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## *Too Big to Fool: Moral Hazard, Bailouts, and Corporate Responsibility<sup>1</sup>*

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*Abstract: Domestic and international regulatory efforts to prevent another financial crisis have been converging on the idea of trying to end the problem of “too big to fail”—that systemically important financial firms take excessive risks because they profit from success and are (or at least, expect to be) bailed out by government money to avoid failure. The legal solutions being advanced to control this morally hazardous behavior tend, however, to be inefficient, ineffective, or even dangerous—such as breaking up firms and limiting their size, which can reduce economies of scale and scope; or restricting central bank authority to bail out failing firms, which (ironically) exacerbates the risk that an uncontrolled banking failure will trigger another crisis. This article contends that the too-big-to-fail problem is exaggerated. It shows that the evidence for this problem is weak, conflating correlation and causation. It also shows that managerial incentives should mitigate the problem because managers who cause their firms to engage in excessive risk-taking, in the expectation of a government bailout, are taking serious personal risks. That begs the question why systemically important firms sometimes do take excessive risks. The article argues that such risk-taking is more likely to be caused by other factors, including a legally embedded conflict between corporate governance and the public interest that allows managers of those firms to ignore the costs of systemic externalities. To address this, the law should—and the article shows that it realistically could—control excessive risk-taking more directly by requiring managers to account for systemic externalities in their governance decisions. It also argues for the creation of a privatized fund to minimize the public cost of bailing out systemically important firms that might fail (because of exogenous shocks, for example) notwithstanding reduced risk-taking.*

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## INTRODUCTION

There is an increasing worldwide regulatory focus on trying to end the problem of “too big to fail” (“TBTF”)<sup>3</sup>: that systemically important financial firms<sup>4</sup> might engage in excessive risk-taking because they would profit by a success and be bailed out by the government to avoid a failure. This is primarily a problem of moral hazard,<sup>5</sup> that persons protected from the negative consequences of their risky actions will be tempted to take

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<sup>3</sup> See, e.g., Too Big to Fail, Too Big to Exist Act, S. 1206, 114 Cong. (2015); Independent Community Bankers of America, *Ending Too Big To Fail Study* (Jun. 25 2013), available at <http://www.icba.org/files/ICBASites/PDFs/EndTBTFStudy.pdf>. See also

<sup>4</sup> The acronym TBTF is sometimes used as an adjective by referring to systemically important financial firms as TBTF firms. For clarity, this article hereinafter refers to these firms as simply systemically important firms.

<sup>5</sup> Although TBTF has also been described as a problem of taxpayer-funded government bailouts, that description is partly circular. A systemically important firm would only need a bailout to avoid failure, and failure would most likely result from excessive risk-taking. If that risk-taking could be controlled, the need for government bailouts would be greatly reduced. Part IV.A of this article examines how to control that risk-taking. Part IV.B of the article examines how to minimize the public cost of bailing out systemically important firms that would fail notwithstanding that risk-taking control. See *infra* notes 169-186 and accompanying text.

more risks.<sup>6</sup> Excessive risk-taking was widely seen as one of the primary causes of the 2007-08 financial crisis (the “financial crisis”),<sup>7</sup> and it is regarded as a continuing threat that can misallocate resources, increase public costs by necessitating government bailouts,<sup>8</sup> and even cause another economic collapse.<sup>9</sup>

For these reasons, much of the financial regulation responding to the financial crisis, including the Dodd-Frank Act<sup>10</sup>—whose very preface states it is “[a]n Act . . . to end ‘too big to fail’”—has been inspired at least in part by the goal of ending TBTF.<sup>11</sup>

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<sup>6</sup> See, e.g., GARY H. STERN & RON J. FELDMAN, *TOO BIG TO FAIL: THE HAZARDS OF BANK BAILOUTS* (2004); Neel Kashkari, *Lessons from the Crisis: Ending Too Big to Fail*, Address at the Brookings Institution, Washington, D.C. (Feb. 16, 2016), transcript available at <https://www.minneapolisfed.org/news-and-events/presidents-speeches/lessons-from-the-crisis-ending-too-big-to-fail> (referring to “the risks and challenges posed by large banks and moral hazard”).

<sup>7</sup> See, e.g., FIN. CRISIS INQUIRY COMM’N, *THE FINANCIAL CRISIS INQUIRY REPORT: FINAL REPORT OF THE NATIONAL COMMISSION ON THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES* xviii–xix (2011) (identifying excessive risk-taking by systemically important firms as a primary cause of the financial crisis); Jacob J. Lew, Opinion, *Let’s Leave Wall Street’s Risky Practices in the Past*, WASH. POST (Jan. 9, 2015) (repeatedly attributing the financial crisis to “excessive risks taken by financial” firms); *The Origins of the Financial Crisis: Crash Course*, ECONOMIST (Sept. 7, 2013), <http://www.economist.com/news/schoolsbrief/21584534-effects-financial-crisis-are-still-being-felt-five-years-article> (identifying excessive risk-taking as one of three causes of the financial crisis, the other causes being irresponsible lending and regulators being “asleep at the wheel”).

<sup>8</sup> For discussion of the ongoing concern of regulators over public costs associated with bailouts of systemically important firms, see, e.g., Arthur E. Wilmarth, *The Dodd-Frank Act: A Flawed and Inadequate Response to the Too-Big-to-Fail Problem*, 89 OR. L. REV. 951, 1021 (2011); Gustavo Gari, *Using Bazookas and Firewalls to Regulate Systemic Risk in the Financial Market: The Problems With Bailouts and Bank Breakups and the Case for Network Interconnectivity*, 12 FLA. ST. U. BUS. REV. 155, 165 (2013) (discussing that Congress enacted the Dodd-Frank Act to try to avoid the need for taxpayer-funded bailouts of systemically important firms).

<sup>9</sup> STERN & FELDMAN, *supra* note 6, at 23-28.

<sup>10</sup> See The Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203 (2010).

<sup>11</sup> Cf. John C. Coffee, *Systemic Risk After Dodd-Frank: Contingent Capital and the Need for Regulatory Strategies beyond Oversight*, 11 COLUM. L. REV. 795, 797–98 (2011) (arguing that the Dodd-Frank Act is directed at freeing the public from again having to choose between the unpalatable externalities of bearing the cost of a massive infusion of

The principal domestic effort to achieve that goal is currently being undertaken by the Minneapolis Federal Reserve Bank (the “Minneapolis Fed”) under the leadership of current president and former Assistant Secretary of the Treasury for Financial Stability, Neel Kashkari.<sup>12</sup> Kashkari claims “there is no question that [the] presence [of systemically important banks] at the center of our financial system contributed significantly to the magnitude of the [financial] crisis and to the extensive damage it inflicted across the economy.”<sup>13</sup> He also sees “widespread agreement among elected leaders, regulators and Main Street that we must solve the problem of TBTF.”<sup>14</sup>

The principal international effort to end TBTF is being led by the Financial Stability Board,<sup>15</sup> an organization established by the G20 nations to monitor and make recommendations about the global financial system. To that end, the Financial Stability Board has published “two final guidance papers to assist the resolution planning work of authorities and firms, as part of the policy agenda to end ‘too-big-to-fail.’”<sup>16</sup> These papers discuss, among other things, the progress in the “development of policies to address the risks posed by too-big-to-fail banks” in order to “contribute to greater resolvability of systemically important firms and resilience of the financial system.”<sup>17</sup>

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capital into a firm whose risk-taking has left it facing collapse, and a possible systemic collapse).

<sup>12</sup> “Seeking Comment on Ending Too Big To Fail,” *available at* <https://minneapolisfed.org/publications/special-studies/endingtbtff/share-your-ideas>. Kashkari hopes to announce a formalized plan to end TBTF by the end of 2016.

<sup>13</sup> Kashkari, *supra* note 6.

<sup>14</sup> *Id.*

<sup>15</sup> *See, e.g.,* John Glover & Ilya Arkhipov, *End of ‘Too-Big-to-Fail’ Banking Era Endorsed by World Leaders*, Bloomberg News (Nov. 15, 2015), *available at* <http://www.bloomberg.com/news/articles/2015-11-15/end-of-too-big-to-fail-banking-era-endorsed-by-world-leaders> (reporting that “World leaders [from the G20 nations] are set to endorse plans by regulators to end the era of too-big-to-fail banks, forcing them to raise as much as \$1.2 trillion, and backed proposals to wrap up sweeping reforms of rules for the global banking system.”).

<sup>16</sup> Financial Stability Board Press Release, “FSB publishes further guidance on resolution planning and fifth report to the G20 on progress in resolution” (Aug. 18, 2016).

<sup>17</sup> Financial Stability Board, *Resilience through Resolvability – Moving from Policy Design to Implementation*, 5th Report to the G20 on Progress in Resolution (Aug. 18,

This article argues that, contrary to currently accepted regulatory wisdom, the problem of TBTF is exaggerated. The central evil of TBTF is based on an assumption: that the expectation of a bailout will cause systemically important firms to engage in morally hazardous, and thus excessive, risk-taking.<sup>18</sup> This article contends that excessive corporate risk-taking is not caused by bailout-induced moral hazard (hereinafter, “moral hazard”).<sup>19</sup> Rather, such risk-taking is more likely caused by other factors,<sup>20</sup> including the governance requirement that corporate managers—including managers of systemically important firms—view the consequences of their firm’s actions only from the standpoint of the firm and its investors, ignoring systemic externalities that can harm the public. As a result, regulating excessive risk-taking by regulating TBTF can be inefficient,<sup>21</sup>

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2016), at 4, available at <http://www.fsb.org/wp-content/uploads/Resilience-through-resolvability-%E2%80%93-moving-from-policy-design-to-implementation.pdf>.

<sup>18</sup> See *supra* notes 3-6 and accompanying text. Although in theory a systemically important firm might not necessarily be TBTF, the financial literature treats the two synonymously. See, e.g., Marc Labonte, *Systemically Important or “Too Big To Fail” Financial Institutions*, Congressional Research Service, Rep. No. 7-5700 (prepared for “Members and Committees of Congress,” June 30, 2015) (treating systemically important firms as TBTF). My article follows this approach to the extent that it assumes for analytical purposes that systemically important firms could be TBTF.

<sup>19</sup> This article refers to moral hazard in the bailout-induced sense, which is commonly linked to the problem of TBTF. In its broadest sense, moral hazard can refer to any “condition that insulates someone from the risk of or responsibility for an action.” BOUVIER LAW DICTIONARY 710 (2011 Compact Edition, Stephen Michael Sheppard, ed.). In that sense, a firm’s externalization of systemic harm also creates moral hazard.

<sup>20</sup> See e.g., Steven L. Schwarcz, *Controlling Financial Chaos: The Power and Limits of Law*, 2012 WIS. L. REV. 815 (discussing other factors that can cause systemically important firms to engage in excessive risk-taking, including limited liability and conflicts of interest between the firm’s secondary and senior managers).

<sup>21</sup> TBTF regulation that focuses on limiting the size of systemically important firms can, for example, reduce economies of scale and scope. See *infra* notes 71-80 and accompanying text.

ineffective,<sup>22</sup> and sometimes even dangerous.<sup>23</sup> Excessive risk-taking can, and should, be more directly and efficiently regulated by regulating the governance of systemically important firms.

The article proceeds as follows. Part I shows there is no evidence that moral hazard is the cause of excessive corporate risk-taking by systemically important firms. To the contrary, such firms are often so large and their actions so subject to scrutiny that they would have difficulty taking excessive risks in the expectation of a bailout; they are, in the words of this article's title, "too big to fool" the public. Part II explains why other factors can cause those firms to engage in excessive risk-taking. Part III analyzes why regulatory solutions to limit TBTF are misguided. Part IV shows how excessive risk-taking can, and should, be more directly regulated. To that end, subpart A of Part IV argues that managers of systemically important firms should have a public governance duty not to engage their firms in excessive risk-taking that leads to systemic externalities. Subpart A also explains how to implement such a duty without unduly weakening corporate wealth production. Subpart B then argues for the creation of a privatized fund to minimize the taxpayer cost of bailing out systemically important firms that might fail notwithstanding reduced risk-taking.

## **I. TBTF DOES NOT CAUSE MORALLY HAZARDOUS BEHAVIOR**

There is no evidence, much less proof, that TBTF causes firms to engage in morally hazardous behavior. Most studies discussing such behavior merely assume it,

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<sup>22</sup> TBTF-motivated regulation that imposes higher capital requirements may not, for example, discourage excessive risk-taking. *See infra* notes 92-98 and accompanying text. And TBTF-motivated regulation that attempts to convert debt to equity has never been truly tested, can raise its own moral hazard concern, and may well make that debt too expensive. *See infra* notes 120-125 and accompanying text.

<sup>23</sup> The Dodd-Frank Act's TBTF-motivated restriction of the Federal Reserve's authority to act as a lender of last resort to systemically important firms exacerbates the risk, for example, that a failing firm will trigger another financial crisis. *See infra* notes 128-132 and accompanying text.

without actually offering evidence.<sup>24</sup> Other studies conflate correlation and causation, assuming that if many systemically important firms engage in risky behavior, that behavior was predicated on bailout expectations.<sup>25</sup> The fallacy of that logic is clear:

Bailed-out banks are, by definition, in some sort of distress and exhibit high risk. But this might be simply due to bad luck rather than to bad behavior. Even a prudently managed bank might be distressed because of an exogenous shock. Using the bailout of such an unlucky bank to explain its risk is no evidence for moral hazard. Moral hazard problems arise only from the additional risk taking due to higher bailout expectations, which are usually not observable. ... Econometrically, the identification of moral

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<sup>24</sup> See, e.g., Jacopo Camassi, *Overcoming Too-Big-To-Fail: A Regulatory Framework to Limit Moral Hazard and Free Riding in the Financial Sector*, Centre for European Policy Studies, 16 (2010) (stating that “a blanket protection *may* exacerbate moral hazard and compromise market discipline”) (emphasis added); Lawrence Baxter, *Fundamental Forces Driving United States and International Financial Regulation Reform*, 6 SUNGKYUNKWAN J. SCIENCE & TECHNOLOGY L. 105, 113 (2012) (“The TBTF status [of certain] institutions . . . creates a class of institutions that are, in effect, ‘protected’ by government. They are able to borrow at lower cost because creditors do not believe they will be allowed to fail, and moral hazard is correspondingly increased as their managers become less sensitive to the costs of potential failure.”); Frederic Mishkin, *How Big a Problem is Too Big to Fail? A Review of Gary Stern and Ron Feldman’s Too Big to Fail: The Hazards of Bank Bailouts*, 44 J. ECON. LIT. 1988, 1990 (2006) (“The result of the too-big-to-fail policy is that large banks are *likely* to take on greater risks, thereby making bank failures more likely.”) (emphasis added).

<sup>25</sup> See, e.g., Ning Gong & Kenneth Jones, *Bailouts, Monitoring, and Penalties: An Integrated Framework of Government Policies to Manage the Too-Big-to-Fail Problem*, 13 INT’L REV. FIN. 299, 300 (“In this paper, we analyze the formulation of a government’s bailout policy. Our model is based on three premises. First, a bank can choose either a safer or a riskier project (portfolio). Without any subsidy or bailout in the event of failure of the projects, shareholders prefer safer projects. Second, with a government subsidy (effectively bailout) in the event of failure, shareholders prefer riskier projects to the safer ones.”); Ann Graham, *Bringing to Heel the Elephants in the Economy: The Case for Ending “Too Big To Fail”*, 8 PIERCE L. REV. 117, 125 (2010) (stating that, because many systemically important banks returned to “risky” behavior a year after being bailed out (namely “betting big on bonds, commodities and exotic financial products”), they were reliant on the promise of TBTF protection); Manja Völz & Michael Wedow, *Market Discipline and Too-big-to-fail in the CDS Market: Does Banks’ Size Reduce Market Discipline?*, 18 J. EMPIRICAL FIN. 195, 196 (2011) (“In practice, the TBTF policy appears to have been extended to varying degrees to banks outside the top eleven, which has led to excessive risk taking by large banks.”).

hazard therefore requires variables that well explain the likelihood of a bank bailout, but are uncorrelated with the risk taking of banks.<sup>26</sup>

The economic studies purporting to “prove” that TBTF causes firms to engage in morally hazardous behavior merely show that systemically important firms can borrow at lower-than-average cost.<sup>27</sup> Economists presume this funding advantage derives from investor belief that these firms will be bailed out before they default.<sup>28</sup> That presumption, however, is unjustified. There are many other reasons besides the expectation of a bailout why systemically important firms, which usually are large,<sup>29</sup> can borrow at lower-than-

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<sup>26</sup> Dam Lammertjan & Michael Koetter, *Bank Bailouts and Moral Hazard: Evidence from Germany*, 25 REV. FIN. STUDS. 2343, 2344 (2012). Cf. Skylar Brooks, *Sovereign Debt Restructuring: A Backgrounder*, Global Consultations on Sovereign Debt Restructuring 9 (2014) (draft intended for publication) (in a sovereign debt context, discussing the difficulty of empirically identifying morally hazardous behavior).

<sup>27</sup> See, e.g., BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, CALIBRATING THE GSIB SURCHARGE 13 (July 20, 2015) (stating that some of the largest systemically important firms are believed to have a funding advantage). Former Federal Reserve Chairman Alan Greenspan has estimated informally that systemically important firms can borrow at a funding advantage of 50 basis points. See *Regulating and Resolving Institutions Considered “Too Big to Fail”*: Hearing Before the S. Comm. on Banking, Housing and Urban Affairs (May 6, 2009) (statement of Martin Neil Baily and Robert E. Litan, referencing Chairman Greenspan’s estimate).

<sup>28</sup> BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, *supra* note 27, at 13 (stating that the funding advantage “derives from the belief of some creditors that the government might act to prevent [a systemically important firm] from defaulting on its debts,” and that this funding advantage “creates an incentive for [those firms] to take on even more leverage and make themselves even more systemic (in order to increase the value of the [funding advantage] subsidy”). Compare Marc Labonte, *Systemically Important or “Too Big To Fail” Financial Institutions*, 6 J. CURRENT ISSUES IN FINAN., BUS. & ECON. 39, 55 (2013) (describing as the “worst-case scenario” the possibility that government protection of systemically important firms “would provide a competitive advantage that would enable more risk taking than before”) with Thomas Huertas, *Resolution Reform*, 13 FINAN. & ECON. REV. 86, 88 (2014) (“If the market expects the government to be able and willing to bail out banks . . . , then such banks can borrow at lower cost than they would be able to do strictly on the basis of their stand-alone rating. This encourages risk-taking at the bank, creating what economists term ‘moral hazard’.”).

<sup>29</sup> Cf. *infra* note 38 and accompanying text (discussing why systemically important firms are usually large).

average cost, including that large firms generally have economies of scale,<sup>30</sup> better access to debt markets<sup>31</sup> and larger dividend pay-out ratios,<sup>32</sup> and their credit is less vulnerable to market disruption.<sup>33</sup> Nor do those studies attempt to examine whether systemically important firms can borrow at lower cost than non-systemically important large firms.<sup>34</sup>

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<sup>30</sup> Viral V. Acharya et al., “The End of Market Discipline? Investor Expectations of Implicit Government Guarantees” 4 (2015), available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1961656](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1961656).

<sup>31</sup> ANTONIOS ANTONIOU ET AL., DETERMINANTS OF CORPORATE CAPITAL STRUCTURE: EVIDENCE FROM EUROPEAN COUNTRIES 4 (2002). Large firms generally have better access to debt markets for reasons other than a TBTF perception. Most studies of that access make no reference to TBTF. *See, e.g.*, Armen Hovakimian et al, *Are Corporate Default Probabilities Consistent with the Static Trade-off Theory?*, 25 REV. FIN. STUD. 315, 317 (2012) (observing that “larger firms are less risky, have lower proportional bankruptcy costs, and have better access to debt markets”); Jan Bartholdy, *Debt and Taxes for Private Firms*, 20 INT’L REV. FIN. ANALYSIS 177, 177 (2011) (observing that “relatively large” firms generally have good access to debt markets because they are often “public on a stock exchange [and] financially sophisticated”).

<sup>32</sup> Christian Schroeder, Demand, q, Financial Constraints and Shareholder Value Revisited: An Econometric Micro-analysis of US Fixed Investment, 7 INT. J. ECON. & BUS. RESEARCH 28, 40 (2014).

<sup>33</sup> Karen Mills & Brayden McCarthy, *The State of Small Business Lending: Credit Access during the Recovery and How Technology May Change the Game*, Harvard Business School General Management Unit Working Paper No. 15-004 6 (2014). *Cf.* Orcun Kaya, Deutsche Bank Research Note on *Capital Markets Union: An Ambitious Goal, but Few Quick Wins* 13 (2015) (discussing why banks have taken a cautious stance in lending to euro-area small and medium size enterprises), available at [https://www.dbresearch.com/PROD/DBR\\_INTERNET\\_EN-PROD/PROD000000000371611/Capital Markets Union%3A An ambitious goal, but few .pdf](https://www.dbresearch.com/PROD/DBR_INTERNET_EN-PROD/PROD000000000371611/Capital%20Markets%20Union%3A%20An%20ambitious%20goal,%20but%20few%20quick%20wins.pdf).

<sup>34</sup> One of the most rigorous economic studies relied on by advocates of bailout-induced moral hazard is Bryan Kelly, Hanno Lustig, & Stijn Van Nieuwerburgh, *Too-Systemic To-Fail: What Option Markets Imply About Sector-wide Government Guarantees*, 106 AM. ECON. REV. 1278 (2016). The authors provide “new evidence from option prices that suggests the [U.S.] government absorbed aggregate tail risk during the 2007–2009 financial crisis by providing a sector-wide bailout guarantee to the financial sector.” *Id.* at 1318. In the words of the authors, though, this evidence only *suggests* that the government provided a bailout guarantee. Furthermore, they make no claim that systemically important firms engaged in bailout-induced moral hazard. Even more significantly, their evidence of a “sector-wide bailout guarantee” does not apply to “individual banks.” *Id.* at 1279. To the contrary, they find that individual banks did not benefit from that guarantee. *Id.* They explain that result as follows: “any individual bank may still fail amid a collective guarantee . . . .” *Id.*

The idea that TBTF causes systemically important firms to engage in morally hazardous behavior is also antithetical to managerial incentives. Managers who cause their firms to engage in excessive risk-taking, in the expectation the firm will be bailed out by the government, are taking serious personal risks. If, as in the case of Lehman Brothers, the government fails to bail out the firm, those managers are almost certain to lose their jobs.<sup>35</sup> Even if there is a bailout, it may well be conditioned on those managers resigning or otherwise giving recompense.<sup>36</sup> In either case, the ensuing reputational damage could permanently end a manager's financial career.<sup>37</sup>

Moreover, systemically important firms are usually large,<sup>38</sup> and—by virtue of being systemically important—their actions are subject to higher scrutiny than ordinary firms. If they take excessive risks in the expectation of a bailout, such firms will almost certainly be recognized and subjected to harsh media and political criticism.<sup>39</sup>

So why is there such a widespread belief that systemically important firms engage in morally hazardous behavior? One reason, perhaps, is that moral hazard is a common

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<sup>35</sup> See, e.g., Susan Rose-Ackerman, *Risk Taking and Ruin: Bankruptcy and Investment Choice*, 20 J. LEG. STUD. 277, 278 (1991) (“In practice, when a publicly held corporation files for bankruptcy, many top managers lose their jobs at the same time.”).

<sup>36</sup> See, e.g., JEFFREY FRIEDMAN & WLADIMIR KRAUS, *ENGINEERING THE FINANCIAL CRISIS: SYSTEMIC RISK AND THE FAILURE OF REGULATION 43* (2011) (“[W]hen Continental Illinois failed, its managers were fired and its shareholders were wiped out, and when [Long Term Capital Management] was bailed out, its principals were essentially wiped out, too. It would not be logical for any self-interested bank executive to run a bank into the ground because of his or her belief that *it* would then be bailed out *if* she would then be fired (and, if compensated with equities, wiped out.)”).

<sup>37</sup> *Id.* at 43.

<sup>38</sup> Cf. Int’l Monetary Fund, *Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations* (2009), <https://www.bis.org/publ/othp07.pdf> (discussing size as one of the key factors for determining a firm’s systemic importance).

<sup>39</sup> That explains, as mentioned (*see* text accompanying notes 23-24), this article’s title—“too big to fool” the public.

explanation for any excessive risk-taking,<sup>40</sup> including excessive risk-taking by firms.<sup>41</sup> Attributing excessive corporate risk-taking to moral hazard also accords with the human inclination, inflamed by politicians and the media, to view harm as being caused by wrongdoers.<sup>42</sup> It also goes without saying that “too big to fail” is a great sound-bite.

## II. OTHER FACTORS CAUSE SYSTEMICALLY IMPORTANT FIRMS TO ENGAGE IN EXCESSIVE RISK-TAKING

If moral hazard does not cause systemically important firms to take excessive risks, then why do they sometimes engage in that risk-taking? There are several possible alternative explanations. To some extent, for example, excessive risk-taking may result from a misalignment between managerial and investor interests.<sup>43</sup> As later discussed, however, even perfectly aligning those interests would not sufficiently control that risk-taking.<sup>44</sup> Another possible explanation is that limited liability motivates shareholders of

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<sup>40</sup> See, e.g., J. David Cummins & Sharon Tennyson, *Moral Hazard in Insurance Claiming: Evidence from Automobile Insurance*, 12 J. RISK & UNCERTAINTY 29-50 (1998) (finding moral hazard in automobile insurance markets); Aviva Aron-Dine et al, *Moral Hazard in Health Insurance: Do Dynamic Incentives Matter?*, 97 REV. ECON. & STAT. 725-741 (2015) (finding moral hazard in health insurance markets); James D. Shilling, *Introduction to the Special Issue of International Real Estate Review*, 18 INT’L REAL ESTATE REV. 149-154 (2015) (finding moral hazard in the housing market); Steven J. Harper, *Bankruptcy and Bad Behavior, The Real Bad Behavior: Law Schools Exploiting Market Disruption*, 23 AM. BANKR. INST. L. REV. 347-365 (2015) (finding moral hazard by law schools “engag[ing] in bad behavior that fills classrooms and maximizes revenues” as the cost of tuition rises); Alan J. Kuperman, *The Moral Hazard of Humanitarian Intervention: Lessons from the Balkans*, 52 INT’L STUD. Q. 49-80 (2008) (finding moral hazard by humanitarian actors in cases of genocide and ethnic cleansing).

<sup>41</sup> See, e.g., David Rowell & Luke B. Connelly, *A History of the Term “Moral Hazard”*, in 79 J. RISK & INSURANCE 159 (2012).

<sup>42</sup> This fundamental attribution bias not only leads observers to believe events are caused by people rather than external factors, but also prevents observers from seeking deeper reasons behind an event once a sufficient reason—like moral hazard by human actors—is found. See Dominik Duell & Dimitri Landa, *Attribution Bias in Strategic Environments*, EPSA 2013 Annual General Conference Paper 744 1, 7 (2013).

<sup>43</sup> See *infra* note 149 and accompanying text.

<sup>44</sup> Cf. *infra* note 150 and accompanying text (arguing that systemic externalities result from a different misalignment of interests: between the firm, its investors, and its managers on the one hand, and the public on the other hand).

systemically important firms to take risks that could generate outsized personal profits, even if that greatly increases systemic risk.<sup>45</sup> But that explanation is incomplete, applying primarily to systemically important firms, such as hedge funds, that are managed directly by their investors.<sup>46</sup>

Examining the corporate governance process reveals a more fundamental reason for excessive risk-taking. Risk-taking decisions are corporate governance judgments made by a firm’s managers,<sup>47</sup> who manage risk in order to try to maximize profitability for the firm and its investors—principally its shareholders.<sup>48</sup> This “shareholder primacy” governance rule<sup>49</sup> creates a conflict between private and public interests: risk-taking that is excessive from a public perspective, in that it has a negative expected value to the public,<sup>50</sup> might benefit the firm and its investors.<sup>51</sup> For non-systemically important firms, this conflict is either inconsequential<sup>52</sup> or addressed through laws that prohibit the firm from causing harm or require the firm to internalize harmful costs.<sup>53</sup>

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<sup>45</sup> See Steven L. Schwarcz, *The Governance Structure of Shadow Banking: Rethinking Assumptions About Limited Liability*, 90 NOTRE DAME L. REV. 1 (2014).

<sup>46</sup> *Id.* at 18.

<sup>47</sup> See, e.g., Christine Hurt, *The Duty to Manage Risk*, 39 J. CORP. L. 253, 256-57 (2014). By “managers,” I refer to those with ultimate responsibility to run the firm, such as a corporation’s directors.

<sup>48</sup> See, e.g., RICHARD A. BREALEY, STEWART C. MYERS, & FRANKLIN ALLEN, *PRINCIPLES OF CORPORATE FINANCE* 9–10 (10th ed. 2011).

<sup>49</sup> Cf. Henry Hansmann & Reinier Kraakman, *The End of History for Corporate Law*, 89 GEO. L.J. 439, 443–48 (2001) (discussing the ideological convergence worldwide of shareholder primacy as a governance rule).

<sup>50</sup> The expected value of an action to a party is determined by comparing the expected benefits and costs of the action to that party. Expected value thus depends on the party on whom the impact is being measured.

<sup>51</sup> Steven L. Schwarcz, *Misalignment: Corporate Risk-Taking and Public Duty*, 92 NOTRE DAME L. REV. 1, 3 (2016).

<sup>52</sup> Cf. Steven L. Schwarcz, *Collapsing Corporate Structures: Resolving the Tension Between Form and Substance*, 60 BUS. LAW. 109, 144 (2004) (observing that corporate risk-taking routinely causes externalities).

<sup>53</sup> See, e.g., STEPHEN M. BAINBRIDGE, *CORPORATION LAW AND ECONOMICS* 425 (2002) (arguing that negative externalities created by corporate conduct should be “constrained through general welfare legislation, tort litigation, and other forms of regulation”).

For systemically important firms, however, the conflict can be highly consequential—especially if the risk-taking decision causes the firm to fail, externalizing systemic harm onto other market participants and the public, including ordinary citizens affected by an economic collapse.<sup>54</sup> The Annex to this article illustrates this impact, using the example of a systemically important firm whose risk-taking has a positive expected value to its investors but a negative expected value to the public.<sup>55</sup> Also, the conflict has not yet been effectively addressed through laws for systemically important firms. Traditional regulatory approaches, such as imposing legal prohibitions or requirements to internalize harmful systemic costs,<sup>56</sup> have failed,<sup>57</sup> leading to the type of frustration expressed as the consensus of an international conference on financial regulation sponsored by the Federal Reserve Bank of Boston: “[P]olicy makers have made little progress in figuring out how they might actually” prevent another financial crisis.<sup>58</sup>

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<sup>54</sup> Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 204-06 (2008). *See also* John Crawford, *The Moral Hazard Paradox of Financial Safety Nets*, CORNELL J.L. & PUB. POL’Y (forthcoming) (Aug. 17, 2015 draft, on file with author) (observing, at 54, that “Financial firms . . . are under-incentivized to insure at the optimum level, given the fact that the potential systemic costs of their *own* failure would be borne primarily by others.”). *Cf.* Alessio M. Paces, *Illiquidity and Financial Crisis*, 74 U. PITT. L. REV. 383, 417 (2013) (arguing that it “may be tempting to simply let banks bear the consequences of their” risk-taking, but a bank failure might “affect[] all banks and the entire economy”). This market failure could be viewed as a type of “tragedy of the commons” insofar as market participants suffer from the actions of other market participants depleting the shared resource of a common financial market. *Cf.* Antonio Cabrales et al., *Risk-Sharing and Contagion in Networks*, CESIFO Working Paper No. 4715, 34 (2014) (observing the “tension aris[ing] from the fact that firms have always an incentive to form connected components of the size that minimizes the default probability of their members, thus ignoring the negative externality this behavior imposes on other firms”). It also could be viewed as a more standard externality—and thus as a form of moral hazard, though not bailout-induced moral hazard—insofar as non-market participants (i.e., the citizens affected by an economic collapse) suffer from the actions of market participants.

<sup>55</sup> *See* ANNEX 1, *infra*.

<sup>56</sup> *Cf. supra* notes 52-53 and accompanying text (referencing the application of traditional regulatory approaches to non-systemically important firms).

<sup>57</sup> *See Misalignment, supra* note 51, at 17-21, 21 (demonstrating that substantive legal prohibitions and requirements to internalize harm may be “insufficient to control excessive corporate risk-taking that causes systemic externalities”).

<sup>58</sup> Binyamin Appelbaum, *Skepticism Prevails on Preventing Crisis*, N.Y. TIMES, Oct. 5, 2015, at B1.

There is another way to resolve the conflict. Regulators should re-examine the corporate governance rule that actually creates the conflict.<sup>59</sup> This approach is somewhat iconoclastic; the law ordinarily avoids regulating corporate governance to address externalities because interfering with governance is thought to “weaken[] the wealth-producing capacities of the firm.”<sup>60</sup> Part IV will explain, however, how corporate governance law could be modified to resolve the conflict without unduly weakening the wealth production of systemically important firms.

In the financial context of this article, focusing on corporate governance has another advantage over traditional regulatory approaches. Traditional approaches often depend on regulators precisely understanding the particular design and structure of financial firms, markets, and other related institutions at the time the regulation is promulgated.<sup>61</sup> Because these institutions constantly change,<sup>62</sup> traditional regulation becomes obsolete unless it is continuously updated to adapt to the changes.<sup>63</sup> Such updating, however, can be costly and “is subject to political interference at each updating

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<sup>59</sup> See *supra* notes 48-49 and accompanying text (discussing shareholder primacy).

<sup>60</sup> Ian B. Lee, *The Role of the Public Interest in Corporate Law*, in RESEARCH HANDBOOK ON THE ECONOMICS OF CORPORATE LAW 106, 124 (Claire A. Hill & Brett H. McDonnell eds., 2012). See also Leo E. Strine, Jr. & Nicholas Walter, *Conservative Collision Course?: The Tension Between Conservative Corporate Law Theory and Citizens United*, 100 CORNELL L. REV. 335, 380–81 (2015) (contending that the most responsible, legitimate, and effective way to control externalities is to have the “legitimate instruments of the people’s will, reflective of their desire, set the boundaries for corporate conduct”). Cf. Milton Friedman, *The Social Responsibility of Business Is to Increase Its Profits*, N.Y. TIMES (Sept. 13, 1970), <http://umich.edu/~thecore/doc/Friedman.pdf> (arguing that managers lack the political legitimacy and expertise to consider social interests).

<sup>61</sup> Steven L. Schwarcz, *Regulating Financial Change: A Functional Approach*, 100 MINN. L. REV. 1441, 1443 (2016).

<sup>62</sup> *Id.*

<sup>63</sup> Cf. PERRY MEHRLING, *THE NEW LOMBARD STREET: HOW THE FED BECAME THE DEALER OF LAST RESORT* 4–5 (2011) (arguing that because economics and finance “largely ignore the sophisticated mechanism that operates to channel cash flows . . . to meet cash commitments,” they have not “been particularly well suited for understanding the . . . [financial] crisis during which the crucial monetary plumbing broke down.”).

stage.”<sup>64</sup> As a result, traditional regulation usually lags financial innovation.<sup>65</sup> Regulating corporate governance can overcome that regulatory time lag; if the firm is proposing to engage in a risky financial innovation, its managers either have or, to fulfill their governance duties, must try to obtain the most current information about the innovation and its consequences.

### III. TBTF-BASED REGULATION OF EXCESSIVE RISK-TAKING IS MISGUIDED

If the assumption that moral hazard causes systemically important firms to engage in excessive risk-taking is incorrect, then regulation starting from that assumption is unlikely to control that risk-taking and could even be harmful. This Part demonstrates that by examining the principal TBTF-based approaches to regulating excessive risk-taking that have been enacted into law or are being contemplated.

One such approach, breaking up firms and limiting their size (discussed in subpart A<sup>66</sup>), seeks to reduce the number of systemically important firms in the first place. Another approach, imposing higher capital requirements (discussed in subpart B<sup>67</sup>), seeks to make systemically important firms more robust so they are unlikely to experience financial problems. A third approach, converting debt to equity (discussed in subpart

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<sup>64</sup> *Regulating Financial Change*, *supra* note 61, at 1443.

<sup>65</sup> *Id.* at 1454. *See also* Edward J. Kane, *Policy Implications of Structural Changes in Financial Markets*, 73 AM. ECON. REV. 96 (1983) (arguing that regulatory responses lag behind innovations). In 2007, for example, the pre-crisis financial regulatory framework, which assumed the dominance of bank-intermediated funding, failed to adequately address a collapsing financial system in which the majority of funding had become non-bank intermediated. *Cf.* Julia Black, *Restructuring Global and EU Financial Regulation: Character, Capacities, and Learning*, in FINANCIAL REGULATION AND SUPERVISION: A POST-CRISIS ANALYSIS 3. 13 (Eddy Wymeersch et al. eds., 2012) (observing that “the system simply did not operate in the way that regulators, banks, and economists had thought it did. If you do not understand how the system works, it is very hard to build in mechanisms either for managing risk or for ensuring the system’s resilience when those risks crystallize.”).

<sup>66</sup> *See infra* notes 71-83 and accompanying text.

<sup>67</sup> *See infra* notes 84-112 and accompanying text.

C<sup>68</sup>), seeks to pre-engineer a change to a systemically important firm's capital structure that becomes effective if the firm experiences financial problems—in effect, a pre-planned debt workout. A fourth approach (discussed in subpart D<sup>69</sup>) seeks to control the failure of a systemically important firm in order to reduce moral hazard and the need for a bailout. The examination shows that these approaches can be inefficient, ineffective, or sometimes even dangerous.<sup>70</sup>

#### A. Breaking up Firms and Limiting their Size

A commonly discussed TBTF-based regulatory approach is to break up systemically important firms and limit their size so they are no longer systemically

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<sup>68</sup> See *infra* notes 112-125 and accompanying text.

<sup>69</sup> See *infra* notes 125-146 and accompanying text.

<sup>70</sup> On a more theoretical level, one might argue that any TBTF-based approach to regulating excessive risk-taking could backfire. Any such approach is primarily microprudential: it is designed to protect individual financial firms. Even though such an approach is also incidentally macroprudential (i.e., protective of the financial system) by making it less likely that individual systemically important firms will fail, Professor Mokal argues that trying to make the financial system stable by making it less likely that individual systemically important firms will fail can actually increase financial instability by ignoring the tendency of individual systemically important firms to try to externalize costs. Rizwaan Jameel Mokal, *Liquidity, Systemic Risk, and the Bankruptcy Treatment of Financial Contracts*, 10 BROOK. J. CORP. FIN. & COM. L. 15, 20, 68 (2015). In contrast, my article's proposal, to require managers to account for systemic externalities in their governance decisions, confronts that tendency and has a clearly macroprudential goal—to reduce systemic risk.

important.<sup>71</sup> But if, as this article argues,<sup>72</sup> moral hazard does not cause systemically important firms to engage in excessively risky behavior, then this approach would merely reduce the number of systemically important firms that can engage in such behavior. Limiting firm size can be harmful, however, undermining the economies of scale and scope that firms need to compete successfully in an increasingly globalized and interconnected world.<sup>73</sup>

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<sup>71</sup> See, e.g., Governor Daniel K. Tarullo, *Confronting Too Big To Fail*, Address at the Exchequer Club, Washington D.C. (Oct. 1, 2009) (“Another approach would be to attack the bigness problem head-on by limiting the size or interconnectedness of financial institutions. Some observers have even suggested that existing large firms should be split up into smaller, not-too-big-to-fail entities, in a manner a bit reminiscent of the break-up of AT&T in the early 1980s.”); Marc R. Reinganum, *Setting National Priorities: Financial Challenges Facing the Obama Administration*, 65 FIN. ANALYST J. 32, 34 (2009) (“In short, new policies should strive to make sure that no investment firm is too big to fail by either limiting the size of firms or prohibiting activities within a firm that can lead to failure.”). Cf. Kashkari, *supra* note 6 (outlining a number of possible “transformative” approaches to ending TBTF, including “[b]reaking up large banks into smaller, less connected, less important entities”). Kashkari also suggested “[t]urning large banks into public utilities by forcing them to hold so much capital that they virtually can’t fail...[and] taxing leverage throughout the financial system to reduce systemic risks wherever they lie.” *Id.* A later-suggested option is to implement alternative resolution mechanisms that could address some of the perceived shortcomings of current resolution plans. Neel Kashkari, *Update on Minneapolis Fed Ending Too Big to Fail Initiative*, Address at the Minnesota Chamber of Commerce (April 18, 2016), transcript available at <https://www.minneapolisfed.org/news-and-events/presidents-speeches/update-on-minneapolis-fed-ending-too-big-to-fail-initiative>. Cf. Joseph Lawler, *Warren Introduces Glass-Steagall Bill to Break up Big Banks*, WASH. EXAMINER, (July 7, 2015), available at <http://www.washingtonexaminer.com/warren-introduces-glass-steagall-bill-to-break-up-big-banks/article/2567757> (discussing ongoing political efforts to reduce the size of systemically important firms). My article does not purport to examine whether breaking up systemically important firms could create a “too many to fail” problem if multiple broken-up firms face highly correlated risks. Cf. Coffee, *infra* note 181 (discussing those correlated risks).

<sup>72</sup> See *supra* Parts I (arguing that TBTF does not cause firms to engage in morally hazardous behavior) & II (arguing that excessive risk-taking results from externalized harm, not from reliance on a bailout).

<sup>73</sup> Cf. Anna Kovner, et al., *Do Big Banks Have Lower Operating Costs?*, FRBNY ECON. POLICY REV. 1, 22 (2014) (“Consistent with recent research that identifies the presence of scale economies in banking, our results suggest that imposing size limits on banking firms would be likely to involve real economic costs. . . . [A] back-of-the-envelope calculation applied to our estimates implies that limiting [bank holding company] size to

Large firms have many competitive advantages over smaller firms.<sup>74</sup> As already mentioned, that they can borrow at lower costs and have economies of scale.<sup>75</sup> The latter include brand-based economies of scale due to the ability of large firms to obtain brand recognition at lower cost,<sup>76</sup> cost-based economies of scale due to lower average cost per unit of output,<sup>77</sup> and revenue-based economies of scale because financial service providers are more likely to advance them large loans and to underwrite large securities offerings for them.<sup>78</sup> Similarly, large firms may benefit by offering a broad range of products or services to a large client base.<sup>79</sup> Furthermore, in the increasingly global market of finance, larger financial firms can benefit by projecting a greater international presence and more easily offering cross-border financial products.<sup>80</sup>

Limiting firm size can also raise practical issues. For example, what metric should govern whether firms should be broken up, especially for firms that are already relatively small but still pose a systemic risk.<sup>81</sup> Because it could limit profitability,<sup>82</sup> any effort to

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be no larger than 4 percent of GDP would increase total noninterest expense by \$2 billion to \$4 billion per quarter.”).

<sup>74</sup> I am not advocating that firms be any larger, however, than needed to achieve economies of scale and scope and other appropriate benefits. Size can create its own problems, including potentially making a firm too big to properly manage.

<sup>75</sup> See *supra* notes 27-31 and accompanying text.

<sup>76</sup> Jean Dermine, “European Banking: Past, Present, and Future,” Paper presented at the Second ECB Central Banking Conference 27-28 (October 25, 2002).

<sup>77</sup> *Id.*

<sup>78</sup> *Id.* Cf. Joseph P. Hughes & Loretta J. Mester, *Who Said Large Banks Don’t Experience Scale Economies? Evidence from a Risk-return-driven Cost Function*, 22 J. FINAN. INTERMEDIATION 559, 561 (2013) (arguing that large banks have cost- and revenue-based economies of scale derived from their heightened risk-return tradeoff).

<sup>79</sup> Dermine, *supra* note 76. Large firms even have defense-based economies of scale, because their size provides protection against takeover attempts. *Id.*

<sup>80</sup> Cf. Jean Dermine & Dirk Schoenmaker, *In Banking, Is Small Beautiful?*, 19 FINAN. MARKETS INSTITUTIONS, & INSTRUMENTS 1, 7 (2010) (arguing that smaller banks are less competitive in international finance).

<sup>81</sup> Gary Stern & Ron Feldman, *Addressing TBTF by Shrinking Financial Institutions: An Initial Assessment*, THE REGION, Federal Reserve Bank of Minneapolis 8, 10 (2009).

<sup>82</sup> See *supra* notes 76-80 and accompanying text.

break up firms is also likely to be unpopular among, and therefore opposed by, shareholders.<sup>83</sup>

### B. Imposing Higher Capital Requirements

Another TBTF-based approach to regulating excessive risk-taking is to impose higher capital and other requirements on systemically important firms.<sup>84</sup> In the United States, for example, this is done by designating such firms as “systemically important financial institutions,” or SIFIs, which thereby subjects them to capital requirements set by the Federal Reserve.<sup>85</sup> These capital requirements, in turn, are based on the framework, known as the Basel Accords, promulgated by the Basel Committee on Banking Supervision under the auspices of the Bank for International Settlements.<sup>86</sup>

In response to the financial crisis, the Basel Committee issued the Basel III recommendations, which are designed to further strengthen bank capital requirements beyond those set in the Basel I and Basel II recommendations.<sup>87</sup> The Federal Reserve’s minimum capital requirements are based on Basel III.<sup>88</sup> The Federal Reserve is also

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<sup>83</sup> Stern & Feldman, *supra* note 81, at 10, 11.

<sup>84</sup> Cf. Anat R. Admati, *The Missed Opportunity and Challenge of Capital Regulation*, NAT’L. INST. ECON. REV. No. 235, R4, R4 (Feb. 2016) (stating that “Capital regulation is critical to address distortions and externalities from . . . the failure of markets to counter incentives for recklessness”); Sanjai Bhagat et al, *Size, Leverage, and Risk-Taking of Financial Institutions*, J. BANK. & FINAN. 520, 521 (2015) (“[Our findings] suggest that instead of just limiting firm size, it may be more effective for regulators to strengthen and enhance regulations on equity capital requirements for all financial institutions.”).

<sup>85</sup> See Dodd-Frank Act § 115 (authorizing the Financial Stability Oversight Council to make recommendations to the Board of Governors of the Federal Reserve System on the “prudential standards and reporting and disclosure requirements” of SIFIs).

<sup>86</sup> See, e.g., Thomas L. Hogan & Neil R. Meredith, *Risk and Risk-based Capital of U.S. Bank Holding Companies*, J. REGULATORY ECON. 86, 90 (2016).

<sup>87</sup> Basel Committee on Banking Supervision, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems* 56 (2011), *available at* <http://www.bis.org/publ/bcbs189.pdf>.

<sup>88</sup> Hogan & Meredith, *supra* note 86.

subjecting eight U.S.-based globally systemically important banks (“G-SIB”s)<sup>89</sup> to risk-based capital surcharges over and above the Basel III recommended level.<sup>90</sup>

The ability of capital requirements to prevent risk-taking is unclear, however.<sup>91</sup> Part of the articulated academic rationale for imposing capital requirements is that “[w]ith more capital, a large bank has more to lose if it goes under and, thus, has less incentives to take on risk.”<sup>92</sup> But the more widely accepted government regulatory rationale for imposing capital requirements is to protect financial institutions against unexpected losses.<sup>93</sup> The Federal Reserve itself articulates that regulatory rationale: to enable banks and other financial firms to “hold adequate capital under adverse conditions to maintain ready access to funding, continue to serve as credit intermediaries, and continue

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<sup>89</sup> G-SIBs are banks whose collapse would threaten the entire international financial system. Meraj Allahrakha et al, *Systemic Importance Indicators for 33 U.S. Bank Holding Companies: An Overview of Recent Data*, Office of Financial Research Brief Series 1 (Feb. 12, 2015).

<sup>90</sup> Board of Governors of the Federal Reserve System, Press Release, December 9, 2014, available at <http://www.federalreserve.gov/newsevents/press/bcreg/20141209a.htm>. The surcharge, intended to become effective January 1, 2019, is to be calibrated based on each firm’s systemic risk profile. *Id.*

<sup>91</sup> Cf. Alessio M. Paces, *The Future in Law & Finance* 24 (Erasmus Law Lectures No. 32) (2013) (observing that “higher capital requirements cannot stop banks from taking excessive risk”).

<sup>92</sup> Mishkin, *supra* note 24, at 996 (concluding that “[h]igher capital requirements thus . . . make the too-big-to-fail problem less severe”). Cf. Anjan V. Thakor, *Bank Capital and Financial Stability: An Economic Tradeoff or Faustian Bargaining?* 6 ANN. REV. FINAN. ECON. 185, 200 (2014) (observing that “theories that emphasize the positive role of bank capital rel[y] on the idea that the shareholders of better-capitalized banks have more to lose from bank failure and are therefore more likely to engage in costly borrower monitoring”); Hendrik Hakenes & Isabel Schnabel, *Bank Size and Risk-taking Under Basel II*, 35 J. BANK. & FINAN. 1436, n. 5 (2011) (observing that “[m]ost of the existing [scholarly] literature focuses on moral hazard as the main motivation for capital requirements”).

<sup>93</sup> Kern Alexander & Steven L. Schwarcz, *The Macroprudential Quandary: Unsystematic Efforts to Reform Financial Regulation*, in RECONCEPTUALISING GLOBAL FINANCE AND ITS REGULATION 127, 136 (Ross Buckley et al., eds.) (2016). Cf. Admati, *supra* note 84, at R4 (observing that “[w]ell-designed capital regulation ensures that an appropriate part of funding is obtained and maintained from owners and shareholders [who] automatically absorb losses . . .”); Hakenes & Schnabel, *supra* note 92 (acknowledging that “[a]nother prominent explanation [for imposing capital requirements is] as a buffer against losses”).

operations.”<sup>94</sup> The Chairman of the Financial Stability Board likewise has articulated that regulatory rationale.<sup>95</sup> He also has explicitly questioned the ability of capital requirements to prevent risk-taking.<sup>96</sup>

It therefore appears unsettled whether higher capital requirements will discourage excessive risk-taking.<sup>97</sup> Even minimal discouragement might be beneficial, though, if there is no cost. Although certain economists argue that higher capital requirements have no associated public costs,<sup>98</sup> others argue to the contrary. For example, some believe that public gains may eventually outweigh the public costs.<sup>99</sup> Some fear that unintentionally excessive capital requirements can lead to social costs.<sup>100</sup> Others believe that capital requirements might reduce bank lending, thereby causing a credit shortfall that would

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<sup>94</sup> Bd. of Governors of the Fed. Reserve Sys., Revised Temporary Addendum to Sr Letter 09-4: Dividend Increases and Other Capital Distributions for the 19 Supervisory Assessment Program Bank Holding Companies 1 (November 17, 2010), *available at* [http://www.federalreserve.gov/boarddocs/srletters/2009/SR0904\\_Addendum.pdf](http://www.federalreserve.gov/boarddocs/srletters/2009/SR0904_Addendum.pdf)

<sup>95</sup> See Rainer Masera, *Taking the Moral Hazard Out of Banking: The Next Fundamental Step in Financial Reform*, 14 PSL QUARTERLY REV. 105, 109 (2011) (“The Chairman of the Financial Stability Board . . . indicated that the new Basel III rules, aimed at strengthening banks’ capital buffers, were a positive step to help prevent future crises, by reducing the probability of the failure of large banks”).

<sup>96</sup> *Id.* (stating that the Basel III capital requirements do “not address the moral hazard problem”).

<sup>97</sup> *But cf.* text accompanying note 188, *infra* (arguing that whether or not higher capital requirements would discourage excessive risk-taking, they should be considered to make a systemically important firm’s insolvency less likely).

<sup>98</sup> ANAT ADMATI & MARTIN HELLWIG, *THE BANKERS’ NEW CLOTHES: WHAT’S WRONG WITH BANKING AND WHAT TO DO ABOUT IT* 98 (2013).

<sup>99</sup> See, e.g., Alberto Locarno, *The Macroeconomic Impact of Basel III on the Italian Economy*, QUESTIONI DI ECONOMIA E FINANZA No. 88, 1, 21 (Bank of Italy 2011) (arguing in the context of the Italian economy that although the fall of output caused by new capital requirements will impose temporary costs, “the gains [will] undoubtedly outweigh the costs to be paid to achieve a sounder banking system”).

<sup>100</sup> See, e.g., Jean Dermine, *Banking Regulations after the Global Financial Crisis, Good Intentions and Unintended Evil*, 19 EUROPEAN FINANCIAL MANAGEMENT 658-674 (2013) (“Or, if capital is excessive, it might lead to inefficiently higher interest rates on bank loans. . . in a dynamic perspective, private costs may induce social costs as banks reduce their supply of loans or securitize assets.”).

harm the public.<sup>101</sup> Still others criticize capital requirements for cutting into global economic output and reducing jobs.<sup>102</sup> One financial economist recently claims that higher capital requirements can create “uncertainty [that] severely undermines rather than reinforces market discipline” because “the Basel [III] system of risk weights is “excessively complex and highly difficult to understand [and also] susceptib[le] to gaming.”<sup>103</sup> That uncertainty, he further contends, “will lead to a near certain loss of confidence in the banking system” in the event of a crisis.<sup>104</sup>

Furthermore, the *misapplication* of capital requirements could have a substantial cost. Capital requirements are generally imposed on a countercyclical basis.<sup>105</sup> This

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<sup>101</sup> See, e.g., Reint Gropp et al., “Bank Response to Higher Capital Requirements: Evidence from a Quasi-Natural Experiment,” available at <http://ssrn.com/abstract=2877771> (Nov. 30, 2016) (finding that higher bank capital requirements cause banks to increase their capital ratios not by raising their levels of equity but by reducing their credit supply, resulting in lower firm-, investment-, and sales growth); Jacob Bikker, et al., *Cyclical Patterns in Profits, Provisioning and Lending of Banks and Procyclicality of the new Basel Capital Requirements*, 55 BANCA NAZIONALE DEL LAVORO QUART. REV. 143, 144 (2002). Cf. David Bholat, Money, Bank Debt, and Business Cycles: Between Economic Development and Financial Crises, in AVAILABILITY OF CREDIT AND SECURED TRANSACTIONS IN A TIME OF CRISIS 28 (2013; N. Orkun Akseli, ed.) (discussing Hayek’s theory that a contraction in bank lending results in declining economic output, unemployment, and a recession or even depression).

<sup>102</sup> See Eduardo Porter, *Recession’s True Cost is Still Being Tallied*, N.Y. TIMES, Jan. 21, 2014, at B1, available at <http://www.nytimes.com/2014/01/22/business/economy/the-cost-of-the-financial-crisis-is-still-being-tallied.html> (discussing these criticisms of capital requirements).

<sup>103</sup> Emiliios Avgouleas, “Bank Leverage Ratios and Financial Stability: A Micro- and Macroprudential Perspective,” Levy Econ. Inst. Working Paper No. 849 (Oct. 2015), at 16-17.

<sup>104</sup> *Id.* at 17.

<sup>105</sup> See Kristin N. Johnson, *Macroprudential Regulation: A Sustainable Approach to Regulating Financial Markets*, 2013 U. ILL. L. REV. 881, 916 (2013) (discussing flexible capital requirements as a macroprudential tool); Richard Berner, Dir. of Office of Fin. Research, Remarks at the Joint Conference of the Federal Reserve Bank of Cleveland and Office of Financial Research, *Financial Stability Analysis: Using the Tools, Finding the Data* (May 30, 2013) (identifying countercyclical capital requirements as a tool to reduce or neutralize “threats to financial stability”).

recognizes that finance, and especially banking, is by nature procyclical.<sup>106</sup> Lowering capital requirements can stimulate economic growth, whereas increasing capital requirements can help to discourage the buildup of imbalances during economic booms and bubbles.<sup>107</sup> There has been debate, however, about whether countercyclical regulation is actually feasible given that it is virtually impossible to know *ex ante* whether a financial cycle is rational or merely a bubble.<sup>108</sup>

Yet, accuracy is critical; the mistiming or misapplication of countercyclical regulation can be devastating, as illustrated by the savings and loan (S&L) crisis of the 1980s in the United States. S&L institutions faced a period in which rising interest rates made lending less attractive to borrowers.<sup>109</sup> To avoid having to commit government funds to bail out financially stressed institutions, regulators relieved the stress by engaging in a type of countercyclicity: they eased the capital ratios in order to “help

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<sup>106</sup> See Haocong Ren, *Countercyclical Financial Regulation 3* (World Bank, Working Paper No. 5823, 2011), <http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-5823> (observing that during economic booms and bubbles, credit expansion outpaces economic growth, and that during economic downturns, lending contracts, further worsening economic prospects).

<sup>107</sup> See Brett H. McDonnell, *Designing Countercyclical Capital Buffers*, 18 N.C. BANKING INST. 123, 123 (2013) (noting that the same factors that cause cycles in the financial markets, cause financial regulations to reinforce the cycles); *see also id.* at 124–30 (discussing how capital requirements are procyclical when they force banks to cut back on lending due to faltering capital positions because of decreasing credit quality and increasing losses, further deteriorating economic performance and resulting in even more credit losses).

<sup>108</sup> See, e.g., Patricia A. McCoy, *Countercyclical Regulation and Its Challenges* (Bos. Coll. Law Sch., Legal Studies Research Paper No. 351, 2015), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2568261](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2568261) (arguing that even for real estate bubbles, no one has adequate information *ex ante* to know for sure whether the price increases are rationale or merely a bubble); MARKUS BRUNNERMEIER, ET AL., *THE FUNDAMENTAL PRINCIPLES OF FINANCIAL REGULATION* 11, 18 (2009) (criticizing countercyclical capital buffers as being difficult to implement, easy to circumvent, and subject to regulatory arbitrage). Countercyclical regulation’s effectiveness could be further undermined by regulatory arbitrage if the measures are not analogously applied to relevant shadow-banking activities. Ren, *supra* note 106, at 8.

<sup>109</sup> Douglas J. Elliott, et al., *The History of Cyclical Macroprudential Policy in the United States* 34 (Fed. Reserve Bd., Finance and Economics Discussion Series No. 2013-29, 2013), <http://www.federalreserve.gov/pubs/feds/2013/201329/201329pap.pdf>.

banks muddle through [that] difficult period.”<sup>110</sup> However, the result of that forbearance, in conjunction with other regulatory-relief steps, was to rapidly expand the size of the S&L industry—from \$686 billion in 1982 to \$1.1 trillion in 1985.<sup>111</sup> When the S&L industry eventually collapsed, its increased size led to the largest federal bailout in history up to that time.<sup>112</sup>

While this article is being written, the Minneapolis Fed issued a comment draft of its “Plan to End Too Big to Fail.”<sup>113</sup> The Plan focuses on dramatically increasing capital for all large systemically important firms, and then forcing firms that are still TBTF to “break themselves up or issue so much capital that they virtually can’t fail.”<sup>114</sup> Annex 2 to this article sets forth the author’s comments on that draft Plan.

### C. Converting Debt to Equity

This approach—which includes the “TLAC” proposal<sup>115</sup>—seeks to pre-engineer a change to a systemically important firm’s capital structure that becomes effective if the firm experiences financial problems. Thus, the Minneapolis Fed has considered TBTF-based regulation that would convert certain debt claims into equity interests if and when a

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<sup>110</sup> *Id.* (observing that this countercyclicality was imprecisely implemented).

<sup>111</sup> *Id.* at 35.

<sup>112</sup> See Lawrence A. Cunningham & David Zaring, *The Three or Four Approaches to Financial Regulation: A Cautionary Analysis Against Exuberance in Crisis Response*, 78 GEO. WASH. L. REV. 39, 51 (2009).

<sup>113</sup> THE MINNEAPOLIS PLAN TO END TOO BIG TO FAIL (Nov. 16, 2016), available at <https://www.minneapolisfed.org/publications/special-studies/endingtbtf/the-minneapolis-plan-to-end-too-big-to-fail>.

<sup>114</sup> Minneapolis Fed Press Release (Nov. 16, 2016).

<sup>115</sup> TLAC refers to total loss-absorbing capacity and contemplates that systemically important firms issue minimum levels of debt and similar securities “that can be written down or converted into equity in case of resolution.” Erica Jeffrey, *TLAC: What You Should Know*, EUROMONEY (Aug. 10, 2016). See also Federal Reserve Board, Press Release on Total Loss Absorbing Capacity Requirement (Oct. 30, 2015); Board of Governors of Federal Reserve System, Notice of proposed rulemaking: “Total Loss-Absorbing Capacity, Long-Term Debt, and Clean Holding Company Requirements for Systemically Important U.S. Bank Holding Companies and Intermediate Holding Companies of Systemically Important Foreign Banking Organizations,” 80 Federal Register 74,926 (Nov. 30, 2015).

systemically important firm reaches a specified level of financial deterioration.<sup>116</sup> The debt-to-equity conversion of the securities evidencing these debt claims (called contingent convertible securities, or “CoCos”) would not bring new cash into the firm.<sup>117</sup> Instead, it would reduce the firm’s indebtedness, thereby making the firm financially viable again.<sup>118</sup> The possibility that their debt could be converted into equity should also motivate creditors to take on more of a “monitoring” role,<sup>119</sup> which could reduce the firm’s risk-taking.

CoCos have been issued in Europe, though they have never been truly tested because no conversion has yet occurred.<sup>120</sup> There are questions remaining regarding the actual implementation of such a policy in the United States, including what would trigger the debt to convert<sup>121</sup> and how to ensure that creditors holding convertible debt are compensated without making the debt too costly.<sup>122</sup>

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<sup>116</sup> See Federal Reserve Bank of Minneapolis, *The Fourth Symposium on Ending Too Big to Fail*, September 26, <https://www.minneapolisfed.org/publications/special-studies/endingtbt/symposiums/ending-too-big-to-fail-symposium-iv>. See also John Glover, *Contingent Convertibles*, BLOOMBERG QUICKTAKE (July 29, 2016, 4:31 PM), <http://www.bloombergvew.com/quicktake/contingent-convertible-bonds>.

<sup>117</sup> Edward Simpson Prescott, *Contingent Capital: The Trigger Problem* 98 *Econ. Q.* 33, n.3 (2012)

<sup>118</sup> Jianping Zhu et al., *From Bailout to Bail-in: Mandatory Debt Restructuring of Systemic Financial Institutions* (IMF Staff Discussion Note, SDN/12/03, Apr. 2012), available at <http://www.imf.org/external/pubs/ft/sdn/2012/sdn1203.pdf>

<sup>119</sup> Emiliios Avgouleas & Charles Goodhart, *Critical Reflections on Bank Bail-ins*, 1 *J. FIN. REGULATION* 1, 4-5 (2015).

<sup>120</sup> Glover, *supra* note 116. Cf. Admati, *supra* note 84, at R10 (arguing that it “is unrealistic to expect that regulators will trigger recovery and resolution processes that are complex, costly and untested so that losses can be imposed on debt-like TLAC securities, and that they would be politically able to follow up with imposing losses on creditors of mandatory conversion to equity. This is particularly true if a potential crisis is looming, since pulling triggers and inflicting haircuts might have unpredictable consequences throughout the opaque financial system.”).

<sup>121</sup> See Emiliios Avgouleas et al., *Living Wills as a Catalyst for Action*, Duisenberg School of Finance Policy Paper No. 4, 4 (2010)

<sup>122</sup> Paul Melaschenko & Noel Reynolds, *A Template for Recapitalising Too-big-to-fail Banks*, *Banks for International Settlement’s Quarterly Review* 25, 34 (May 2013); Eric S. Halperin, *Coco Rising: Can the Emergence of Novel Hybrid Securities Protect from*

CoCos can also raise their own moral hazard concern—that a “bank that issues contingent capital faces a moral hazard incentive to increase its assets’ jump risks”—i.e., the risk that bank assets can suffer large, sudden losses.<sup>123</sup> In other words, issuers of CoCos may be motivated to invest in risky assets because such issuers will be protected against a fall in asset value by the CoCos’ debt-to-equity conversation. Attempts to reduce this moral hazard, such as by including restrictive contractual covenants, can be overly rigid and “impair[] the managers’ ability to pursue value-maximizing projects.”<sup>124</sup> Yet the failure to reduce this moral hazard is likely to further increase the cost of issuing CoCos.<sup>125</sup> President Kashkari himself appears to be skeptical of this approach.<sup>126</sup> The Financial Stability Board, however, has made this approach a significant part of its plans to end TBTF.<sup>127</sup>

#### D. Controlling Failure to Reduce Moral Hazard and the Need for a Bailout

This approach focuses on controlling the failure of a systemically important firm, in order to reduce moral hazard and the need for a bailout. In the United States, for example, the Dodd-Frank Act restricts the Federal Reserve’s authority to act as a lender

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*Future Liquidity Crises?*, 8 BYU INT’L L. & MGMT. REV. 15, 21–23 (2011) (explaining why issuing CoCos to investors may be more expensive than issuing ordinary debt).

<sup>123</sup> George Pennacchi, “A Structural Model of Contingent Bank Capital,” Federal Reserve Bank of Cleveland, Working Paper No. 10-04 (rev. June 2011), at 30, available at <https://business.illinois.edu/gpennacc/ConCap030211.pdf>.

<sup>124</sup> Simone M. Sepe, *Corporate Agency Problems and ‘Dequity’ Contracts*, 36 J. CORP. L. 113, 145 (2010). Another concern over this moral hazard is that it will increase the cost of CoCos.

<sup>125</sup> Cf. Pennacchi, *supra* note 123, at 22 (arguing that investors in CoCos that are subject to “downward jumps in value” will “demand higher new issue yields to compensate for these potential losses”).

<sup>126</sup> Kashkari, *supra* note 6.

<sup>127</sup> See Financial Stability Board, *supra* note 17, at 8 (internal citation omitted): “Much has now been done to achieve what is necessary to make too-big-to-fail banks resolvable. A particular milestone was the FSB’s publication in November 2015 of the finalised standard for Total Loss-Absorbing Capacity (TLAC). This policy taken together with the other policy measures to enhance the resolvability of systemic banks will, if implemented at firm level and underpinned by robust legal or regulatory measures, contribute to greater resilience of the financial system.”

of last resort to provide bailouts to failing financial institutions.<sup>128</sup> This restriction is primarily intended to reduce the moral hazard of systemically important firms by removing their expectation of a financial safety net should risky behavior put such a firm at risk of failing.<sup>129</sup>

Again, however, if moral hazard does not cause those firms to engage in excessively risky behavior,<sup>130</sup> then the restriction cannot, by itself, prevent such behavior. But the restriction is dangerous,<sup>131</sup> making it much more likely that the government will be unable to prevent systemically important firms from failing, with (predictably) systemically devastating consequences.<sup>132</sup>

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<sup>128</sup> The Dodd-Frank Act limits the authority of the Federal Reserve to make emergency loans under section 13(3) of the Federal Reserve Act. Dodd-Frank amended that subsection to require the Federal Reserve to consult with and receive approval from the Secretary of the Treasury to ensure that any emergency lending is designed to provide liquidity to the markets and not to aid a financially failing firm. Dodd-Frank Act § 1101(a)(6).

<sup>129</sup> See, e.g., Norbert J. Michel, *Title XI Does Not End Federal Reserve Bailouts*, in *THE CASE AGAINST DODD-FRANK: HOW THE “CONSUMER PROTECTION” LAW ENDANGERS AMERICANS* 170 (Michel 2016) (“One concern with central banks providing direct loans is a basic moral hazard problem. Namely, if central banks provide liberal credit to private banks (or other private firms) on a regular basis, the knowledge of having easy access to these loans would likely encourage private companies to take on additional risk.”).

<sup>130</sup> See *supra* notes 24-33 and accompanying text.

<sup>131</sup> Indeed, the restriction is counter to the European Union’s efforts to expand central bank authority to act as a lender of last resort to failing financial institutions. Carlos Garcia-de-Andoain, *Lending-of-last-resort is as Lending-of-last-resort does: Central Bank Liquidity Provision and Interbank Market Functioning in the Euro Area*, 1 J. FINAN. INTERMEDIATION 1, 22 (2016).

<sup>132</sup> See, e.g., Iman Anabtawi & Steven L. Schwarcz, *Regulating Systemic Risk: Towards an Analytical Framework*, 86 NOTRE DAME L. REV. 1349, 1376 (2011); Michael Fleming & Asani Sarkar, *The Failure Resolution of Lehman Brothers*, 20 FRBNY ECON. POLICY REV. 175, 178 (2014) (observing that the Dodd-Frank Act’s “circumscrib[ing] the ability of the Federal Reserve to act as lender of last resort to the same extent that it did during the financial crisis” will virtually assure that the future bankruptcy of a systemically important firm will result in high creditor losses); Coffee, *supra* note 11, at 825 (observing that the Dodd-Frank Act prevents federal government lender-of-last-resort assistance to nonbank financial firms that are solvent but illiquid, thereby forcing “some firms into an arguably unnecessary liquidation”).

The Dodd-Frank Act also requires certain systemically important firms to file so-called living wills, which are resolution plans setting forth how they could liquidate with minimal systemic impact.<sup>133</sup> This is intended to reduce the need for a bailout.<sup>134</sup> The living-will requirement might not, however, eliminate that need.<sup>135</sup> In my many years as a workout and bankruptcy lawyer, I rarely saw a firm’s failure that accurately reflected, much less closely resembled, expectations about the firm when it was profitable. Furthermore, living wills do not prevent the concurrent failure of multiple otherwise-systemically important firms from, collectively, having a systemic impact.<sup>136</sup> The financial crisis demonstrated that a concurrence of failures is likely when the causes of the failures are interconnected, such as an industry-wide overreliance on credit ratings.<sup>137</sup>

The so-called “single point of entry” (SPOE) strategy represents another way to attempt to control the failure of a systemically important firm in order to reduce the need for a public bailout.<sup>138</sup> This strategy is artificially dependent on systemically important

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<sup>133</sup> See, e.g., Jennifer Meyerowitz et al., *A Dodd-Frank Living Wills Primer: What you Need to Know Now*, 31 AM. BANKR. INST. J. 34, 34 (Aug. 2012) (“As part of the goal to remove the risks to the financial system posed by ‘too big to fail’ institutions, § 165(d) of the Dodd-Frank Act requires systemically important financial institutions to create living wills to facilitate rapid and orderly resolution, in the event of material financial distress or failure”) (internal quotations omitted).

<sup>134</sup> Cf. Clay R. Costner, *Living Wills: Can a Flexible Approach to Rulemaking Address Key Concerns Surrounding Dodd-Frank’s Resolution Plans?*, 16 N.C. BANKING INST. 133, 138–40 (2012) (summarizing arguments for how living wills might help address TBTF).

<sup>135</sup> Although it is questionable, as discussed, whether the U.S. government could satisfy such a need if it arises. See *supra* note 132 and accompanying text.

<sup>136</sup> Cf. Victoria McGrane, *FDIC Chief Martin Gruenberg: Big Bank Failure Won’t Imperil System*, WALL ST. J., May 12, 2015, at C1 (observing that some in Congress “doubt regulators could handle the failure of multiple major firms at the same time”).

<sup>137</sup> Steven L. Schwarcz, *Protecting Financial Markets: Lessons from the Subprime Mortgage Meltdown*, 93 MINN. L. REV. 373, 379-83 & 404-05 (2008). Cf. Janet L. Yellen, Vice-Chair of Board of Governors of the Federal Reserve System, Speech at the Annual Meeting of the National Association for Business Economics, Denver, Col., Oct. 11, 2010, available at 2010 WL 3952044 (F.R.B.) (attributing the financial crisis to concurrences of interrelated failures).

<sup>138</sup> See, e.g., Daniel K. Tarullo, “Toward Building a More Effective Resolution Regime: Progress and Challenges,” Remarks at the Federal Reserve Board and Federal Reserve Bank of Richmond Conference (Oct. 18, 2013) (“Planning for the Orderly Resolution of

firms having a parent-subsidary organizational structure in which the parent holds the stock of the operating-company subsidiary.<sup>139</sup> At the start, therefore, it faces unique legal challenges for cross-border systemically important firms, which may not have the parent-subsidary structure needed for the strategy's execution.

Under the SPOE strategy, if the subsidiary begins to fail, a government agency (in the United States, the Federal Deposit Insurance Corporation) becomes the receiver of the parent,<sup>140</sup> wiping out the parent-company's shareholders (and potentially writing down some of its debt).<sup>141</sup> The receiver then may provide temporary liquidity to the parent to keep the subsidiary operating (and thereby avoiding the instability that rocked the financial markets after Lehman Brothers collapsed<sup>142</sup>), while it seeks to sell its receivership interest to equity investors to bring in more permanent capital.<sup>143</sup> Although proponents of the SPOE strategy are optimistic it can work once implementation

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a Global Systemically Important Bank," Washington, D.C. ("The aim of the single-point-of-entry approach is to stabilize the failed firm quickly, in order to mitigate the negative impact on the U.S. financial system, and to do so without supporting the firm's equity holders and other capital liabilities holders or exposing U.S. taxpayers to losses.").

<sup>139</sup> John Crawford, *'Single Point of Entry': The Promise and Limits of the Latest Cure for Bailouts*, 109 NW. U. L. REV. ONLINE 103, 107 (2014).

<sup>140</sup> Mechanically, the steps described above might take place through a bridge company. The above simplified description nonetheless would still accurately depict the economics of the SPOE strategy.

<sup>141</sup> See, e.g., Jerome H. Powell, Ending "Too Big to Fail," Remarks at the Institute of International Bankers 2013 Washington Conference, Washington, D.C. (March 14, 2013), available at <http://www.federalreserve.gov/newsevents/speech/powell20130304a.htm>.

<sup>142</sup> Kwon-Yong Jin, *How To Eat an Elephant: Corporate Group Structure of Systemically Important Financial Institutions, Orderly Liquidation Authority, and Single Point of Entry Resolution*, 124 YALE L. J. 1746, 1764 (2014).

<sup>143</sup> Powell, *supra* note 141.

challenges are resolved,<sup>144</sup> others—including Kashkari<sup>145</sup>—believe the strategy is unlikely to be practical.<sup>146</sup>

#### IV. EXCESSIVE RISK-TAKING SHOULD BE MORE DIRECTLY REGULATED

If this article is correct that systemically important firms are more likely to engage in excessive risk-taking because much of the systemic harm from their failure would be externalized onto the public,<sup>147</sup> regulation should require those firms to internalize systemic externalities. Subpart A below shows how corporate governance law could be regulated to accomplish that, without unduly weakening corporate wealth-producing capacity, by re-aligning private and public interests.<sup>148</sup>

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<sup>144</sup> Jeremy C. Stein, *Regulating Large Financial Institutions*, in WHAT HAVE WE LEARNED?: MACROECONOMIC POLICY AFTER THE CRISIS 136 (2014).

<sup>145</sup> Kashkari, *supra* note 6 (observing that there is no way to test this strategy’s effectiveness until it is actually in use, and doubting it will be useful in a stressed economic climate).

<sup>146</sup> See, e.g., Stephen J. Lubben & Arthur E. Wilmarth, Jr., *Too Big and Unable to Fail*, FLA. L. REV. 2 (forthcoming 2016) (describing single point of entry as “a resolution tool designed for a very stylized, even hypothetical sort of failure”). Cf. Charles Goodhart & Emiliios Avgouleas, *A Critical Evaluation of Bail-ins as Bank Recapitalisation Mechanisms*, Centre for Economic Policy Research Discussion Paper 10065 1, 34 (July 2014) (arguing that “Reputational contagion” may cause investor flight within the United States once the holding company is liquidated, regardless of how many subsidiaries are still operating); Paul H. Kupiec & Peter J. Wallison, *Can the “Single Point of Entry” Strategy be used to Recapitalize a Failing Bank?*, AEI Economic Working Paper 2014-08 6-7 (Dec. 3, 2014) (discussing the possibility that the FDIC may have to borrow from the U.S. Treasury to recapitalize subsidiaries, and expressing concern that Title II of the Dodd-Frank Act prohibits bank-subsidiary recapitalization using such funds; and also observing that if the use of the funds are challenged, the losses are likely to fall on taxpayers).

<sup>147</sup> See Part II, *supra*. Recall that corporate governance law requires managers to view the consequences of their firm’s actions, and thus to view the expected value of corporate risk-taking, from the standpoint of the firm and its investors. This ignores public externalities caused by the actions. Although that generally makes sense, it does not make sense for risk-taking by systemically important firms that can cause systemic externalities that damage the economy and harm the public.

<sup>148</sup> The Basel Committee on Banking Supervision also advocates revising corporate governance for banks, but so far its principles merely require managers to “look after the interests of the bank as a whole” and do not require them to take into account the

This proposed re-alignment of private and public interests is fundamentally different from, and should not be confused with, the regulatory responses to the financial crisis that attempt to mitigate excessive risk-taking by aligning managerial and investor interests.<sup>149</sup> Those types of responses are necessary but insufficient: even if managerial and investor interests to engage in risk-taking could be perfectly aligned, that would not control the systemic externalities that result from a misalignment of interests between the private sector—the firm and its managers and investors—and the public sector.<sup>150</sup>

Finally, subpart B below recognizes that, notwithstanding a perfect re-alignment of private and public interests, a systemically important firm could still be subject to failure. An exogenous shock, for example, might cause the failure.<sup>151</sup> Avoiding that failure could impose bailout costs on the public. Subpart B therefore also discusses how to minimize those bailout costs.

#### A. Regulating Governance

As explained in Part II, excessive corporate risk-taking is essentially a corporate governance problem. Although much of the harm from a systemically important firm's

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possibility of systemic externalities. *See* Basel Committee on Banking Supervision, Guidelines: Corporate governance principles for banks (2015), *available at* <http://www.bis.org/bcbs/publ/d328.pdf>.

<sup>149</sup> For example, requiring a systemically important firm to tie management compensation to the firm's long-term performance is intended to better align managerial and investor interests by penalizing managers who engage such firms in risky ventures that, notwithstanding short-term appeal, ultimately jeopardize investors. *See, e.g.*, Lucian Bebchuk & Jesse Fried, *Paying for Long-Term Performance*, 158 U. PENN. L. REV. 1915 (2010). *Cf.* Steven L. Schwarcz, *Conflicts and Financial Collapse: The Problem of Secondary-Management Agency Costs*, 26 YALE J. ON REG. 457 (2009) (arguing that aligning secondary and senior managerial interests can help to mitigate excessive risk-taking).

<sup>150</sup> For a detailed analysis of why attempts to mitigate excessive risk-taking by aligning managerial and investor interests are insufficient, *see Misalignment*, *supra* note 51, at 7-8.

<sup>151</sup> *Cf.* *supra* note 26 (observing that “Even a prudently managed bank might be distressed because of an exogenous shock”).

failure would be externalized onto the public, corporate governance law does not require managers to consider those externalities. As a result, systemically important firms “themselves lack sufficient incentives to take precautions against their own failures.”<sup>152</sup>

Requiring managers of systemically important firms to account for systemic externalities in their governance decisions would help to correct this misalignment between private and public interests. That, in turn, would help to reduce excessive risk-taking. To this end, I have separately argued that managers of systemically important firms should have a duty to society (a “public governance duty”) not to engage their firms in excessive risk-taking that leads to systemic externalities.<sup>153</sup> I also have analyzed in detail how to create a public governance duty without unduly weakening corporate wealth-producing capacity.<sup>154</sup> The remaining discussion in this subpart A draws from, and is more fully informed by, that analysis.

There are two critical questions: how should a systemically important firm’s managers assess and balance the public costs and private benefits of a risk-taking activity; and how should the business judgment rule apply to their decisionmaking.

*Assessing and balancing costs and benefits.* How should managers of a systemically important firm, or members of its risk committee,<sup>155</sup> assess and balance the

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<sup>152</sup> BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, CALIBRATING THE GSIB SURCHARGE 1 (July 20, 2015).

<sup>153</sup> See *Misalignment*, *supra* note 51. Although a public governance duty could be judicially created, I have argued that it should be enacted legislatively because it broadly impacts public policy. In the United States, for example, this would mean that a public governance duty should be imposed either by state legislatures (especially the Delaware legislature, because most domestic firms are incorporated under Delaware law) or by the U.S. Congress. *Id.* at 29-31.

<sup>154</sup> See *id.* at 28-50.

<sup>155</sup> For example, § 165(h) of the Dodd-Frank Act directs the Federal Reserve Board to require each publicly traded nonbank financial company supervised by the Board and each publicly traded bank holding company with total consolidated assets of \$10 billion or more to establish a risk committee, which will be responsible for overseeing the company’s risk-management practices. 12 U.S.C. 5365(h). However, the Board’s implementing regulations currently only require risk committees to focus on risks to the

public costs and private benefits of a risk-taking activity? Compare two approaches, one subjective and the other more objective and ministerial. To minimize the burden on managers, these approaches would be needed only when deciding on a risky project whose failure might, either itself or in combination with other factors of which such managers are or should be aware, cause the firm to fail. That recognizes that systemic externalities would most likely result from such a failure.<sup>156</sup>

Under the subjective approach, managers would simply consider and balance the public costs and private benefits of engaging in the project the same way they would consider and balance any other relevant costs and benefits when making a corporate governance decision.<sup>157</sup> Although managers might favor this approach, it would have several drawbacks. Most significantly, a decisionmaking process to mitigate the consequences of a systemic collapse, which can be devastating to the public, should be more transparent. Managers following a subjective approach may also be subject to peer pressure to favor investor profitability over avoiding public harm.<sup>158</sup>

Under the objective approach, managers considering engaging in the project would measure the public costs by the expected value of the project's systemic costs and would measure the private benefits by the expected value of the project to the firm's shareholders.<sup>159</sup> With one exception—valuing the systemic costs if the firm fails—those managers should have sufficient information, or at least much more information than third parties, about these values.<sup>160</sup>

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firm, not to the public. 12 C.F.R. § 252.20–22, 30–35 (2015). *Cf. supra* note 148 (observing that the Basel Committee on Banking Supervision's governance principles do not require bank managers to consider systemic externalities).

<sup>156</sup> *See supra* note 54 and accompanying text.

<sup>157</sup> *Misalignment, supra* note 51, at 32.

<sup>158</sup> *Id.*

<sup>159</sup> *Id.* at 33–34.

<sup>160</sup> *Id.*

Valuing the systemic costs if the firm fails should be a public policy choice. It might be based, for example, on the estimated cost of a government bailout to avoid a systemic failure. Such an estimate could be made by the government as part of the process of designating a firm as “systemically important,” and thereafter periodically updated by the government.<sup>161</sup>

Under the objective approach, managers could simply use the expected value calculations to balance the public costs and private benefits of engaging in the project. From a Kaldor-Hicks economic efficiency standpoint, the project’s justification would turn on the higher expected value. But strict economic efficiency may be insufficient as a public policy matter because the magnitude and harmful consequences of a systemic collapse, if it occurs, could be devastating. It therefore may be appropriate to apply a precautionary principle, requiring a margin of safety in the balancing.<sup>162</sup> Even if this margin-of-safety requirement reduces a firm’s wealth production from a given project that is not undertaken, the net overall wealth production to society, after subtracting systemic costs, should be increased.<sup>163</sup>

*Applying the business judgment rule.* How should the business judgment rule apply to a public governance duty? In the traditional corporate governance context, managers are protected by this rule which presumes that they should not be personally liable for harm caused by negligent decisions made in good faith and without conflicts of interest—and in some articulations of the business judgment rule, also without gross negligence.<sup>164</sup> The rule attempts to balance the goal of protecting investors against losses

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<sup>161</sup> See *id.* at 33-34.

<sup>162</sup> *Id.* at 35-36. Cf. Cass R. Sunstein, *Beyond the Precautionary Principle*, 151 U. PA. L. REV. 1003, 1014 (2003) (discussing a precautionary principle under which “[r]egulation should include a margin of safety, limiting activities below the level at which adverse effects have not been found or predicted”).

<sup>163</sup> *Misalignment*, *supra* note 51, at 37.

<sup>164</sup> Hurt, *supra* note 47, at 258.

with the goals of encouraging the best managers to serve<sup>165</sup> and avoiding the exercise of inappropriate judicial discretion (as would occur if courts tried to second-guess business judgments).<sup>166</sup>

Arguably, the business judgment rule should apply differently to a public governance duty because one of the rule's basic assumptions—that there be no conflict of interest—may be breached. The interest of a manager who holds significant shares or interests in shares, or whose compensation or retention is dependent on share price, is aligned with the firm's shareholders, not with that of the public. To that extent, the manager would have a conflict of interest.<sup>167</sup> To address that conflict, conflicted managers who are grossly negligent—that is, who fail to use even slight care in assessing systemic harm to the public—could be barred from using the rule as a defense. Even with that bar, managers who follow a reasonable procedure<sup>168</sup> to balance public costs and private benefits would be using (at least) slight care and therefore should be protected.<sup>169</sup>

#### B. Minimizing Bailout Costs

Subpart A above has shown how regulating the governance of systemically important firms could control excessive risk-taking. Nonetheless, such a firm could still fail because that control was imperfect or for exogenous reasons. Avoiding that failure

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<sup>165</sup> See, e.g., Ryan Scarborough & Richard Olderman, *Why Does the FDIC Sue Bank Officers? Exploring the Boundaries of the Business Judgment Rule in the Wake of the Great Recession*, 20 FORDHAM J. CORP. & FIN. L. 367, 377 (2015).

<sup>166</sup> Hurt, *supra* note 47, at 259-60; Robert T. Miller, *Oversight Liability for Risk-Management Failures at Financial Firms*, 84 S. CAL. L. REV. 47, 120–21 (2010).

<sup>167</sup> *Misalignment*, *supra* note 51, at 41-42.

<sup>168</sup> The business judgment rule generally respects a duty of process care, which is the standard commonly used in the United States. See, e.g., *Brehm v. Eisner*, 746 A.2d 244, 264 (Del. 2000) (stating that due care in the corporate decision-making context is process due care only, not substantive due care); *In re Caremark Int'l Inc. Derivative Litig.*, 698 A.2d 959, 967–68 (Del. Ch. 1996) (explaining that the business judgment rule is process oriented and informed by a deep respect for all good faith board decisions).

<sup>169</sup> *Misalignment*, *supra* note 51, at 42-43.

could impose bailout costs on the public.<sup>170</sup> This subpart B discusses how to minimize those bailout costs.

Government central banks traditionally are tasked with helping to bail out critical banks, to prevent them from defaulting. They appear to perform this task well,<sup>171</sup> subject only to concerns over whether that imposes a bailout cost on taxpayers and whether it fosters moral hazard. Both of those concerns could be addressed by privatizing the bailout cost.

Privatization could be implemented, for example, by taxing systemically important firms to create a bailout fund.<sup>172</sup> In the United States, there are analogous precedents for requiring the private sector to contribute funds to help internalize externalities.<sup>173</sup> The Federal Deposit Insurance Corporation requires member banks to

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<sup>170</sup> See *supra* notes 5 & 8. In the United States, however, the experience of the financial crisis is that the net cost of bailing out systemically important firms has been relatively minimal, with the government recouping much of its investment. See, e.g., Jonathan Weisman, *U.S. Declares Bank and Auto Bailouts Over, and Profitable*, N.Y. TIMES, Dec. 20, 2014, at B1.

<sup>171</sup> See Gary Gorton & Lixin Huang, 94 *Liquidity, Efficiency, and Bank Bailouts*, AM. ECON. REV. 455, 473-74 (2004).

<sup>172</sup> See *Systemic Risk*, *supra* note 54, at 226 (originally proposing this approach to privatizing bailout costs of systemically important firms). Cf. Jeffrey N. Gordon & Christopher Muller, *Confronting Financial Crisis: Dodd-Frank's Dangers and the Case for a Systemic Emergency Insurance Fund*, 28 YALE J. ON REG. 151, 156 (2011) (calling for a systemic emergency insurance fund that is funded by the financial industry); Wilmarth, *supra* note 8 (arguing that systemically important firms should be required to pay risk-based insurance premiums which would be used to fund liquidation of failed firms and thus reduce potential bailout costs).

<sup>173</sup> The externalities in our case would, of course, be bailout costs. Ironically, an earlier version of the Dodd-Frank Act included a provision for a privatized bailout fund sourced by large banks and other systemically important financial institutions. See Restoring American Financial Stability Act of 2010, S. 3217, 111th Cong. § 210(n) (2009). This provision was dropped, however, after certain politicians alleged it would institutionalize bailouts. See Greg Hitt & Damian Paletta, *Senate Ends Financial-Bill Standoff*, WALL ST.J., Apr. 29, 2010, at A2. The plan by eleven European Union countries to impose a Financial Transactions Tax (FTT) provides another possible precedent for a privatized bailout fund. See European Commission Press Release IP/13/15, Financial Transaction

contribute to a Deposit Insurance Fund to ensure that depositors of failed banks are repaid.<sup>174</sup> U.S. law also requires each owner of a nuclear reactor to contribute monies to a fund to compensate for possible reactor accidents.<sup>175</sup>

Taxing systemically important firms in this way, to create a bailout fund, should reduce the public cost of providing bailouts. It also should reduce moral hazard; and indeed the likelihood that systemically important firms will have to make additional contributions to the fund to replenish bailout monies should motivate those firms to cross-monitor each other and thereby help control each other's risky behavior.<sup>176</sup>

Privatizing bailout costs raises at least two practical concerns. First, we have insufficient experience to precisely determine these costs, and thus to assess the exact amount each systemically important firm should be taxed. If taxes are too low, taxpayer funding may be needed to cover shortfalls.<sup>177</sup> If taxes are too high, that could decrease efficiency by decreasing the amount of capital that financial firms can use to invest.<sup>178</sup> Regulators should be able to at least roughly estimate these costs, however, such as by attempting to match the firm in question to the most “comparable company” that has received bailout money in the past,<sup>179</sup> based on the tracking of data for bailout recipients

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Tax Under Enhanced Cooperation: Commission Sets Out the Details (Feb. 14, 2013), [http://europa.eu/rapid/press-release\\_IP-13-115\\_en.htm](http://europa.eu/rapid/press-release_IP-13-115_en.htm).

<sup>174</sup> 12 U.S.C. § 1815 (d) (2006).

<sup>175</sup> *Nuclear Insurance and Disaster Relief Funds*, U.S. NUCLEAR REG. COMM'N, <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/funds-fs.html>.

<sup>176</sup> *Regulating Financial Change*, *supra* note 61, at 490.

<sup>177</sup> Cf. Iman Anabtawi & Steven L. Schwarcz, *Regulating Ex Post: How Law Can Address the Inevitability of Financial Failure*, 92 TEX. L. REV. 75, 126 (2013) (cautioning that some amount of taxpayer funding will likely be needed to cover bailout-fund shortfalls). Also cf. Adam Geršl & Petr Jakubík, *How Important Is the Adverse Feedback Loop for the Banking Sector?*, 60 EKONOMICKÝ ČASOPIS 32, 34 (2012) (arguing that too small of a bailout fund could prove to be procyclical by letting banks have too much capital and not enough of an insurance cushion).

<sup>178</sup> European Commission, *Bail-In Tool: A Comparative Analysis Of The Institutions' Approaches* 4 (2013).

<sup>179</sup> I say “roughly” estimate because a comparable companies approach is never based on exactly comparable companies. ASWATH DAMODARAN, *APPLIED CORPORATE FINANCE* 565 (4th ed. 2015). Comparability might be assessed based on factors that relate to

in connection with the financial crisis.<sup>180</sup> Furthermore, the bailout fund is contemplated merely as a fallback to the primary remedy of imposing a public governance duty; if that remedy works, relatively few systemically important firms would need a bailout. This article’s proposal for a bailout fund should therefore be much more practical than previously advanced conceptions for bailout funds as a primary remedy.<sup>181</sup>

Another practical concern<sup>182</sup> is the need for international cooperation, so as not to drive systemically important firms in high-tax jurisdictions to low-tax jurisdictions. This type of concern, though, has been addressed extensively by the international community in implementing the various Basel capital accords<sup>183</sup> as well as so-called “soft-law” initiatives.<sup>184</sup>

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systemic riskiness, such as size, interconnectedness, substitutability, and leverage. *See, e.g.*, INT’L MONETARY FUND, GUIDANCE TO ASSESS THE SYSTEMIC IMPORTANCE OF FINANCIAL INSTITUTIONS, MARKETS AND INSTRUMENTS: INITIAL CONSIDERATIONS (2009), <https://www.bis.org/publ/othp07.pdf>. The actual mechanics of the sizing could potentially raise other questions, such as how should the aggregate need for funding be estimated and how should funding be allocated among contributing firms, initially and over time?

<sup>180</sup> *See Bailout Recipients*, PROPUBLICA.ORG, <http://projects.propublica.org/bailout/list/index> (providing a bailout list, which tracks every dollar and every recipient of U.S. government bailout money).

<sup>181</sup> *See supra* note 172. *Cf.* John C. Coffee, Jr., *Systemic Risk after Dodd-Frank: Contingent Capital and the Need for Regulatory Strategies Beyond Oversight*, 111 COLUM L. REV. 795, 801-02 (2011) (observing that “[g]iven high correlation, the failure of one institution implies that all institutions facing correlated risks will face a similar crisis. Insurance cannot solve such an industry-wide problem because no industry-funded insurance fund could ever be sufficient to insure against much of the industry’s failure.”).

<sup>182</sup> Privatizing bailout costs may also raise political concerns. *Cf. supra* note 173 (observing that although an earlier version of the Dodd-Frank Act included a provision for a privatized bailout fund, the provision was dropped after certain politicians alleged it would institutionalize bailouts); Wilmarth, *supra* note 8, at 954 (discussing that political opposition).

<sup>183</sup> *See supra* notes 86-90 and accompanying text.

<sup>184</sup> *Cf.* Andrew P. Morriss & Lotta Moberg, *Cartelizing Taxes: Understanding the OECD’s Campaign Against “Harmful Tax Competition”*, 4 COLUM. J. TAX L. 1, 11 (2013) (discussing soft-law initiatives by international organizations such as the Organisation for Economic Co-operation and Development).

The foregoing discussion assumes that central banks will have authority to use monies in the bailout fund to provide the necessary bailouts. The central bank's authority to provide bailouts should therefore be restored in jurisdictions, such as the United States,<sup>185</sup> where it has been limited. Furthermore, the central bank's authority to provide bailouts should be expanded in all jurisdictions, as needed, to cover not only banks but also other systemically important financial firms.

Finally, in sizing a bailout fund, regulators will need to consider whether the fund should be sufficient to bail out not only illiquid but also insolvent systemically important firms. For an insolvent firm, liquidity would provide only temporary relief from default. Regulators might consider, for example, whether it would be sensible to combine a privatized liquidity bailout fund with a resolution mechanism, such as the conversion of debt to equity discussed in Part III.C,<sup>186</sup> in order to make the firm solvent again. Even if a resolution mechanism is insufficient and too costly as a primary tool to control excessive risk-taking, it might be more effective as a supplemental remedy to help reduce potential bailout costs.<sup>187</sup> Additionally, whether or not higher capital requirements would discourage excessive risk-taking, they would certainly make a systemically important firm's insolvency less likely<sup>188</sup> and therefore should be considered for this purpose.

## CONCLUSIONS

Why do systemically important financial firms engage in excessive risk-taking? Most attribute it to moral hazard: the idea that such a firm will take risks assuming it will profit from success and, being "too big to fail," be bailed out to prevent its failure. This article begins by showing that attributing excessive risk-taking to moral hazard is unsupported by evidence and inconsistent with management incentives. That calls into

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<sup>185</sup> See *supra* notes 128-132 and accompanying text.

<sup>186</sup> See *supra* notes 115-127 and accompanying text.

<sup>187</sup> A resolution mechanism that takes into account a statistical spreading of insolvency risk among multiple systemically important firms would be especially cost-effective as a supplemental remedy.

<sup>188</sup> See, e.g., Admati, *supra* note 84, at R10.

question the efficacy of regulation designed to reduce that risk-taking by reducing moral hazard.<sup>189</sup>

Traditional corporate governance law, this article argues, is more likely to cause systemically important firms to engage in excessive risk-taking. Such law requires managers to consider risk-taking from the standpoint of the firm and its investors. Much of the harm from a systemically important firm's failure, however, would be externalized onto the public. As a result, risk-taking that is excessive from a public perspective might actually benefit the firm and its investors (and therefore comply with corporate governance law).<sup>190</sup>

The article shows that requiring managers of systemically important firms to account for systemic externalities in their governance decisions would help to align private and public interests. That, in turn, should reduce excessive risk-taking. The article also analyzes how to align these interests and reduce that risk-taking without unduly weakening corporate wealth-producing capacity.

Reducing excessive risk-taking would make systemically important firms less likely to fail.<sup>191</sup> It could not, however, completely eliminate the chance of failure. Even

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<sup>189</sup> More technically, as the article explains, systemically important firms do not engage in excessive risk-taking because of bailout-induced moral hazard; such risk-taking is instead caused by a form of moral hazard that results from externalizing systemic harm onto the public.

<sup>190</sup> In this sense, viewing externalities as a market failure, corporate governance law can cause market failures when applied to systemically important firms.

<sup>191</sup> See *supra* note 8 and accompanying text (observing that a systemically important firm's failure would most likely result from excessive risk-taking). Although this article argues for a public governance "duty," other more incremental, though less effective, steps are also possible to try to align private and public interests. One would be to expand on the idea of certain "constituency" statutes that permit, but do not require, managers to take into account potential systemic harm—effectively, a public governance right. Another such step might be to harness bondholders, who are more risk averse than shareholders, in the governance of systemically important firms. See Steven L. Schwarcz, *Rethinking Corporate Governance for a Bondholder Financed, Systemically Risky World*,

firms that take prudent risks could fail due to exogenous shocks.<sup>192</sup> That leaves the problem, albeit attenuated, that systemically important firms will occasionally need to be bailed out. To minimize taxpayer cost, the article finally proposes requiring systemically important firms to contribute to a privatized bailout fund.

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58 WM. & MARY L. REV. (forthcoming issue no. 4, 2017), available at <http://ssrn.com/abstract=2741794>.

<sup>192</sup> See text accompanying note 26, *supra*.

**ANNEX 1**  
**EXPECTED VALUE DISPARITY**

As discussed, systemically important firms can engage in risk-taking ventures that have a positive expected value to their investors but a negative expected value to the public.<sup>193</sup> This Annex 1 illustrates that disparity.

Consider managers of a systemically important firm deciding whether to engage in a risky project that could be profitable. The expected value of the project to the firm's investors (usually the shareholders), which I'll call  $\alpha$ , can be calculated as follows:

$$\alpha \text{ (expected value of project to investors)} = \\ \text{[X\% chance of project being successful} \times \text{\$Y value to investors from that success}^{194}\text{]} - \text{[(1-X\% chance of project being unsuccessful)} \times \text{\$W loss from that failure]}$$

Compare that to the expected value of the project to the public, which I'll call  $\beta$ :

$$\beta \text{ (expected value of project to public)} = \\ \text{[X\% chance of project being successful} \times \text{\$ value to public from that success]} - \\ \text{[(1-X\% chance of project being unsuccessful)} \times \text{F\% chance of firm failing as a result of the project being unsuccessful} \times \text{\$Z resulting systemic costs}].^{195}$$

Most of these values would be pure business judgments about which the firm's managers should have sufficient information, or at least much more information than third parties. For example, those managers should have much more information than third parties about valuing X%, the chance of the project being successful; \$Y, the value to investors from that success; \$W, the loss from the project's failure; and F%, the chance of the firm failing as a result of the project's failure (i.e., effectively as a result of the \$W loss). The exceptions, however, are the values for \$Z, the systemic costs if the firm fails, and the values for \$, the value to the public from the project's success.

Government financial regulators are likely to know much more about valuing \$Z than the firm's managers. That valuation should therefore be a public policy choice. Although there are several possible ways of valuing \$Z, for illustrative purposes I will base its value on the estimated cost of a government bailout to avoid a systemic failure. Such an estimate could be required to be made by the government, for example, as part of the process of

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<sup>193</sup> See *supra* notes 55-54 and accompanying text.

<sup>194</sup> \$Y, the value to investors from the project's success, could be measured by profit or whatever other metric the firm normally uses.

<sup>195</sup> For illustrative purposes, this equation has been simplified in several ways, including that it assumes that the only way a risky project could cause systemic costs is if the project's failure causes the firm's failure. That approach may miss other triggers of systemic risk, such as the negative effects of correlated portfolios.

designating a firm as a systemically important financial institution<sup>196</sup> and thereafter periodically updated by the government.

Valuing  $\xi$  should also be a public policy choice. Certainly the success of an individual firm's project has at least indirect value to the public, such as increasing job creation and economic growth. Quantifying that value is difficult, however, because it is so diffuse. For illustrative purposes, I will assume it is relatively de minimis for any given project and thus can be treated as zero.

Subject to the caution that the values chosen below rely on no hard empirical data and are solely illustrative (a quantitative analysis being no better than its assumptions), assume that the government has estimated the firm's bailout cost ( $\$Z$ ) as \$500 million<sup>197</sup> and that the firm's managers estimate the other values as follows:

$X\%$  (the chance of the project being successful) = 80%.

$\$Y$  (the value to investors from that success) = \$50 million.

$\$W$  (the loss from the project's failure) = \$20 million.

$F\%$  (the chance of the firm failing as a result of the project's failure) = 10%.

Applying these values yields the following:

$\alpha$  (expected value of the project to the firm's investors)

= [(80% chance of project being successful)  $\times$  \$50 million value to investors from that success] – [(20% chance of project being unsuccessful)  $\times$  \$20 million loss from that failure]

= \$36 million

$\beta$  (expected value of project to public)

= [(80% chance of project being successful)  $\times$  \$0 value to public from that success] – [(20% chance of project being unsuccessful)  $\times$  10% chance of firm failing as a result of the project being unsuccessful  $\times$  \$500 million resulting systemic costs]

= – \$10 million

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<sup>196</sup> Such an estimate should, ideally, take into account both domestic and foreign bailout costs. If Country X is designating a global firm as systemically important, the bailout cost would include not only the Country X bailout cost but also the costs of any necessary foreign bailouts.

<sup>197</sup> Much will depend on the government's valuation of  $\$Z$ , the systemic costs if the firm fails. If  $\$Z$  were estimated as \$1.5 billion, rather than \$500 million, the expected value of the project's systemically harmful costs would equal \$30 million in the above illustration.

This project thus has a positive expected value to the firm's investors but a negative expected value (i.e., a cost) to the public.

## ANNEX 2

## COMMENTS ON THE MINNEAPOLIS PLAN TO END TOO BIG TO FAIL

SET FORTH BELOW ARE THE AUTHOR’S COMMENTS, DELIVERED TO THE MINNEAPOLIS FEDERAL RESERVE BANK ON DECEMBER 8, 2016, ON ITS PROPOSED PLAN TO END TOO BIG TO FAIL.<sup>198</sup>

The Minneapolis Plan’s focus on the too-big-to-fail (TBTF) problem appears to conflate, or at least ignore, cause and effect. The TBTF problem is widely viewed as comprising two evils: that systemically important banks might engage in excessive risk-taking because they would profit by a success and expect to be bailed out by the government to avoid a failure; and that government will have little choice but to bail out failing systemically important banks, lest their losses be imposed on other banks. The Minneapolis Plan focuses only on the latter evil—the effect, not the cause.

Indeed, the Plan specifically defines the “TBTF problem” as having that narrow focus: merely being the possibility that “the largest and most systemically important banks fail and impose their losses onto other banks.” Plan p. 2. This ignores how systemically important banks contributed to the 2007-08 financial crisis and could trigger future crises. A comprehensive plan to solve the TBTF problem should also examine the fundamental question of why systemically important banks might fail.

The Financial Crisis Inquiry Commission has begun that examination, identifying excessive risk-taking by systemically important banks as a primary cause of the financial crisis. FIN. CRISIS INQUIRY COMM’N, THE FINANCIAL CRISIS INQUIRY REPORT: FINAL REPORT OF THE NATIONAL COMMISSION ON THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES xviii–xix (2011). Other concur with that view. *See, e.g.*, [Secretary of the Treasury] Jacob J. Lew, Opinion, *Let’s Leave Wall Street’s*

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<sup>198</sup> *See supra* notes 113-114 and accompanying text.

*Risky Practices in the Past*, WASH. POST (Jan. 9, 2015) (repeatedly attributing the financial crisis to “excessive risks taken by financial” firms); *The Origins of the Financial Crisis: Crash Course*, ECONOMIST (Sept. 7, 2013), <http://www.economist.com/news/schoolsbrief/21584534-effects-financial-crisis-are-still-being-felt-five-years-article> (identifying excessive risk-taking as one of three causes of the financial crisis, the other causes being irresponsible lending and regulators being “asleep at the wheel”).

If excessive risk-taking causes systemically important banks to fail (requiring them to be bailed out before they “impose their losses onto other banks”), any plan to address the TBTF problem should also address that risk-taking. Some have already examined excessive risk-taking and its causes. *See, e.g.*, “Too Big to Fool: Moral Hazard, Bailouts, and Corporate Responsibility,” available at <http://ssrn.com/abstract=2847026> (arguing that excessive risk-taking may result less from moral hazard and more from a legally embedded conflict between corporate governance and the public interest that allows managers of systemically important firms to ignore systemic externalities). The Minneapolis Plan does not, however, take the cause of failure into account.

Ignoring causation can undermine the Plan’s recommendations. Because the Plan implicitly assumes that systemically important banks fail, its recommendations center on requiring high levels of common-equity capital to prevent such failures. Some economists (such as Professors Admati and Hellwig, whom I greatly respect) argue that high capital requirements have little associated public costs, but others argue to the contrary. Without attempting to resolve that debate, I merely observe that if high capital requirements are costly, it would be worth examining whether other more targeted remedies (such as trying to mitigate the corporate governance conflict) could be more efficient.

Here’s a simple way to think about this last point. The Dodd-Frank Act’s limiting the Fed’s bailout powers under § 13(3) of the Federal Reserve Act has been analogized to shutting down fire departments in order to make homeowners more careful about starting

fires. If requiring high levels of common-equity capital to prevent a bank failure is in fact very costly, then the Plan's requirement that systemically important banks hold that capital is like making houses completely fireproof instead of improving the effectiveness of fire departments. That may well prevent the houses from burning down, but it is likely to be extremely expensive.

Ignoring causation raises other problems in the Plan, though less serious. For example, the Plan states that as a result of the TBTF problem—which, as indicated, it defines as the possibility that systemically important banks fail and impose their losses onto other banks—“trillions of dollars in American wealth was destroyed.” Plan p. 2. But that wealth destruction resulted from the financial crisis itself. The net cost of bailing out systemically important banks may actually be relatively minimal because the government has been recouping much of that investment.