textual interpretation of authorizing statutes in agency action); Emerson H. Tiller, Controlling Policy by Controlling Process: Judicial Influence on Regulatory Decision Making, 14 J.L. Econ. & Org. 114 (1998) (presenting model of judicial review of agency decision-making, in which "process review" under the APA for arbitrariness forces agencies to expend resources to reduce risk of judicial reversal); Emerson H. Tiller & Pablo T. Spiller, Strategic Instruments: Legal Structure and Political Games in Administrative Law, 15 J.L. Econ. & Org. 349 (1999) (agencies choose among "instruments of decision making" so as to increase costs of court review). For an account of executive agency efforts to avoid CBA review by OIRA, see Jennifer Nou, Agency Self-Insulation Under Presidential Review, 126 Harv. L. Rev. 11755 (2013).

based on their expertise. Judicial efforts to promote CBA/FR, in other words, have given expert agencies an incentive to ask an inexpert Congress to tie their hands with inflexible statutory commands.

The most notorious[109] decision was *Business Roundtable*, which struck down an SEC rule requiring public companies to include, under limited circumstances,[110] information about and the power to vote for board nominees nominated by large shareholders rather than solely those nominated by the incumbent board.[111] Despite the SEC having debated the issue for over a decade, having developed an extensive public record before adopting its rule, and having adopted the rule under the explicit authority and implicit direction of Congress in Section 971 of the Dodd-Frank Act, a panel of the D.C. Circuit struck the rule down as "arbitrary and capricious" on the ground that the twenty-five single-spaced pages devoted to cost-benefit and related analyses in the adopting release was inadequate under the APA and "failed ... adequately to assess the economic effects of a new rule."[112] The

[109] The decision provoked unusual agreement among legal commentators – all negative. Robert B. Ahdieh, Reanalyzing Cost-Benefit Analysis: Toward a Framework of Function(s) and Form(s), 88 N.Y.U. L. Rev. 1983 (2013); James D. Cox & Benjamin J.C. Baucom, The Emperor Has No Clothes: Confronting the D.C. Circuit's Usurpation of SEC Rulemaking Authority, 90 Tex. L. Rev. 1811, 1840 (2012); Jill E. Fisch, The Long Road Back: Business Roundtable and the Future of SEC Rulemaking, 36 Seattle U. L. Rev. (2013), ssrn.com/abstract=2164423; Grant M. Hayden & Matthew T. Bodie, The Bizarre Law & Economics of Business Roundtable v. SEC, 38 J. Corp. L. 1 (2012); Bruce Kraus and Connor Raso, Rational Boundaries for SEC Cost-Benefit Analysis, 30 Yale J. on Reg. 289 (2013); Michael E. Murphy, The SEC and the District of Columbia Circuit: The Emergency [sic] of a Distinct Standard of Judicial Review, 7 Va. L. & Bus. Rev. 125 (2012); Comment, D.C. Circuit Finds SEC Proxy Access Rule Arbitrary and Capricious for Inadequate Economic Analysis, 125 Harv. L. Rev. 1088 (2012); Anthony W. Mongone, Note, Business Roundtable: A New Level of Judicial Scrutiny and Its Implications in a Post-Dodd-Frank World, 2012 Colum. Bus. L. Rev. 746 (2012); Stephanie Lyn Parker, Note, The Folly of Rule 14a-11: Business Roundtable v. SEC and the Commission's Next Step, 61 Am. U. L. Rev. 715 (2012); J. Robert Brown, Jr., Shareholder Access and Uneconomic Economic Analysis: Business Roundtable v. SEC, Denv. U. L. Rev. Online (Sept. 30, 2011, 2:57 PM), www.denverlawreview.org/online-articles/2011/9/30/shareholder-access-and-uneconomic-economic-analysis-business.html; Dennis Kelleher, Stephen Hall and Katelynn Bradley, Better Markets, Inc., Setting the Record Straight on Cost-Benefit Analysis and Financial Reform at the SEC 59-68 (2012), www.bettermarkets.com/sites/default/files/Setting%20The%C20Record% 20Straight.pdf. The only substantial defense of the decision is in the CCMC Report, supra note 6, which a noted above, was paid for by a party to the case, the U.S. Chamber of Commerce, *id.* at ii.

[110] Indeed, the circumstances were so limited that prominent corporate law scholars labeled the rule "insignificant." Marcel Kahan and Edward B. Rock, The Insignificance of Proxy Access, 97 Va. L. Rev. 1347 (2011). The CCMR Report's characterization of proxy access rule "more substantive," supra note 4 at 7, than the CFTC registration and reporting requirements upheld in Investment Company Institute v. Commodities and Futures Trading Commission, 891 F. Supp. 2d 162 (2012) is mysterious – proxy access would not have changed "substantive" corporate governance but only added disclosure and process requirements for proxy solicitation – it would have been, in effect, a cross-subsidy of large, long-term shareholders' disclosure obligations, but would not have altered voting rights, or the relative authority of boards or shareholders to make decisions for corporations.

[111] Business Roundtable v. SEC, 647 F.3d 1144 (D.C. Cir. 2011).

[112] 647 F.3d at 1148. The court also asserted the SEC had been arbitrary by using "inconsistent" estimates of the frequency with which the rule would be used. To support this, the court claimed the SEC had "predicted nominating shareholders would realize 'direct cost savings' from not having to print or mail their own proxy materials," that the SEC had cited comment letters in support of this fact, and that one letter reported the rule would be frequently used, suggesting that the SEC believed that the cost savings would large because the rule would be frequently used. 647 F.3d at 1154 (SEC "then cited comment letters predicting the number of elections contested under [the rule] would be quite high" and "One of the comments reported ... that ... hundreds of ... companies ... expected a shareholder to nominate a director using the rule," citing Letter from Kenneth L. Altman, President, The Altman

D.C. Circuit presented no evidence that there is any available scientific technique for the SEC to "assess the economic effects" of the rule along the lines that the court seemed to think legally required – as when the court held that the SEC "relied upon insufficient empirical data when it concluded that Rule 14a-11 [would] improve board performance and increase shareholder value by facilitating the election of dissident shareholder nominees,"[113] or when it held that the SEC had "arbitrarily ignored the effect of the final rule" because the SEC "did not address whether and to what extent Rule 14a-11 will take the place of traditional proxy contests."[114]

Instead, as in *Chamber of Commerce* decision, the U.S. court with "status second only to [the] Supreme Court" [115] ignored precedents establishing a "deferential" standard of review under the APA and substituted its own judgment for that of the SEC in evaluating the existing research relevant to proxy contests. In *Business Roundtable,* the D.C. Circuit went so far as to characterize (without explanation) a peer-reviewed article published in the *Journal of Financial Economics* as "relatively unpersuasive."[116] Even the *Chamber of Commerce* decision had not gone so far, for while that decision invented an obligation for the SEC to use guesstimated CBA/FR on the cost-side of its rulemaking, it also held that the SEC need only "determine ***as best it can*** the economic implications" of a rule,[117] and nowhere suggested the SEC had to remain inert whenever quantified CBA/FR was simply unavailable. Hypocritically, it was Judge Ginsburg who penned the *Business Roundtable* decision, just two years after he joined the decision in *Stilwell*, where the same court held that the APA "imposes ***no general obligation on agencies to produce empirical evidence***."[118] The legal demerits of *Business Roundtable* should be kept in mind by anyone interested in promoting good policy through CBA/FR.

Group, Inc.). The court's opinion on this point is egregiously misleading: it falsely attributes a reliance on the Altman comment to as a basis for the SEC's views on costs, and it then falsely claims that the SEC's supposed view on costs contradicted other statements in the SEC's release. In fact, the SEC did not cite ***any*** public comments to support its beliefs about direct cost savings, which were qualitative, a matter of common sense and did not need such support. See SEC Release 33-9259 at 315-16. To the contrary, the SEC specifically rejected the claim that the rule would be frequently used, as claimed in the Altman letter cited by the court. Id. at 270. Nowhere does the SEC cite the Altman letter to support its conclusions. Id.

[113] Id. at 1150.

[114] Id. at 1153.

[115] Jess Bravin, Why D.C. Circuit, at Center of Nominee Fight, Is So Important, Wall St. J. (Nov. 20, 2013).

[116] Id. at 1151.

[117] 412 F.3d at 143 (emphasis added).

[118] Stilwell v. Office of Thrift Supervision, 569 F.3d 514, 519 (D.C.Cir. 2009) (emphasis added). Nothing in the text of the securities laws would change this – the word "efficiency" does not by any reasonable reading imply a burden to generate evidence that does not exist, and the court in *Business Roundtable* did not examine the legislative history of the requirement that the SEC consider "efficiency." See Murphy, 7 Va. L. & Bus. Rev. at 128-30; Mongone, 2012 Colum. Bus. L. Rev. at 746-56.

D. Regulatory Initiatives

All the foregoing pressures, particularly the judicial decisions just reviewed, have led financial agencies to conduct and publish more CBA/FR in recent years. OMB reports shows that this increase in the use of CBA/FR at least began in the early 2000s, with a more evident increase prompted by the conjunction of the decisions just reviewed and the massive rule-making requirements of the Dodd-Frank Act.

In September 2010, the CFTC's General Counsel and Acting Chief Economist distributed a memo to the CFTC's rulemaking teams noting that while the CFTC's authorizing statute does not require quantified CBA/FR, it does require the CFTC to consider costs and benefits, and recent court decisions just reviewed had been expanding the demands of CBA/FR law under the APA. As a result, and to inform the CFTC, staff were directed to provide summary CBA/FR in proposed rulemakings, and to address conceptual CBA/FR in adopting releases. A follow-up memo, in May 2011, required rule-making teams to "incorporate the principles of Executive Order 13563 ... to the extent ... reasonably feasible." In May 2012, the CFTC and OIRA entered into a memorandum of understanding permitting OIRA staff to provide "technical assistance" to CFTC staff during implementation of the Dodd-Frank Act, "particularly with respect" to CBA/FR.[119]

In March 2012, SEC staff distributed its own internal CBA/FR guidance. The guidance cited "recent court decisions, reports of the ... GAO, and the SEC's ... OIG, and Congressional inquiries" that had "raised questions about ... the [SEC's] economic analysis in its rulemaking." The SEC guidance noted "no statute expressly requires" the SEC to "conduct a formal" CBA but that "SEC chairmen [had] informed Congress since at least the early 1980s – and as rulemaking releases since that time reflect – the [SEC] considers potential costs and benefits as a matter of good regulatory practice whenever it adopts rules." The SEC guidance went on to set out "substantive requirements" for CBA/FR, drawing on the CBA Executive Orders and the OMB Guidance.[120] Rulemaking staff were directed to work with economists on the SEC's staff to analyze what costs and benefits a rule might create and which could be quantified, to quantify those that could be feasible to quantify, and to explain why others could not be quantified feasibly.

E. Proposed Legislation

In June 2013, three Senators reintroduced the "Independent Agency Regulatory Analysis Act."[121] That bill would permit the President to order

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[119] Available at www.whitehouse.gov/ sites/ default/ files/ omb/ inforeg/ regpol/ oiracftcmou2012.pdf (last visited Nov. 29, 2013).

[120] Supra notes 19 and 65.

[121] The Senators were Senators Collins (R-ME), Portman (R-OH), and Warner (D-VA). S. 1173, 113th Cong. (2013). An identical bill was introduced in 2012, S. 3468, 112th Cong. (2012). Other bills promoting CBA have been introduced in this and prior years. E.g., Regulatory Sunset and Review Act, H.R. 309, 113th Cong. (2013); Startup Act 3.0, H.R. 714, 113th Cong. (2013) and S. 310,

all independent agencies to (among other things) conduct a CBA of any "new rule and, recognizing some costs and benefits are difficult to quantify, propose or adopt a rule only upon a reasoned determination that the benefits of the rule justify its costs."[122] Independent agencies include all of the financial regulatory agencies.[123] The bill incorporates the definition of "rule" from the APA and excepts only rules of the Federal Reserve "relating to monetary policy."[124]

In addition, for any "economically significant rule" (***ESR***), an independent agency could be required to give OIRA and to publicly disclose (1) "an assessment, including the underlying analysis, of benefits … [and] costs … anticipated … with, to the extent feasible, a quantification of those benefits … [and] costs," (2) a similar assessment of all "potentially effective and reasonably feasible alternatives to the rule, identified by the agencies or the public" and (3) a statement of why the rule is superior to alternatives. For this purpose, the bill defines an ***ESR*** as a rule with an annual effect on economy of $100 million or more. Independent agencies could be required to submit any ESR for a 90-day OIRA review of whether the rule "has complied" with these requirements, with the OIRA review also to be part of the published record for the rule. Independent agencies would also be required to publish a finding that the rule did comply with the bill, with an explanation of that finding, or "if applicable, an explanation of why the agency did not comply."

The bill states "compliance" by an independent agency with the bill is not subject to judicial review. However, it also states that in any court challenge – under other laws, such as the APA – to an independent agency's rule all material produced by the independent agency and OIRA under this bill would be "part of the whole record" for the court to review.

III. HOW MIGHT CBA OF FINANCIAL REGULATION WORK?

In this Part, I outline how the kind of quantified CBA/FR of financial regulation envisioned by CBA/FR proponents might work in practice. The goals of this Part are to illuminate what we might expect of CBA/FR policy,

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113th Cong. (2013); Unfunded Mandates Information and Transparency Act, H.R. 899, 113th Cong. (2013); SEC Regulatory Accountability Act, H.R. 1062, 113th Cong. (2013); Congressional Office of Regulatory Analysis Act, H.R. 214, 112th Cong. (2011); Regulatory Improvement Act of 1999, S. 746, 106th Cong. (1999); Regulatory Improvement Act of 1997, S. 981, 105th Cong. (1997); Comprehensive Regulatory Reform Act of 1995, S. 343, 104th Cong. (1995); Regulatory Reform and Relief Act, H.R. 926, 104th Cong. (1995). To date, a small number of former commissioners of independent agencies have backed the bill. E.g., Letter dated June 28, 2013 to the Chair and Ranking Member of the Senate Homeland Security and Governmental Affairs Committee, available at www.portman.senate.gov/ public/ index.cfm/ files/ serve?Fileid=8eb0dbd9-5631-4878-bfb2-e040407cf0ba (last visited Nov. 29, 2013).

[122] S. 1173, section 3.

[123] These include the Bureau of Consumer Financial Protection (CFPB), CFTC, Federal Deposit Insurance Corporation (FDIC), Federal Reserve Board, Federal Housing Finance Agency (FHFA), Federal Trade Commission (FTC), Office of the Comptroller of the Currency (OCC), Office of Financial Research (OFR), and SEC. S. 1173, section 2(4) (incorporating 44 U.S.C. § 3502(5)).

[124] S. 1173, section 2(5) (incorporating 5 U.S.C. § 551) (any "statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy").

to advance the substantive research project of developing CBA/FR, and to provide a better empirical basis for evaluating CBA/FR law in Part IV.

To do so, CBA/FR is first outlined for four specific rules: (1) Sarbanes-Oxley Act (SOX), section 404 [hereinafter, "***SOX 404***"], (2) the SEC's 2002 mutual fund governance proposals, (3) Basel III's enhanced capital requirements for banks, and (4) the Volcker Rule. These analyses are followed by a review of two rules that have been subject to CBA/FR held up at "gold-standard" by CBA advocates: (5) the SEC's cross-border swap rules, and (6) the UK/FSA's mortgage market rules.

The first, third and fourth case studies represent the kind of significant rulemakings that CBA/FA proponents agree should be the focus of CBA/FR,[125] and because they are clearly "economically significant rules" that would trigger the highest degree of inter-agency review under the CBA Executive Orders and OMB Guidance if the independent agencies were brought under those process requirements. The second case study focuses on rules that led to the D.C. Circuit decisions reviewed above, and stimulated the SEC's Chief Economist to publish two extensive CBA/FR-related memos that provide one of the better (if imperfect) examples of what CBA/FR as conducted by a financial agency would look like.

In each case the analysis draws on the best research by economists, finance scholars, and legal scholars, all using the kinds of methods that are closest to the idealized vision of quantified CBA/FR that its proponents are asking financial agencies to pursue.[126] This review illustrates how guesstimated CBA/FR of each of the rules reviewed would (or did) require the same kinds of macroeconomic and/or political models used to set monetary policy, or entails causal inferences that are unreliable under standard regulatory conditions, or both.

A. Case Study #1: Control Disclosures for Public Companies[127]

The Sarbanes-Oxley Act (SOX) was Congress's response to the widespread fraud heralded by Enron, Tyco, Worldcom, and other widely publicized corporate scandals. The core of SOX consisted of two parts:[128] (1) the creation of a quasi-public regulatory body to oversee public company

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[125] See CCMR Report at 1 (CBA/FR should "focus on economically significant rules").

[126] It is worth noting that no similar efforts can be found in the more prominent publications advocating CBA/FR of financial regulation. E.g., CCMR Report, supra note 4; CCMC Report, supra note 6. The closest proponents come is to point to selected CBA/FR as "gold-standard" CBA/FR, but CBA/FR advocates do not review that CBA in any detail, and as discussed in Part III.E below, they are no more compelling in their guesstimated CBA/FR components as the examples reviewed here. This gap between what the CBA/FR proponents promise can be done and what they can demonstrate has been done is troubling, and suggests that CBA/FR proponents have not fully thought through the implications of their recommendations.

[127] This sections draws extensively on John C. Coates IV and Suraj Srinivasan, SOX After Ten Years: A Multidisciplinary Review, Accounting Horizons (forthcoming 2014). In working paper form, this article is available here: ssrn.com/abstract=2343108.

[128] For a review and evaluation of the core elements of SOX, see John C. Coates IV, The Goals and Promise of the Sarbanes-Oxley Act, 21 Journal of Economic Perspectives 91–116 (2007).

audit firms – the Public Company Accounting Oversight Board – and (2) to require new disclosures by public companies about "control systems."[129]

1. The SEC's CBA of Rules Implementing SOX 404

SOX required the SEC to enact regulations to carry out the goals of SOX 404. The SEC did this in August 2003, a year after SOX's passage.[130] In its adopting release, the SEC included a 1400-word CBA, which, as noted above, was not a legal requirement for the SEC.[131] The release contained a separate 500-word analysis of the rule's effects on efficiency, competition, and capital formation,[132] and a longer analysis under the PRA and RFA.[133] In its CBA, the SEC provided a qualitative listing but no quantification of the rule's benefits. The benefits identified were (1) generally to (a) enhance the quality of public company reporting and (b) increase investor confidence, and (2) specifically to (a) improve disclosure about (i) management's responsibility for financial statements and controls and (ii) how management discharges that responsibility, (b) encourage companies to devote adequate resources and attention to controls, (c) help companies detect fraud earlier, and (d) deter fraud or minimize its effects. The bottom-line benefit, then, was to reduce fraud.

The SEC also provided a qualitative listing of the rule's direct costs (administrative burdens and fees to attorneys and auditors). The SEC noted that companies were already required to have a control system under the FCPA and that many issuers were already voluntarily provide the required disclosures, raising conceptual issues (discussed below) for what baseline and set of effects to assume in any CBA/FR of the rule, which the SEC did not explicitly address. The SEC provided a partial quantification of the costs of its rules under SOX 404. That estimate focused exclusively on the requirements of subsection (a) of SOX 404, disclosures by management, which the SEC estimated would cost covered companies an average of $91,000 per year. The SEC explicitly noted it had no information that would allow it to quantify the costs created by subsection (b) of SOX 404, the auditor attestation requirements, which it acknowledged could be large.[134]

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[129] Such systems consist of methods by companies monitors use of its assets and produces accurate financial reports, including (for example) computer programs designed to detect inconsistencies between customer orders and accounting records, rules for which corporate agents could authorize what expenditures and transactions, internal audits, and verification procedures.

[130] SEC Final Rule: Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports, SEC Rel. Nos. 33-8238; 34-47986; IC-26068; File Nos. S7-40-02; S7-06-03, 17 C.F.R. Parts 210, 228, 229, 240, 249, 270 and 274. For brevity, I refer to the SEC's "rule" in this section, although in fact the release modified a number of separate SEC rules. The effect of the SEC's rules in practice would turn out to be heavily influence by rules separately adopted by the PCAOB

[131] See Part II supra.

[132] This was required by the SEC's governing statutes, including the Securities Act of 1933, 15 U.S.C §77b(b), the Securities and Exchange Act of 1934, 15 U.S.C. 78w(a)(2), the Investment Advisers Act, 15 U.S.C. 78c(f), and the Investment Company Act, 15 U.S.C. 80a-2(c).

[133] See note 68 and 69 supra.

[134] SEC Rel. Nos. 33-8238 at V.B and note 174 ("The estimate does not include the costs of the auditor's attestation report, which many commenters have suggested might be substantial.")

Of note for assessing CBA/FR's effects on public understanding, the SEC has been strongly criticized for its CBA/FR in its release – but only for the part of its CBA/FR in which provided a quantitative estimate of costs, which commentators have claimed is "now known to have been off by a factor of 48."[135] However, this critique of the SEC's CBA/FR is demonstrably mistaken. The SEC's estimate was solely for SOX 404(a), while the FEI/FERF estimate was for both SOX 404(a) and 404(b).[136] For several reasons, auditor attestation costs can be expected to exceed internal costs by a multiple (as in fact has been the case).[137] The SEC explicitly acknowledged this gap in its cost estimate in its release[138] – but the criticisms of the SEC ever since – including by SEC Commissioner Gallagher himself – have mistakenly claimed the estimate was for SOX 404 as an entirety. CBA/FR-advocates, in other words, have publicly and repeatedly criticized the SEC for underestimating the cost of apples and oranges when the SEC's estimate was for the cost of apples alone. The spectacle may undermine an observer's faith in the value of public discourse stimulated by CBA/FR.

A better critique of the SEC's CBA/FR of SOX 404 would be that it failed as conceptual CBA/FR for not identifying indirect costs of the rule. Indirect costs include potential reductions in risk-taking, dilution in strategic focus, and the opportunity costs of devoting excessive management time to compliance and working through the initial control attestation process with outside auditors, internal audit staff, and members of companies' audit committees, which SOX separately required to be wholly independent for the first time.[139] While quantifying such these costs would have been nearly impossible for the SEC at the time (as discussed below), the SEC could have identified the possibility of these costs in its rulemaking.

Conversely, the SEC in 2006 did not identify much less quantify increased fraud as a possible cost of the deferral of SOX 404 requirements

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[135] Sarbanes-Oxley 404: Will the SEC's and PCAOB's New Standards Lower Compliance Costs for Small Companies?: Hearing Before the H. Comm. on Small Bus., 110th Cong. (2007) (statement of Hal S. Scott, Dir. of Comm. on Capital Mkts. Regulation) ("The agency's estimate is now known to be have been off by a factor of 48."). Presumably, this claim is based on comparing the SEC's cost estimate with the results of a survey (n=274) conducted by the Financial Executives International (FEI) and Financial Executives Research Foundation (FERF). That survey found the average cost of SOX 404 reported in 2004 was $4.4 million (4,400,000 / 91,000 = 48.4).

[136] Criticisms of the SEC's cost estimate are misplaced for two other reasons. The FEI/FERF survey cited in note 135 was of large firms (average revenues of $6 billion, as compared to overall average revenues for all public firms in Compustat in 2004 of $2 billion, and median revenues for such firms of $96 million). Since compliance costs generally, and control system costs in particular, increase at a decreasing rate in firm size, $4.4 million would have been too high as an average for all covered firms even in 2004. In addition, the FEI/FERF estimate was from companies in the first year under the rule. The costs of any new rule will fall over time, with learning, as has been the case with SOX 404. Further, the agency ultimately charged with supervising section 404(b) work by audit firms, the PCAOB, modified the requirements applicable under that section in 2007, further dramatically reducing the costs of the rule. The upshot is that the best current estimate of section 404 costs is closer to $400,000 than to $4.4 million – still higher than the SEC's estimate of section 404(a) costs, but reasonably close, once one acknowledges that the $91,000 estimate was for a part and not all of section 404's costs.

[137] See Coates and Srinivasan, supra note 127.

[138] Supra note 134.

[139] See text accompanying notes 155-74 infra.

for small and newly public companies, nor did it identify much less quantify increased fraud as a possible side-effect (cost) of the relaxation of the SOX 404 requirements in 2007.[140] While these efforts were deregulatory in nature, they would be just as subject to CBA under Executive Order 12,866 for an executive agency as would the imposition of new regulations.[141] The fact that the more prominent CBA/FR-proponents[142] do not mention these gaps in the SEC's ***deregulatory*** rulemaking process under SOX tends to undermine their general depictions of CBA/FR as a politically neutral procedure for improving regulation generally.

2. An Overview of CBA/FR of SOX 404

Now that ten years have passed since its adoption, how might SOX 404 fair under a CBA/FR? Quantifying the costs and benefits of the rule would require multiple research tasks. These include (1) better estimates of the incidence and direct costs of fraud,[143] (2) consensus on how to treat "transfers" for purposes of analyzing fraud, (3) new models and data on fraud's externalities, (4) better instruments for estimating the rule's causal effects, (5) better models and data on the chilling effects that the rule could have on legitimate activity, and (6) better understandings of how compliance costs vary across firms and over time. Each task will be difficult and likely require a separate stream of research before any plausible quantified estimate of the costs and benefits of a rule under SOX 404 could be developed.

3. Estimating the Incidence of Fraud and Its Direct Costs

The first task is to develop better methods of measuring the incidence of corporate fraud and its direct costs. This task is a prerequisite to even a rough estimation of the effects of regulation aimed at reducing fraud, such as SOX 404. Yet, with few exceptions, research on fraud to date has only attempted to establish relationships between fraud and its correlates, and do not present evidence of how strong these relationships are, or what the overall incidence of corporate fraud is.[144]

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[140] See www.gpo.gov/ fdsys/ pkg/ FR-2006-12-21/ pdf/ E6-21781.pdf (last visited Nov. 30, 2013); www.gpo.gov/ fdsys/ pkg/ FR-2007-06-27/ pdf/ E7-12298.pdf (last visited Nov. 30, 2013).

[141] Executive Order 12,866, supra note 65, at Section 3(e) defines "regulatory action" covered by order to include "any substantive action by an agency ... that promulgates or is expected to lead to the promulgation of a final rule or regulation," without regard to whether the final rule adds new restrictions on private activity or exempts private activity covered by a prior regulation.

[142] See CCMC Report supra note 6; CCMR Report supra note 4.

[143] Throughout this section, I use "fraud" in a loose sense, and mean it to encompass deceptive, manipulative, or misleading accounting and other financial disclosures that could be prevented or corrected in a cost-effective manner, regardless of whether proof of specific intent to deceive, reasonable reliance, or other elements of the tort or crime of fraud exist, and regardless of whether the accounting technically complies with general accepted accounting principles.

[144] See Coates and Srinivasan, supra note 127.

One difficulty confronting such studies is that all concerned have incentives to hide fraud.[145] Partial observability presents challenges to empirical modeling,[146] but until recently, few researchers used models adapted to those challenges. Such models study both fraud incidence and detection together, exploiting partial overlap in indicators of fraud incidence and detection to draw better inferences about correlates of fraud overall from detected frauds.[147]

Building on this work, one study exploits the failure of Arthur Andersen to estimate an incidence of fraud among public companies of 15%.[148] The study also estimates fraud generates direct losses of between 22% and 40% of enterprise value, implying a lower bound on hidden fraud of 3% of enterprise value (0.15 x 0.22 = 0.03), or losses of over $500 billion. This study is a promising start to estimating how much fraud exists, and how costly it is. But it as yet unpublished, and relatively isolated,[149] and needs more scrutiny before it could provide a reliable rulemaking foundation. Future research could use more comprehensive measures of fraud, including frauds outside the scope of audits that nevertheless might be revealed by a stronger control system, such as insider trading and self-dealing (as at Enron), fraudulently obtained compensation (Tyco), frauds involving third parties (as at Worldcom) or technically GAAP-compliant but deceptive accounting choices (as at Lehman).

4. How Should Transfers Be Treated?

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[145] Id. Interestingly, the US crime victimization survey does not ask questions that would be likely to elicit data on fraud incidence, instead focusing on violent crime, sexual assaults, and stalking. See www.bjs.gov/content/pub/pdf/ncvs12012.pdf and www.bjs.gov/content/pub/pdf/svs106.pdf (last visited Jan. 2, 2014). Identity theft and cyber crimes are types of fraud surveyed by the BJS. www.bjs.gov/index.cfm?ty=pbdetail&iid=4821 and www.bjs.gov/index.cfm?ty=tp&tid=41 (last visited Jan. 2, 2014), but no general survey of fraud is conducted by the BJS.

[146] Jonathan S. Feinstein, Detection controlled estimation, 33 *Journal of Law and Economics*, 233-276 (1990).

[147] E.g., X. Wang, Corporate Securities Fraud: An Economic Analysis, Working Paper (April 2006); X. Wang, Increased Disclosure Requirements And Corporate Governance Decisions: Evidence From Chief Financial Officers In The Pre- And Post-Sarbanes Oxley Periods, 48 J. Acct'g. Res. 885 (2010); S. Li, Corporate Financial Fraud: An Application Of Detection Controlled Estimation, Working Paper (July 2013); Vikramaditya Khanna, E. Han Kim, and Yao Lu, CEO Connectedness and Corporate Frauds, Working Paper (2013). Such models have their weaknesses, as they rely in an ad hoc fashion on different instruments that are assumed to be exogenous, when none truly are exogenous; they are, however, the best that researchers have yet devised.

[148] E.g., A. Dyck, A. Morse, and L. Zingales, How Pervasive Is Corporate Fraud?, Working Paper (Feb. 2013). They validate this measure with a survey of fraud observed by business school students at former employers.

[149] Related research, using different and less theoretically grounded empirical methods, is that of A. Zakolyukina Measuring intentional manipulation: a structural approach, Working Paper (Mar. 30, 2103), who estimates undetected intentional earnings manipulation from a sample of 1,500 firms in the post-SOX period. She finds that the probability of detection is only 9%, and generates a loss of 11% to the firm's CEO wealth if detected. The inference she draws is that 66% of her sample have rational incentives to manipulate earnings, and that the value-weighted bias in stock prices across the sample firms is 16%. A survey-based study is Ilia Dichev, John Graham, Campbell R. Harvey and Shiva Rajgopal, Earnings Quality: Evidence from the Field, J. Acc'g and Econ. (2013), whose respondents suggest ~20% of firms exploit GAAP to misrepresent reported performance in their financial statements.

An open conceptual issue in estimating the costs of fraud is how to treat fraudulent "transfers" – i.e., whether to count the utility of a fraudster in estimating welfare effects of fraud.[150] Data on crime generally suggests the issue could have a significant effect on a CBA/FR of SOX 404.[151] Canonical economic theory would count the loss as zero, as would the OMB Guidance on CBA,[152] but it seems implausible as a political, policy, or legal matter for the SEC to ignore for purposes of CBA/FR of SOX 404 the losses of Enron's defrauded investors on the ground that they were mere transfers to Ken Lay and Andrew Fastow. OMB Guidance suggests including transfers in a "distributional analysis" distinct from quantified costs and benefits,[153] but that does not answer the question of how an agency may weigh the transfers in its overall CBA.[154]

5. Measuring the Externalities and Psychological Costs of Fraud

If more work is needed to model the incidence and transfers caused by fraud, no researchers have systematically attempted to study and measure the social costs of corporate fraud. Without estimates of such costs, an assessment of rules that reduces fraud, such as SOX 404, would have to remain qualitative. Research is needed both on ***externalities***[155] and ***psychological costs***. On externalities, consider these categories:[156] (a) fraud increases the ***cost of capital*** for all firms;[157] (b) fraud results in the

[150] Assume, for example, a fraudster obtains $1 from a victim and spends it on food. Is the social loss $0 or $1? If the criminal's utility is ignored and the fraud has no effect besides the transfer of $1, the social loss is $1. If a criminal's utility is counted equally with the victim's, and neither attaches unusual utility to the $1, the social loss is $0.

[151] E.g., D. Anderson, The Aggregate Burden Of Crime, 42 Journal of Law and Economics 611 (Oct. 1999) estimates such gains, if counted, roughly double the costs of crime.

[152] Supra note 19 at 38.

[153] Id.

[154] In the context of crime, compare Philip J. Cook, Costs of Crime, in Encyclopedia of Crime and Justice, (ed. Sanford H. Kadish 1983) (criminals' utility should count) with M. Cohen, The Costs of Crime and Justice (2005) and J. Ludwig, Testimony before United States Senate Committee on the Judiciary (Sep. 19, 2006) (it should not count).

[155] Fraud is criminalized in part because it causes large externalities – direct remediable civil damages are not thought to be large enough to provide sufficient incentive for private actors to enforce optimally. Steven M. Shavell, The Judgment Proof Problem," 6 Int'l Rev. of L. and Econ. 45 (1986). But criminal sanctions are reserved for a small subset of frauds – those in which clear evidence is available ex post for frauds caused by individuals with specific intent, and the nature of fraud is such that such evidence is often unavailable. Section 24 of the Securities Act of 1933 imposes criminal liability for "willful" violations; see also section 32(a) of the Securities Exchange Act of 1934 (same).

[156] B. Lev, Corporate Earnings: Facts And Fiction, 17 J Econ. Persp. 27 (2003). Anderson, supra note 151, presents a similar list of indirect effects of crime generally. He estimates the indirect costs – what he categorizes as "crime-induced production," opportunity costs, and risks to life and health – are roughly double the value of victim-to-criminal property transfers, and when he counts the costs incurred by criminals, the total costs of crime is more than double the value of those transfers (Table 7). In other words, the external effects of crime generally greatly exceed their direct effects.

[157] Reduced quality of financial information provided by one firm will in the first instance lower expectations of the quality of information provided by other firms, heighten expected fraud-related losses generally, and reduce confidence in public securities markets and in markets more generally. P. Jain, J. Kim, and Z. Rezaee, The Sarbanes-Oxley Act of 2002 and Market Liquidity, 43 Fin'l Rev. 361 (2008) show that market-wide liquidity deteriorated following Enron and related scandals, and improved after SOX's adoption. For a more general study of the effect of trust on finance, see L.

misallocation of resources;[158] (c) fraud destroys value through ***(costly) acquisitions and bankruptcy***;[159] (d) fraud induces ***precautionary costs***;[160] and (e) fraud imposes costs on non-investor ***third parties***.[161] Consider the Madoff scandal, which imposed significant direct losses on over 15,000 individual investors, each of whom presumably had an average of two dependents or heirs, and many of whom were co-investors and borrowers with yet others, or makers of charitable donations to non-profits.[162] To date, the liquidation of the Madoff entities has generated over $700 million in expenses – all a pure loss to investors, over and above the amounts stolen by Madoff himself.[163]

As a broader example, consider how fraudulent home loans (whether due to borrower fraud, lender fraud, or both) had ripple effects in the last financial bubble, partly generated through leverage and intermediation, so

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Guiso, P. Sapienza and L. Zingales, Trust the Stock Market, Working Paper (May 2007); see also E. Bonaccorsi di Patti, Weak institutions and credit availability: the impact of crime on bank loans, Working Paper (July 2009), available at ssrn.com/abstract=1606242 (crime, including fraud, increases borrowing costs and increases capital constraints by the public generally).

[158] Misallocation is caused by fraudulent signals of the value of firms or whole industries, as in the telecom and internet bubbles. For a review of studies showing that corporate finance decisions driven by capital market prices, including prices that deviate from fundamental values (i.e., mispricing), see M. Baker, Capital Market-Driven Corporate Finance, 1 Ann. Rev. of Fin'l Econ. 181 (Dec. 2009); see also Baker, M., J. Stein and J. Wurgler, When Does The Market Matter? Stock Prices And The Investment Of Equity-Dependent Firms, Q. J. Econ. 969 (2003) (modeling and presenting evidence that bubbles affect corporate investment). S. Kedia and T. Phillippon, The Economics Of Fraudulent Accounting, 22 Rev. Fin. Stud. 2169 (2009) model investment decisions of firms during periods of fraud and find empirical support for their prediction that fraud and earnings management distort hiring and investment decisions of firms leading to over-investment and excessive hiring during periods of suspicious accounting, leading to misallocation of resources in the economy.

[159] One can view costly acquisitions by fraudulent companies of other companies as an example of the prior category (misallocated resources), but it is important enough to warrant estimating separately. Such acquisitions are often followed by mismanagement or outright theft, contributing to otherwise-avoidable bankruptcies. While bankruptcy can reorganize firms, resulting in transfers among investors, they also use up real resources. For a model of merger and acquisition activity driven by mispricing, see A. Shleifer and R. Vishny, Stock market driven acquisitions, 70 J. Fin. Econ. 295 (2003); for estimates of the costs of bankruptcy, see, e.g., I. Bris, I. Welch and N. Zhu, The costs of bankruptcy: Chapter 7 liquidation versus Chapter 11 reorganization, 61 J. Fin. 1253 (June 2006) (estimating range from 2 to 20% of firm assets resulting from formal bankruptcy).

[160] Such costs include bonding, monitoring and by investors to avoid fraud, such as for audit firms, independent directors, appraisers, analysts, regulatory and enforcement agencies, and prisons. Audit fees were rising prior to SOX, due to market-driven demand for increased scrutiny of financial statements following the scandals that led to SOX. S. Asthana,, S. Balsam and S. Kim, The Effect of Enron, Andersen, and Sarbanes-Oxley on the Market for Audit Services, 22 Acct'g Res. J. 1 (2009). Likewise, separate from SOX, the NYSE and the Nasdaq adopted tighter corporate governance requirements in response to Enron et al., which tightened the criteria for and likely increased the costs of recruiting independent directors.

[161] These third parties include those dependent on the victims of the initial fraud (e.g., family, business partners, creditors and communities). For studies showing spillover effects of restatements, see Coates and Srinivasan, supra note 127.

[162] While SOX 404 would have had no effect on Madoff's scheme, since he kept his brokerage private and outside the scope of SOX, the findings are suggestive of what might be found if the prospect of quantifying such harms to fraud victims more generally were undertaken. For the number of investors affected, see I. Picard, Trustee's Ninth Interim Report for the Period Ended March 31, 2012, In re Bernard L. Madoff, United States Bankruptcy Court, Southern District of New York (April 30, 2013) at Exhibit A, page 5. For charities harmed by the Madoff scandal, see A. Weiss and G. Birkner, 2008, Charities, Day Schools Hard Hit By Madoff Scandal, Forward.com (Dec. 17, 2008).

[163] See Picard, supra note 162 at Exhibit A, page 2.

the one fraudulent loan would affect not only the immediate parties to the loan but also securitization lenders, sponsors and other related parties; collateralized debt obligation investors, sponsors and related parties; structured investment vehicle investors, sponsors and related parties; investors in the banks that sponsored those vehicles; borrower-customers of those banks, whose capital constraints and heightened risk-aversion following the crisis caused a withdrawal or increase in the cost of credit; employees and customers of businesses that failed as a result of the capital constraints generated by the banks' losses; family members of those employees, and so on.

Psychological effects (e.g., fear, distrust, and stress) can result in tangible consequences, including drug addiction, job loss, reduced income, health effects, and even suicide. In the context of securities fraud, elevated levels of post-traumatic stress disorder and related behavioral effects have been found among Madoff's victims.[164]

The take-away from these thought experiments – and they remain just that – is that the external costs of fraud are likely to exceed, perhaps by a large amount, direct transfers from victim to fraudster. As a result, the quantified benefit of SOX 404 is likely to be found not in estimating direct losses prevented, but in increasing those losses by a ***multiple*** to reflect its externalities. How do we translate anecdotal examples into more general methods for estimating the full effects of fraud on society as a whole?

In the context of SOX, only one unpublished paper attempts to estimate fraud's social costs.[165] The authors treat widespread revelation of fraud as a "shock" to the equity premium, and estimate its social effects with a macroeconomic model. For this purpose – and this is worth stressing in light of the discussion of the Taylor Rule in Part I.D above – they adapt a model used by the Treasury Department and the Federal Reserve to set monetary policy.[166] They first guesstimate that 25% to 100% of the market decline from March to July 2002 was caused by those scandals. They then rely on the US/Fed model's to estimate that investment would fall 0.8% per year in response for a 20% decline in the stock market, to guesstimate first-year impacts ranging from $19 to $57 billion. These estimates underestimate costs if the impact of the frauds lasted longer, and could over- or under-estimate the costs if the economy's response to fraud-driven equity shocks

[164] A. Freshman, Financial Disaster As A Risk Factor For Posttraumatic Stress Disorder: Internet Survey Of Trauma In Victims Of The Madoff Ponzi Scheme, Health and Social Work, doi: 10.1093/hsw/his002 (2012).

[165] C. Graham, R. Litan and S. Sukhtankar, The Bigger They Are, The Harder They Fall: An Estimate Of The Costs Of The Crisis In Corporate Governance, Brookings Institution Working Paper (Aug. 30, 2002). Another attempt to assess the size of externalities (without quantifying them for society overall) uses brokerage data of a sample of retail investors across the US and show that upon the revelation of fraud in a company in a particular state, all households in the state, not just the ones owning stocks of fraud firms, reduce their equity holdings. M. Giannetti and Tracy Yue Wang, Corporate Scandals and Household Stock Market Participation, available at ssrn.com/abstract=2331588 (2003) (last visited Jan. 1, 2014).

[166] The model is described in D. Reifschneider, R. Tetlow, and J. Williams, Aggregate Disturbances, Monetary Policy, and the Macroeconomy: The FRB/US Perspective, Fed. Res. Bull. 1 (1999).

differs from responses to other kinds of shocks, or if the assumptions of the US/Fed model are varied.[167]

Finally, research on fraud's social costs could draw on research on crime generally, which uses several families of methods:[168] (1) estimating hedonic models in which variation in prices affected by crime to infer social costs;[169] (2) surveying willingness-to-pay for a reduction in crime;[170] (3) aggregating estimates of each direct and indirect effect;[171] and (4) relating responses to surveys of crime victims to respondent wealth or income and inferring a "shadow price" for the effects of crime.[172] Each method has limitations,[173] guesstimates based on willingness-to-pay surveys have been stringent criticized as too subjective and internally inconsistent to be reliable for CBA purposes,[174] and to date these methods have not been undertaken in the context of fraud.

7. Estimating Causal Effects of SOX 404

With a better framework for estimating the incidence and costs of fraud in hand, researchers could then better estimate the benefits of regulatory changes as SOX 404. Where a regulation is an innovation, regulators are not in a position to "study" its causal effects at all, but must forecast it. For SOX 404, this would have been impossible – indeed, few observers (even hostile commentators, who had incentives to exaggerate) failed to anticipate the full extent of the direct costs that SOX 404 would at least initially generate.

Ex post or retrospective studies, coupled with regulations that sunset absent re-adoption based on the result of the ex post studies, are more promising, and would be better able to enlist academic research in the service of better financial regulation. To date, however, most retrospective studies

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[167] The sensitivity of estimates of social harms to assumptions in similar macroeconomic models is discussed more in connection with the Basel III rules in Part III.C below.

[168] For overviews, see J. Ludwig, The Costs Of Crime, 9 Criminology and Public Policy 307-11 (2010) and J. Donohue, Assessing the Relative Benefits of Incarceration: The Overall Change over the Previous Decades and the Benefits on the Margin, in Do Prisons Make Us Safer? The Benefits and Costs of The Prison Boom (eds. S. Raphael and M. Stoll 2009).

[169] Richard Thaler, A Note on the Value of Crime Control: Evidence from the Property Market, 5 J. Urban Econ. 137 (1978); J. Hoehn, M. Berger and G. Blomquist, A Hedonic Model Of Interregional Wages, Rents And Amenity Values, 27 J. Reg'l Sci. 605-620 (1987); K. Viscusi, The Value of Life in Legal Context: Survey and Critique, 2 Am. L. and Econ. Rev. 195 (2000).

[170] M. Cohen, R. Rust, S. Steen, S. Tidd, Willingness-To-Pay For Crime Control Programs. 42 Criminology 86 (2004); D. Nagin A. Piquero, E. Scott, and L. Steinberg, Public Preferences For Rehabilitation Versus Incarceration of Juvenile Offenders: Evidence From A Contingent Valuation Survey, 5 Criminal Public Policy 627 (2006).

[171] Anderson, supra note 151.

[172] S. Moore, and J. Shepherd, The Cost Of Fear: Shadow Pricing The Intangible Costs Of Crime, 38 Applied Economics 293 (2006).

[173] Such methods are probably best used in combination, as in Donohue, supra note 168.

[174] Peter A. Diamond and Jerry A. Hausman, Contingent Valuation: Is Some Number Better than No Number?, 8 J. Econ. Persp. 45, 63 (1994) ("survey responses [in contingent valuation or willingness-to-pay surveys] are not satisfactory bases for policy"). See also John Bronsteen, Christopher Buccafusco, and Jonathan S. Masur, Well-Being Analysis vs. Cost-Benefit Analysis, 62 Duke L.J. 1603 (2013) (advocating use of hedonic surveys as more reliable than willingness-to-pay surveys as conventionally used in CBA in the non-financial regulatory context).

of SOX have not used research designs allowing reliable causal inferences about its effects. Instead, most researchers have used before-and-after comparisons that fail to control for contemporaneous changes in the objects of study.[175] Better are a handful of difference-in-difference studies, such as those used to study some of the effects of SOX.[176] In such studies researchers match as best they can the companies by a regulation with unaffected companies and compare the before-and-after effects. But even those studies are commonly misleading in the kinds of rich, interdependent environments that characterize the financial markets. Long-term trends may manifest differently in the treated and nominal control group, and common factors omitted from the matching criteria that affect events in the nominal control sample may differentially affect the nominally "treated" sample, creating a spurious impression of the regulation having effects it did not have.[177]

Better for identifying causal effects ex post are discontinuity designs, which look at the before-and-after effects of a regulation on firms just above a threshold triggering compliance and compare them with changes at firms just below the threshold.[178] However, the findings of such studies rarely generalize beyond firms "near" the discontinuity, making them of limited use in CBA/FR.[179] This point is illustrated by Figure 1, which depicts how one of the best studies of SOX 404, using such a discontinuity design, provides very limited information about SOX's overall effects, because of how different the firms near the discontinuity are from the firms most likely to generate significant costs and benefits.

[175] See Coates and Srinivasan, supra note 127.

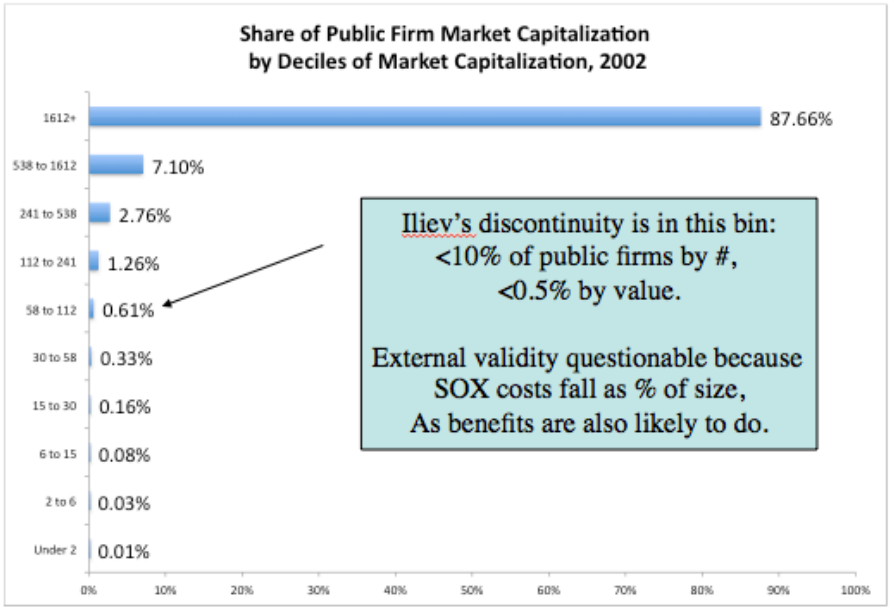
[176] E.g., E. Kamar, P. Karaca-Mandic and E. Talley, Going-private decisions and the Sarbanes–Oxley Act of 2002: a cross-country analysis, 25 *Journal of Law, Economics and Organization* 107 (2009) (studying going private). See other studies reviewed in Coates and Srinivasan supra note 127.

[177] This seems to have been true in some of the earliest studies of the effects of SOX, which found differences in US firms after SOX compared to Canadian or UK firms. See studies reviewed in Coates and Srinivasan, supra note 127. Those differences, however, either started well before SOX or affected US firms not subject to SOX as much as they did US firms subject to SOX, such that no consensus has emerged as to whether SOX did have those effects. Id.

[178] See studies reviewed in Coates and Srinivasan, supra note 127.

[179] One could imagine a law like SOX 404 applying to all firms with a past (and so non-manipulable) market capitalization of between $75 million and $100 million, or between $100 million and $125 million, or between $150 million and $175 million, and so on all the way through the full distribution of market capitalizations. Needless to say, even though it may be the only way to derive reliable estimates of the aggregate social costs and benefits of the rule such a novel regulatory design would generate howls of protest from covered companies, who would rightly complain that they compete with the exempt companies in the product, labor and capital markets and that they were being potentially disadvantaged by any regulatory cost the rule might impose.

Figure 1. Limits on External Validity of Single Best SOX Study to Date



Source: Coates and Srinivasan 2014

Perhaps best of feasible ex post studies are time-series designs studying multiple events, as a small number of studies did for SOX 404. Leuz et al. studied differences-in-differences among covered and exempt groups of companies over several events in the phase-in of the rule, including extensions by the SEC of exemptions for small firms, and Arping and Sautner studied the staged phase-in for foreign firms cross-listed in the US.[180] Neither attempted comprehensive measurement of changes in fraud, direct and indirect costs at covered firms, but in principle they provide the best path towards a possible retrospective CBA/FR of SOX 404.

8. What Baseline and Set of Counterfactuals Should be Used?

Even if a research design could produce reliable inferences about the effects of financial regulation, it is unclear how (if at all) to modify the results of such a study to reflect the context in which the rule was adopted. As mentioned above, the SEC's CBA/FR under SOX 404 noted two facts about the rule's context: (1) covered companies were already subject to the FCPA, which requires companies to have effective control systems, and (2) many companies already voluntarily made disclosures similar to ones required by the rule. These facts raise several open questions about the baselines and counterfactuals to be used in assessing the rule.

[180] S. Arping, and Z. Sautner, Did SOX 404 Make Firms Less Opaque? Evidence From Cross-Listed Firms, 30 Contemp. Acc'g Res. 1133 (2013); C. Leuz, A. Triantis, and T. Wang, Why Do Firms Go Dark? Causes And Economic Consequences Of Voluntary SEC Deregistrations, 45 J. Acct'g and Econ. 181 (2008).

First, what baseline should be used to assess the effects of SOX? One possibility is to assume a baseline of full compliance with prior law. Another is to use a realistic baseline of average actual compliance, in which case both costs and benefits would likely be higher (reflecting the gap between full and average compliance, on the reasonable assumption that effects of new enforcement pressures from SOX would have a diminishing effect as compliance increases). A third possibility is to try to estimate levels of baseline compliance that vary with observable firm characteristics. Nothing in the SEC's governing statutes or other relevant law resolves which baseline to use, but the answer would likely have a significant effect on any quantified CBA/FR of the rule.[181]

Second, how should analysts treat indirect behavioral effects of eliciting information for purposes of CBA/FR. Suppose, for example, that disclosure reduces risk-taking (as SOX 404 may have done) not because it distracts management but simply because it prevents managers from hiding behind information asymmetries to deflect blame from losses caused by risks they caused the firm to take. Assume that in a world of symmetric information, those risks would not have been taken, but might have generated expected net gains for a firm (perhaps due to differences in risk aversion between managers and diversified shareholders). Should the lost gains due to this reduction in risk-taking be counted? Asymmetric information is treated as a market failure in conventional economics and in the OMB Guidance on CBA. Does that imply that "costs" (such as reduced risk-taking) causally attributed to elimination of some (but not all) information asymmetries should not be counted in CBA/FR? Such a question arises for all disclosure regulations, which anticipate and rely on private responses to the disclosure.[182]

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[181] At first pass, it might seem that the dual effect of this choice on both costs and benefits would cancel out as long as the choices were consistent, but in fact that would require a further debatable assumption, i.e., that the functional relationship between actual legal compliance on the rule's effects is the same for both costs and benefits. That assumption seems at least possibly mistaken because (for example) the extra costs from assuming a realistic baseline should be larger for larger companies, but they should increase at a decreasing rate in firm size, whereas the extra benefits might not follow that pattern, and in fact might increase at an increasing rate, if (for example) large firm frauds (as at Enron) have externalities of the sort sketched above that are not only larger than externalities of smaller firms, but larger by a multiple greater than one, due to informational cascades and threshold effects in how the media report on frauds.

[182] Another open issue for CBA/FR is whether to use a national or supranational unit of analysis to use for purposes of estimating welfare effects. If, for example, SOX 404 prevented fraud by US-listed but foreign-based companies that harms foreign investors, should that count as a social gain? What if, as some studies suggest (see Coates and Srinivasan, supra note 127), SOX 404 reduced cross-listings in the US of foreign firms, but with an effect that was concentrated among the most fraud-prone firms? If the result was to shift sales of stock by fraud-prone companies from the US to other countries, but did not reduce the total amount of fraud, should that count as a "benefit" for CBA/FR purposes under US law? A similar unresolved issue concerns the costs of the rule: if the shift of firms from the US to foreign stock markets harmed the New York economy, but benefited the London or Hong Kong economy, should the losses count in a CBA/FR of the rule? The authors of the CCMR Report seem to think such losses to the US economy should count as "costs" under CBA, supra note 4 at 10 (criticizing SEC for not attempting to measure whether new rules "would ... deter foreign companies from tapping U.S. capital markets"). But that report does not defend the position, and does not take the correlative position that an increase in larger company cross-listings (for example, by lowering the cost of capital relative to foreign jurisdictions by reducing information asymmetries), that

9. How do Compliance Costs Vary Across Firms and Over Time?

Better methods are also needed for estimating costs, even of direct costs. Affected companies and their agents (who know the most about the likely direct costs of a rule) have incentives to exaggerate costs in public comments.[183] This is clear by noting strong contrasts between the FEI/FERF survey results on SOX 404[184] with findings on direct costs from surveys by the SEC, the GAO, and CAQ, a firm catering to the audit industry.[185] Compliance costs also vary across firms.[186] The SEC's own studies of the effects of SOX 404[187] contain information on some relevant differences, but future CBA/FR could usefully build such differences into better models of direct compliance costs, rather than relying on rationally biased inputs from private actors.

10. Modeling and Measuring Chilling Effects of Financial Regulation

Although direct costs of SOX 404 were most salient to firms, because they are borne directly and paid out the firm's treasury, indirect costs of SOX 404 may have been larger. They are likely to remain high, and may increase rather than diminish over time, as direct costs typically do. Such costs include those flowing from changes in risk-taking and investment, which can plausibly dwarf direct costs in magnitude. SOX 404 is said to have caused changes in the risk of personal liability facing managers and directors and in the risk of reputational harms and opportunity costs created by litigation. If true, difficult-to-explain and legitimate business risks may be foregone, firms may decline to go public or otherwise avoid the burdens of the law, with resulting social costs. However, the challenges of estimating indirect costs are also larger than for direct costs. Causal inference for indirect costs is just as difficult as for a regulation's benefits, requiring quasi-experimental research designs that will only be imperfect, even after the fact. Powerful empirical proxies for risk-taking, investment, and capital costs remain elusive and contested.

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should count as a benefit (and if a benefit, should be a gross benefit to the US, or net of lower benefits to the issuers' home countries). Neither the CFTC's nor the SEC's governing statutes specify the US as the governing unit when commanding those agencies to consider "costs and benefits" or "efficiency," respectively. See notes 6 supra.

[183] See Harrington, et al. supra note 30 for evidence of this outside the financial context.

[184] See note 135 supra.

[185] See discussion in Coates and Srinivasan, supra note 127.

[186] SOX 404, for example, generates higher costs for larger firms, as well as for firms with less centralized decision-making and more dispersed or fragmented assets. To some extent, the RFA and analyses thereunder have produced useful methods of breaking down costs by firm size, but some of the more important differences may have less to do with size and more to do with industry, complexity or geographic dispersion.

[187] Securities and Exchange Commission. Study and Recommendations on Sections 404(b) of the Sarbanes-Oxley Act of 2002 For Issuers with Public Float Between $75 and $250 Million (2011); Securities and Exchange Commission. Study of the Sarbanes-Oxley Act of 2002 Section 404 Internal Control over Financial Reporting Requirements (2009).

12. Summary and Illustrative Integrated Assessment Model

The previous sections have described the kind of CBA/FR of SOX 404 that could (in theory) be done today, from the distinctly advantaged after-the-fact perspective of ten years after the rule was adopted. The bottom line of the foregoing is that the no one could hope to conduct a precise and compelling quantified CBA/FR of such a rule now or in the near future. The one component of CBA/FR that could be quantified – direct costs – has generated estimates that vary by an order of magnitude.[188] Other, larger components, including benefits from reduced fraud and indirect costs from effects on risk-taking, investment and management, all remain unquantifiable.

To produce quantified CBA/FR, the SEC would need an "integrative assessment model" (IAM) similar to those used in estimating the social cost of carbon in climate change analysis.[189] An IAM would have to combine a sub-model of fraud incidence, a sub-model of the costs of fraud, including transfers and externalities (possibly consisting of a macroeconomic model), and a predictive empirical sub-model for how SOX 404 would affect the incidence of fraud. Indirect costs would have to be estimated in yet another sub-model.

To illustrate what an IAM might look like, consider the following: Begin with the formula for the present value of a perpetuity,[190] of an annual per-firm direct cost stream for SOX 404 ranging from $300,000 to $2 million per year[191] would range from $10 to $67 million (at a 3% discount rate) or from $4 to $29 million (at a 7% discount rate).[192] As of 2003, there were

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[188] The cost estimates range from more than $4.4 million per year on average (firms with average $6 billion in revenues in 2004, based on a FEI/FERF survey) to $350,000 (firms with market capitalizations under $10 billion in 2012, based on a GAO survey). See note 135 supra.

[189] For one economist's highly skeptical assessment of IAMs in the environmental context, see Robert S. Pindyck, 51 J. Econ. Lit. 860 (2013). Pindyck calls for environmental policy-making to be informed by research, including empirical research, but ultimately based not on IAMs or guesstimated CBA, but on "simpler" policy approaches, that use a "plausible" range of outcomes and probabilities, where "plausible" is what is acceptable to a range of economists and subject matter experts (in his analysis, climate scientists).

[190] PV = C / R, where PV is the present value, C is the annual cost, and R is the discount rate.

[191] This is a rough range of per-year, per-firm direct cost estimates reflected in the SEC's comprehensive survey of such costs in 2007 and 2008, U.S. Securities and Exchange Commission, Study and Recommendations on Sections 404(b) of the Sarbanes-Oxley Act of 2002 For Issuers with Public Float Between $75 and $250 Million (2009) (see Table 9), reduced by an arbitrary 30% to reflect increases that would have occurred without SOX, due to market pressures reacting to Enron and related scandals.

[192] OMB Guidance, supra note 19, suggests these discount rates. Whether they are appropriate at all, or for assessing financial regulation, is unclear. See Martin Feldstein, 51 J. Econ. Lit. 873 (2013) (critiquing current discount rate of 3% recommended by OMB, suggesting 1% instead, based on current yields on US Treasuries). If a discount rate of one percent were used instead of three percent, the sensitivity to the net costs and benefits reported in Table 3 below for discount rates would increase by another +852%. One can also argue for discount rates higher than seven percent, depending on what time period one averages returns on equity investments. As discussed in note 271 infra, two further discount rates (2.5% and 5%) are used by the Bank for International Settlements, in its CBA/FR of the Basel III capital rules discussed in Part III.C below, and yet another (3.5%) used by

~4,400 US public companies covered by SOX 404,[193] producing a present value of direct costs ranging from $19 to $293 billion.

How would this compare to a possible range of benefits for SOX 404? Suppose fraud incidence was – as estimated by Zingales et al.[194] – 3% of market capitalization, on average, but could range from 50% to 200% of that estimate. These assumptions produce direct-fraud costs ranging from $140 to $700 billion. Suppose SOX 404 permanently reduced annual fraud risk by an amount ranging from 1% to 10%.[195] When applied to our direct fraud-cost estimates, the range of fraud reduction implies benefits from SOX 404 ranging from $2 to $84 billion. Finally, assume fraud externalities range from 1.0x to 3.0x direct costs.[196] This implies benefits ranging from $4 to $336 billion.

Table 2. Illustrative Quantitative CBA/FR of SOX 404

Present value of aggregate direct costs				**Present value of direct benefits (transfers)**		**Present value of aggregate benefits, including externalities**		
	Discount rate		**% of current equity market cap of public firms due to fraud**	**Fraud reduction rate**		**Ratio of externalities to transfers from fraud**	**Low end of direct transfers**	**High end of direct transfers**
Direct costs per firm per year	**3%**	**7%**		**1%**	**10%**			
$0.3 mm	$44 bn	$19 bn	**1.5%**	$2 bn	$21 bn	**1.0x**	$4 bn	$168 bn
$2.0 mm	$293 bn	$126 bn	**6.0%**	$8 bn	$84 bn	**3.0x**	$8 bn	$336 bn

Table 2 summarizes. The high end of costs is far higher than the low end of benefits, producing a net cost of $289 billion, but the low end of costs is far lower than the high end of benefits, producing a net benefit of $317 billion. Depending on assumptions, guesstimated CBA suggests SOX 404 could be a very good idea, a very bad idea, or anything in-between. If one arbitrarily chose the range's midpoint, SOX 404 created a net benefit of $9

the FSA in its CBA/FR of the mortgage reforms discussed in Part III.E below. That six different discount rates (1%, 2.5%, 3, 3.5%, 5%, 7%) are plausible is itself a source for concern about CBA/FR.

[193] This is derived from SEC Rel. Nos. 33-8238 at n. 174 (divide the aggregate estimate of $1.24 billion by the per-firm estimate of $91,000 = 13,626).

[194] See text accompanying notes 147-48 supra.

[195] This range roughly equivalent at the high end to reductions in the shares of US public companies that were meeting or just beating analyst estimates in the post-SOX period, with the low end being motivated by the likelihood that SOX's effects on fraud are diminishing over time and/or caused by changes other than SOX 404. Bartov and Cohen 2009.

[196] This range extends from 50% to 200% of the point estimate of the relationship between transfers and externalities of crime from Anderson, supra note 151 (Table 7 in working paper version).

billion. But this bottom-line is highly sensitive, as reflected in Table 3, with net benefits changing by between 2x and 13x as one moves from low to high values for each of five major inputs into the illustrative IAM.

Table 3. Sensitivity of output of illustrative IAM to inputs

Low to high	Absolute value of difference between net benefits from low to high of various inputs, relative to mean net benefit of $9 billion, holding other inputs constant at mean
Discount rates	+243%
Direct costs	+440%
Ratio of externalities to direct costs	+511%
Fraud rates	+1033%
Fraud reduction rates	+1267%

This illustrative IAM is crude – it implicitly resolves all of the open issues reviewed above, and uses many assumptions. The IAM could be challenged on numerous fronts: (a) indirect costs are omitted; (b) open issues on baselines and counterfactuals are resolved in favor of higher cost estimates, but discounted by an arbitrary 30%; (c) the current run-rate for direct costs is assumed to last indefinitely, contrary to the SEC's survey of SOX 404 costs that suggest that costs can be expected to fall[197]; (d) transfers from US to non-US persons are ignored; (e) transfers from fraud victims to other shareholders are counted; (f) the ratio of externalities to transfers is borrowed from research on crime, not fraud; (g) discount rates are from OMB Guidance; (h) the fraud reduction effect is assumed to be a one-time permanent reduction; (i) the rate of fraud reduction is derived from a before-and-after study that may wrongly misattribute changes to SOX; (j) the rate of fraud reduction is derived from studies of earnings, and not the full range of fraud that SOX might reduce; and so on. A change in any of these assumptions would change the bottom-line. This list of serious debatable limits could be extended for many pages. Any serious contest between opposed analysts would add to the upper ends of ranges of both costs and benefits.[198]

[197] Securities and Exchange Commission, Study and Recommendations on Sections 404(b) of the Sarbanes-Oxley Act of 2002 For Issuers with Public Float Between $75 and $250 Million (2011); Securities and Exchange Commission. Study of the Sarbanes-Oxley Act of 2002 Section 404 Internal Control over Financial Reporting Requirements (2009).

[198] Another method for estimating the net costs and benefits of a financial regulation is the "event study," which examines market reactions to events leading up to a regulation's enactment. One estimate of the negative effects of SOX overall, based on stock market reactions to its announcement, was roughly -0.06% of the US equity market capitalization. I. Zhang, Economic consequences of the Sarbanes Oxley Act of 2002, 44 J. Acct'g and Econ. 74 (2007). That represented a net effect of more than ***negative*** $840 ***billion***, based on US equity market capitalization in 2003, when SOX 404 was adopted, was roughly $14 trillion. World Bank Data, available at data.worldbank.org/ indicator/ CM.MKT.LCAP.CD?page=2 (last visited Dec. 2, 2013). By contrast, other studies of the stock market reaction to SOX produced results ranging from ***positive*** $420 ***billion*** to $1.7 ***trillion***. P. Jain and Z. Rezaee, The Sarbanes-Oxley Act of 2002 and Capital-Market Behavior: Early Evidence, 23 Contemp. Acct'g Res. 629 (2006); H. Li, M. Pincus, and S. Rego, 2008, Market Reaction To Events Surrounding The Sarbanes-Oxley Act of 2002, 51 J. L. & Econ. 111 (2008); and Aigbe Akhigbe and Anna Martin,

B. Case Study #2: Independent Boards For Mutual Funds

In 2003, New York Attorney General Eliot Spitzer ended his prepared remarks at a Harvard Law School reunion event with a dramatic *J'accuse*! Pointing a finger at a fellow panelist – a lawyer from Fidelity Management[199] – Spitzer announced that his office was about to reveal widespread fraud in the mutual fund industry. Over the next year, twenty-five advisory companies settled cases alleging violations of the securities laws in which select investors were permitted to harm funds and other investors by engaging in late or frequent trading that was either contrary to SEC rules or contrary to disclosed fund policies.[200]

Scandals at this scale had not hit the fund industry in decades, and while the wrongdoing alleged from fund complex to fund complex, the most troubling charges involved conflicts of interest between the fund advisors and the funds they advised.[201] Conflict-of-interest transactions had been banned in 1940, but because many conflict-of-interest transactions could benefit funds, the SEC had adopted a series of exemptions, subject to a fund meeting set conditions.[202] In 2001, the SEC had tightened the conditions, increasing the share of independent directors from 40% to a majority for funds wanting to use the exemptions (as the majority of funds did).

2. The Rules

In response to the scandals, the SEC proposed further tightening the exemptive conditions, (1) raising the requirement from a majority to 75%

Valuation Impact of Sarbanes-Oxley: Evidence from Disclosure and Governance within the Financial Services Industry, 30 J. Bkng. & Fin. 989 (2006). Each was published in peer-reviewed journal, and each included plausible cross-sectional tests of the validity of the estimates – each, for example, contrasted differing market reactions to firms that theory would predict would be more or less benefited or harmed by SOX, and found results consist with at least some of those theories.

[199] Fidelity turned out not to be a target of the investigations, but Spitzer did not let that get the way of a dramatic moment.

[200] Securities and Exchange Commission, Performance and Accountability Report 2006, available at www.sec.gov/about/secpar/secpar2006.pdf at 23 (noting "Fair Funds" established pursuant to SEC enforcement actions concerning market timing and late trading); John C. Coates IV, Reforming the Taxation and Regulation of Mutual Funds: A Comparative Legal and Economic Analysis, 1 J. Legal Anal. 591-689 (2009). I served as an independent distribution consultant in connection with one of the Fair Funds created as a result of the SEC's investigations of the fund industry that came in the wake of Spitzer's announcement. See In re Massachusetts Financial Services Company et al., SEC Rel. No. 34-56122 (July 24, 2007), available at www.sec.gov/litigation/admin/2007/34-56122.pdf (order approving modified distribution plan).

[201] E.g., State of New York v. Canary Capital Partners, LLC et al., Complaint, available at www.ag.ny.gov/sites/default/files/press-releases/archived/canarycomplaint.pdf, at paragraphs 9 and 20 (alleging that Bank of America agreed to let a hedge fund place illegal late trades in return for keeping investments in funds sponsored by Bank of America). For a good analysis of the market reaction to revelation of the scandals, see Stephen Choi and Marcel Kahan, The Market Penalty for Mutual Fund Scandals, 87 B.U. L. Rev. 1021-1059 (2007).

[202] Various sections of the ICA govern conflict of interest transactions. See, e.g., Section 17, codified at 15 USC § 80a–17 (banning purchases, sales and loans by advisor with fund). The exemptions adopted by the SEC under the ICA are numerous, and collected at SEC Release No. IC-26520, 69 Fed. Reg. 46378 (Aug. 2, 2004) at note 9.

independent directors, and (2) adding a requirement that a fund board chair be independent of the advisor.[203] The latter requirement was anathema to Fidelity Management – one of the largest fund complexes, privately held, and dominated by its founder, Ned Johnson, who chaired boards of all 292 funds advised by Fidelity.[204] Fidelity paid for a study that found a negative correlation between independent board chairs and fund performance, but which acknowledged that the correlation could be due to ''other important differences that may have impacted performance results,'' such as the prevalence of split chairs in bank-sponsored fund groups.[205]

The SEC adopted the conditions by a 3-2 partisan vote in August 2004. In its rule release, the SEC included a 1680-word CBA/FR, and a lengthier discussion of the conditions' benefits in its general assessment of the conditions.[206] The CBA/FR was qualitative, and the rule was justified because, in the SEC's view, independent directors and chairs were "more likely to be primarily loyal to the fund shareholders rather than the fund adviser," and more likely to manage conflicts of interest such as those involved in the 2003 scandals.[207] The SEC explicitly noted it had not conducted a quantified CBA/FR, as it could not quantify either costs or benefits, as well as the fact that:

> We are not aware of any conclusive research that demonstrates that the hiring of an independent chairman will improve fund performance or reduce expenses, or the reverse.[208]

Within weeks, Fidelity persuaded Senator Gregg (R-NH) to include a rider to an omnibus bill[209] requiring the SEC to study the need for tightened

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[203] SEC Release No. IC-26520, 69 Fed. Reg. 46378 (Aug. 2, 2004). The SEC also added requirements for fund boards to perform self-assessments at least annually, hold executive sessions for independent directors at least quarterly, and to give independent directors authority to hire their own staff. Id. at 46381. None of these requirements were the focus of subsequent litigation, although each plausibly contributes to both the overall benefits and overall costs of the combined package of conditions, by enhancing the power of independent directors, for both good and ill.

[204] Amy Borrus, Who's Right, The SEC or Ned Johnson?, BloombergBusinessweek (June 27, 2004), available at www.businessweek.com/stories/2004-06-27/whos-right-the-sec-or-ned-johnson (last visited Jan. 4, 2014).

[205] See Comment Letter from Fidelity Investments dated Mar. 18, 2004 to SEC, available at www.sec.gov/rules/proposed/s70304/fidelity031804.htm.

[206] SEC Release No. IC-26520, 69 Fed. Reg. 46378 (Aug. 2, 2004) at 46386 to 46387 (cost-benefit analysis) and 46381 to 46386 (discussing conditions, including qualitative assessment of benefits).

[207] Id. at 46386.

[208] The SEC noted that "even accepted at face value, Fidelity's data constitute muddy and unpersuasive evidence for continuing to allow senior management company officials to sit in the fund chairman's chair." SEC Release No. IC-26520, 69 Fed. Reg. 46378 (Aug. 2, 2004) at n. 52 (citing Remarks by John C. Bogle, Founder and Former CEO, The Vanguard Group, before the Institutional Investor Magazine Mutual Fund Regulation and Compliance Conference (May 5, 2004), File No. S7–03–04).

[209] As noted by Sherwin, supra note 14, this rider was first introduced in S. 2908, 108th Cong. (2004) by Senator Gregg on Sept. 15, 2004 and was later incorporated into H.R. 4818, 108th Cong. (2004), the version of the spending bill passed into law, during the House-Senate conference. See H.R. REP. NO. 108-472, at 841 (2004). For Fidelity's role, see Carrie Johnson, Trade Groups, Firms Push to Ease Tough Federal Scrutiny, Wash. Post, Jan. 3, 2005, at A1.

conditions, which the SEC released in April 2005. That study contained 77 pages of conceptual CBA/FR, showing the Fidelity-commissioned study was sensitive to assumptions and could not reliably establish what it purported to show. While the SEC conducted that study, the Chamber of Commerce sued to overturn the rule under the APA and the ICA, a suit that ended in *Chamber of Commerce*, as described in Part II.[210]

3. The Aftermath of *Chamber of Commerce II*

After the second *Chamber of Commerce* decision,[211] the SEC requested the SEC's Chief Economist[212] to re-evaluate the governance rules yet again. That request led to two memos – publicly released with a request for public comment.

In those memos, the Chief Economist concluded that (1) more independent boards were more likely to better protect investors, but (2) little evidence existed to establish that board composition would improve higher returns. These two conclusions, seemingly in tension, could be reconciled by one or more of three further conclusions: (a) "no sound structural model exists ... to isolate the effect of a ... board decision on performance,"[213] (b) "inherent limitations on data and statistical tools may render it difficult for research to identify relations that may be economically significant," or (c) "there may be [no] unique relation between governance and performance.[214] In other words, the state of finance research was such that no CBA/FR of the mutual fund governance rules was feasible. At the same time, economic theory (particularly agency cost theory) and the Chief Economist's judgment, based on the research reviewed in the memos, supported a qualitative judgment that the rules would better protect investors.

4. What Would CBA of the Mutual Fund Governance Rules Require?

Implicit in the Chief Economist's memos is a sketch of what quantified CBA/FR of the governance rules would look like. As the memos noted, the best board structure (in terms of independence) depends:

> [O]n the ... consequences of increasing the influence of outsiders... [O]utsiders may bring expertise and independence [and] improve the

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[210] See notes 17 supra.

[211] 443 F.3d 890.

[212] Chester Spatt, who had been a Professor of Finance at Carnegie-Mellon.

[213] While the Chief Economist did not spell the point out, "structural model" here presumably refers to a model in which potential causal relationships among exogenous and endogenous variables needed to measure fund value or fund performance are specified – i.e., a theoretical model of fund value or performance. See, e.g., Peter C. Reiss and Frank A. Wolak, Structural Econometric Modeling: Rationales and Examples from Industrial Organization, 64 Handbook of Econometrics Volume 6A (2008) at 4282 (contrasting structural models with non-structural "descriptive" empirical models). Most empirical corporate governance research, including research relevant to mutual funds, remains closer to the "descriptive" than to the "structural."

[214] See www.sec.gov/rules/proposed/s70304/oeamemo122906-litreview.pdf and www.sec.gov/rules/proposed/s70304/oeamemo122906-powerstudy.pdf.

> quality of management decisions and manage conflicts of interest that insiders have, thereby increasing the value of the firm [but] may lack information about the "inner-workings" of the firm and other firm-specific knowledge [which] if ... difficult to extract ... may diminish the quality of management decisions and reduce the value of the firm.

Because this trade-off may vary by fund, a fixed minimum share of independent directors may benefit investors in one fund by preventing an advisor from influencing the board to nominate too few independent directors. The same minimum may harm investors in another fund by raising the level of independence beyond the optimum for that fund.

Because optimal boards likely vary, however, and because board structure is only one of many factors influencing firm value, an empirical comparison of value at funds with more independent directors in the pre-rule context would not generate reliable information about the effect of the rules. Governance scholars have known this fact – that cross-sectional observational studies produce only weak information about the merits of endogenously chosen governance structures – for some time.[215] A source of governance variation that is exogenous with respect to fund value is a necessary but insufficient condition for identifying the average effect of a proposed rule about the feature. Few exogenous sources of variation for fund governance exist, other than as a result of SEC rule changes – and even for those changes, the effects they have caused are likely to be sufficiently small as to be difficult to discover, even with the best cross-sectional modeling.

This identification challenge is fundamental, and greatly undermines the reliability of any guesstimated CBA/FR of rules on fund (or corporate) governance.[216] Even worse than for SOX, because the plausible importance

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[215] E.g., Benjamin E. Hermalin & Michael S. Weisbach, The Effects of Board Composition and Direct Incentives on Firm Performance, 20 Fin. Mgmt. 101 (1991); Hamid Mehran, Executive Compensation Structure, Ownership, and Firm Performance, 38 J. Fin. Econ. 163 (1995); April Klein, Firm Performance and Board Committee Structure, 41 J. Law & Econ. 275 (1998); Sanjai Bhagat & Bernard Black, The Noncorrelation between Board Independence and Long-Term Firm Performance, 27 J. Corp. L. 231 (2002); Eugene Kang and Asghar Zardkoohi, Board Leadership Structure and Firm Performance, 13 Corp. Gov.: An Int'l Rev. 785-99 (2005); M. Babajide Wintoki, James S. Linck, and Jeffry M. Netter, Endogeneity and the Dynamics of Internal Corporate Governance, 105 J. Fin. Econ. 581 (2012).

[216] E.g., Yair Listokin, Interpreting Empirical Estimates of the Effect of Corporate Governance, 10 Amer. L. Econ. Rev. 90-109 (2008); Sanjai Bhagat and Richard H. Jefferis Jr., The Econometrics of Corporate Governance (MIT Press 2002); M.R. Roberts and T.M. Whited, Endogeneity In Empirical Corporate Finance, in 2 Handbook of the Economics of Finance (eds. M. Constantinides and R. Stulz, R. 2013). This does mean empirical studies of governance are useless. Such studies are essential sources of descriptive information about important organizations, without which neither social scientists nor practitioners can hope to understand them at all. For example, the fact of the extent and generality of variation in governance's fine details emerged only from such studies. Such studies can provide partial, weak and provisional evidence about the effects of governance arrangements, and when replicated with sufficient frequency in a variety of settings by a variety of researchers, they may allow tentative inferences to augment raw experience-based judgment in tentative evaluations. They can reject certain theories about governance, prompt refinements in theory, and provide a basis for more serious experimentation. At least over short time frames, they can allow for useful out-of-sample predictions even without a reliable proof of causal mechanisms.

of any detail of governance is lower is plausible for SOX, which combined multiple institutional and enforcement changes. Anything that changes fund values – e.g., anything that changes the value of a fund's investments – can confound the ability of researchers to identify the effects of governance changes. Fund investment values undergo changes that are continuous and large (money funds aside) relative to the effect of governance details. No one imagines that a shift from 50% to 75% independent directors would have an effect on value approaching a small fraction of common market-affecting events.[217] In the language of econometrics, the "power" of statistical tests given available data is too weak to detect much less reliably and precisely quantify the effects of most governance changes – even if we had examples of changes that were plausibly exogenous. All of these points are made plain in the Chief Economist's memos, even if they were not explained in the SEC's releases or subsequent D.C. Circuit court opinions.[218]

To be sure, any change in governance mandates will generate adjustment costs – the focus of both the SEC in the "cost" section of its rule release and of the Chamber of Commerce in its lawsuit – that could be quantified (or at least bounded) based on survey evidence. But if benefits of a rule cannot be quantified, and larger potential costs of the rule, due to fund performance cannot be quantified, it remains unclear why the failure to quantify adjustment costs is a significant failing, or how if provided such information would materially improve public understanding of the effects of the rule. This is more so when, as here, even these quantifications would vary depending on private responses that could not be forecast with any precision, as the D.C. Circuit acknowledged in *Chamber of Commerce*. Put differently, litigation challenging the SEC's rule focused on an immaterial subset of the likely costs and benefits of the rule, and had the SEC had done exactly what the D.C. Circuit ultimately said it had to do, the result should have had no material effect on any assessment of the rule. Yet one would not know this from reading the D.C. Circuit's opinions or much of the commentary on the

[217] Compare, for example, the effect of financial collapse, as in 2008, accounting scandals, as in 2002, a market crash, as in 1987 and 1989, or war (shooting or trade), pandemic, or drought.

[218] Thus, as with SOX, a valid criticism of the SEC's CBA/FR is not, as argued by others, that the SEC failed to conduct adequate quantitative analysis, e.g., Edward Sherwin, The Cost-Benefit Analysis of Financial Regulation: What the SEC Ignores in the Rulemaking Process, Why It Matters, and What to Do About It, Working Paper, available at www.law.harvard.edu/ faculty/ hjackson/ pdfs/ Sherwin.Cost.Benefit.Paper.April.2005.pdf (last visited Dec. 30, 2013) at 53, 65; CCMR Report, supra note 4, at 9; *Chamber of Commerce*, 412 F.3d at 144, but that it failed to explain adequately why quantitative analysis was not feasible, and that it failed to present an adequate conceptual CBA/FR. For example, the SEC never noted in its rule release that heightened independence requirements could result in less informed and more cumbersome boards or divisiveness and conflict on boards, and dilute the effectiveness of board culture and decision-making. SEC Release No. IC-26520, 69 Fed. Reg. 46378 (Aug. 2, 2004) at 46386 to 46387. These costs seem likely to swamp the short-term compliance costs on which the SEC, the D.C. Circuit, and commentators have focused. See John C. Coates IV, Letter, attached to www.sec.gov/rules/proposed/s70304/s70304-554.pdf (last visited Dec. 23, 2013) (discussing costs of independent board chair).

case.[219] The litigation is a perfect example of how CBA law – here, judicial review of CBA/FR – can obscure more than they illuminate.

5. The Aftermath of the Aftermath

Because it was unclear if the Chief Economist's memos represented the end or the beginning of another stage in the SEC's efforts to revise governance rules, Fidelity filed a 141-page comment in response, including a 22–page analysis of the Chief Economist's memos by me (for which I was paid a fee, giving me a financial interest in this topic).[220] In my analysis, I critiqued the memos on the ground that the research used to support the qualitative conclusion that the rules would better protect investors was weak, inconsistent, and at times at odds with the summary in the memos. I also outlined a number of potential costs to the proposed rules that had not been noted in the Chief Economist's memos.[221]

Subsequently, the SEC has taken no more action to re-propose its governance reforms. What is unclear, however, is whether its decision was based on a genuine change of policy. Two less optimistic possibilities exist: (1) between *Chamber of Commerce II* and the SEC's giving up on the rules, the SEC Chair switched from Democrat to Republican, and (2) the ongoing litigation threat, coupled with the fact that reliable quantified CBA/FR for the rules remains unfeasible, led the SEC to not want to risk another morale-draining, resource-depleting court loss,[222] even if it continued to hold the judgment that the governance rules would benefit investors at a low cost. In favor the last possibility is that the Chief Economist's memos were released ***after*** Christopher Cox became Chairman, but they supported re-adoption, and nothing in the public commentary (including my comment) provided any compelling ***quantitative*** reason for the SEC to change its mind. While the qualitative reasoning in the public comments may be part of the explanation, a dysfunctional system of judicial review seems likely to be a bigger part of the explanation.

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[219] Chamber of Commerce v. SEC, 412 F.3d 133 (D.C. Cir. 2005), subsequent proceeding at 443 F.3d 890 (nowhere discussing these costs); CCMR Report, supra note 4, at 4; CCMC Report at 29-30; Sherwin, supra note 14, at 32-33.

[220] See www.sec.gov/rules/proposed/s70304/s70304-554.pdf.

[221] I also argued that "If [CBA/FR] is to assist the regulatory process, the minimum one would expect before adding regulations is at least some economic evidence that the regulations would provide some benefit." I continue to hold that view. But a desire for "evidence" is not the same as a mandate to conduct ***quantified*** CBA/FR. One can believe financial regulations aimed at improving or constraining governance is not susceptible to quantified CBA/FR, without giving up on the goal of obtaining "evidence" that can inform consideration of the rule and its alternatives. Evidence is commonly adduced in court and in other contexts that do not admit of quantification, reliable causal inference, or anything approaching "science."

[222] Robert A. Kagan, Adversarial Legalism and American Government, The New Politics of Public Policy (ed. Marc K. Landy and Martin A. Levin 1995) (litigation drains agency resources, causing agencies to try to avoid it).

C. Case Study #3: Heightened Capital Requirements for Banks

"You only find out who is swimming naked when the tide goes out."[223] Warren Buffett's self-congratulatory moral was occasioned by losses facing casualty insurers after 9/11, but it captures a central fact of the 2008 crisis: banks were revealed to be grossly undercapitalized for risks they had been running. Undercapitalization was obvious in failures, of commercial banks – WaMu, Wachovia – and investment banks – Lehman, Bear Stearns. But it was also true of 700+ banks bailed out by the US.[224] Even the "best" performing US banks during the crisis lost significant amounts of money, needed to raise capital on terms suggesting pre-crisis undercapitalization,[225] and would have failed without massive infusions of liquidity by the Federal Reserve, through near-zero interest rates and three rounds of "quantitative easing," the last still ongoing as of this writing, six years after the crisis began.[226]

Capital shortfalls were global, but not universal. Banks in the UK, France, Germany and Belgium failed or needed government support to stay open, while banks in Canada and Australia did not, in part due to tight capital regulation.[227] In a cross-section of banks, those with more capital and those

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[223] Chairman's Letter, Berkshire Hathaway Inc. Annual Report (Feb. 28, 2002), at available at www.berkshirehathaway.com/2001ar/2001letter.html (last visited Jan. 4, 2014).

[224] See www.treasury.gov/initiatives/financial-stability/TARP-Programs/Pages/default.aspx (last visited Dec. 26, 2013).

[225] For example, Wells Fargo's CEO criticized what he viewed as U.S. government efforts to pressure his company to accept a bailout under the Emergency Economic Stabilization Act (also known as the Troubled Asset Relief Program), and Wells Fargo repaid the investment as soon as it was permitted to under the terms of the investment. Mark Calvey, Former Wells Fargo CEO Dick Kovacevich Blasts TARP: An "Unmitigated Disaster," San Francisco Business Times (June 13, 2012); Wells' TARP Plan Brings End to Bailout Era, DealBook, N.Y. Times (Dec. 14, 2009). However, Wells Fargo was found to need more capital in the course of the "stress tests" conducted after the crisis, in circumstances in which not all banks were required to raise capital. Wells Fargo & Co., Form 10-K (Mar. 31, 2009) at 8, available at www.sec.gov/Archives/edgar/data/72971/000095012310017877/f54129e10vk.htm (last visited Dec. 26, 2013) ("in 2009, the [Federal Reserve] conducted a test under the [Supervisory Capital Assessment Program, i.e., the stress test program] to forecast capital levels ... in an adverse economic scenario. Following ... that stress test, the FRB required [Wells Fargo] to generate a $13.7 billion regulatory capital buffer .... [Wells Fargo met] this requirement through an $8.6 billion ... common stock offering...").

[226] Brett W. Fawley and Christopher J. Neely, Four Stories of Quantitative Easing, Federal Reserve Bank of St. Louis Review , January/February 2013, 95 (1), pp. 51-88, available at research.stlouisfed.org/publications/review/13/01/Fawley.pdf (last visited Dec. 26, 2013).

[227] Jennifer G. Hill, Why Did Australia Fare So Well in the Global Financial Crisis?, CLS Blue Sky Blog (Feb. 7, 2013), at 43-44, in The Aftermath of the Global Financial Crisis (eds. E. Ferran, N. Moloney, J.C. Coffee, Jr. 2012), at 203-300, available at ssrn.com/abstract=2063267 (last visited Dec. 26, 2013) (reporting no bailouts occurred in those countries, noting that "Between 2003 and 2005, APRA created a new regulatory framework, which was focused on close supervision, effective risk management, governance, and strong, well-enforced, capital adequacy rules"); Michael D. Bordo, Angela Redish and Hugh Rockoff, Why Didn't Canada Have A Banking Crisis In 2008 (Or In 1930, Or 1907, Or ...)?, NBER Working Paper 17312 (August 2011), available at www.nber.org/papers/w17312 (last visited Dec. 26, 2013) ("Canadian regulation under OSFI proved tougher than in the United States, mandating higher capital requirements, lower leverage, less securitization, the curtailment of off balance sheet vehicles, and restricting the assets that banks could purchase...").

based in countries more stringent capital regulation did better than banks elsewhere, controlling for other factors.[228]

1. Regulatory Response

It was thus inevitable that regulators around the world would impose new, higher capital requirements. Capital regulation is coordinated for global banks (on a voluntary multilateral basis) by the Bank for International Settlements (***BIS***) based in Basel. More precisely, BIS hosts the Basel Committee on Banking Supervision (***Basel Committee***), composed of members from twenty-seven countries, which from time to time reaches consensus on unified set of capital regulations for banks.[229] Bank regulators in the member countries then transpose the consensus to national regulation.

Each US banking agency (the Federal Reserve, the OCC, and the FDIC)[230] participates in the Basel Committee.[231] Following the crisis, the Committee hosted talks on new capital guidelines (called Basel III to distinguish them from two prior guidelines).[232] This new round focused on tougher capital guidelines for large, interconnected, complex banks engaged in cross-border transactions or activities with a lack of substitutes,[233] and on ***liquidity requirements***, to address liquidity risks that played a greater role in 2008 than in prior crises.[234] The new capital guidelines include ***leverage ratios*** so banks would need to hold a minimum ratio of capital to assets, even if those assets nominally had a low level of risk, such as highly rated mortgage-backed securities.[235] Other requirements in the guidelines that

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[228] Andrew Beltratti and Rene Stulz, The Credit Crisis Around The Globe: Why Did Some Banks Perform Better?, 105 Journal of Financial Economics 1-17 (2012).

[229] See www.bis.org/bcbs/ (last visited Dec. 23, 2013).

[230] The Federal Reserve supervises systemically important financial institutions and other bank and financial holding companies, and state banks that are members of the Federal Reserve System (FRS). The OCC supervises national banks and federal thrifts. The FDIC supervises state FDIC-insured banks that are not members of the FRS, and has back-up authority over other insured banks. Edward V. Murphy, Who Regulates Whom and How? An Overview of U.S. Financial Regulatory Policy for Banking and Securities Markets, Congressional Research Service (May 28, 2013), available at www.fas.org/sgp/crs/misc/R43087.pdf (last visited Dec. 25, 2013).

[231] See www.bis.org/bcbs/membership.htm (last visited Dec. 23, 2013).

[232] See www.bis.org/bcbs/basel3.htm (last visited Dec. 23, 2013).

[233] Bank for International Settlements, Basel Committee on Banking Supervision, Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems (Dec. 2010, rev. June 2011), available at www.bis.org/publ/bcbs189.pdf (last visited Dec. 25, 2013).

[234] Bank for International Settlements, Basel Committee on Banking Supervision, Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools (Jan. 2013), available at www.bis.org/publ/bcbs238.pdf (last visited Dec. 25, 2013). The new requirements include a liquidity coverage ratio, which requires banks to have enough high quality liquid resources to survive an acute stress scenario lasting for one month, and a net stable funding ratio, designed to address liquidity risk by creating incentives for banks to rely on funding with maturities of a year or longer. Id. In general terms, liquidity is the amount of cash or other assets readily convertible to cash on a timely basis, to meet withdrawal demands or other cash requirements. Id. The Basel Committee also circulated an earlier discussion paper related to liquidity. Bank for International Settlements, Basel Committee on Banking Supervision, Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring (Dec. 2010), available at www.bis.org/publ/bcbs188.pdf (last visited Dec. 23, 2013).

[235] Under prior capital rules, securitized assets with high credit ratings were given a low risk weighting and so required less capital than other kinds of assets. See Bank for International Settlements, Basel Committee on Banking Supervision, Consultative Document: Revisions to the

emerged included more common equity, tougher treatment for credit default swaps and counterparty risk, securitizations, and risk management.[236] The Committee circulated capital guidelines in December 2010 (revised June 2011), and liquidity guidelines in January 2013. The US agencies proposed capital requirements for US banks in August 2012, eliciting over 2,500 comments before being finalized in October 2013; and proposed new liquidity requirements in November 2013.[237]

2. CBA/FR of Basel III

Although US banking agencies briefly discussed costs in reviewing comments on their rules,[238] none of the US banking regulators included formal CBA in transposing Basel III to US law. However, the Basel Committee itself, in consultation with the International Monetary Fund, published its own CBA/FR.[239] The Committee elicited CBA/FR that focused on costs from its members (i.e., central banks and bank regulatory agencies), twenty-three of which obtained data and analyses from 263 large banks worldwide.[240] Subsequently, the Fed's counterpart in the UK (then the

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Basel Securitisation Framework (Dec. 2012) at 4 ("The recent financial crisis revealed that external credit ratings often did not adequately reflect the risk of certain structured finance asset classes, such as mortgage backed securities, including but not limited to resecuritisation exposures."), available at www.bis.org/publ/bcbs236.pdf (last visited Dec. 25, 2013).

[236] See www.bis.org/publ/bcbs237.pdf (last visited Dec. 23, 2013); www.bis.org/bcbs/basel3/b3summarytable.pdf (last visited Dec. 23, 2013).

[237] Regulatory Capital Rules: Regulatory Capital, Implementation of Basel III, Minimum Regulatory Capital Ratios, Capital Adequacy, Transition Provisions, and Prompt Corrective Action, 77 Fed. Reg. 52792 (Aug. 30, 2012) (proposed rule); Regulatory Capital Rules: Standardized Approach for Risk-weighted Assets; Market Discipline and Disclosure Requirements, 77 Fed. Reg. 52888 (Aug. 30, 2012) (proposed rule); Regulatory Capital Rules: Advanced Approaches Risk-based Capital Rule; Market Risk Capital Rule, 77 Fed. Reg. 52978 (Aug. 30, 2012) (proposed rule); Regulatory Capital Rules: Regulatory Capital, Implementation of Basel III, Capital Adequacy, Transition Provisions, Prompt Corrective Action, Standardized Approach for Risk-weighted Assets, Market Discipline and Disclosure Requirements, Advanced Approaches Risk-Based Capital Rule, and Market Risk Capital Rule, 78 Fed. Reg. 62018 (Oct. 11, 2013) (final rule, consolidating three proposed rules); Liquidity Coverage Ratio: Liquidity Risk Measurement, Standards and Monitoring, 78 Fed. Reg. 71818 (Nov. 29, 2013 (proposed rule). Section 171 of the Dodd-Frank Act required new capital requirements, but left substantial discretion to the US banking agencies as to what precise requirements to impose.

[238] 78 Fed. Reg. at 62024.

[239] Bank for International Settlements, Basel Committee on Banking Supervision, An assessment of the long-term economic impact of stronger capital and liquidity requirements (Aug. 2010) (estimating both costs and benefits of higher capital requirements), available at www.bis.org/publ/bcbs173.htm (last visited Dec. 25, 2013) [hereinafter, "***BCBS 173***"], and Macroeconomic Assessment Group, established by the Financial Stability Board and the Basel Committee on Banking Supervision, Interim Report: Assessing the Macroeconomic Impact of the Transition to Stronger Capital and Liquidity Requirements (Aug. 2010) (estimating costs of higher capital requirements), available at www.bis.org/publ/othp10.pdf (last visited Dec. 25, 2013), subsequently revised and re-released in final form (Dec. 2010) (same), available at www.bis.org/publ/othp12.pdf (last visited Dec. 25, 2013).

[240] Bank for International Settlements, Basel Committee on Banking Supervision, Results of the Comprehensive Quantitative Impact Study (Dec. 2010), available at www.bis.org/publ/bcbs186.pdf (last visited Dec. 25, 2013), at 1, 4. The Basel Committee compiled those inputs and analyzed the results in a "quantitative impact study," id., and those results are reflected in the Committee's final CBA/FR, supra note 239. This consultation was confidential, at both agency and bank levels, and individual bank or national regulator inputs to the Basel Committee process are not available to the public. Id.

FSA),[241] extended the Basel Committee's CBA/FR in a series of white papers.[242]

Collectively, the work of the Basel Committee and the FSA on Basel III's higher capital rules provide another – and detailed – illustration of what CBA/FR looks like for a financial regulation with large if narrow significance. A review of these publications does not leave a reader with any confidence in using guesstimated CBA/FR to guide regulation. CBA/FR of the new rules required complex social and economic predictions. First, the analysis had to estimate benefits of heightened capital and liquidity requirements, identified as less frequent and/or severe financial crises. Two sub-models were needed, one to estimate the cost of a crisis, and one to predict the frequency of crises. The CBA/FR then faced the challenge of forecasting the causal effect of the requirements on each modeled relationship (incidence and effects). Finally, the CBA/FR had to estimate the costs of the requirements – posited to be lower lending by the banks subject to the rules. Each of these models is discussed below.

3. Costs of a Financial Crisis

Focus first on the costs of a crisis. One pair of commentators has suggested that this element of CBA/FR should be "easy": "Agreement on a figure in the range of $150 billion to $3 trillion (viz., a cost between 1% and 20% of US GDP …) would seem relatively easy to reach given the widely respected estimates of Reinhart and Rogoff..."[243] Unfortunately, this view is too sanguine by more than half. Other estimates of the costs of financial crises range from 90% to 350% of world GDP (Bank of England); 18% to 48% of UK GDP (FSA 42); and 10% to 210% of UK GDP (Yan et al.).[244]

To state the obvious: these ranges do not even overlap. The high end of Posner and Weyl's range (20% of US GDP) is less than one-fourth of the low end of the Bank of England's range, and is barely above the low end of the FSA's range. The high end of the Bank of England's estimate is seventeen times that of Posner and Weyl, and Yan et al.'s is eleven and a half

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[241] The FSA was required to conduct CBA/FR, See note 67 supra.

[242] Ray Barrell, E. Philip Davis, Tatiana Fic, Dawn Holland, Simon Kirby and Iana Liadze, Optimal Regulation of Bank Capital and Liquidity: How to Calibrate New International Standards, FSA Occasional Paper Series No. 38 (July 2009), available at www.fsa.gov.uk/pubs/occpapers/op38.pdf (last visited Dec. 25, 2013) [hereinafter, "***FSA 38***"]; Sebastian de-Ramon, Zanna Iscenko, Matthew Osborne, Michael Straughan, and Peter Andrews, Measuring the Impact of Prudential Policy on the Macroeconomy: A Practical Application to Basel III and Other Responses to the Financial Crisis, FSA Occasional Paper Series No. 42 (May 2012) [hereinafter, "***FSA 42"***], available at www.fsa.gov.uk/pubs/occpapers/op42.pdf (last visited Dec. 25, 2013).

[243] E. Posner and G. Weyl, Benefit-Cost Analysis For Financial Regulation, 103 Am. Econ. Rev. 1 (2013) at 5, citing Carmen M. Reinhart and Kenneth S. Rogoff, This Time is Different: Eight Centuries of Financial Folly (2009).

[244] Andrew G. Haldane, The $100 Billion Question, Speech, Bank of England (March 2010), available at www.bankofengland.co.uk/publications/Documents/speeches/2010/speech433.pdf; FSA 42, supra note 242; Meilan Yan, Maximilian J.B. Hall, and Paul Turner, A Cost-Benefit Analysis of Basel III: Some Evidence from the UK, Working Paper, available at ssrn.com/abstract=1913433 (2013).

times larger. In absolute, comparable, present value dollars, these differences are enormous: trillions, not billions.

One may object, fairly, that Posner and Weyl's estimate is for all future crises, whereas the other ranges are for the recent crisis. But there are two responses. First, with respect to the recent crisis, ranges still vary substantially. Second, as discussed more below, no consensus approach exists to resolve which historical data to use in estimating future crises. Data from 1929, included in Reinhart and Rogoff, on which Posner and Weyl rely,[245] are not obviously more or equally relevant to future crises than data from 2008. A longer set of historical data has the advantage of allowing costs to vary with factors that fluctuate or cycle through historical time, and dampens the effect of differences of estimated costs of any particular crisis. A shorter set of data from more recent periods has the advantages of (a) better modeling current economic, legal and political conditions, including the centrality of finance to the economy,[246] which has arguably increased over time, and the presence of laws and institutions that socialize some of the risks of crises (such as FDIC deposit insurance) and did not exist in 1929, and (b) reducing the number of disputes that can be expected over which crises to include in the dataset. Neither choice clearly dominates.

An examination of CBA/FR conducted for the Basel Committee reveals methodologies and estimates of the costs of crises more disparate than in the studies just summarized. The Committee reviewed twenty-one studies. Two provided estimates of peak-to-trough losses during the crises studied, while thirteen provided cumulative loss estimates. The present value of the average cost in the latter studies ranged from 16% to 302% of pre-crisis GDP. Several include a lower bound of zero (!),[247] while the highest upper bound was 1,041% of pre-crisis GDP. One study presented results from two methods that varied at the mean by a factor of five, and at the high-end by a factor of ten.[248]

The Basel Committee CBA/FR's qualitative summary is "that results in the literature are surprisingly consistent."[249] It is not clear how the authors reached this conclusion: they do not explain it, and it is inconsistent with their statement elsewhere in the report, that one can find "a significant range of crisis outcomes across studies and individual episodes."[250] Presumably, the "significant range" of outcomes is "surprisingly consistent" when

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[245] This date is from Reinhart and Rogoff, supra note 243, at 230. Posner and Weyl do not provide details on which of Reinhart and Rogoff's estimates they used; in some of the latter's datasets, e.g., id. at Table A1, they provide data on crises dating back to 1800 or even 1258. I assume few would use data from the 13th century in modern CBA/FR.

[246] See Part IV.B below.

[247] That a crisis could have zero social cost disconcerted the authors of tBCBS 173, supra note 239, who found the result driven by "definitions of what constitutes a systemic banking crisis. For example, some studies assume that Canada had a banking crisis in 1983. While two small banks failed, experts at the Bank of Canada do not consider this event a systemic banking crisis. Unsurprisingly, most studies find zero output costs for this crisis." Id. at 36.

[248] J.H. Boyd, S. Kwak and B. Smith The Real Output Losses Associated with Modern Banking Crises, 37 Journal of Money, Credit and Banking 977 (2005).

[249] Id. at 34.

[250] Id. at 11.

measured against prior expectations that the results would lack coherence altogether.

The table summarizing their findings – Table A1.1 reproduced here[251] – shows the sensitivity of the results to assumptions and methodological choices. The primary drivers of the sensitivity of results are: (1) selection of historical data points, (2) assumptions about whether economic losses will be permanent or temporary, and if temporary, how long crises will last, and (3) what policy response will be triggered by the crisis. For each driver, a number of choices must be made, and each choice has large effects on the bottom line of the CBA/FR.

For the simplest driver – choice of data – at least three contestable choices are required. First, a "financial crisis" must be defined: crises can be subjectively and judgmentally chosen ("I know it when I see it" approach),[252] or objective, and either way can be based on a variety of data, including market volatility, [253] bank runs, [254] bank closures or nationalizations,[255] bank bailouts,[256] stock market declines,[257] and ratios of non-performing loans to bank assets.[258] Some distinguish banking from market crises; others include banking crises a subset of financial crises.[259] Second, time periods must be chosen – both for the overall dataset (how far back to go in history?), and for each crisis (because the duration of a crisis affects the count and size of effects).[260] Third, one must decide what geographic scope to consider: should one only consider crises in the US, in developed countries (and if so, how to define "developed") or all countries?

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[251] BCBS 173, supra note 239, at 35.

[252] One prominent study asserts the definitions used in it and in other cross-country studies are "qualitative." G. Hoggarth, R. Reis, and V. Saporta, Costs of Banking System Instability: Some Empirical Evidence, 26 J. Banking & Fin. 825, 829 (2002).

[253] E.g., D. Bordo, B. Eichengreen, D. Klingebiel and M. Soledad Martinez-Peria, Is The Crisis Problem Growing More Severe?, Economic Policy: A European Forum, 51–75 (2001), at 55.

[254] E.g., Reinhart and Rogoff, supra note 243, at Table A2; FSA 38 at 12.

[255] E.g., Bordo et al., supra note 253, at 55; Reinhart and Rogoff, supra note 243, at Table A2; FSA 38 at 12.

[256] E.g., Bordo et al., supra note 253 at 55; FSA 38, supra note 242 at 12.

[257] E.g., Boyd et al., supra note 248, at 981.

[258] E.g., FSA 38 at 12.

[259] E.g., E.g., Bordo et al., supra note 253, at 55.

[260] As the FSA noted, the use of binary crisis dummies (as is typical in the studies reviewed here) "inevitably mean that the start and end dates are ambiguous," the use of annual dummies allows for up to 22 months of variance in actual duration without affecting the data used (eleven months for the start date, eleven months for the end date), and, "since the end-dates are to some extent subjectively chosen, there are potential endogeneity problems with estimation: the explanatory variables will be affected by ongoing crises." FSA 38, supra note 242, at 12.

Table A1.1

Cost of a banking crisis relative to pre-crisis GDP[1]

Study	Cumulative losses	Results reported in the literature				
		Mean	Min	Max	Industrial economies[2]	Emerging markets[2]
Difference between GDP at beginning and end of period						
Period from peak to trough[3]						
Reinhart and Rogoff (2009)		9	0	29		
Cecchetti et al (2009)		9	0	42		
Period until growth rate recovers[3]						
Bordo et al (2001) (sample 1973–97)		6			7	6
Bordo et al (2001) (sample 1919–39)		11			12	9
IMF (1998)		12			10	12
Hoggarth et al (2002)		14			13	15
Demirgüç-Kunt et al (2005)		7				
Hutchison and Neuberger (2005)		10				
Infinite horizon (permanent effects)[4]						
Cerra and Saxena (2008)	158	7.5			15	4
Turini et al (2010)	197	9.4				
IMF (2009)	210	10			11	5
Furceri and Zdzienicka (2010)	95	4.5				
Furceri and Mourougane (2009)	42	2	1.5	4		
Barrel et al (2010a)	42	2	0	23		
Cumulative losses						
Period from peak to end of crisis						
Hoggarth et al (2002)	16	16	0	122	21	14
Laeven and Valencia (2008)	20	20	0	123		
Haugh et al (2009)	21	21	10	40		
Cecchetti et al (2009)	18	18	0	130		
Infinite horizon (permanent effects)						
Boyd et al (2005): Method 1	63	63	0	194		
Boyd et al (2005): Method 2	302	302	0	1041		
Haldane (2010)[5]	200	200	90	350		
Crises have no permanent effects[6]						
Average cumulative losses	19					
Median cumulative losses	19					
Crises have permanent effects[7]						
Average cumulative losses	145					
Median cumulative losses	158					
All studies						
Average cumulative losses	106					
Median cumulative losses	63					

Source: BCBS 173 (see note 239 supra at 35).

These choices have large effects on outputs. One study of the costs of financial crises presents two historical samples, with its bottom line estimate doubling depending on which sample is used.[261] Even over the same historical period, one study counts 160 banking crises, including many that caused relatively small losses, reducing the average loss caused by the crises counted, while another study count 23, which caused large average losses.[262]

[261] E.g., Bordo et al., supra note 253.

[262] Boyd et al., supra note 248, at 980 (comparing their choice of 23 crises with 160 "or so" identified by Gerard Caprio, Jr., and Daniela Klingebiel, Bank Insolvency: Bad Luck, Bad Policy, or Bad Banking?, in Annual World Bank Conference on Development Economics (ed. Michael Bruno and Boris Pleskovic) (1997)); see also BCBS 173, supra note 239, at 9 ("Different authors classify

The differences are attributable to (a) basic definitional choices, (b) whether to count poor, developing nations or nations with poorly developed financial markets, and (c) how (and whether) to count countries that experienced multiple crises close in time – if all crises are counted separately, the average cost falls, because some of the crises are brief episodes paving the way to a larger crisis.[263]

Further illustrating the fragility of cost-of-crisis models is the recent kerfuffle involving Reinhart and Rogoff (***R&R***), on whose "widely respected estimates" Posner and Weyl rely. R&R's publications on the effects of crises turned out to be indisputably[264] flawed because of a spreadsheet error that went undetected for over three years,[265] despite being cited prominently in policy debates.[266] While the spreadsheet error caused R&R's analysis to drop data for five countries they intended to include, the error had no effect on their estimates of the ***direct*** costs of financial crises, which was a separate part of their separately published book. However, the error did affect estimates of the depressive effects on growth caused by higher levels of debt incurred as part of a policy response to (and an ***indirect*** cost of) financial crises. As discussed below, whether and how to count indirect effects caused directly by policy responses are further sources of sensitivity in modeling the cost of crises. The same researchers who discovered the spreadsheet error also challenged separate choices by R&R in their analyses, what the critics termed R&R's "selective exclusion of data" (for Australia, New Zealand and Canada) and a "flawed weighting methodology" that amplified the effects of exclusion of New Zealand.[267] While R&R disagree on these points, they do

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crises differently. Reinhart and Rogoff (2008) find 34 crises over the 25 year period, while Laeven and Valencia (2008) report only 24)").

[263] If a stable or smooth relationship existed between the number of crises and the average losses caused by crises, then choices affecting size might be balanced by effects in the second component of the CBA/FR of capital rules, viz., the probability of a crisis, but no such relationship is evident from the studies.

[264] R&R concede the spreadsheet error, see www.nytimes.com/interactive/ 2013/ 04/ 17/ business/ 17economix-response.html (last visited Dec. 27, 2013), but not other critiques of their estimates, see id. Paul Krugman takes R&R to task for their response to their critics. krugman.blogs.nytimes.com/2013/04/16/reinhart-rogoff-continued/. R&R take Krugman to task for his taking them to task. www.carmenreinhart.com/letter-to-pk/.

[265] The original R&R publication was a working paper released in early 2010; the data flaw did not get noticed until 2013. See Carmen M. Reinhart and Kenneth S. Rogoff, Growth in a Time of Debt, NBER Working Paper 15639 (Jan. 2010), available at www.nber.org/papers/w15639.pdf (last visited Dec. 27, 2013); Thomas Herndon, Michael Ash and Robert Pollin, Does High Public Debt Consistently Stifle Economic Growth? A Critique of Reinhart and Rogoff, Working Paper (April 15, 2013), available at www.peri.umass.edu/236/hash/ 31e2ff374b6377b2ddec04deaa6388b1/ publication/ 566/ (last visited Dec. 22, 2013).

[266] As noted in Herndon et al., supra note 265, R&R's 2010 paper "is the only evidence cited in the 'Paul Ryan Budget' on the consequences of high public debt for growth." British politician George Osborne (later Chancellor of the Exchequer) relied on R&R to argue that financial crises are all caused by excessive public debt in a speech quoted in an April 2013 New Yorker article on the R&R kerfuffle, John Cassidy, The Reinhart and Rogoff Controversy: A Summing Up (Apr. 29, 2013), available at www.newyorker.com/online/blogs/johncassidy/2013/04/the-rogoff-and-reinhart-controversy-a-summing-up.html (last visited Dec. 27, 2013), but the speech linked to the New Yorker website has since been removed from the Conservative Party website (www.conservatives.com/ Information/ 404.aspx?aspxerrorpath=/ News/ Speeches/ 2010/ 02/ GeorgeOsborneMaisLecture-ANewEconomicModel.aspx (last visited Dec. 27, 2013).

[267] Herndon et al., supra note 265.

so in part on the ground that their work is history, consisting of "archival research, involving constant judgments at every step."[268]

Even if observers agreed on historical crises to estimate the cost of future crises, two additional output-sensitive inputs (temporary vs. permanent effects and policy response) intensify the unreliability of CBA/FR of Basel III. Some studies assume the effects of a crisis on the economy are transient – i.e., a crisis causes a temporary drop in activity, followed eventually by higher-than-normal "catch-up" growth, bringing long-term output trends back to where they would have been without the crisis. Other studies assume that the effects are permanent – i.e., economic activity never catches up to where it would have been without the crisis (called "scarring"). If one takes the median of the average of estimated losses across studies, as the authors of the BCBS 173 did, the difference caused by this one assumption triples the losses.[269] If harms are large (e.g., 158% of pre-crisis GDP in BCBS 173), then differences between permanent-harm and temporary-harm models are even larger – up to ***a hundred times*** larger.[270] A related force increasing the sensitivity of results in permanent-harm models – which by definition extend into the indefinite future – is the choice of discount rate.[271]

A final source of sensitivity of social costs of financial crises to modeling assumptions is perhaps the most troubling for anyone hoping CBA/FR can produce reliable information: the political and policy response to the crisis. As the last crisis reminded us, a major financial crisis can provoke a range of policy responses. Politicians may bail out banks; tighten, loosen, or repeal regulation; increase liquidity through conventional monetary policy (i.e., cutting interest rates) and less conventional instruments ("quantitative easing"); stimulate activity directly with government spending or tax cuts; other responses; or some combination. Each response can have benefits and costs, ranging from lending constraints, moral hazard and the future frequency of crises; inflation; deficits, debt; and reduced medium to long-term growth. These policy responses can vary in intensity as well. Depending on the policy response, the effect of a crisis can vary significantly, and the models reviewed in the Basel Committee CBA/FR make assumptions about the policy responses and their effects.

To predict policy responses, CBA/FR must include what amounts to political speculation. For if economic inputs to CBA/FR models are

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[268] www.nytimes.com/ 2013/ 04/ 26/ opinion/ reinhart-and-rogoff-responding-to-our-critics.html?pagewanted=2 (last visited Dec. 27, 2013).

[269] BCBS 173, supra note 239, at 3 ("Using the median estimate ... across all comparable studies ... each 1 percentage point reduction in the annual probability of a crisis yields an expected benefit per year equal to 0.2% of output ... when crises are seen to have only a temporary effect... . Using the median estimate ... when banking crises are allowed to have a permanent effect ... each 1 percentage point reduction ... yields an expected benefit per year of 0.6% of output").

[270] BCBS 173, supra note 239, at Table 8 (subtract amounts in column labeled "Net benefits (large permanent effect)" from amounts in column labeled "Net benefits (no permanent effect)," add back "deduct amount in column labeled "Expected costs," and compare difference).

[271] BCBS 173, supra note 239, at 36 ("median losses are sensitive to the choice of discount rate, ... the median loss ... is 82% if a discount rate of 2.5% is used ... [but] is 63% ... if [5%] is assumed"). On discount rates in CBA/FR, see note 192 supra.

uncertain, political inputs are even more so.[272] To see this, simply note the varying policy responses across developed economies to the recent crisis. The US created a much larger fiscal stimulus through deficit spending, relative to the economy or the tax base, while the UK early committed to fiscal retrenchment.[273] The US implemented the most aggressive monetary program in history, through the novel technique of buying massive amounts of mortgage-backed and other fixed income securities, while the European Central Bank remained more focused on preventing inflation, and the Bank of Japan's balance sheet increased only slightly over the crisis period.[274] Policy responses also change in response to learning (or claims to learning) from past crises – compare US recent monetary and fiscal policy to responses to the Great Depression,[275] and to that of Japan during the 1990s[276] – but that implies that predicting future policy requires predicting the future path of economic theory and the results of retrospective analyses of past policy interventions.

These are not second-order considerations. Informed observers have attributed much of the differences in the duration of the current US recession, on the one hand, and the contemporaneous UK recession and the historical US Great Depression, on the other hand, to policy responses.[277] Should the current legitimacy of otherwise desirable regulation turn, to any significant

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[272] See Tetlock, supra note 51.

[273] Edward Ashbee, Fiscal Policy Responses to the Economic Crisis in the United Kingdom and the United States: A Comparative Assessment, in The Legacy of the Crash: How the Financial Crisis Changed America and Britain (ed. Terrence Casey 2011), at 79-100, available at ssrn.com/abstract=1899700 (last visited Dec. 27, 2013).

[274] Michael Joyce, Quantitative Easing and Other Unconventional Monetary Policies: Bank of England Conference Summary, Bank of England Quarterly Bulletin 48 (Q1:2012), available at ssrn.com/abstract=2029661 (last visited Dec. 27, 2013) at 49 (contrasting US and UK versus European Central Bank responses to crisis); Leonardo Gambacorta, Boris Hofmann and Gert Peersman, Unconventional Monetary Policy at the Zero Lower Bound: A Cross-Country Analysis, BIS Working Paper No. 384 (Aug. 1, 2012), available at ssrn.com/abstract=2142513 (last visited Dec. 27, 2013).

[275] E.g., James R. Lothian, U.S. Monetary Policy and the Financial Crisis, 6 J. Econ. Asymmetries 25-40 (2009).

[276] E.g., Mariko Fujii and Masahiro Kawai, Lesson from Japan's Banking Crisis, 1991-2005, ADBI Working Paper No. 222 (June 29, 2010), available at ssrn.com/abstract=1638784 (last visited Dec. 27, 2013).

[277] E.g., Martin Feldstein, Quantitative Easing and America's Economic Rebound, Project Syndicate (Feb. 24, 2011) (suggesting that 2011 economic rebound in US was due to increases in stock prices and consumer spending driven by quantitative easing, which would not be sustainable beyond 2011), available at www.project-syndicate.org/commentary/quantitative-easing-and-america-s-economic-rebound (last visited Dec. 27, 2013); Lothian, supra note 275; Adam S. Posen, Why Is Their Recovery Better Than Ours? (Even Though Neither Is Good Enough), Speech, Bank of England (Mar. 27, 2012) ("US has had significantly more GDP growth with somewhat lower inflation over the last thirty-two months than in the UK ... [because, among other factors]... there was significantly less net withdrawal of fiscal stimulus in the US than UK..."), available at www.bankofengland.co.uk/publications/Documents/speeches/2012/speech560.pdf (last visited Dec. 27, 2013); Jeremy C. Stein, Evaluating Large-Scale Asset Purchases, Speech (Oct. 11, 2012) (large-scale asset purchases by Federal Reserve "played a significant role in supporting economic activity and in preventing a worrisome undershoot of the Committee's inflation objective"), available at www.federalreserve.gov/newsevents/speech/stein20121011a.htm (last visited Dec. 27, 2013).

degree, on debates or assumptions about predictions of future politics? That is what CBA/FR advocates effectively if tacitly presume.[278]

4. Frequency of Financial Crises

Even if the cost of financial crises could be estimated with precision and reliability, it would have to be paired with estimates of the frequency of crises to arrive at an estimate of the benefit from regulations reducing their frequency. This modeling faces similar challenges as for estimating effects: subjectivity in selection among relatively small numbers of historical data points and sensitivity of results to choice of data points. The Basel Committee simply took average frequencies from two studies[279] over an arbitrarily chosen time period and set of countries (1985 to 2009 for G10 and BCBS countries, except Russia and China, which were included from 1992 on) and made the heroic assumption that this average was a good estimate of the probability of a crisis for any given year and country.[280]

The FSA, by contrast, used a longer time period (1970-2007), a narrower set of countries (OECD countries), and relied on a multivariable logit approach relating the likelihood of a crisis in a given year to a vector of explanatory variables, with observed crises in the past coded one and non-crisis years coded zero.[281] This approach relies on the logistic cumulative distribution to predict future crises and is an improvement over BCBS 173 if interdependencies among time-varying observables affect crisis frequency, as seems likely. For example, housing prices have varied over time, and crises often coincide with (partly causing, partly being caused by) bubbles in housing prices, so crisis odds would not be uniform over time, but vary in cycles and across countries. However, the small number of crises that can be modeled this way (FSA 38's data included fourteen) limits the value of this approach, in statistical degrees of freedom and in robustness, and the functional form imposes assumptions on the shape of the distribution of crisis probabilities that is nowhere defended in the FSA's publications.

Because of differences in approach, the FSA's results differ markedly from the Committee's results. BCBS 173 reports an estimated baseline probability of a crisis per year for all countries of 4.5%.[282] FSA 38 reports a baseline probability ranging from 0.7% (for Germany) to 21.7% (for the UK) – that is, from one-sixth to five times the estimate used by BCBS 173.[283]

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[278] It is tempting to suggest that CBA/FR could be made tractable by just ignoring future policy responses in modeling the costs of future crises. But that is to make an implicit assumption, too, and one that is more likely to be counterfactual than an assumption based on past (or at least recent) policy responses, and would tend to inflate the cost of future crises beyond reasonable levels (because every crisis would tend, absent a policy response, to generate large and sustained reductions in GDP, as in the Great Depression). The result would be to greatly expand the range of defensible regulations, and eliminate any disciplining effect of CBA/FR while adding a great deal of camouflage to the regulatory process.

[279] BCBS 173, supra note 239 (citing Reinhart and Rogoff 2008, Laeven and Valencia 2008).

[280] See BCBS 173, supra note 239, at 39 (Table A1.4).

[281] FSA 38, supra note 242, at 10.

[282] BCBS 173, supra note 239, at 9.

[283] FSA 38, supra note 242, at 15 (Table 2).

Again, the sensitivity of outputs to assumptions illustrates how fragile CBA/FR of capital regulation remains.[284]

5. Effects of Higher Capital Requirements on Financial Crises

A third task necessary to estimate the benefits of higher capital requirements is to estimate how higher capital would affect the frequency and effects of future crises. The challenges are similar to those outlined in the case studies of SOX and mutual fund governance above, if slightly less difficult. The challenges are less difficult because capital levels have a more mechanical relationship to bank failure than disclosure and governance regulations have to fraud and fund performance, respectively. If a bank's capital falls below zero, it is by definition insolvent, and will either be closed, nationalized or bailed out (and/or may suffer a bank run) – all of which (at least by most definitions) feed directly into the occurrence of a financial crisis.

Nevertheless, the modeling exercise remains difficult here, too, and includes a long list of challenges. Three are here reviewed: (1) baselines, (2) packages and (3) international externalities. The first question in any CBA is what baseline to use. Similar to the effect of fraud revelation on disclosure practices in the SOX case study, financial crises stimulate banks to raise their capital levels even without regulatory reform. So how should one model the effect of a regulatory mandate for new capital: against the baseline of pre-crisis capital levels, or against levels that could be expected in the wake of the crisis without the regulation? The argument for the former – advanced in FSA 42 – is that "banks will tend to relax their post-crisis holdings of capital as the economic cycle strengthens."[285] This seems sensible as a rough prediction, but it is not anchored in an equilibrium model of bank behavior. After all, banks observe the same indicia of the probability of a crisis as used in the FSA's CBA/FR of Basel III, and bank investors can observe those indicia and bank capital levels, so why should we assume that bank capital levels only subside, rather than rising and falling as the risk of a systemic crisis rises and falls?

A better answer may be that banks face moral hazard due to the likelihood of bailouts and other policy interventions, which blunts private market incentives to hold capital. But that response calls into question the validity of using pre-crisis capital levels as appropriate baselines altogether. Has moral hazard increased, decreased, or remained the same after the bailouts of 2008? FSA 42 asserts that the pre-crisis period was one in which

[284] FSA 42, supra note 242, adds current account balances to the logit model used in FSA 38, and adjust the data for comparability across countries. At 37-38. The modest change significantly "improves" the model's classification performance. Id. at 38 (Table 5.1). FSA 42 also examines a larger family of different crisis prediction models. Id. at 38-45. The authors later present information on the overall uncertainty associated with their bottom-line estimates of the net benefits of higher capital requirements, id. at 60-64, but do not break out the specific potential impact of different models of crisis frequency.

[285] FSA 42, supra note 242, at 47.

"banks' decisions ... were not distorted by the immediate influence of the crisis or regulators' response to the crisis."[286] But surely someone at Goldman, Sachs & Co. was thinking about at least the possibility of a crisis – even if they did not accurately gauge the size of the crisis – when Goldman began to withdraw from and then bet against the subprime market,[287] regardless of whether Goldman committed fraud in doing so.[288] Any rational actor that anticipates a crisis should, given policy responses to past crises, also anticipate a bailout, and the capital levels it will hold will be affected by that anticipation. The better point, then, is that a model of the effect of future capital regulation should start with a baseline that explicitly takes into account moral hazard as permanent condition of financial markets without adequate regulation.

Another challenge is that Basel III consists of a package of reforms, not one reform. As FSA 42 notes,[289] if the probability of a crisis is non-linear in the level of bank capital, as assumed in a logit model (and as seems likely), then the effect on that probability of each piece of the reform package will depend on the sequence in which the pieces are adopted. As with SOX, the best that one may be able to do in estimating the causal impact of a package of reforms is to evaluate the package as a whole. For the CBA/FR of any given package of reforms, this is not a critical problem, but it does undermine the value of CBA/FR because it allows regulators to determine (to an extent) what is being evaluated – and may allow a package to include some reforms that are net positive (if evaluated on their own) with other reforms that would be net negative (if evaluated on their own), as long as the former outweigh the latter.

A third challenge to estimating the causal impact of Basel III, also noted in FSA 42,[290] is that it is a voluntary multilateral initiative, which means that it will be implemented in different ways at different times in different countries. Implementation in one country will affect how banks in other countries act, independent of the effect of implementation by their own regulators. If, for example, UK banks are required to increase capital, they may not only reduce but focus reduced lending on geographies or sectors where interest margins are highest, which in turn may affect currency and trade flows. An increase in US capital regulation under Basel III, being evaluated in a CBA/FR by a US regulator, should take into account the simultaneous shift in lending activity by UK banks, as well as the direct effect on US banks. In a global financial market, the externalities of regulation create modeling difficulties of their own – adding yet more necessary assumptions to how the regulations will actually affect the probability or effects of future crises.

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[286] Id.

[287] Michael Lewis, The Big Short (2010); Gretchen Morgenson and Louise Story, Banks Bundled Bad Debt, Bet Against It and Won, N.Y. Times (Dec. 23, 2009), available at www.nytimes.com/2009/12/24/business/24trading.html?r=4&ref=business (last visited Dec. 27, 2013).

[288] http://www.sec.gov/litigation/complaints/2010/comp21489.pdf (last visited Jan. 4, 2014).

[289] Supra note 242, at 48.

[290] Id. at 50-51.

6. Costs of Higher Capital Requirements: Less Lending?

Finally, the costs of higher capital requirements must be estimated. The standard framework, employed by the Basel Committee and the FSA,[291] is to assume that a bank required to hold an increased amount of capital will cut lending. The reasoning is simple: banks must pay their investors a minimum expected rate of return on their invested capital; if more capital is required, the greater the return a bank must generate; to generate a higher return, a bank must charge more to its borrowers; at a higher cost of borrowing, less lending will occur. With lower lending by banks, the model further assumes, economic output will fall.

As with the models of the benefits of capital requirements, however, models of the effects on the amount of lending, and its knock-on effects on output, require numerous contestable assumptions, and their outputs are sensitive to those assumptions. Among the assumptions are: (a) what is the cost of bank equity and will it fall in response to the change in capital levels required by the rule; (b) what is the ability of borrowers to substitute among different sources of financing (and at what cost), and (c) how will non-bank sources be affected by an increase in bank capital requirements and the reduction in risks and effects of financial crises?[292] Each has major impacts on the output of the cost model alone.

The uncertainties associated with these assumptions are underscored by the fact that one prominent set of economists believe the social costs of higher capital requirements would in fact be "very small ... if in fact there are any at all."[293] The authors point out that higher taxes, if paid by banks as a

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[291] FSA 38, supra note 242, at 39; BCBS 173, supra note 239, at 21.

[292] BCBS 173, supra note 239, at 22 notes that reducing the assumed cost of bank equity from the 1993-2007 average of 14.8% to 10.0% cuts the impact of higher capital requirements from a 1-to-13 basis point impact to a 1-to-7 basis point impact. The report goes on to note that "there are good reasons to believe that the cost of capital would decline in response to a reduction in bank leverage" due to increased bank capital requirements, and that "in the limit, the change in the cost of capital could reduce to tax effects," id., at 22, citing F. Modigliani and M. Miller, The cost of capital, corporation finance and the theory of investment, 48 Am. Econ. Rev. 261–97 (1958), which finds that, under stylized assumptions, a firm's returns are invariant to how it finances itself, but for taxes. As BCBS 173 notes, prior research suggests the long-run effect on banks' funding costs of higher capital requirements is likely to be smaller than the numbers used in BCBS 173 – a four percentage point increase is assumed to increase borrowing costs by 52 basis points in BCBS 173 at 23 (Table 6), versus only 5 to 10 basis points in Douglas J. Elliot, A Further Exploration of Bank Capital Requirements: Effects of Competition from Other Financial Sectors and Effects of Size of Bank or Borrower and of Loan Type, The Brookings Institution (2010), available at www.brookings.edu/~/media/research/files/papers/2010/1/29%20capital%20elliott/0129capitalrequirementselliott.pdf (last visited Dec. 27, 2013); and 10 to 18 basis points in Anil K. Kashyap, Jeremy C. Stein and Samuel Hanson, An Analysis of the Impact of "Substantially Heightened" Capital Requirements on Large Financial Institutions, Working Paper (May 2010), available at faculty.chicagobooth.edu/anil.kashyap/research/papers/ (last visited Dec. 27, 2013). For a discussion of some of the drivers of disagreements on the effect of capital requirements on lending costs, see available Douglas J. Elliott, Higher Bank Capital Requirements Would Come at a Price, Brookings Insstitution (Feb. 20, 2013) at www.brookings.edu/research/papers/2013/02/20-bank-capital-requirements-elliott (last visited Dec. 27, 2013).

[293] Anat R. Admati, Peter M. DeMarzo, Martin F. Hellwig and Paul Pfleiderer, Fallacies Irrelevant Facts and Myths in the Discussion of Capital Regulation: Why Bank Equity is Not Socially

result of shifting from debt to equity finance in response to capital requirements, are not a social cost, because the shift reduces the distortive effects of a socially harmful tax code.[294] They argue that moral hazard induces banks to remain larger than a socially efficient scale, so that even if higher capital induced large banks to shrink, the overall impact on lending would be offset by increases in lending by other banks or financial institutions.[295] By contrast, the Basel Committee, based on its modeling, and inputs from self-interested private banks, concluded that the proposed requirements in Basel III would reduce of steady-stage output (i.e., gross domestic product) by between 0.25 and 0.92 percentage points, as BCBS 173 concludes,[296] which translates into $1.4 ***trillion*** in present value terms, for the US alone. As with estimates of benefits, differences in respectable CBA/FR opinion vary the present value of Basel III's costs by more than $1 trillion.

D. Case Study #4: The Volcker Rule

As a final example, consider Section 619 of the Dodd-Frank Act – colloquially known as the "Volcker Rule"[297] – which bans US banks from speculating for their own account, i.e., from engaging in "proprietary trading" or holding "ownership interests" in hedge or private equity funds, subject to a number of exceptions. Rules implementing that part of the statute were approved after many delays in December 2013, and are scheduled to go into effect April 1, 2014.[298] The releases by the financial agencies contain no general CBA/FR, because (1) as discussed in Part II.A, no general CBA/FR mandate exists for those agencies, (2) the statutory requirement for and authorization of the rules is part of the Bank Holding Company Act of 1956,[299] which does not contain any equivalent to the requirement in the securities laws that the SEC consider "efficiency" or in

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Expensive, Working Paper (Oct. 22, 2013), at 1. These authors also rely on Modigiliani and Miller, supra note 292.

[294] Id. at 19-20.

[295] Id. at 21-23.

[296] BCBS 173, supra note 239, at 27 (Table 7, column titled "Average").

[297] Codified at 12 U.S.C. § 1851. The rule is so-called because a prominent backer of the law was former Federal Reserve Board Chairman Paul Volcker.

[298] The banking agencies and the SEC issued a joint final rule. Prohibitions and Restrictions on Proprietary Trading and Certain Interests in, and Relationships with, Hedge Funds and Private Equity Funds, available at www.sec.gov/rules/final/2013/bhca-1.pdf (last visited Dec. 30, 2013) [hereinafter ***Joint Volcker Rule Release***], codified at 12 CFR Part 44 (OCC); 12 CFR Part 248 (Federal Reserve); 12 CFR Part 351 (FDIC); 17 CFR Part 255 (SEC). The CFTC issued a final rule separately, available at www.cftc.gov/ucm/ groups/ public/ @newsroom/ documents/ file/ federalregister121013.pdf (last visited Dec. 30, 2013) (codified at 17 CFR Part 75).

[299] 12 U.S.C. § 1841 *et seq.* The Bank Holding Company Act of 1956 (BHCA) initially contained a broad regulatory delegation of authority to the Federal Reserve Board to "issue such regulations and orders as may be necessary to enable it to administer and carry out the purposes" of the Act "and to prevent evasions thereof." 84 Cong. Ch. 240, May 9, 1956, 70 Stat. 133. That provision remains in 12 U.S.C. § 1844, with amendments to clarify that the authority includes power to adopt capital requirements for bank holding companies.

the commodities laws that the CFTC consider costs and benefits,[300] and (3) nothing in the language of Section 619 required CBA.[301] The rulemaking did contain limited cost-related information in its analyses under the RFA and the PRA,[302] but no information about benefits or non-compliance costs.

Suppose an agency had performed a CBA/FR of the Volcker Rule – what would it look like? The qualitative benefits are easy to sketch: reduced risk of bank failures and financial crises; reduced risks of conflicts of interest; and reduced risks that banks do not have effective liability for nominally off-balance sheet funds they sponsor.[303] The qualitative costs are also easy to sketch: reduced liquidity in markets where banks were significant trading participants, which attendant reduction in the depth of those markets and the ability of issuers to raise capital in those markets.[304] A conceptual CBA could elaborate on each of these effects, outlining the analyses and describing data that would allow in principle for these effects to be monetized.

Could the agencies go beyond conceptual CBA and conduct a reliable, precise, quantified CBA/FR? The short answer is no. There is simply no historical data on which anyone could base a reliable estimate of either the costs or the benefits of preventing banks from engaging in proprietary trading or investing in hedge and private equity funds. Any effort to quantify

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[300] See note 6 supra. This is true even though the SEC and the CFTC were also required to adopt the Volcker Rule, because their authority (and mandate) to do so is (unusually) in the BHCA, not the statutes that traditionally authorize them to act. Joint Volcker Rule Release at 11.

[301] The specific section of the BHCA added by the Dodd-Frank Act that authorizes the Volcker Rule (12 U.S.C. § 1851) contains a similarly broad grant of authority, and does not condition rulemaking on any particular finding or process, other than (1) to "consider" a statutorily mandated January 2011 study of how to implement the section conducted by the Financial Stability Oversight Council (available at www.treasury.gov/ initiatives/ documents/ volcker%20sec%20%20619%20study%20final%201%2018%2011%20rg.pdf (last visited Dec. 28, 2013), and to (2) coordinate rulemaking among the Federal Reserve Board, FDIC, OCC, SEC and CFTC so as to assure "to the extent possible, that such regulations are comparable and provide for consistent application" and to "avoid providing advantages or imposing disadvantages to the companies affected" and "to protect the safety and soundness of banking entities and nonbank financial companies supervised" by the Federal Reserve.

[302] Joint Volcker Rule Release, supra note 298 at 876 (under the PRA, supra note 68) and 877-80 (under the RFA, supra note 69). The American Bankers Association (ABA) and other plaintiffs sued to enjoin enforcement of the Volcker Rule on the ground that the agencies' RFA analysis failed to consider the rule's "significant economic impact on a substantial number of community banks." See Emergency Motion of Petitioners For Stay of Agency Action Pending Review, American Bankers Association v. Board of Governors of the Federal Reserve System et al., D.C. Cir. No. 13-1310 (Dec. 24, 2013), available at bit.ly/1dIwJkq (last visited Jan. 4, 2014), at 15. The Joint Volcker Rule Release specifically addressed potential impacts by exempting banks below various specified size thresholds from reporting and compliance burdens. The ABA suit focuses on one indirect effect of the rule, which is to ban "banking entities" (including all depository institutions, small or large) from holding "ownership interests" in hedge and private equity funds (subpart C of the Volcker Rule), including ***debt*** instruments that give holders the right to remove a collateral manager for a collateralized debt obligation — an entity that holds multiple trust-preferred or other securities, which (as the ABA in its motion papers admits) collapsed in value during the financial crisis.

[303] Financial Stability Oversight Council, Study and Recommendations on Prohibitions on Proprietary Trading and Certain Relationships with Hedge Funds and Private Equity Funds (January 2011), available at 1.usa.gov/1dnrB56 (last visited Dec. 31, 2013).

[304] James D. Cox, Jonathan R. Macey and Annette L. Nazareth, A Better Path Forward on the Volcker Rule, Bipartisan Policy Center Report (Oct. 2013), available at www.sec.gov/comments/s7-41-11/s74111-648.pdf (last visited Jan. 3, 2014), at 8.

those benefits runs straight up against the difficulties described in the case studies above: the Basel III study addresses financial crises (e.g., macroeconomic modeling, subjective data selection, predicting policy responses); the mutual fund study addresses conflicts of interest (e.g., causal inference with low-powered tools about complex institutional arrangements), and the SOX 404 study addresses risks associated with misleading accounting such as may attend off-balance sheet fund sponsorship (e.g., numerous contestable conceptual questions relating to action-forcing disclosures, costs, incidence and externalities of misleading information).

Quantifying the costs of the rule would be equally difficult, as it would require first estimating the impact of the rule on liquidity in a range of financial markets (including anticipating entry by institutions not subject to the rule, which could be expected to take advantage of any competitive opportunities opened up by the exit of banks subject to the rule). That estimate would have to then be linked to an estimate of the impact on the cost of capital from any expected reduction in the liquidity of one channel for capital raising, again taking into account possible substitution effects from other channels. Then, finally, the effects on output of any estimated capital cost increase would have to be quantified, using a macroeconomic model. As with Basel III, the result would be complex, difficult, constrained by limited data, highly contestable and sensitive to modeling assumptions.

E. "Gold-Standard" Examples of CBA/FR

Perhaps the case studies presented above are not fully representative of the range of financial regulation. Perhaps other significant regulations would be more susceptible to quantified CBA/FR. Taking a cue from inference in the adversarial legal system, in which neutral judges rely on advocates to advance the best evidence in favor of a cause, this section reviews two regulations that CBA/FR proponents hold them up as examples of "gold standard" quantified CBA/FR[305] – the SEC's cross-border swaps rules, and the FSA's mortgage market reforms – on the theory that they should provide the best evidence that quantified CBA/FR is capable of being done in a reliable, precise way. These rules are also high profile and indisputably significant, and are of interest for evaluating CBA/FR law because the agencies did conduct and publish CBA/FR for them, and because both respond to CBA/FR law: the SEC was responding to the D.C. Circuit Court decisions reviewed above, and the FSA was complying with a UK statute requiring CBA/FR, precisely the kind of mandate that CBA/FR advocates hope to bring to the US. Does either of those rules demonstrate that quantified CBA/FR is feasible and desirable? Far from it – they instead show how easily CBA/FR can camouflage the effects of rulemaking, rather than to discipline it.

[305] CCMR Report, supra note 4 at 13-16.

1. The SEC's Cross-Border Rules on Swaps

One of the few examples of CBA/FR of US financial regulatory rules praised by CBA/FR proponents is by the SEC, in its proposed rules on cross-border swaps under the Dodd-Frank Act (the ***Cross-Border Swap Release***).[306] Those rules are to fill a regulatory gap[307] – over over-the-counter (***OTC***) derivatives markets, which exploded over the past two decades and exacerbated the 2008 financial crisis, causing the insolvency of one of the world's largest insurance companies (i.e., AIG) and triggering a bailout through an unprecedented series of actions by the US Treasury and the Federal Reserve Board.[308]

The Dodd-Frank Act authorizes the SEC and the CFTC[309] to register and regulate entities active in the OTC swap markets;[310] establish rules for clearing and trade execution, recordkeeping, real-time reporting and disclosure. Pursuant to this authority, the SEC (in conjunction with the CFTC) has issued two releases defining terms[311] and proposed or adopted ten (!) sets of rules on domestic swap activities.[312] The Dodd-Frank Act was

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[306] Cross-Border Security-Based Swap Activities, Exchange Act Rel. No. 34-69490 (May 1, 2013), available at www.sec.gov/rules/proposed/2013/34-69490.pdf [hereinafter, ***Cross-Border Swap Release***].

[307] The gap was created by the Commodity Futures Modernization Act of 2000, Pub. L. 106-554, 114 Stat. 2763. The 262-page bill, attached as an appendix to a budget bill, barred the SEC from regulated OTC derivatives as "securities" and the CFTC from regulating them as "futures," leaving regulation to deal with them only through general (and much less specific) "safety and soundness" oversight by regulatory supervisors of OTC issuers and users (which was non-existent for companies that did not accept deposits, invest or deal in securities or futures, or underwrite or sell insurance, including companies that were affiliated with regulated entities, such as AIG). Sheila Bair, Bull by the Horns: Fighting to Save Main Street from Wall Street and Wall Street from Itself 333 (Free Press eds., 2012); Simon Johnson & James Kwak, 13 Bankers: The Wall Street Takeover and the Next Financial Meltdown 7-11, 78-82, 92, 121-26, 134-37, 169-70, 202 (2010).

[308] See Federal Reserve Board, Report Pursuant to Section 129 of the Emergency Economic Stabilization Act of 2008: Restructuring of the Government's Financial Support to the American International Group, Inc. on March 2, 2009, available at www.federalreserve.gov/ monetarypolicy/ files/ 129aigrestructure03022009.pdf (last visited Dec. 30, 2013).

[309] The CFTC now regulates "swaps," the SEC now regulates "security-based swaps," and both have authority over "mixed swaps." Dodd-Frank Act sections 721 and 761. A "swap" is a contract that requires conditional payments between counterparties derived from changes in specified prices or events, generally related to financial markets, such as interest or currency exchange rates, but can also include "credit" events, such as the default by a borrower on an unrelated "reference" security or loan.

[310] Regulated entities include swap dealers, major swap participants, data repositories, clearing agencies, and execution facilities. Where regulated by the SEC, relevant entities have the phrase "security-based" added to qualify "swap," but otherwise the definitions are identical to those adopted by the CFTC for other swaps. "Market swap participants" are generally persons with "daily average current uncollateralized exposure" of $1 billion (or $3 billion for rate swaps). SEC Release No. 34-66868 (Apr. 27, 2012), 77 FR 30596 (May 23, 2012) at 30751-30753.

[311] SEC Release No. 34-67453 (July 18, 2012), 77 FR 48208 (Aug. 13, 2012) (adopting product definitions); SEC Release No. 34-66868 (Apr. 27, 2012), 77 FR 30596 (May 23, 2012) (adopting intermediary definitions); see also SEC Release No. 34-63452 (Dec. 7, 2010), 75 FR 80174 (Dec. 21, 2010) (proposing intermediary definitions).

[312] SEC Release No. 34-68080 (Oct. 22, 2012), 77 FR 66220 (Nov. 2, 2012) (adopting clearing agency standards); SEC Release No. 34-67286 (June 28, 2012), 77 FR 41602 (July 13, 2012) (adopting clearing procedures); SEC Release No. 34-68071 (Oct. 18, 2012) 77 FR 70214 (Nov. 23, 2012) (proposing capital, margin and segregation rules); SEC Release No. 34-65543 (Oct. 12, 2011), 76 FR 65784 (Oct. 24, 2011) (proposing registration rules for dealers and major swap participants); SEC Release No. 34-64766 (June 29, 2011), 76 FR 42396 (July 18, 2011) (proposing external business

clear that swap regulation should also cover cross-border activity that could affect the US markets. To that end, the SEC proposed in May 2013 to address cross-border swaps comprehensively, issuing one large release collecting, discussing and analyzing all of the swap-related rules as they would apply to cross-border activities. That release contains ~200 pages labeled "economic analysis," or roughly 31% of the total release – including both conceptual and limited elements of quantified CBA/FR – and cross-referenced lengthy CBA/FR in previously issued releases.[313] By comparison to CBA/FR in most prior SEC releases, the length of the CBA/FR is indeed impressive, which is part of why CBA/FR advocates praised the release.[314] The SEC's CBA/FR was also praised because it focused on full, quantified CBA/FR, "estimating the ***quantitative*** impact of ***each key aspect*** of the proposed rule, rather than simply assess firm specific compliance costs."[315]

However, a careful (if exhausting) review of the CBA/FR in the Cross-Border Swap Release shows that it is comprehensive only in its ***qualitative*** economic analysis of the proposed rules, and contains little quantified information, other than for a subset of compliance costs. As noted in passing towards the beginning of the CBA/FR, "Many of the resulting costs and benefits are difficult to quantify with any degree of certainty, especially as the practices of market participants are expected to evolve and adapt to changes in technology and market developments."[316] The SEC divides its CBA/FR into "assessment" costs – i.e., costs of determining if a given entity is subject to swap regulation, a subset of compliance costs – and "programmatic" costs and benefits due to subjecting swaps to regulation. The primary programmatic benefits the SEC identified were the promotion of competition by increasing market access and transparency, reducing search costs, and increased price efficiency.[317] The primary programmatic costs the SEC identified were reduced liquidity and depth in the swaps markets due to market participants withdrawing because transparency requirements will reveal valuable information, and a potentially increased incentive to "race to the bottom," as participants relocate cross-border operations to jurisdictions with less regulation.[318]

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conduct standards); SEC Release No. 34-63727 (Jan. 14, 2011), 76 FR 3859 (Jan. 21, 2011) (proposing trade acknowledgement rules); SEC Release No. 34-63347 (Nov. 19, 2010), 75 FR 77306 (Dec. 10, 2010), corrected at 75 FR 79320 (Dec. 20, 2010) and 76 FR 2287 (Jan. 13, 2011) (proposing data repository rules); SEC Release No. 34-63825 (Feb. 2, 2011), 76 FR 10948 (Feb. 29, 2011) (proposing execution facility rules); SEC Release No. 34-63346 (Nov. 19, 2010) (RIN 3235-AK80), 75 FR 75208 (Dec. 2, 2010) (proposing reporting rules); SEC Release No. 34-63556 (Dec. 15, 2010), 75 FR 79992 (Dec. 21, 2010) (proposing end-user exceptions).

[313] See SEC Release No. 34-68071 (Oct. 18, 2012) 77 FR 70214 (Nov. 23, 2012) at 70299-70328 (economic analysis taking up roughly 20% of the total release); SEC Release No. 34-68080 (Oct. 22, 2012), 77 FR 66220 (Nov. 2, 2012) at 66263-66284 (economic analysis taking up roughly 30% of the total release); SEC Release No. 34-66868 (Apr. 27, 2012), 77 FR 30596 (May 23, 2012) at 30722-30742 (economic analysis taking up roughly 12% of the total release).

[314] CCMR Report, supra note 4 at 14.

[315] Id. (emphasis added). The CCMR Report, id., does not provide any specific cites or examples from within the Cross-Border Swap Release to back up this characterization.

[316] Cross-Border Swap Release, supra note 306, at 386.

[317] Id. at 413-16.

[318] Id. at 416-18.

Almost no information relating to "programmatic" costs and benefits is quantified. No models of competition, liquidity or prices under the rules are presented. Instead, the SEC repeatedly says that it lacks data and/or an inferential basis for quantifying those costs and benefits. Exceptions include, for example, a quantification of the costs of building a compliant swap execution facility from scratch and then maintaining it thereafter, or to modify an existing trading platform to comply and to maintain it[319] – but these exceptions only prove the general absence of quantification, as they relate to a subset of the costs of a subset of the rules proposed in the release – a subset of a subset of a subset of what a full quantified CBA/FR would include.

This description is not meant to criticize the absence of quantification. The SEC's decision not to quantify is entirely justified, given the state of available information and research methods. The Dodd-Frank Act effectively required creation of entirely new OTC swaps markets. Private actors will be reacting to these novel regulations in ways that almost certainly cannot be reliably predicted. The realization of the rules' major potential benefit – increased competition – depends upon latent demand for products – transparently cleared swaps – which private actors had only limited incentives to provide under prior rules, and whose value will be altered by other new aspects of the rules, such as segregation and capital requirements. The realization of the rules' major potential cost – reduced liquidity and depth relative to prior markets – will also be a function of latent demand, as well as the importance of proprietary information that may be revealed in more transparent markets. Another major potential cost – an increased incentive for participants to relocate to other jurisdictions – depends on political and policy outcomes in other countries, as well as the ability of international regulatory coordination to cope with or blunt those incentives.

Although justified in this respect, the SEC's CBA/FR nevertheless must be fairly viewed as conceptual, and not quantified. Rather than showing quantification is possible and desirable, as a matter of policy or law, the Cross-Border Swap Release shows just the opposite. Yet CBA/FR advocates have singled out the Cross-Border Swap Release for accomplishing something it did not accomplish. How could that be? Perhaps the praise was false, a mere rhetorical pretense in service of the political goal of promoting CBA/FR.

But a more charitable possibility exists: perhaps CBA/FR advocates did not see through the camouflage of the SEC's release. As noted, the CBA/FR is 200 pages long, and incorporates lengthier CBA/FR sections in other related releases. It is turgid, vague, and full of jargon. Discussions of less

[319] Cross-border Swap Release, supra note 306, at 508-09. In the discussion of the benefits of the rules covering swap executive facilities, there is no quantification, nor does the release quantify major potential non-compliance costs of such rules, which are noted in qualitative terms in the release – the possibility that disclosure obligations would drive swap participants from the market, reducing liquidity, or to force participants to fragment trades to discourage front-running, resulting in greater transaction costs. Id. at 505-08 (benefits) and 501-12 (nonquantifiable costs).

important assessment costs are longer than discussions of more important programmatic costs and benefits. Specific quantified amounts appear regularly, so someone skimming the analysis might surmise it was filled with quantitative analysis, while in fact the vast majority of the amounts relate to assessment costs or a small subset of programmatic costs, and not to programmatic benefits or the most important programmatic costs. The release contains lengthy discussions of qualitative costs and benefits of a *de minimis* exemption from coverage by the rules, while nowhere setting forth a detailed conceptual outline of how one might (in theory) measure the costs and benefits of being covered by the rules. Important points relevant to the limited quantification in the release are buried in footnotes,[320] while whole pages are taken up with text such as this:

> Segregation requirements would limit the potential losses for security-based swap customers if a registered security-based swap dealer fails. The extent to which assets are in fact protected by proposed Rule 18a-4(a)-(d) would depend on how effective they are in practice in allowing assets to be readily returned to customers. In the cross-border context, the effectiveness of the segregation requirement with respect to foreign security-based swap dealers in practice may depend on many factors, including the type and objective of the insolvency or liquidation proceeding and how the U.S. Bankruptcy Code, SIPA, banking regulations, and applicable foreign insolvency laws are interpreted by the U.S. bankruptcy court, SIPC, Federal Deposit Insurance Corporation, and relevant foreign authorities. In the Capital, Margin, and Segregation Proposing Release, we stated that it would be difficult to measure the benefits of the segregation requirements proposed by the Commission under Section 3E of the Exchange Act; however, we believe that Rule 15c3-3, the existing segregation rule for broker-dealers, would provide a reasonable template for crafting the segregation requirements for security-based swap dealers. The ensuing increased confidence of market participants when transacting in security-based swaps, as compared to the OTC derivatives market as it exists today, should increase the desire to trade security-based swaps and generally benefit market participants.[321]

Perhaps someone finds this and similar paragraphs illuminating. I do not. Did including it in a 200-page section labeled "economic analysis" in a 650-page release inform the public about the costs and benefits of requiring

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[320] For example, in assessing how much voluntary swap clearing is already occurring, the release notes (at note 1618) that "if the counterparties choose to transact in a reference entity that is accepted for clearing in a currency other than U.S. dollars, the transaction is no longer eligible for clearing." This fact would be of significance for assessing the rules, since one would expect many cross-border swaps to be denominated in other currencies. No data on the currency profile of cross-border swaps is provided. As another example, the release places in a footnote (at note 1549) the fact that less than 5% of margin received by swaps association members was segregated with a third-party custodian. This fact directly bears on the potential gross benefits of a rule requiring segregation.

[321] Cross-Border Swaps Release at 467-68 (footnotes omitted!).

dealers in cross-border swaps to segregate customer assets? In what way is it even "economic" analysis? It would look out of place in an economics journal. Even if these 210 words were boiled down to a more succinct, social-scientific style,[322] would a law requiring such a statement discipline the SEC, improve the public's ability to comment on the proposals, or correct the SEC's potential cognitive biases? I cannot see how.

Again, I do not intend to criticize the authors of the Cross-Border Swaps Release – to the contrary, I commend them. They accomplished an important goal – eliciting praise from a group of critics of the SEC's CBA practices – and likely helped set up the SEC to defend itself against any court challenges to its rules. The staff accomplished here what any rational actor at a regulatory agency would want to accomplish, given the court decisions reviewed in Part II above, which have created a strong incentive for regulators to invest resources in generating precisely the kind of qualitative, lengthy and largely opaque "gold-standard" CBA/FR included in the Cross-Border Swap Release.

2. The FSA's Mortgage Market Reforms

A second example held up as model CBA/FR is the set of mortgage market rules passed by the FSA in 2011. The FSA was abolished in 2010 (effective in 2013) for its failures to foresee, prevent or mitigate the 2008 crisis.[323] Among its pre-crisis failures was allowing significant amounts of mortgage loans to be made to borrowers who could not repay the loans other than by refinancing or reselling their homes into what optimists hoped would be an ever-rising market.[324] Reforms adopted in 2011 require lenders to assess affordability of homes before lending to buyers, to include the possibility of interest rate increases in making those affordability assessments, and to evaluate interest-only mortgages without assuming the possibility of a refinancing.[325]

a. The FSA's CBA/FR

Since 2000, UK law has required the FSA to publish a CBA/FR of its regulations and guidance,[326] such as the mortgage reforms. That 131-page CBA/FR was attached as an annex to the reform proposal (a "consultation

[322] I think 35 words could preserve the meaning: "segregation may protect customers, depending on US and foreign laws, and if so may increase market confidence and the value of swaps, consistent with our experience with broker-dealer segregation, but those benefits cannot be quantified."

[323] George Parker and Brooke Masters, Osborne Abolishes FSA and Boosts Bank, Financial Times (June 16, 2010). The theory of the split-up of the FSA was that it had neglected systemic issues due to a "pre-occupation with consumer protection matters." Eilis Ferran, Regulatory Lessons from the Payment Protection Insurance Mis-Selling Scandal in the UK, 13 Eur. Bus. Org. L. Rev. 247, 248 (2012). Going forward, the Prudential Regulation Authority is meant to engage in "macroprudential" supervision, while the Financial Conduct Authority will govern consumer finance. Id.

[324] FSA, Mortgage Market Review: Proposed Package of Reforms, Consultation Paper CP11/31 (Dec. 2011), at 1.

[325] Id.

[326] See note 67 supra.

paper" in European legal jargon).[327] In it, the FSA summarized the benefit of the main reform (mandatory affordability analysis) as protecting some borrowers "from mortgage impairment," and its cost as "preventing [other borrowers] from taking out the mortgage they want."[328]

In an effort to quantify and compare those primary benefits and costs, the FSA used a multistep process. First it applied a multivariate logistic model to a large (n=730,000) sample of loans from 2005 to 2010, to estimate the probability of loan "impairment."[329] It then used ordinary least squares regression of the probability of impairment on factors it selected as contributing to impairment to quantify the contribution each factor made to impairment risk.[330] It used "judgment" to choose factors relevant to loan underwriting to identify a cut-off where impairment risk increased "markedly,"[331] on the theory that this was where the new affordability requirement would have affected sample loans.[332]

With those models, the FSA concluded that the rules would have prevented ~200,000 loans that went into default ("unaffordable" loans), and constrained ~530,000 borrowers to take out smaller or delayed loans than

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[327] Id. at Annex 1 (pages A1:1 et seq.).

[328] The FSA's conceptual CBA/FR is much more complex than depicted in the text – in one figure alone (Figure A2.1, at A1:11), it identifies four channels for reforms to affect welfare by cutting both affordable and unaffordable loans and increasing the suitability of loans made: (1) reducing resources spent on loans in arrears or repossession; (2) changing welfare from fewer loans; (3) changes in the buy-to-let mortgage market; and (4) lower home prices. The reforms also affect competition and increase compliance costs, so increasing mortgage prices, so contributing to lower home prices. Lower home prices would cut the odds of a new crisis, benefiting the economy, and also affect the economy through the rental, savings, and pension markets. All this would be happening simultaneously with changes in the identified baseline, such as market corrections in the home loan market; stricter prudential requirements, such as those imposed under Basel III; the collapse and re-launch of a new securitization market; changes in the supply and demand for housing due to government policy changes, partly driven in turn by the macroeconomic loss. The FSA's efforts to guesstimate the costs and benefits of the reforms aim at a subset of these channels. Other effects (e.g., changes in monetary or fiscal policy, effects on the "buy-to-let" market, effects on competition) are not quantified "because they are unlikely to be significant or because data constraints prevent us from providing any meaningful estimate." Id. Also not quantified were benefits from reduced transfers of homes from borrowers to mortgagors, because although reducing transfers "is likely to be regarded as socially beneficial ... it is difficult to assess the size of the benefit relative to the size of the transfer." Id. at A1:27. Nevertheless, despite this complexity, the bottom-line of its CBA is driven by what is described in the text. Id. at A1:8-9 ("Overall CBA balance" is dominated by net well-being benefit).

[329] Impairment was defined as either being in arrears (i.e., paying late) or having a home repossessed. Id. at A1:27. The breakdown between these types was roughly 85% / 15%. Id.

[330] For the other two reforms, the FSA used a separate "model" that simply identified a subset of loans that passed the affordability test but were made to borrowers with high-debt-service ratios (mortgage payments to after-tax income), which was taken as a proxy for loan non-affordability. Id.

[331] This cut-off point was identified by looking visually at a plot of the average underwriting risk scores by the lenders in its sample, identifying a region in which the scores increased at an increasing rate, selecting the midpoint of the visually identified range, and usually the average underwriting score for the lender so identified. Id at A1:35. It then arbitrarily chose a range that bracketed this score by a round +/- 0.1. Id. at A1:36.

[332] The FSA broke its sample into two sub-periods – 2005 to 2007 and 2009 to 2010 to "construct different estimates of the impacts the affordability assessment would have in boom and subdued periods of lending." Id. at A1:39. The FSA does note that this period experienced generally low (by historical standards) and falling interest rates, which likely means its estimates of loan defaults is low by historical standards, which may have led it to underestimate the benefits of its rules. Id. at A1:32.

they could have taken out and repaid without the rules.[333] The FSA then assumed the rules would prevent similar future defaults, which the FSA assumed would create solely social costs and so count solely as benefits of the rules.[334] The FSA further assumed the rules would generate social costs but no benefits if they prevented or delayed borrowers who could have afforded larger or earlier loans from obtaining consumption benefits.[335]

To quantify a comparison between these direct costs and benefits of the new rules on borrowers, the FSA needed a common metric. Because the FSA had no data on actual demand for loans in a hypothetical world without information asymmetries (the market failure addressed by the rules),[336] it estimated effects not on welfare but psychological "well-being," for which it had proxy data, derived from a UK government household panel survey with data from 1991 to 2008.[337] By regressing self-reported well-being scores on "housing-related events" in a fixed-effects regression with other controls from the survey, it generated parameters[338] for changes in well-being for events that were (by assumption) related to unaffordable loans (e.g., payment problems) or affordable loans (e.g., becoming a home owner rather than a renter, moving into a larger home). The FSA found effects on well-being were "much greater" for payment problems and defaults than for foregone improvements in housing,[339] such that the net effects on all affected borrowers are positive overall, despite being expected to stop more affordable loans than unaffordable loans.[340]

While this procedure allowed for a comparison of direct effects of the rule, it by design did not ***monetize*** the effects for use in a full, quantified CBA. To do that, self-reported well-being figures needed to be converted to pounds, to compare to other costs and benefits. Nevertheless, the FSA

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[333] To do this, the FSA estimated the likely impact of the reforms on the size of loans that would be made, breaking down loans into new buyers, home movers, and refinancings. Id. at A1:70-71. For new buyers, loans were reduced until they "complied" with the rules under the FSA's model, unless the reduction exceeded an arbitrarily chosen 30%, at which point the FSA assumed (absent data) the loan would be foregone. For other borrowers, they estimated the impact on the marginal increased loan of the new rules. Of these, the FSA estimated that 75,000 would obtain a smaller mortgage while the rest would be pushed to delay their borrowing. Id. at A1:79.

[334] The FSA partly motivates this strong pair of assumptions by further assuming that "most borrowers would prefer to borrow affordably." Id. at A1:76.

[335] "Others whose borrowing is affected by the [rules] would in any case not have experienced mortgage impairment. These consumers experience ***only*** a reduction in well-being (a cost), for example from having to buy a less desirable property, from delaying their property purchase or, in the case of some remortgagors, from not obtaining desired additional lending to support consumption." Id. at A1:26 (emphasis added). The FSA implicitly defends this assumption with the claim that "some of these would have been willing and able to deal with high repayment burdens without much stress." Id. at A1:78.

[336] Id. at A1:76.

[337] Id. at A1:80.

[338] The FSA refers to them as "weights." E.g., id. at A1:82-84.

[339] The FSA generated a variety of comparative statics, for different subgroups of borrowers and different types of housing-related events. Id. at A1:82-83. Because of the variety of comparisons possible, there is no single ratio that emerges from the analysis, other than the general, qualitative conclusion that effects of payment problems and defaults are "much greater" than the effects of delayed or foregone housing improvements. Id.

[340] Id. at A1:84. Positive effects in housing booms were larger than slightly negative effects in subdued markets. Id.

exploited the happenstance that well-being impacts of loans being in arrears were similar in size to those of being unemployed, a condition more easily monetized by reference to income data.[341] The bottom line was an average benefit of 350 pounds per borrower over the period 2005-2010.[342] Added to this was an additional benefit 10 pounds per borrower in the form of fees and repossession costs the rules would have prevented.

Finally, the FSA estimated compliance costs for the new rules at between 47 and 170 million pounds per year, for an average of 109 million pounds per year, based on a combination of its own survey of lenders, input from a consulting group (Oxera) that conducted its own surveys, and internal FSA data. Using the FSA's discount rate of 3.5%[343] one can derive a present value of compliance costs of between 1.3 and 4.9 billion pounds. The FSA did not explain how it was able to relate the per-borrower benefits it estimated from its main analyses to the per-year compliance costs it estimated. However, it did present a per-borrower compliance cost (120 pounds per borrower), which can be related to its aggregate average compliance cost estimate (109 million pounds per year), to derive a per-year benefit from the earlier analyses of 300 million pounds per year. Using the FSA's 3.5% discount rate, that annual amount has a present value of 9 billion pounds. The bottom-line implicit in the FSA's analysis, then, is a total benefit (net of compliance costs) of 6 billion pounds.

Separately, the FSA used a macroeconomic ("NiGEM")[344] model to estimate effects of the rules on output. With many assumptions,[345] the model predicted six categories of sequential monetary impacts.[346] The long-run effects in the sixth category – increased output from increased business investment – more than outweighed categories (such as reduced home lending, home prices and household consumption) that would reduce output in the short-run. The net effect was estimated at 300 million pounds more per year of output. Using the FSA's discount rate of 3.5%, the present value

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[341] Id. at A1:85.

[342] Id. at A1:8, and A1:86.

[343] Id. at A1:112.

[344] The National Institute for Economic and Social Research created the model, and describes it as using "a 'New-Keynesian' framework in that agents are presumed to be forward-looking but nominal rigidities slow the process of adjustment to external events. See nimodel.niesr.ac.uk/logon/nigem-index.php?t=1&b=1 (last visited Dec. 30, 2013).

[345] Id. at A1:7. This modeling was off a baseline that took into account the effects of Basel III estimated by the FSA, id. at A1:72, and so builds in all of the uncertainties and assumptions of that exercise, see Part III.C above, along with a variety of other assumptions used to calibrate the NiGEM model, including assumptions about economic growth, inflation, and home prices, and how those macroeconomic forces interact. See A1:72-74.

[346] These categories were (a) a reduction in home lending due to increased lending costs from the rules, (b) reduced home prices, which reduces household expectations of capital gains from investments in homes, (c) increased household savings and reduced consumption to offset the reduction in expected home investments, (d) decreased inflation and lower central and interbank borrowing rates due to reduced consumption, increased savings, and lower household borrowing, (e) increased business lending as banks use funds freed up by reduced household and mortgage borrowing, and because of the lower bank rate, and (f) increased business investment due to additional business lending, which adds to productive capacity and increases overall output.

of this increase would be 9 billion pounds,[347] i.e., as much as the total direct benefits. Yet elsewhere, without explanation, or detail, the CBA/FR stated it had not included output in its bottom-line summary of costs and benefits because "the margin of error inherent in the estimation of the macroeconomic impacts means that in reality this impact could either be positive or negative."[348]

b. Assessing the FSA's CBA/FR

Any assessment of the FSA's CBA/FR should begin by acknowledging it is better as an academic exercise – more complex, detailed, and interesting – than anything yet produced by any US financial regulatory agency. It relies on academic working papers, several different datasets, and multiple modeling techniques, and tackles a host of difficult estimation problems. It actually attempts to quantify the ***benefits*** of a financial regulation – something that the rest of this Part III shows is rarely done. If CBA/FR has a role to play in the US, this CBA/FR is a useful example of a path forward, just as CBA/FR advocates suggest by calling it "gold-standard."

However, it should also be recognized that the FSA's job here was by many measures easier than that faced in other regulatory contexts. The mortgage reforms were important, and will have complex effects, but their importance and complexity pale besides those of more general regulations such as Basel III or the Volcker Rule. The mortgage reforms impose relatively light mandates on the process and terms of one class of consumer financial product –- an important class, to be sure – but one that is considerably simpler than, for example, swaps or even common stock issued by a variety of public companies with a variety of governance arrangements and disclosure practices. A home mortgage is a loan, with clear and definite terms, and a limit set of straightforward purposes. Other important transactions have similar characteristics – consumer loans, credit card loans, student loans – and regulations of those markets are also likely to be more tractable for CBA/FR than the more complex regulations reviewed here.[349]

Despite being in a simpler regulatory context, a review of the FSA's CBA/FR of its mortgage reforms nevertheless shows how fragile and unreliable the analysis remains, and how susceptible such CBA/FR is to being used as camouflage, rather than as discipline – particularly as it gets more complex and ambitious (as it will have to do to approach the goals that its advocates have for it). Here is a short list of weaknesses in the FSA's CBA/FR that illustrate both its shortcomings and how it could as or more easily mislead as inform the public.

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[347] This discount rate is mentioned in passing at A1:112 in another part of the FSA's CBA/FR, without explanation of how it was derived. The FSA does not translate its macroeconomic impact estimates into present values.

[348] Id. at A1:9.

[349] This may suggest that if new CBA/FR mandates are to be adopted, which Part IV below argues against, they should be confined to this context: consumer protection.

First, the FSA is clear in its exposition that it used judgment in a number of crucial places. Examples include: (1) it created its own loan impairment model, where its staff effectively chose their own underwriting criteria, rather than rely on industry models, due to data limitations; (2) it chose where the new rules would begin to bind on lending decisions, using visual inspection of a figure rather than more quantitative methods; and (3) it chose how to "weight" the well-being results given the multiple comparisons it had with its data. Another important judgment the FSA made was to ignore the output of its macroeconomic modeling, as noted above, despite the fact that the net benefits on output of the rules were comparable to the direct benefits to borrowers. Each of these decisions is defensible, but judgmental.

Second, its entire well-being analysis, which is its core method for estimating the effects of the rules, was usable only because of the happenstance that its output could be related to unemployment data. If the net effect on well-being had been significantly larger or smaller, this method would have been unavailable, and the FSA would have had to use another method to monetize the well-being effects, something that is as the FSA noted "notoriously problematic."[350] This calls into question the viability of this "gold-standard" CBA as a model for the future.

Third, the FSA made a number of assumptions that affected its CBA: (a) it assumed that loans would not be made if they were reduced by arbitrary 30% in size due to the new rules, but would be made otherwise;[351] (b) it assumed that delayed loans would not ever be made;[352] (c) it assumed that repossession had no effects on well-being distinct from default, because it had too few observations in its well-being dataset to estimate a different effect;[353] (d) by using a fixed effects model to generate causal inferences about loan rules and well-being, it assume unobserved variation in individual respondents does not co-vary with home-related events;[354] (e) it assumed data from 2006 to 2011 – a period of concededly low and falling interest rates – predicts future home market conditions;[355] (f) it implicitly assumed that its modeling of the effects of Basel III were correct, but as discussed in Part III.C above, that is a fragile assumption; (g) it estimated compliance costs from a small survey (n=15, response rate 60%) of firms that would be subject to the new rules and therefore potentially biased; and (h) it assumed that the social cost of transfers represented by repossessions and resales of repossessed homes (as opposed to the transaction costs of those events,

[350] Id. at A1:85.

[351] Id. at n. 33, A1:70. The FSA defends 30% as more realistic than zero or 100%, which seems right, but better would have been to present a sensitivity analysis for this assumption.

[352] Id. at n. 42, A1:79. As the FSA laconically notes, "it is therefore likely that over the long run we are over-estimating the impacts of the [rules] on lending volumes in the market." Id.

[353] Id. at A1:83. This means that benefits are likely understated.

[354] Id. at A1:82. This assumption seems implausible because borrowers will tend to "stretch" in their borrowing for housing in response to career developments, which will correlate with time, so any time trends in well-being reports will be reflected in the implicit before-and-after comparisons.

[355] Better would have been to include some data from periods of high or rising interest rates, but the FSA faced data limitations similar to those faced by all financial regulators.

which it did estimate) was zero.[356] Each of these assumptions is defensible as a matter of regulatory discretion, as each simplified the analysis or coped with data limits. Together, however, they demonstrate the lack of reliability or precision in the overall analysis.

Two other strong assumptions are nowhere discussed or explained in detail: that all "unaffordable" loans would produce only social losses, and that all "affordable" loans would produce only social gains. Both assumptions seem dubious. Some loans that turn out to be unaffordable represent gambles by borrowers that turn out bad, but which ex ante, even on a fully informed basis, the borrowers would take again. The new rules will likely prevent those gambles, and while one can make good arguments in favor of preventing such gambling, at least some normative approaches to welfare analysis would treat preventing informed consumers from making knowing gambles as a welfare harm. Some loans on which borrowers never default are nevertheless the product of avoidable misunderstandings by borrowers, and others are the product of deception and fraud by lenders – the fact that a borrower chooses not to default on such a loan does not imply that the borrower would take it out again, were the borrower adequately evaluated and warned about the loan's potential risks. Indeed, the FSA's own data showed that many non-defaulting borrowers experienced high levels of stress and difficulty in making payments, suggesting that they may regret their loans. The new rules will likely reduce some of those loans, but none of the associated increase in well-being was counted in the FSA's analysis. Nowhere does the FSA identify these possibilities in a clear manner, and the technical language in which it presents its well-being analysis may prevent many readers from even understanding the assumptions have been made, much less appreciate what effect they may have on the bottom-line.

Finally, despite the relative merits of the substance, the FSA's presentation is not a model of clarity or candor in other respects. The assumptions listed in the two paragraphs above are not collected in one place in the FSA's paper, but are mentioned in scattered locations, or not explicitly noted at all. The sensitivity of the bottom-line results of the CBA/FR to important assumptions is not made clear.[357] For example, the FSA does show how sensitive parts of its analysis are to assumptions about future levels of lending activity, by breaking its historical data into two subperiods, and showing that during the "boom" period of the 2000s, the new rules would have affected between 1.7% and 10.5%, while during the "subdued" period after the collapse, they would have affected no more than 0.4% of borrowers.[358] Similarly, the FSA shows that in the subdued period 7% of

[356] The FSA it noted this assumption was likely counterfactual, although it did not elaborate on why – presumably because the non-market value of a home to the defaulting borrower exceeds the value of the home to the lender and/or a new buyer, on average.

[357] Compare OMB Guidance, supra note 19, at 3: "It is usually necessary to provide a sensitivity analysis to reveal whether, and to what extent, the results of the analysis are sensitive to plausible changes in the main assumptions and numeric inputs."

[358] Id. at A1:40. This is for the affordability component of the reforms alone; for the package of reforms, the results were similar. Id. at A1:62. The FSA also showed breakdowns by borrower type in the subperiods. Id. at A1:41-42 and A1:63-64.

borrowers that the FSA estimated would be affected by the reforms faced actual impairment in its historical data, while 30% were in the boom period.[359] The FSA does not, however, translate this sensitivity into bottom-line effects on benefits (gross or net). It does not present sensitivities to most of the assumptions discussed in the prior two paragraphs, and because it does not translate per-borrower benefits from its well-being analysis into present values, it does not allow readers to compare those benefits with the possible range of macroeconomic effects of the rules.

In sum, this "gold-standard" example of CBA/FR, while distinctly more ambitious and interesting than other CBA/FR, is still without clear value in assessing the mortgage rules. Its bottom-line depends on assumptions and limited data to such an extent that, with equally plausible assumptions or different data, it could have come out with a different sign or order of magnitude attached to it. The FSA does include a number of disclaimers precisely to this effect – writing, for example, "certain data, for example on relevant households' expenditure, are not available ... [such that] this CBA has been unusually difficult to prepare [and led to a] wide margin of uncertainty around its results."[360] Elsewhere, it notes: the analysis "is inherently highly uncertain," with the result that "to a significant extent ... the decision on whether to proceed with the proposed rules has to be based on social and political judgments."[361] And further: "It is extremely difficult to identify exactly how the responsible lending requirements will change borrowing in the market or the likely scale of this. It requires some judgemental [sic] assumptions on the basis of imperfect evidence."[362] None of this would be apparent to anyone reading US white papers advocating CBA/FR legal reform.[363]

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[359] Id. at A1:65.

[360] Id. at A1:2. Another disclaimer: "No amount of quantification would remove the need to make such a judgement. We illustrate, however, our quantification of the trade-off. This should not be interpreted as providing a precise measure of well-being effects, but rather as supporting some reasonable assumptions about the relative weight attached to different positive and negative effects, and illustrating that such relative weights might support different judgements." Id. at A1:80.

[361] Id. at A1:5. While the FSA believed those judgments "are best informed" by its CBA/FR, it presented no evidence to show that was true, or if so, how. Id.

[362] Id. at A1:3.

[363] E.g., CCMR Report, supra note 4.

F. Summary of Case Studies

The substantive rules reviewed in the foregoing case studies are summarized in Table 4.

Table 4. Summary of Case Studies

Rule	Agency	Primary regulatory instrument	CBA/FR by agency?	Quantified CBA/FR by agency?	Primary benefit	Primary costs
SOX 404	SEC	Disclosure	Yes	No	Less fraud	Less risk-taking, compliance
Mutual fund rules	SEC	Governance	Yes	No	Less harm from conflicts of interest	Reduced board effectiveness
Basel III capital requirements	FSA, US bank agencies	Capital	FSA – yes, US bank agencies – no	FSA – yes, US bank agencies – no	Fewer systemic financial crises	Less lending
Volcker rule	US bank agencies, SEC, CFTC	Activity	No	No	Fewer systemic financial crises	Lower liquidity, depth
Cross-border swaps rules	SEC, CFTC	Multiple	Yes	No	Promotes competition	Lower liquidity, depth, incentive to race to bottom
Mortgage market reforms	FSA	Process and contract terms	Yes	Yes	Fewer unaffordable loans	Smaller, delayed affordable loans

As reflected in Table 4, the case studies range across representative regulatory instruments:[364] ***disclosure*** (SOX 404); ***governance*** (mutual fund rules); ***capital regulation*** (Basel III); and ***activity limits*** (Volcker Rule). The cross-border swaps rules cover a large number of regulatory instruments, including disclosure and capital requirements, but also rules requiring ***segregation***, ***risk management***, ***margin limits***, and ***fair dealing***. The mortgage reforms represent a final, important category of financial regulation – consumer protection, in the form of required ***process*** and constraints on ***contract terms***. The rules' benefits range across public goods pursued by financial regulation: more competition, fewer systemic crises and harmful conflicts of interest, and reduced levels of asymmetric information.[365]

[364] John Y. Campbell, Howell E. Jackson, Brigitte C. Madrian, and Peter Tufano, 25 J. Econ. Persp. 91, 98-100 (2011).

[365] Id.; Luigi Zingales, The Future of Securities Regulation, 47 J. Acct'g Res. 391, 393-401 (2009).

Table 5. Challenges for Possible or Actual Efforts at Guesstimated CBA/FR in Case Studies

Rule	Data Challenges	Causal Inference Challenges	Role of Macroeconomic Models	Role of Political / Policy Models	Examples of Output-Sensitive Inputs
SOX 404	Fraud is often unobservable, data on fraud's externalities does not exist; survey data is unreliable and potentially biased.	Better instruments or randomized treatment to control for contemporaneous market and other changes; discontinuities have low external validity.	Required for estimating externalities of large-scale fraud (shocks to equity premium)	Required to establish baseline for studying individual regulation change in context of multiple policy responses to revelation of fraud	Incidence of fraud Magnitude of fraud (direct costs) and externalities Reduction of fraud by rule Discount rate
Mutual fund rules	Conflicts of interest are often unobservable; data on relevant to modeling governance outputs often unavailable	Better instruments or randomized treatments to control for unobserved covariates; models have low power	No obvious role	No obvious role	Model specification Sample period and other criteria selection Empirical proxies for conflicts
Basel III capital requirements	Number of past financial crises is small and identification is subjective	Inferring causal effects of capital requirements on lending difficult due to lack of variation	Required to estimate effects of financial crises and effects of reducing lending	Required to estimate policy responses to crises	Past crises in dataset Duration of effect of crisis on output Policy response to crisis Discount rate
Volcker rule	As with Basel III, plus no use of rule in past	Inferring effects of novel rule impossible	As with Basel III	As with Basel III	As with Basel III
Cross-border swaps rules	No use of rule in past	Inferring effects of novel rule impossible	Required to estimate effect of reduced liquidity on capital costs and output	Required to estimate risk that swap markets move to other jurisdictions	Not meaningful because no quantitative model possible
Mortgage market reforms	Private loan underwriting criteria unknown; period of unusual interest rates; low number of repossessions in well-being dataset; survey data is unreliable and potentially biased.	External validity of model of effects on reduced lending unclear due to data limitations, unobserved time-varying changes in well-being factors; no model of costs of transfers	Required to estimate effects of rules on output through lower home prices	Required to estimate effects of Basel III to establish baseline	Historical data used (boom vs. subdued) Basel III outputs Others not clear due to gaps in FSA presentation

Table 5 summarizes the conclusions of the case studies on the feasibility of quantitative CBA/FR. As can be seen, it shows that any substantial

financial regulatory rules will face one or more of five serious challenges: (1) data limitations, (2) causal inference challenges, (3) the need to incorporate judgmental macroeconomic models, (4) the need to incorporate even more judgmental policy/political models, and (5) the need to make contestable, judgmental assumptions or modeling choices that have large effects on the outputs of the analysis. Not every challenge is as acute for every kind of rule – political/policy modeling is probably not a first-order component of an analysis of an anti-fraud or governance rule, for example. But all face data challenges and are highly sensitive to assumptions, all face causal inference challenges more severe in kind from ones faced in many non-financial contexts (as discussed more in Part IV), and most require the analyst to embed (explicitly or not) a macroeconomic model of the same judgmental nature as that used in setting monetary policy.

The central conclusion of the case studies is that quantitative CBA/FR is not currently feasible with any degree of precision and reliability for representative types of financial regulation. Anything presented as quantified CBA/FR is in fact judgmental in nature – not an actual alternative to "expert judgment" but its equivalent, in numerical form. Such quantitative CBA/FR as has been done is better understood as "guesstimated," and has been presented without clear disclaimers and sensitivity analyses. As a result, it is more likely to mislead and camouflage than inform or discipline. The only kind of CBA that is currently feasible for representative types of financial regulation is conceptual CBA, augmented by limited elements of quantified evidence that will be more illustrative than disciplinary.

IV. WHAT ARE THE IMPLICATIONS OF THESE CASE STUDIES?

The case studies in Part III suggest that the capacity of anyone – including financial regulatory agencies, OIRA, academic researchers, CBA/FR proponents, litigators, or courts – to conduct quantified CBA/FR with any real precision or confidence does not exist for important, representative types of financial regulation. What are the implications of this conclusion?

A. CBA/FR Remains a Potentially Valuable Component of Policy Analysis

A naïve response to the case studies in Part III would be to jettison CBA/FR altogether. If CBA cannot generate reliable, precise estimates of costs and benefits, one might conclude, it has no value, in policy or in law. If CBA/FR cannot produce reliable quantification, then (as argued in the next section), it cannot plausibly discipline agencies, or add materially to public understanding, leaving it only to serve as camouflage for discretionary policy choices, making them appear more objective than they are. What's more, CBA/FR consumes resources. Together, the lack of a public-regarding benefit and the presence of real costs mean CBA/FR flunks a cost-benefit test.

This response would be a mistake, for four reasons. First, it is possible that some financial regulations are susceptible of quantified CBA/FR – perhaps there are simple consumer finance regulations where the costs and benefits will be more straightforward to estimate reliably. The case studies in Part III are only a sampling of rules.

Second, conceptual CBA/FR remains the best available overarching framework for organizing and communicating the pros and cons of a proposed regulation. Conceptual CBA/FR is a commonsensical way to begin the analysis necessary to evaluate a proposed rule by comparing it to the status quo and plausible alternatives. Indeed, it is hard to imagine conducting any sort of policy analysis without at least engaging in tacit conceptual CBA/FR. Organizing analysis in a conceptual CBA framework will provide some benefit for public understanding, even if the benefit is modest, and even if the negative effects of guesstimated camouflage can easily overwhelm that benefit.

Third, CBA may have effects other than the conventional set outlined in Part I.C (discipline, transparency, or camouflage). CBA guidelines, such as those in the OMB Guidance,[366] also serve a brainstorming function, as a checklist to prompt analysts to be more creative in regulatory design and evaluation. Precisely because conceptual CBA is not an entrenched and exclusive piece of any one agency's historical lore, evaluating regulatory proposals within a CBA framework can open up new channels of thought, and nudge regulators beyond a baseless enthusiasm for tried but perhaps less helpful models of regulation. Conceptual CBA involves a common language and mode of thought that could facilitate inter-agency dialogue by floating above any one statutory mandate or set of agency-specific regulatory goals. Such dialogue can improve thinking about CBA-related problems (e.g., how to phase-in or randomize regulation so as to generate useful information while meeting legitimate expectations about equal treatment under the law).[367] Thinking through conceptual CBA for a rule can lead to novel insights about how the rule is (or is not) similar to rules issued by other agencies, or how it may generate unintended consequences.

Fourth and most broadly, and with the greatest potential value, conceptual CBA/FR can facilitate improvements in quantified CBA/FR. Quantified CBA/FR, after all, would be highly valuable if it could generate precise and reliable estimates of the social costs and benefits of a regulatory change. Anything that promotes the long-term research agenda needed for reliable, precise quantitative CBA/FR has high potential value. To pursue that agenda, it would be useful for financial agencies to frame the questions that they face in evaluating regulations in a conceptual CBA, so as to stimulate and guide that research. Research in economics, sociology,

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[366] Supra note 19.

[367] CBA/FR advocates (e.g., CCMR Report, supra note 4, at 14) rightly point to the SEC's pilot program on short sale rules, which randomly exempted a stratified sample from new rules for purposes of evaluating the rules' effects in a statistically reliable way. SEC Office of Economic Analysis, Economic Analysis of the Short Sale Price Restrictions Under the Regulation SHO Pilot (Feb. 6, 2007), available at www.sec.gov/news/studies/2007/regshopilot020607.pdf (last visited Jan. 4, 2014).

psychology, and other relevant fields proceeds along paths that are not random, but shaped by incentives, social cues, and psychological rewards. If agencies ask pointed research questions in their rulemaking proposals, they will encourage private researchers to answer those questions. Private actors with an interest in the answers may fund such research; tenure can be granted in part on the ground that an academic has answered a socially valuable question; and grant proposals are more likely to be funded if they relate to research topics that have direct potential value to regulatory agencies.

For conceptual CBA to be useful in this way, however, careful attention must be paid to institutional details, where the devil always lurks. Conceptual CBA/FR will not be useful in stimulating thought or guiding research if it consists of a simple, abstract list of the benefits and costs of a category of regulations. For example, it is correct in most instances for the SEC to include in the category of qualitative benefits of its rules "investor protection" and "investor confidence," but it would be useless to leave things at that. How, precisely, does a rule improve confidence – through what channels? How does improved confidence constitute a social benefit – how does it affect the cost of capital? Nor will conceptual CBA/FR be useful if it consists of lengthy and opaque boilerplate circumlocutions designed to deflect or confuse judicial review rather than actually communicate to researchers or those who fund, evaluate or publicize research.

A review of CBA conducted by the financial regulatory agencies demonstrates that fleshing out the benefits of financial regulation is a largely incomplete conceptual task, one that I hope the case studies in Part III will help advance. Similarly, indirect or systemic costs of regulation remain undeveloped. CBA/FR proponents have a strong point when they mock past CBA/FR efforts as exercises in "paperclip counting."[368] Those who are unhappy with the financial agencies are striving to promote quantified CBA through law in part because they rightly worry that regulatory practices that focus only on easily quantified subsets of costs in isolation will achieve little good.

The question, then, is how to encourage financial regulators to engage in meaningful, detailed conceptual CBA so as to stimulate research on quantitative CBA. How can lawmakers or law affirmatively encourage the use of conceptual CBA to stimulate thought and innovation? While a detailed set of proposals is beyond the scope of this Article,[369] suffice to say here that the challenge is primarily managerial, not methodological, a challenge not susceptible to simple legal commands or conventional judicial review (as discussed more below). The challenge is not going to be met by specifying in meta-regulations methods to be used to conduct CBA/FR, but about using law and the lawmaking process to encourage expert agencies to better manage their resources and rulemaking processes in the short run to improve conceptual CBA/FR, with goal in the long run of facilitating reliable, precise quantified CBA/FR.

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[368] CCMR Report, supra note 4, at 9.

[369] I take up the task of making such proposals in a related paper. Coates, supra note 10.

B. Why is Quantified CBA/FR so Unreliable?

A second, straightforward implication of the case studies is that efforts by the financial agencies at quantified CBA/FR will for the foreseeable future produce only guesstimation. Back-of-the-envelope guesses at ranges of magnitudes are what are currently feasible, not precise or reliable estimates. Too many variables are in play for any given rule, too many contestable assumptions are required, for anyone producing or consuming guesstimated CBA/FR to have any confidence in any specific estimate of costs or benefits, even if expressed in ranges or bounds. Even if guesstimated CBA/FR can draw on scientific disciplines, such as financial economics, and even if the agencies themselves decide it is worth attempting on occasion as a way of helping analysts better understand the implications of a given regulation, it will not be in application scientific, in any conventional sense of replicable, reliable or predictive.

Claims that quantified CBA/FR is generally feasible, or conclusions about financial regulations derived from guesstimated CBA/FR, should be understood not as science but number-laden guesswork, and treated as such by the public, other regulators, and courts. While guesstimation can be a legitimate part of decision-making, it should not "guide" policy except in the loosest sense. Basing policy on specific quantitative outputs would simply be a poor exercise of judgment.

This conclusion – that quantitative CBA is not a good basis for setting policy – stands in contrast to practice in other regulatory domains, where quantitative CBA appears to be used in that way.[370] Why might CBA/FR be generally more difficult than CBA in other domains? While this topic warrants considerably more thought than belongs in this Article, I advance here three tentative explanations for why CBA/FR is so hard, with the recognition that some of what follows may also characterize some non-financial domains, at least in part.[371]

1. Finance is Central to the Economy

Part of the explanation for how far we are from reliable and precise quantified CBA/FR estimates is that finance is at the heart of the economy. Any change in regulation with a material impact on finance will have a material impact on the economy, and large and complex effects on welfare.

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[370] Compare, e.g., Sunstein, supra note 5 (advocating its use, albeit with caveats), with Sinden, supra note 38 (critiquing its use).

[371] E.g., Sunstein, supra note 32, 90 Geo. L.J. at 2289 (concluding that "A skeptic might conclude that because the range of uncertainty [about the net costs and benefits of a regulation designed to reduce arsenic intake] is so large, any number at all could be justified and the ultimate decision is essentially political or based on 'values.' This view is not exactly wrong [a lawyerly locution that presumably means the view is correct], but it should not be taken as a convincing challenge to CBA."). Even the arsenic rule had considerably simpler potential effects on welfare than several of the case studies reviewed in Part III (e.g., SOX 404 or the Volcker Rule).

Recall from Part III.E.2 how the FSA's mortgage reforms – relatively simple consumer protection regulations on the surface – were conceptually identified as having multiple, complex effects on the macroeconomy.[372] They would cut home lending, lower home prices, reduce consumer spending, but also increase consumer saving, reduce consumer borrowing, and increase business lending and investment. The FSA waived its hands and derived a positive net effect of $9 billion, which it then claimed it was ignoring as too unreliable. Many rules would have more complex effects.

Macroeconomic models that include finance are highly contested, still. They are the stuff of Op Eds and blogs as much as consensus models in academic journals.[373] The ripple effects on financial regulation are too large and complex, relative to their direct effects, to allow for reliable predictions of net effects. As noted in Part I.D, this is a reason that even CBA-proponents conceded that monetary policy should remain unregulated by CBA laws. What advocates have not grasped, but Part III shows, is that important financial regulation is always likely to interact with the economy – perhaps not to the same extent as quantitative easing, but with enough impact as to generate large (and uncertain) effects on economic growth.

By contrast, consider the Department of Transportation's proposed rule to increase rear visibility in motor vehicles.[374] While there were some uncertainties associated estimating benefits of the rule, owing to the question of whether to value children differently than adults, and in estimating the costs, owing to the possibility compliance costs might fall over time, estimating neither costs nor benefits required a macroeconomic model. Indeed, it is hard to imagine a financial regulation important enough to warrant significant CBA/FR costs that would be as simple to model as this rule. Yet this rule is typical of many non-financial regulations, which generate direct compliance costs and result in straightforward improvements in safety, with few knock-on systemic effects.

2. Finance is Social and Political

A second reason why quantitative CBA/FR is hard is that 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

[372] See text accompanying notes 344-48.

[373] Compare Open Letter to Ben Bernanke from Cliff Asness, et al., N.Y. Times (Nov. 15, 2010) (letter from multiple economists, including former Chairman of Council of Economic Advisors, former Direct of the Congressional Budget Office, former staff economist of the Federal Reserve, and former Deputy Assistant Treasury Secretary, stating "We believe ... 'quantitative easing' ... risk[s] currency debasement and inflation and ... not ... achieve the Fed's objective of promoting employment") with reply from Federal Reserve spokeswoman (defending Federal Open Market Committee's "recent actions" – i.e., "quantitative easing" – as reflecting the Federal Reserve's "mandated objectives [of] promot[ing] increased employment and price stability"). See also text accompanying notes 291-96, supra (noting disagreements among economists over whether increase in bank capital requirements will reduce socially beneficial lending).

[374] See 75 Fed. Reg. 76,186, 76,238, discussed in Cass R. Sunstein, The Real World Of Cost-Benefit Analysis: Thirty-Six Questions (And Almost As Many Answers), Colum. L. Rev. (forthcoming 2014), available at papers.ssrn.com/sol3/papers.cfm, at n. 48.

political relations. Finance is about firms – corporations – groups of people coming together to fund a business – and financial markets – groups of people routinely trading intangibles. These features of finance can be contrasted with at least non-financial domains, where objects of study and regulation are inanimate (e.g., chemicals, rear-facing car cameras) and regulations are designed to achieve relatively simple ends (e.g., changing the frequency and intensity of the use of identified chemicals, or requiring installation of cameras). While a chemical can interact with the environment in ways challenging to model and predict, those interactions are generally going to be simpler than interactions of groups of humans. Every human possesses agency and interacts with others in non-linear, unpredictable ways. As stated by one theoretical physicist:

> Computational ... approaches [to modeling] have been very useful in physics because the knowledge of microscopic laws constrains theoretical modeling in extremely controlled ways. This is almost never possible for socioeconomic systems.[375]

Chemicals can also be easily subjected to randomly controlled experiments, while for humans, experiments are more difficult, and for groups, they are frequently not feasible. Because finance affects the economy, modeling policy also becomes necessary to quantify effects of financial regulation – finance is more routinely and powerfully political than chemistry. Part of the baseline to evaluate the costs of a crisis, as Part III showed, requires predicting how governments will respond. No similar efforts are required for most typical non-financial regulations.[376]

3. Finance is Non-Stationary

A third reason that may help explain why quantified CBA/FR is hard is that underlying regularities that enable quantification are commonly "non-stationary" in finance – more likely to change over time in finance than in other domains. The proverbial "rocket science," for example, uses relatively simple models of inert objects moving through space, with key inputs – such as both big G (the gravitational constant) and little g (gravitational acceleration at the Earth's surface)[377] – that do not change, hence the word "constant."[378] By contrast, most relationships in finance change through time, often rapidly. Consider the striking decline from 1978 to 1999 in the

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[375] M. Marsili, Toy Models and Stylized Realities, 55 Eur. Phys. J. 169, 173 (2007).

[376] An exception is climate change, where the effects of US regulations will depend upon how other governments cope with climate change. Quantitative CBA may for that and other reasons (see Pindyck, supra note 189) be less useful for coping with climate change than for regulations responding to less world-threatening problems.

[377] Paul A. Tipler, Physics For Scientists and Engineers (4th ed. ed. 1999) at 336–37 (relating gravitational constant to the force of gravity at various depths).

[378] Other physical constants relevant to non-financial domains include the magnetic constant, the electric constant, the mass of a proton, the gas constant, the speed of light, Planck's constant, etc.

dividend payout ratio, or the steady fall since 1930 in the ratio of directly to institutionally invested stocks in US retail portfolios, both changes with large implications for the costs and benefits of financial regulation.[379]

One reason for the greater degree of non-stationarity in finance is that finance is non-physical, such that technology shocks have larger and more unpredictable effects on optimal financial choices. This is reflected in the case studies in Part III: new technologies of derivatives and securitization were significant causes of the last crisis,[380] which gave rise to several of the rules reviewed. While technological progress affects all regulatory domains, physics, chemistry and biology are more central to non-financial regulation than to financial, and regularities uncovered in those disciplines have proven more durable than those found in finance. As summarized by the same physicist quoted above:

> Nature has been there since ever, but it has taken centuries to develop a reasonable understanding of little parts of it. Many of the things which are traded nowadays in financial markets did not exist few decades ago, not to speak of internet communities. In addition, we face a situation in which the density and range of interactions are steadily increasing, thus making theoretical concepts based on effective non-interacting theories inadequate.[381]

No doubt there are other explanations for why quantitative CBA/FR is so unreliable – some has to do with historical unwillingness of the financial agencies to invest sufficiently in the task. No doubt, too, there are areas of non-financial regulation where science is weak, and CBA there, too, cannot be reliably used a strong guide for regulation. But the problems in financial regulation are real, and likely to persist for the foreseeable future.

C. New Legal CBA/FR Mandates Would Be a Bad Idea

A third implication of the case studies in Part III is that new legal mandates for CBA/FR such as those reviewed in Part II.B would be a bad idea. Instead, CBA/FR should be conducted only to the extent and in the manner the expert agencies choose to do so. This conclusion is particularly true when it comes to quantified CBA, because of how unreliable quantified CBA/FR remains. CBA/FR law's purpose – to discipline agencies and reduce agency costs – will not be furthered by forcing analyses that amount to more than guesstimation.

Other constraints – the general goals of the agencies, the screening and socialization of the agency staff, the political oversight of the agencies by Congress, through confirmations, budgets, hearings, and public criticism of

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[379] Eugene F. Fama and Kenneth R. French, Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?, 60 J. Fin. Econ. 3 (2001); Zingales, supra note 365.

[380] The Financial Crisis Inquiry Commission, The Financial Crisis Inquiry Report (Jan. 2011) at 38-51.

[381] Marsili, supra note 374.

the sort reviewed in Part II.B – will prevent new regulation or deregulation that is so extreme in generating costs without offsetting benefits that it could not be justified by the current art of guesstimated CBA. Within the range of plausible regulatory action set by those other constraints, the financial agencies retain too much discretion to select inputs and make assumptions in CBA/FR for numbers that emerge in any effort at quantification to demonstrate that a proposed change is net beneficial for society or not. Worse, the goal of disciplining agencies may even be undermined, if the result is to encourage agencies to use CBA/FR as camouflage – to hide discretionary judgments under impressive numbers.

This implication is reinforced by the fact that CBA of CBA has itself never been adequately conducted, leaving the first-stage choice of when to conduct CBA in the realm of judgment, rather than science.[382] Such second-order CBA/FR is likely to be best conducted by the primary financial regulatory agencies, not by some other non-specialized agency, much less by a court, which will lack the judgment and knowledge to know when the direct and indirect costs of conducting CBA/FR will outweigh its benefits. Until evidence is developed to illuminate when CBA/FR passes its own test, courts, and other agencies, should have no formal role in second-guessing the choice of when to conduct CBA/FR, or the details of CBA/FR when it is used.

Empowering courts to review even ***conceptual*** CBA/FR policy analysis is also likely to be bad idea. Judicial review is not likely to generate any significant improvement in the CBA/FR itself, as agencies would respond to threat of such review by hiding, not exposing, the weaknesses in their analyses. Nothing produced by the back-and-forth with the D.C. Circuit over the mutual fund rules reviewed in Parts II.D and III.B was a meaningful advance in public understanding of the qualitative costs and benefits of requiring more independent fund boards – the compliance costs on which the court in *Chamber of Commerce* focused were minor even by the lights of the Chamber of Commerce itself.[383] The SEC's cross-border swap CBA, reviewed in Part III.E, provides a clear picture of how little the threat of such review will accomplish, relative to what conceptual CBA voluntarily presented by an agency might do.

Mandating an interagency process for CBA – such as by requiring a financial agency to publish not only its CBA but also the views of OIRA on its CBA – will also worsen outcomes. The result will be a larger record that will continue to be largely ignored by the public but used by litigators to pick at particular agency judgments as arbitrary and capricious under the APA. The benefits such a mandate might achieve can already be achieved if the financial agency sees the process as valuable, as evidenced by the voluntary cooperation between the CFTC and OIRA during the Dodd-Frank Act roll-

[382] See note 31 supra.

[383] Chamber of Commerce v. SEC, 412 F.3d 133 (D.C. Cir. 2005), subsequent proceeding at 443 F.3d 890, discussed in text accompanying notes 17, 86-96 and 200-22 supra; CCMC Report, supra note 6, at 31 (characterizing costs as "minor").

out.[384] The cases reviewed in Part II.D show how aggressive some D.C. Circuit panels have been in using such review to overturn agency actions, particularly when an agency's commissioners have been divided over judgments needed for any regulatory change, and trebling the number of pages or components of a CBA available for judicial second-guessing, and adding the possibility of inter-agency disagreement to the mix, will incite more interventions, with no clear benefit to anyone other than litigators.[385]

More extensive judicial review would have other pernicious consequences. Not only would agencies be rationally expected to use CBA/FR as camouflage, they could be expected to go to Congress to lobby it to impose rules through detailed Congressional mandates, which will likely receive greater deference from courts than rules adopted pursuant to Congressional delegations of discretion to achieve general goals.[386] Both the litigation and the shift towards Congressional mandates will produce a general slowdown, not just of regulation, but also of deregulation and regulatory reform, increase partisan polarization in and deterioration of public opinion of the very courts charged with that review.

D. Existing CBA/FR Laws Are Little Better in Practice

A final implication of Part III is that existing interpretations of the APA and the financial agencies' governing statutes should also be restored to their state prior to *Chamber of Commerce*, to reduce the influence of concentrated interests through litigation and of politically partisan but unaccountable judges on regulatory outcomes. The D.C. Circuit's new interpretations of the APA have permitted (some) panels to overturn regulatory changes on the ground that a court would conduct its guesstimated CBA differently than an agency's guesstimated CBA/FR. Since guesstimated CBA/FR is unreliable and imprecise, no matter who conducts it, courts have no legitimate role for the courts to second-guess the agencies – even if the agencies are openly arbitrary in how they go about the guesstimated CBA/FR. Indeed, the state of CBA/FR is such that one can reasonably argue that all guesstimated CBA/FR of major financial regulations inevitably will contain multiple arbitrary assumptions and judgments simply to allow for rough guesstimates to be made. A legal system that simultaneously requires arbitrary judgments

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[384] See note 119 and accompanying text supra.

[385] See Alan B. Morrison, The Administrative Procedure Act: A Living and Responsive Law, 72 Va. L. Rev. 253, 256 (1986) ("rulemakings are often more controversial than adjudications [under the APA], whose very processes are hidden from outsiders").

[386] E.g., NAM v. SEC, -- F. Supp. 2d. --, 2013 WL 3803918 (D.D.C. 2013). This consequence appears to be a novel or at least recent dysfunction in the administrative state. Jacob E. Gersen and Anne Joseph O'Connell, Deadlines in Administrative Law, 156 U. Pa. L. Rev. 923, 926 (2008) ("Because narrow delegations with extensive substantive restrictions would eliminate agency discretion and expertise in policymaking, it is rare that Congress specifies the actual content or substance of agency decisions"); cf. Michael Herz, Judicial Textualism Meets Congressional Micromanagement: A Potential Collision in Clean Air Interpretation, 16 Harv. Env. L. Rev. 175, 179 (1992) (arguing that in environmental regulation, judicial deference to regulatory discretion absent statutory specificity had created incentives for Congress to impose specific mandates as a way to best control agencies);

by agencies, and then allows them to overturned by a court for being arbitrary, depending on the which panel of the D.C. Circuit is randomly (that is, arbitrarily) chosen, is self-evidently indefensible.[387]

Even if one agrees with a given court that a given rule represents bad policy (as I do in respect of the fund governance rules reviewed in Part III.B), better means exist for those affected by such rules to protect their interests, such as through the legislative process, or by developing regulatory proposals to await a new set of regulators – who, after all, are more frequently replaced by politically accountable Presidents than are the judges on the D.C. Circuit. In sum, the current, erratically applied law of CBA/FR is raising agency costs as between citizens and their political agents, not lowering them, as CBA/FR is often supposed to accomplish.

Often, the current state of the law on CBA/FR of financial regulation is perceived in simple partisan terms – Republican judges will strike down regulations adopted by regulators appointed by a Democratic president – and this is viewed as good by Republicans (and financial institutions) and bad by Democrats (and individual investors and bank customers). But in a few years the same unfortunate dynamic may reverse, with Democratic judges striking down deregulatory changes adopted by regulators appointed by a Republican president. Regardless of the current state of partisan power sharing, or of one's political inclinations, it should require more theory and evidence than CBA/FR-proponents have developed to date to leave financial regulation wrapped in the unlovely arms of litigators and the partisan lottery that is the D.C. Circuit.[388]

To remedy the situation, two recommendations made by Kraus and Raso for the SEC[389] should be extended to all financial agencies. First, an exemption from the "sunshine" laws[390] should be added to permit closed-door, pre-decisional discussions of CBA/FR to occur among financial agency commissioners, between commissioners and the economic staffs of the agencies, among the agencies, and between the staffs of the agencies and the staffs of OIRA and the OFR. Until CBA/FR is considerably more

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[387] See Vermeule, supra note 9 for a different but complementary argument that courts should be more deferential to agencies in contexts requiring arbitrary decisions.

[388] For evidence that judicial review of agency action outside the financial regulatory context is motivated by politics and judicial ideology, despite nominal legal standards requiring deference and permitting court intervention only if the agency acts "arbitrarily" or capriciously," see, e.g., Frank B. Cross & Emerson H. Tiller, Essay, Judicial Partisanship and Obedience to Legal Doctrine: Whistleblowing on the Federal Courts of Appeals, 107 Yale L.J. 2155, 2175 (1998) (presenting model and evidence that courts' ideological preferences affect their review of agency actions, despite Chevron requirement of deference, but is moderated by dissenting judges on panels; evidence is all D.C. Circuit Court opinions 1991 to 1995 that cite *Chevron*); Thomas J. Miles and Cass R. Sunstein, The Real World of Arbitrariness Review, 75 U. Chi. L. Rev. 761, 813-14 (2008) (finding in a large sample of judicial decisions reviewing actions by the EPA and the NLRB that politics influences operation of "hard look" review under APA); Richard L. Revesz, Environmental Regulation, Ideology, and the D.C. Circuit, 83 Va. L. Rev. 1717, 1735 (1997) (finding significant ideological effects in review by D.C. Circuit of EPA decisions between 1970 and 1994; that ideology is more important in cases, such as procedural challenges, that are less likely to be reviewed by US Supreme Court, and that interaction of partisan background of judges on panels affects outcomes).

[389] Kraus and Raso, supra note 12; see also Fisch, supra note 109.

[390] 5 U.S.C. § 552b (Sunshine Act); 5 U.S.C. § 552 (Freedom of Information Act).

developed, such deliberations are best conducted in a setting that encourages candor and creativity, rather than defensive camouflage and obfuscation in anticipation of litigation or requests under the Freedom of Information Act. Such a reform would likely increase the willingness of the agencies to comply with existing requirements under the CBA Executive Orders[391] that they submit CBA of their annual regulatory agendas to OIRA, requirements that have long been given short shrift by the financial agencies.[392]

Second, a "safe harbor" for CBA/FR should be added to the APA and the financial agencies' governing statutes. The "safe harbor" can be modeled on the Congressional Review Act,[393] which courts have interpreted as barring judicial review of agency compliance with the statute, including agency determinations of whether a rule is "major," triggering additional requirements under that statute. As Kraus and Raso put it, "private litigants must not be allowed to throw [CBA/FR] back at the agency as 'party admissions against interest,' undermining the validity of the very rules that the analysis informed." Anyone genuinely interested in fostering CBA/FR should recognize that, with the current, politicized D.C. Circuit only likely to become more polarized with the elimination of the filibuster, the absence of such a safe-harbor will lead agencies to be overly cautious, long-winded, and opaque in their CBA/FR – lawyerly virtues, not economic ones.

CONCLUSION

This article has attempted to fill a significant gap in writing about cost-benefit analysis – how such analysis would be conducted if, as advocated by some members of Congress, the D.C. Circuit, and legal academia, the law extended the current requirements that executive agencies engage in cost-benefit analysis to financial agencies, and required those agencies to produce as part of their rulemaking quantified CBA that could be subject to review under the requirements of the agencies' authorizing statutes and the APA. Detailed case studies of six rules – (1) disclosure rules under Sarbanes-Oxley Section 404, (2) the SEC's mutual fund governance reforms, (3) Basel III's heightened capital requirements for banks, (4) the Volcker Rule, (5) the SEC's cross-border swap proposals and (6) the FSA's mortgage reforms – finds that precise, reliable, quantified CBA remains unfeasible. Quantified CBA of such rules can be no more than "guesstimated," as it entails (a) causal inferences that are unreliable under standard regulatory conditions; (b) using problematic data, and/or (c) the same contestable, assumption-sensitive macroeconomic and/or political modeling used to make monetary policy, which even CBA advocates would exempt from CBA law. Expert judgment remains an inevitable part even of what advocates label "gold-standard" quantified CBA, because finance is central to the economy, is social and political, and is non-stationary. Judicial review of quantified CBA

[391] See note 64 supra.
[392] See note 65 supra.
[393] See text accompanying notes 70-71.

can be expected to do more to camouflage discretionary choices than to discipline agencies or promote democracy.

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