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Credible Losers: A Regulatory Design for Prudential Market Discipline

*John Crawford**

INTRODUCTION

A remarkable fact about postcrisis attempts to end the “too-big-to-fail” status of systemically important financial institutions (SIFIs) is how much these efforts depend on the creation of new classes of “loss-absorbing” creditors.¹ If there is one thing SIFIs have never lacked, it is an abundance of creditors that can legally absorb losses in the event of failure.² Regulators were unwilling to let losses fall on the trillions of dollars of debt claims held by these creditors during the crisis.³ How,

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¹See *infra* Part III. See also *Total Loss Absorbing Capacity and Term Sheet*, FINANCIAL STABILITY BOARD 5 (Nov. 9, 2015), <http://www.fsb.org/2015/11/total-loss-absorbing-capacity-tlac-principles-and-term-sheet/>.

²For example, at the end of 2015, JPMorgan Chase & Co. had over \$2 trillion in liabilities, and Citigroup had over \$1.5 trillion. JPMorgan Chase & Co., Annual Report 75 (Form 10-K) (Dec. 31, 2015), <http://files.shareholder.com/downloads/ONE/2512090218x0xS19617-16-902/19617/filing.pdf>; Citigroup Inc., Annual Report 12 (Form 10-K) (Dec. 31, 2015), http://www.citigroup.com/citi/investor/quarterly/2016/ar15c_en.pdf.

³At year-end 2007, Citigroup had over \$2 trillion in liabilities and JPMorgan Chase & Co. had over \$1.4 trillion. Citigroup Inc., Annual Report 66 (Form 10-K) (Dec. 31, 2007), <http://www.citigroup.com/citi/investor/data/k08c.pdf?ieNocache=693>; JPMorgan Chase & Co., Annual Report 61 (Form 10-K) (Dec. 31, 2007), <http://files.shareholder.com/downloads/ONE/2512090218x0xS1193125-08-43536/19617/filing.pdf>). Ultimately, creditors of every major financial institution were made whole during the crisis, with the exception of

then, is creating a *new* class of debt supposed to change regulators' calculus when the next SIFI falters? In this article, I seek to resolve this apparent paradox by identifying key criteria that must be met for the loss-bearing function of creditor claims on a SIFI to be credible—criteria that had not previously been satisfied but that are arguably met by a proposed new rule requiring certain U.S. SIFIs to issue long-term debt (LTD) out of their parent holding companies.⁴ I further argue that the existence of “credible losers” among SIFI claimants not only makes SIFI failure less damaging when it happens, but can also make failure less likely to occur in the first place.⁵

Credible losers can make SIFI failure less likely by exercising “market discipline” on firm decision makers. If market actors do not credibly bear the risk of loss, they will lack appropriate incentives to monitor and punish firms for excessive risk-taking; thus, credible losers are a prerequisite for the operation of market discipline. It is important, however, to distinguish two different benchmarks against which we can measure market discipline:⁶ first, expected returns to shareholders; and second, the risk of default on credit obligations. These measures often overlap, but not always. Shareholders may sometimes prefer riskier strategies that carry a higher risk of default but, if successful, promise greater gains.⁷ The creditor's discipline is more likely to support the goals of the prudential regulator, focusing on the safety and soundness of firms, such as banks, whose failure can have destabilizing effects. This article is concerned with discipline that supports the goals of prudential regulation—that is, preventing default rather than maximizing expected

Washington Mutual and Lehman Brothers. See *infra* note 64. Without government support, most U.S. SIFIs would likely have failed. See *infra* note 48.

⁴See *infra* Parts II and III.

⁵See *infra* Parts I and II. “Failure” here means the SIFI cannot survive on its own (leading either to default or rescue). To be clear, “less likely” does not necessarily mean “unlikely.” Further, though I argue that debt offers disciplinary advantages that equity does not, see *infra* Part II.B.1, it is obviously not the case that debt makes failure less likely than an equivalent amount of equity would. The point, then, is that credible losers make it less likely that a SIFI will reach the point of non-viability than would be the case if the SIFI instead issued an equivalent amount of debt that could not credibly bear losses.

⁶See *infra* Part I for further clarification.

⁷See *infra* Part II.B.1.

shareholder profits.⁸ I will revisit the problems with shareholder discipline in Part II.B.1. Elsewhere, unless otherwise specified, I will use “market discipline” to mean this sort of *creditor* discipline and “credible losers” to refer to those whose discipline should be expected to support prudential regulatory aims.

After explaining how market discipline can play a useful supporting role for prudential regulators, and why establishing such discipline for SIFIs has proven so challenging, I present my framework for establishing credible losers. Broader frameworks for understanding how market discipline operates all include, among other elements, the need for market actors with the incentive to monitor and react to firm risk-taking.⁹ I hone in on this need, which presupposes credible losers, and identify three key criteria that must be met for it to hold in a way that supports prudential goals. Meeting these criteria is, I argue, necessary for the establishment of credible losers at SIFIs.¹⁰ The first criterion, focused on serving prudential goals, is that claimants must be more sensitive to the downside risk of default than to the upside potential for large gains.¹¹ Second, the claims must not themselves be “systemically important.”¹² Third, and most challenging, the claims must not be “entangled” with systemically relevant debt—that is, imposing losses on the credible losers must not create the risk of loss or delay in the repayment of systemically important claims.¹³ It is worth noting that this framework runs counter to the views of some commentators on how best to discipline financial institutions,¹⁴ but I defend it as embodying regulators’ (correct) understanding of how to promote financial stability.

⁸See *infra* notes 65–76 and accompanying discussion.

⁹See *infra* notes 92–103.

¹⁰At the same time, it is necessary, but not sufficient, for the operation of market discipline. For example, discipline might be impeded in the absence of adequate disclosure that allows the credible losers to perform their monitoring function effectively. See *infra* notes 94–98.

¹¹See *infra* Part II.B.1.

¹²See *infra* Part II.B.2.

¹³See *infra* Part II.B.3.

¹⁴These views tend to rest on skepticism of the wisdom of protecting the type of debt I call “systemically important” in this article. See *generally infra* Part II.A and II.B.2.

I then use this framework to evaluate the aforementioned rule recently proposed by the Federal Reserve that will require the most prominent class of SIFIs, the global systemically important bank holding company, or GSIB,¹⁵ to issue a minimum amount of LTD.¹⁶ I argue that the rule holds a great deal of promise for meeting the three criteria to establish “credible losers” among the debt claimants of a GSIB—simultaneously protecting taxpayers in case of failure and making failure less likely by promoting market discipline.

Despite the promise of the rule, gaps remain, and I propose addressing them in two ways. First, for SIFIs not covered by the rule, I suggest that appropriately designed contingent convertible (CoCo) capital may help fill the gap.¹⁷ Many European SIFIs have issued such CoCo instruments, and though they have been criticized as problematic along several dimensions,¹⁸ I argue that clearer regulation and better design may make these instruments more useful. Second, “side bets” on SIFIs—in the form of credit default swaps (CDS) and prediction market contracts—might offer another way to create credible losers where they are lacking.

Part I provides a background discussion of the mechanisms through which market discipline traditionally works. Part II lays out the three criteria required to establish credible losers, and Part III evaluates the recent rule requiring GSIBs to issue LTD in light of these criteria. Part IV considers potential objections and gaps that will remain even if the rule is finalized. Part V proposes CoCo instruments and SIFI “side bets” as gap-fillers in partial response to these objections. The Conclusion summarizes the article’s arguments.

¹⁵Eight U.S. firms are currently treated as GSIBs for regulatory purposes: JPMorgan Chase, Citigroup, Bank of America, Goldman Sachs, Morgan Stanley, Wells Fargo, Bank of New York Mellon, and State Street. *See, e.g.*, Regulatory Capital Rules: Implementation of Risk-Based Capital Surcharges for Global Systemically Important Bank Holding Companies, 80 Fed. Reg. 49082, 49109 (Aug. 14, 2015).

¹⁶*See infra* Part III.

¹⁷*See infra* Part V.A.

¹⁸*See infra* notes 179–88.

I. MECHANISMS OF MARKET DISCIPLINE

The argument that credible losers can make SIFI failure less likely depends on the operation of market discipline. By “market discipline,” I mean the various ways that the efforts of firm claimants, to protect against or compensate themselves for the risk of loss, can influence the actions of firm decision makers. It is worth noting at the outset that the term “market discipline” does not have a rigorous and universally embraced definition in the literature.¹⁹ My primary goal in this part is not to try to provide such a definition, but to describe some of the ways in which credible losers might help to rein in firm risk-taking, thereby reducing the likelihood of default.²⁰ I should also note that while credible losers are a *sine qua non* of market discipline, they are not the only institutional feature that is important for market discipline—others include adequate disclosure by the firm and institutional channels for credible losers’ actions to affect individual firm decision makers.²¹

¹⁹For a good overview of the literature and usages, see David Min, *Understanding the Failures of Market Discipline*, 92 WASH. U. L. REV. 1421, 1473 (2015). See also Constantinos Stephanou, *Rethinking Market Discipline in Banking: Lessons from the Financial Crisis* 4 (The World Bank, Working Paper No. 5227, 2010), <https://openknowledge.worldbank.org/bitstream/handle/10986/37117/WPS5227.pdf?sequence=15227>, 2010 (“The definition varies in the literature but, in its broadest terms, [market discipline] is the mechanism via which market participants monitor and discipline excessive risk-taking behavior by banks. As some commentators have pointed out, [market discipline] has less to do with the market *per se* and more [to do with] the institutional framework—information, incentives, and control—used to reduce problems of moral hazard and asymmetric information that are endemic in banking.” (footnotes omitted)).

²⁰That said, the use of the term here is consistent with the general thrust of the literature. See, e.g., Stephanou, *supra* note 19, at 4–5.

²¹See, e.g., Robert R. Bliss & Mark J. Flannery, *Market Discipline in the Governance of U.S. Bank Holding Companies: Monitoring vs. Influencing*, 6 EUR. FIN. REV. 361, 362 (2002) (distinguishing monitoring and influencing as two components of market discipline). Stephanou offers four “building blocks” of market discipline: information and disclosure to ensure that market participants can effectively monitor firm activities; appropriate incentives for market participants to monitor and react (this corresponds to the establishment of credible losers); various disciplinary mechanisms, including quantity and price adjustments by creditors, collateral and margin requirements by counterparties, supervisory actions, the market for corporate control (rarely employed in the banking context), and legal actions; and internal governance, such that bank decision makers are appropriately incentivized to respond to market signals. Stephanou, *supra* note 19, at 5–7. Stephanou cites other commentators who provide a list of preconditions for market discipline, each of whom includes appropriate incentives by market actors. *Id.* at 6–7 (citing Andrew Crockett, *Market*

A. Direct Market Discipline

Credible losers can help discipline SIFIs both directly and indirectly. As explained by Constantinos Stephanou, “[d]irect [market discipline] refers to the control or influence that market participants themselves can exert on a bank’s risk-taking behavior. By contrast, indirect [market discipline] is brought about by regulatory intervention triggered by market signals.”²² Direct discipline can manifest itself in at least three ways, all of which involve some degree of “monitoring”—that is, paying attention to a firm’s activities and taking certain actions when the firm’s risk levels rise or fall. First, lenders will demand a higher rate of interest the greater their (perceived) risk of loss.²³ Having to pay higher interest rates raises the cost of funding for a firm so that riskier firms are “punished” by lenders.²⁴ In an undistorted market, this should incentivize issuers to limit risk in order to lower borrowing costs.

In addition to charging higher interest rates, lenders may act directly on management to constrain risk.²⁵ This may involve negotiating contractual covenants *ex ante*, placing, for example, restrictions on the borrower’s ability to assume new liabilities, sell certain assets, or make

Discipline and Financial Stability, 26 J. BANKING & FIN. 977 (2002); David T. Llewellyn, *Inside the ‘Black Box’ of Market Discipline*, 25 ECON. AFFAIRS 41 (2005); Hal S. Scott, *Market Discipline for Financial Institutions and Sovereigns*, in MARKET DISCIPLINE ACROSS COUNTRIES AND INDUSTRIES 69 (Claudio Borio et al., 2004).

²²Stephanou, *supra* note 19, at 5. See also BD. OF GOVERNORS OF FED. RES. SYS. & U.S. DEP’T OF TREASURY, *THE FEASIBILITY AND DESIRABILITY OF MANDATORY SUBORDINATED DEBT* 24–28 (2000) (discussing types of “direct” and “indirect” market discipline in the context of subordinated debt for banks).

²³See BD. OF GOVERNORS OF FED. RES. SYS. & U.S. DEP’T OF TREASURY, *supra* note 22, at 4 (“Direct market discipline is exerted when a firm’s expected cost of issuing debt instruments increases substantially with an increase in its risk profile. For this to occur, investors must gather information about the firm’s risks and prospects, and then incorporate that information into their decisions to buy the firm’s debt. The anticipation of substantially higher funding costs should provide an incentive *ex ante* for the firm to refrain from excessive risk taking.”).

²⁴*Id.*

²⁵See *infra* notes 26–27 and accompanying discussion of contract and informal lobbying. Stephanou also cites markets for corporate control and lawsuits as potential market disciplinary mechanisms. Stephanou, *supra* note 19, at 10. He notes, however, that the market for corporate control has rarely been employed as a disciplinary mechanism in the banking industry. *Id.* at 10 n.12.

dividend payments to equity lenders.²⁶ It may also involve informal lobbying of management.²⁷

A final type of direct discipline “occurs when . . . a bank experiences withdrawals of funds as its risk increases.”²⁸ This is often referred to as “quantity market discipline,” and may occur gradually or turn into a run—that is, the *en masse* withdrawal of short-term funding.²⁹ This is a particularly salient issue for financial institutions that rely on large numbers of short-term creditors to “roll over” their debt from period to period. The classic example is the bank deposit: depositors have the right to withdraw their money on demand, but banks rely on the majority of depositors keeping their money in the bank—or “rolling over”

²⁶See generally William W. Bratton, *Bond Covenants and Creditor Protection: Economics and Law, Theory and Practice, Substance and Process*, 7 EUR. BUS. ORG. L. REV. 39 (2006).

²⁷Lobbying management is more commonly associated with the type of discipline exercised by equity claimants. Although shareholders generally have no contractual rights to force a corporation’s management to take or refrain from taking any particular action—see, e.g., DEL. CODE ANN. tit. 8, § 141(a)(2016) (“The business and affairs of every corporation organized under this chapter shall be managed by or under the direction of a board of directors. . . .”)—they may exert informal influence and use the threat of board votes to force management’s hand on important issues. This has become increasingly prevalent under the current model of shareholder activism. See, e.g., Ronald J. Gilson & Jeffrey N. Gordon, *The Agency Cost of Agency Capitalism: Activist Investors and the Reevaluation of Governance Rights*, 113 COLUM. L. REV. 863, 866–67 (2013). As discussed below, however, equity investors will sometimes want the firm to take on more risk than is socially optimal. See *infra* Part II.B.1. Although extracontractual lobbying is more common by shareholders, creditors may also engage in such lobbying in attempts to affect management decisions. One noteworthy example occurred in the landmark Delaware case *Revlon Inc. v. MacAndrews & Forbes Holding Inc.* 506 A.2d 173 (Del. 1986). In the case, Revlon’s management agreed to waive certain covenants on senior subordinated notes (the “Notes”) in connection with a merger, which provoked an angry response from the noteholders. *Revlon*, 506 A.2d at 178 (“When the merger, and thus the waiver of the Notes covenants, was announced, the market value of these securities began to fall. The Notes, which originally traded near par, around 100, dropped to 87.50 by October 8. One director later reported (at the October 12 meeting) a ‘deluge’ of telephone calls from irate noteholders, and on October 10 the Wall Street Journal reported threats of litigation by these creditors.”). *Id.* Revlon’s management tried to strike a new merger deal involving an exchange of the Notes to appease the noteholders, despite owing the noteholders “no further duties under the circumstances.” *Id.* at 178–79, 184. Although the Delaware Supreme Court ultimately held that in the context of an “auction” of the company, directors could not favor creditors at the expense of shareholders, the incident illustrates the occasional influence creditor lobbying may have on management. *Id.* at 185.

²⁸Rosalind L. Bennett et al., *Market Discipline by Bank Creditors During the 2008–2010 Crisis*, 20 J. FIN STABILITY 51, 56 (2015).

²⁹*Id.*

their loan to the bank—from day to day. If these creditors run, the results can be catastrophic for the issuer. The mere threat of a run may serve a disciplinary role *ex ante*, as decision makers adopt a conservative strategy to avoid piquing creditors' anxiety.³⁰

B. Indirect Market Discipline

The mechanisms outlined thus far involve a direct channel from credible losers to firm actors. It is also possible, however, that credible losers can provide price signals that regulators then use to inform their oversight efforts, creating an indirect sort of discipline.³¹ The concept is straightforward: loans that bear a credible risk of loss will demand a higher rate of interest. Regulators can then use this pricing information to help determine which SIFIs are at greater risk of default and focus their supervisory efforts more intensively on these firms.³² It is also possible that “quantity discipline”—the withdrawal

³⁰For a further discussion of this type of discipline, see *infra* Part II.B.2. It is worth flagging here, however, that this type of discipline could conflict with the goals of prudential regulation. It has nevertheless been influential in the economics literature. See, e.g., Charles W. Calomiris & Charles M. Kahn, *The Role of Demandable Debt in Structuring Optimal Banking Arrangements*, 81 AM. ECON. REV. 497, 497–98 (1991). Similarly, a common theme in the law and banking literature is that depositor discipline would be effective *but for* the existence of deposit insurance (which may be justified on other grounds). See, e.g., Jonathan R. Macey & Geoffrey P. Miller, *Bank Failures, Risk Monitoring, and the Market for Bank Control*, 88 COLUM. L. REV. 1153, 1165 (1988) (arguing that “[a]lthough deposit insurance generally achieves its purpose of preventing bank runs, it does so at the cost of providing incentives for excessive risk taken by banks”); Jonathan R. Macey & Elizabeth H. Garrett, *Market Discipline by Depositors: A Summary of the Theoretical and Empirical Arguments*, 5 YALE J. REG. 215, 216 (1988) (finding “a good deal of support for the proposition that depositor discipline can control risk-taking by bank[s]”). While no one questions the link between excessive risk-taking by a bank and the possibility of runs in the absence of deposit insurance, some do question how much this actually affects bank decision-makers *ex ante*. See, e.g., Jürg M. Blum, *Subordinated Debt, Market Discipline, and Banks' Risk Taking*, 26 J. BANKING & FIN. 1427, 1438 (2002) (arguing that disciplinary acts by creditors once risks become apparent “will not prevent inefficiently high risk choices by banks *ex ante*”).

³¹Some commentators include actions of private agents to rein in risk based on the market signals provided by credible losers as “indirect discipline.” See, e.g., Bennett et al., *supra* note 28. I follow Stephanou in using it to refer to regulatory action based on these signals. Stephanou, *supra* note 19, at 5. In any event, this is an issue of semantics that makes no analytic difference. See BD. OF GOVERNORS OF FED. RES. SYS. & U.S. DEP'T OF TREASURY, *supra* note 22.

³²See, e.g., Gary Stern, President, FED. RES. BANK OF MINNEAPOLIS, Address at the 35th Annual Conference on Bank Structure and Competition at the Federal Reserve Bank of Chicago (May 6, 1999) (transcript available at <https://www.minneapolisfed.org/publications/>)

of funding from a financial institution—could occur gradually enough to provide regulators not only with a signal of excessive risk, but sufficient time to try to counteract that risk via supervisory means.³³ Precisely how to structure the link between market signals and regulatory efforts is an important question, but beyond the scope of this article.³⁴

Regulators, of course, face few limits in the information they can get directly from GSIBs.³⁵ Because of this, they have visibility into GSIB operations that the public does not.³⁶ The idea that market actors could

the-region/managing-moral-hazard-with-market-signals-how-regulation-should-change-with-banking) (“Development of a policy framework for the use of market signals requires two steps. First, policymakers must credibly put creditors and others capable of providing market discipline at risk of loss, so that market signals are generated. To accomplish this successfully, the reform must address TBTF and instability. Second, bank regulators must explicitly and systematically incorporate market signals into the supervisory process.”).

³³Bennett et al., *supra* note 28, at 52.

³⁴One obvious if limited step with respect to banks would be for regulators to incorporate these signals into CAMELS scores, which are used to help determine the premium a bank must pay for deposit insurance. See RICHARD SCOTT CARNELL ET AL., *THE LAW OF BANKING AND FINANCIAL INSTITUTIONS* 275 (5th ed. 2013) (“The acronym *CAMELS* reflects six key aspects of a bank’s condition: *Capital adequacy, Asset quality, Management, Earnings, Liquidity, and Sensitivity to market risk*. Examiners rate each aspect on a 1 to 5 scale, with 1 as the highest and 5 as the lowest possible score. They also assign the bank a ‘composite’ (i.e., overall) *CAMELS* rating, again on a 1 to 5 scale.”).

³⁵GSIBs have regulatory examination teams on-site year-round with considerable discretion to review GSIB operations, portfolios, and practices. See, e.g., THOMAS EISENBACH ET AL., *SUPERVISING LARGE, COMPLEX FINANCIAL INSTITUTIONS: WHAT DO SUPERVISORS DO?* 16–17 (2015).

³⁶Public disclosures from GSIBs do not, for example, typically include detailed information on specific deals or on the proprietary models the firms use to value their portfolios and measure risk exposures. Indeed, the paucity of disclosures that could inform potential market disciplinarians inspired one of the key innovations of the second attempt, in 2004, by the international coordinating body for banking regulators, the Basel Committee on Banking Supervision, to establish an “international capital framework.” See, e.g., *Basel II: Revised International Framework*, BANK FOR INTERNATIONAL SETTLEMENTS, <http://www.bis.org/publ/bcbsca.htm> (last visited Sept. 20, 2016) (Basel II). Market discipline is one of the “three pillars” of Basel II and has also been incorporated into Basel III (2011)—but its prescription for promoting market discipline is entirely disclosure based, reflecting the view that for markets to function properly in disciplining GSIBs, they need more and better information. *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems*, BANK FOR INTERNATIONAL SETTLEMENTS, <http://www.bis.org/publ/bcbs189.htm> (last visited Oct. 23, 2016) (Basel III) The United States did not fully implement the Basel II Accord, but rules implementing the Basel III Accord have largely been completed. See *Basel Regulatory Framework*, BD. OF GOVERNORS OF THE FED. RES. SYS.,

improve on the information available to regulators is rooted in notions of market efficiency—that markets are singularly good (and far better than regulators) at quickly integrating multiple data streams into a single, informative number.³⁷ Variations of this view are sometimes labeled the “efficient markets hypothesis.”³⁸ The most common version of the efficient markets hypothesis is that market prices reflect all available (public) information, so there are no sure arbitrage profits to be made from trading.³⁹ Some degree of market efficiency is essential to the operation of indirect discipline—otherwise, market actors would not be providing useful information that regulators did not already have. Two points are worth highlighting here. First, prices do not magically adjust

federalreserve.gov/bankinforeg/basel/USImplementation.htm (last visited Sept. 20, 2016). For a good example of the disclosures required under the “market discipline” pillar, see GOLDMAN SACHS GRP. UK LTD., PILLAR 3 DISCLOSURES 1–7 (2016), <http://www.goldmansachs.com/disclosures/pillar-3-q1-2016.pdf>.

³⁷The idea is that a large number of people betting and risking their own money can produce a more informative assessment of the available information than bureaucratic actors with (1) no similar process for incorporating different pieces of data and (2) imperfect incentives toward diligence and accuracy. See, e.g., John Crawford, *Predicting Failure*, 7 VA. L. & BUS. REV. 171, 201–02 (2012) (describing the theory behind the information aggregation function of markets as a special instance of the Condorcet Jury Theorem).

³⁸A 1965 paper by Paul Samuelson is often cited as the origin of the hypothesis. Paul Samuelson, *Proof That Properly Anticipated Prices Fluctuate Randomly*, 6 INDUS. MGMT. REV. 41 (1965); but see JUSTIN FOX, THE MYTH OF THE RATIONAL MARKET 73 (2011) (arguing that Samuelson’s being credited with originating the hypothesis “must be chalked up to the now-universal convention in economics and finance that until something is said mathematically, it has not been said at all. Seventeen years before, Holbrook Working had not just posited that randomness and perfect markets went together. He had argued that actual securities markets approached this random ideal.”).

³⁹Different nuances in the definition of the term “efficiency” have developed over time. First, “[i]t is now commonplace to distinguish fundamental efficiency—that market price represents the best current estimate of the present value of the future cash flow associated with an asset—from informational efficiency, that is, the absence of a profitable trading strategy based on publicly available information.” Ronald J. Gilson & Reiner Kraakman, *The Mechanisms of Market Efficiency Twenty Years Later: The Hindsight Bias*, in THE HARV. JOHN M. OLIN DISCUSSION PAPER SERIES 2 n.4 (2003), http://www.law.harvard.edu/programs/olin_center/papers/pdf/446.pdf (questioning, however, the analytical basis for this distinction, since prices can only be efficient “with respect to a particular information set”). Informational efficiency can, in turn, be “weak form,” meaning future price movements cannot be predicted from historical movements; “semi-strong form,” meaning prices reflect all publicly available information; or “strong form,” meaning prices reflect all information, public or private. See Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383, 383 (1970).

to reflect new information (for example, about an increase or decrease in the risk of default): arbitrageurs must seek out information and trade on it, in the processing moving the price to its “correct” level. If they were unable to profit from small inefficiencies, arbitrageurs would have no incentive to seek out and trade on the information in the first place. Thus, even the most efficient markets have an “equilibrium degree of disequilibrium.”⁴⁰ The second point is related: efficiency is a *relative* concept, and markets can be more or less efficient at incorporating new information. For example, the markets for mortgage-backed securities and collateralized debt obligations leading up to the financial crisis of 2007–2008 were *not* efficient—these instruments were traded thinly, if at all, on secondary markets, so there was no mechanism for quickly integrating new information into their prices.⁴¹ While pricing efficiency is conceptually distinct from the central focus of this article—establishing credible losers—it remains a key issue for the operation of market discipline, as clear signals of riskiness may be necessary (if not sufficient) to motivate regulators and firm decision makers to rein in risk.⁴²

II. THE IMPORTANCE AND DIFFICULTY OF ESTABLISHING CREDIBLE LOSERS

The mechanisms of market discipline described in Part I all critically depend on the *expectation* that the relevant creditor will lose money if the firm fails. If this expectation does not exist, the risk of loss will not be priced into the instrument, and the party will have no incentive to engage in the costly activities of monitoring and “punishing” the SIFI. There is broad support in the literature for the view that market discipline of SIFIs is imperfect.⁴³

⁴⁰Sanford J. Grossman & Joseph E. Stiglitz, *On the Impossibility of Informationally Efficient Markets*, 70 AM. ECON. REV. 393, 393 (1980).

⁴¹*See, e.g.*, GARY GORTON, SLAPPED BY THE INVISIBLE HAND: THE PANIC OF 2007 22–23 (2010).

⁴²Because of this, I consider some ways in which we might promote the price efficiency of credible losers’ claims in Part III.B, *infra*.

⁴³*See, e.g.*, João A.C. Santos, *Evidence from the Bond Market on Banks’ “Too-Big-to-Fail” Subsidy*, FED. RES. BANK OF N.Y. ECON. POLY REV., Dec. 2014 at 29 (reviewing bond data from 1985–2009 and finding evidence that “investors accept lower credit spreads on bonds issued by the largest banks than on bonds issued by small banks”); Viral V. Acharya et al., *The End of*

Of course, just as markets likely do not place a probability of “0” on regulatory intervention to prevent SIFI defaults, they are also unlikely to place a probability of “1” on such events.⁴⁴ The higher the probability assigned to regulatory intervention, or a “bailout,” the weaker the market discipline and the more important it is to try to create credible losers. Any nontrivial positive probability of a bailout adds noise that corrupts market signals and discipline.

A. Can We Eliminate Bailouts?

The preamble to the Dodd-Frank Act states that it is an act to “promote the financial stability of the United States by improving

Market Discipline? Investor Expectations of Implicit Government Guarantees 2–3, http://pages.stern.nyu.edu/~sternfin/vacharya/public_html/pdfs/End%20of%20Market%20Discipline%20-%20Acharya%20Anginer%20Warburton%202_10_2016.pdf (showing that the price of long-term subordinated debt is sensitive to risk for most banks but not for the biggest ones); Andrew G. Haldane, Wincott Annual Memorial Lecture at Westminster, London (Oct. 24, 2011) (transcript available at <http://www.bankofengland.co.uk/archive/Documents/historicpubs/speeches/2011/speech525.pdf>) (dividing large international banks into “crisis” and “no crisis” groups depending on their need for bailouts during the crisis, and showing that credit default swap (CDS) spreads were essentially identical for the two categories leading up to the crisis). For a dissenting view, see Javed I. Ahmed et al., *Are the Borrowing Costs of Large Financial Firms Unusual?*, FIN. & ECON. DISCUSSION SERIES 1 (2015), <https://www.federalreserve.gov/econresdata/feds/2015/files/2015024pap.pdf> (finding that the “CDS and bond spreads of financial firms are no more sensitive to borrower size than the spreads of non-financial firms”). But see John Carney, *Big Banks’ Debt-Cost Conundrum*, WALL ST. J. (Apr. 28, 2015), <http://www.wsj.com/articles/big-banks-debt-cost-conundrum-1430242159> (criticizing Ahmed et al. by observing that stock price volatility for nonfinancial firms decreases in size, but increases in size for banks, so that “[w]ithout a too-big-to-fail subsidy, borrowing costs should actually move up for banks”) (emphasis added). For evidence not just of lower debt-funding costs—which dampens SIFI decision makers’ incentives to limit leverage—but of the potential impact of expectations of government support on bank investment decisions, see Gara Afonso et al., *Do “Too-Big-to-Fail” Banks Take on More Risk?*, FED. RES. BANK OF N.Y. ECON. POL’Y REV., Dec. 2014 at 41–42 (drawing on “data for more than 200 banks in 45 countries,” finding “higher levels of impaired loans after an increase in government support, as measured by Fitch Ratings support rating floors”).

⁴⁴See, e.g., Min, *supra* note 19, at 1473 n.210 (citing empirical research that “investors demand lower prices on securities issued by SIFIs, but that SIFIs’ funding costs are still substantially higher than the government’s cost of funding, indicating that investors still maintain a significant degree of uncertainty about the likelihood of recovery”). It is worth noting that lingering spreads between GSIB and government funding costs may also be due in part to a higher perceived liquidity risk for GSIB debt—that is, a concern not that the GSIB will default, but that if the instrument needs to be unloaded in a hurry, it might be more difficult to find a buyer, particularly during periods of market stress.

accountability and transparency in the financial system, *to end 'too big to fail,' to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes.*"⁴⁵ Despite the stated purpose of the Act, several mechanisms persist that regulators can use to prevent a default at a SIFI, or to protect creditors of a SIFI that goes into resolution. A complete account of these mechanisms is beyond the scope of this article,⁴⁶ but one illustrative example is emergency lending by the Federal Reserve under section 13(3) of the Federal Reserve Act.⁴⁷ During the crisis, these emergency loans arguably saved most U.S. SIFIs from failure⁴⁸ by providing cash the firms needed to meet immediate obligations—cash they could neither borrow from other

⁴⁵Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111–203, p.mbl., 124 Stat. 1376 (2010) (emphasis added).

⁴⁶For a fuller account of the bailout mechanisms still available to regulators, see John Crawford, *The Moral Hazard Paradox of Financial Safety Nets*, 25 CORNELL J. L. & PUB. POL'Y 95, 121–23 (2015).

⁴⁷12 U.S.C.S. § 343(A) (LexisNexis 2010) (authorizing the Federal Reserve to lend to non-bank financial institutions in “unusual and exigent circumstances”). It is worth noting that the Dodd-Frank Act placed constraints on the use of section 13(3): before it is invoked to make emergency loans in the future, there must be a determination of borrower solvency. *Id.* at § 343(B)(ii). Also, the loan must be made as part of a program with broad-based eligibility. *Id.* at § 343(A). Neither of these limitations, however, is likely to serve as a strong constrain on the Federal Reserve in using section 13(3) as a “bailout” tool. With respect to the solvency requirement, permissible procedures for making the determination include “a certification from the chief executive officer (or other authorized officer) of the borrower, at the time the borrower initially borrows under the program or facility. . . that the borrower is not insolvent.” *Id.* at § 343(B)(ii). With respect to the requirement that loans be made only as part of a program of broad-based eligibility, it should be relatively easy to set up such a program that is *in fact* targeted at a single borrower—indeed, regulators did something just like this several times during 2008 and 2009. See Crawford, *supra* note 46, at 121–22.

⁴⁸See, e.g., FINANCIAL CRISIS INQUIRY COMMISSION, THE FINANCIAL CRISIS INQUIRY REPORT 354 (Official Government ed. 2011) [hereinafter FCIC REPORT] (quoting Ben Bernanke’s statement that “[O]ut of . . . 13 of the most important financial institutions in the United States, 12 were at risk of failure within a period of a week or two”). For a description of the various lending facilities established under section 13(3) during the crisis, see DAVIS POLK & WARDWELL LLP, FINANCIAL CRISIS MANUAL: A GUIDE TO THE LAWS, REGULATIONS AND CONTRACTS OF THE FINANCIAL CRISIS 18–41 (2009).

private lenders, nor raise through the sale of assets without incurring “fire sale” penalties.⁴⁹

This invites the question: if market discipline is our concern, why not eliminate these regulatory interventions? The problem with the Dodd-Frank Act’s promise to end bailouts is that it is “cheap talk”—because mechanisms for bailouts persist, the mere promise that bailouts will not occur is not credible. If regulators fear that a SIFI’s default could trigger a damaging crisis, they will have a strong incentive to prevent the default. So why do we not *really* tie regulators’ hands?⁵⁰ If the constraints on regulatory intervention were credible, then the loss-bearing role of creditors would be credible as well, and the complicated scheme described below for establishing credible losers⁵¹ would be unnecessary.

The standard economic justification for regulatory intervention in markets is the problem of market failure. There are two potential types of market failure in the case of SIFI default: a collective action or coordination problem among its short-term creditors,⁵² and the creation of negative externalities, or costs imposed on unaffiliated third parties

⁴⁹A “fire sale” is the sale of an asset for a price below its “fundamental” value (i.e., the net present value of its expected future cash flows) due to an immediate need for cash. While the sale itself may be zero-sum—the seller loses, but the buyer gets a great deal—it can have pernicious knock-on effects, particularly during a crisis. See, e.g., Anil Kashyap et al., *Rethinking Capital Regulation*, in MAINTAINING STABILITY IN A CHANGING FINANCIAL SYSTEM 431, 440–42 (2008) (describing what they term the “fire sale externality” from widespread asset liquidations).

⁵⁰See Crawford, *supra* note 46, at 132–35.

⁵¹See *infra* Part II.B.1–II.B.3.

⁵²The collective action problem arises from the fact that in a bank run (or its shadow banking equivalent) depositors act in a way that is individually rational but collectively harmful. This is sometimes modeled as a “prisoner’s dilemma.” See Carnell et al., *supra* note 34, at 271–72; but see MORGAN RICKS, *THE MONEY PROBLEM: RETHINKING FINANCIAL REGULATION* (2015) (arguing that the problem of bank runs is more appropriately modeled by the classic game theory scenario of the “stag hunt,” which has a good *and* a bad equilibrium, rather than the prisoner’s dilemma, which has only a bad equilibrium). Importantly, a run is possible even on a solvent bank. See, e.g., Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POL. ECON. 401, 410 (1983) (famously modeling runs as being triggered by “some commonly observed random variable in the economy [such as] a bad earnings report, a commonly observed run at some other bank, a negative government forecast, or even sunspots. It need not be anything fundamental about the bank’s condition.” (footnotes omitted)). If a bank facing a run liquidates assets at fire sale prices (for example, selling an asset with a “true” value of \$100 for \$80) in order to meet withdrawal demands, a mere liquidity crisis could evolve into a solvency crisis.

from the SIFI's failure.⁵³ In short, those whose decisions could lead to SIFI failure do not internalize the potentially enormous costs of such failure—just as businesses that pollute the environment often do not internalize the full cost of their activities. Removing the tools of regulatory intervention, therefore, may improve market discipline but at a terrible economic cost. As former Secretary of the Treasury Timothy Geithner trenchantly observes in his memoir, “[t]aking away the fire department’s equipment certainly ensures that the equipment won’t be used, but it isn’t much of a strategy for reducing fire damage.”⁵⁴ Elevating concerns about market discipline above a concern for the overall health of the economy and stability of the financial system reflects what Geithner refers to as “moral hazard fundamentalism.”⁵⁵ The assumption in this article is that market discipline should be a tool, not an end in itself.

A potential counterargument is that I have set up a false opposition between unbridled, “pure” market discipline and financial stability—that credibly tying regulators’ hands would not create large externalities, as markets would discipline SIFIs to avoid risks that may lead to default. (Or, to take up Geithner’s metaphor, private citizens’ fire safety efforts would be more effective at containing fire damage than the fire department’s *ex post* firefighting efforts.) There are, however, compelling reasons to reject this argument. Specifically, damaging crises were the norm during the period of our history when regulators really did lack the tools to intervene.⁵⁶

⁵³See, e.g., Kashyap et al., *supra* note 49, at 441. If bank A is forced to liquidate assets in a fire sale, “[I]t imposes a cost on another bank B who holds the same assets: the mark-to-market price of B’s assets will be pushed down, putting pressure on B’s capital position and in turn forcing it to liquidate some of its positions. Thus selling by one bank begets selling by others, and so on, creating a vicious circle.”*Id.*

⁵⁴TIMOTHY F. GEITHNER, *STRESS TEST: REFLECTIONS ON FINANCIAL CRISES* 430 (2015).

⁵⁵*Id.* at 178.

⁵⁶In the nineteenth and early twentieth centuries, prior to the creation of the Federal Reserve and the Federal Deposit Insurance Corporation, bank claimants (including depositors) were credible losers, but damaging financial panics were a regular occurrence. See, e.g., Ben S. Bernanke, Chairman, Fourteenth Jacques Polak Annual Research Conference, Washington, D.C. (Nov. 8, 2013) (transcript available at <https://www.federalreserve.gov/newsevents/speech/bernanke20131108a.htm>) (discussing the Panic of 1907). See also GARY GORTON, *MISUNDERSTANDING FINANCIAL CRISES: WHY WE DON’T SEE THEM COMING* 29 (2012) (“Since 1793 [financial] panics have occurred [in the United States] in the following years: 1797, 1811, 1813, 1816, 1819, 1825, 1837, 1847, 1857, 1866, 1873, 1884, 1890, and 1893.” (quoting Theodore Gilman, *Federal Clearing Houses* 1899)).

Of course, even admitting the likelihood of crises in the absence of intervention, some may question whether the long-term costs of such crises are really higher than the long-term moral hazard costs that intervention invites.⁵⁷ I find this view implausible.⁵⁸ It is ultimately an empirical question, but one that does not, in my view, admit of the sort of unambiguous answers that would be likely to move persons away from their prior beliefs.⁵⁹ In any event, this article assumes that if regulators believe an instrument's default risks starting or substantially fanning a financial "wildfire," the instrument will not be a credible loser.

B. Criteria for Creating Credible Losers in Support of Prudential Goals

This part provides a framework for thinking about how market discipline could be reestablished for SIFIs without breaking them up⁶⁰ and

⁵⁷See, e.g., Kenneth Ayotte & David A. Skeel, Jr., *Bankruptcy or Bailouts?*, 35 J. CORP. L. 469, 471 (2010).

⁵⁸One of the key events informing the view that moral hazard should be our greatest concern is the savings and loan crisis of the 1980s, in which deposit insurance permitted insolvent thrifts to continue to operate, throwing good money after bad, compounding losses ultimately borne by the taxpayer. I am persuaded, however, by the argument that (1) the costs of this crisis pale in comparison to widespread panics; and (2) the more appropriate response to such a problem is to strengthen supervision, as the Federal Deposit Insurance Corporation Improvement Act of 1991 arguably did effectively. See generally Morgan Ricks, *Safety First? The Deceptive Allure of Full Reserve Banking*, U. CHI. L. REV. ONLINE (forthcoming, Vanderbilt Public Law Research Paper No. 16-35) ("The savings and loan debacle of the 1980s and early 1990s resulted in a \$124 billion taxpayer bailout of the deposit insurance system. While costly, this failure needs to be kept in perspective. First, it amounts to less than one-third of U.S. military expenditure in 1990. This is hardly an exorbitant fiscal price to pay for seventy-five years of run-proof financial conditions. Second, much of this fiscal cost was avoidable, because regulation of insured banking in the 1980s was awful. Among other things, Congress relaxed bank and thrift portfolio constraints in the early 1980s, allowing insured institutions to dramatically increase their exposures to risky asset classes like junk bonds and construction loans. Insured institutions then 'gambled for resurrection,' compounding the debacle. Third, and most important, the savings and loan debacle was not accompanied by a severe macroeconomic disaster. The United States entered a mild and brief recession in July 1990. It is reasonable to conclude that, by preventing a banking panic, deposit insurance forestalled a macroeconomic catastrophe." (footnotes omitted)).

⁵⁹On the implausibility of precisely measuring the costs and benefits of financial regulatory choices, see generally John C. Coates IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications*, 124 YALE L.J. 882 (2015).

⁶⁰Breaking up the largest banks has pockets of strong political support at present. See, e.g., David Harrison & Ryan Tracy, *Fed's Neel Kashkari: Break up the Big Banks*, WALL ST. J. (Feb. 16, 2016), <http://www.wsj.com/articles/minneapolis-fed-chief-says-dodd-frank-act-didnt-go>.

without adopting a “let it burn” approach. It is worth noting that some instruments can plausibly provide both direct and indirect market discipline, while others can provide only one or the other. A penalty rate of interest on a SIFI liability, for example, can serve a direct disciplinary function by raising the SIFI’s cost of capital, while also providing valuable information to regulators, thereby facilitating indirect discipline. Some types of short-term debt, on the other hand, may not provide much useful information to regulators *ex ante*,⁶¹ but could plausibly serve a disciplinary role if they create a run risk. This type of debt could serve a direct, but not an indirect, disciplinary role, as I have defined those terms.⁶² Finally, it is possible that credible losers with no direct claim on a SIFI could serve an indirect, but not a direct, disciplinary role on the firm. For example, a CDS written on a SIFI and entered into by third parties unaffiliated with the SIFI does not directly raise the cost of capital or create a run risk for the SIFI, but it may provide useful information to regulators.⁶³ In this part, I describe the criteria that must be met to establish credible losers at a SIFI.

1. Criterion 1: Greater Sensitivity to Downside Risk than Potential Upside Gain

The most obvious “credible loser” among claimants on a SIFI may be the shareholder: indeed, even as virtually every creditor of a large financial institution was protected during the crisis,⁶⁴ shareholders of these institutions suffered enormous losses, and share prices fell

far-enough-1455636718; Maryalice Parks, *Bernie Sanders Vows to Break up Nation’s Largest Banks Within His First Year*, ABC NEWS (Jan. 5, 2016), <http://abcnews.go.com/Politics/bernie-sanders-vows-break-nations-largest-banks-year/story?id=36101481>. In this article I remain agnostic as to the wisdom of such a move but assume that SIFIs will nevertheless be a continuing feature of the financial landscape for the foreseeable future.

⁶¹This is true to the degree the debt remains “informationally insensitive”—a feature that explains the very existence of much short-term debt. See Gorton, *supra* note 41. In this context, *ex ante* means prior to the run occurring, at which point it will likely be too late for regulatory action to prevent failure.

⁶²See *supra* notes 20–39.

⁶³For further discussion of CDS, see *infra* Part V.B.1.

⁶⁴The exceptions are Lehman Brothers and Washington Mutual, both of whose failures involved haircuts for creditors. See FCIC REPORT, *supra* note 48, at 353–89.

drastically.⁶⁵ Equity claimants also benefit from trading in highly liquid secondary markets, so expectations about losses are quickly and efficiently incorporated into share prices.⁶⁶ And although SIFIs do not routinely issue new equity—and thus are not directly punished with a higher cost of capital—their executives' compensation is often linked to the share price⁶⁷ so that these decision makers are highly motivated to maximize returns on equity.

Despite the credibility of losses being imposed on shareholders, from the perspective of the prudential regulator,⁶⁸ equity is an imperfect, and sometimes perverse, disciplinarian of SIFI decision makers. First, it may be the case that equity claims that should be wiped out retain some value due to regulatory intervention—that zeroing out equity would, for practical purposes, require a resolution process that regulators are hesitant to invoke because of the effect it could have on systemically important claims.⁶⁹

⁶⁵See, e.g., Lucian A. Bebchuk et al., *The Wages of Failure: Executive Compensation at Bear Stearns and Lehman 2000–2008*, 27 YALE J. REG. 257, 260 (2010).

⁶⁶See *supra* Part I.B and accompanying notes.

⁶⁷*Id.*

⁶⁸The aim of prudential regulation is to prevent disorderly and destabilizing failure of banks and other financial institutions as well as to protect depositors and the deposit insurance fund. It is worth contrasting this with the mission of the typical *securities market* regulator. Securities regulation typically does *not* try to prevent companies from failing or to protect investors from losses; rather, its mode of investor protection is to ensure investors have adequate information to understand the inherent risks of a given investment. Similarly, the Securities and Exchange Commission's oversight of broker-dealers has traditionally been much less concerned about the risk of their failure than the traditional banking regulator vis-à-vis the banks it oversees. See Crawford, *supra* note 46, at 113 n.86 ("Broker-dealers' primary regulator, the Securities and Exchange Commission, has traditionally focused on investor protection and promoting capital formation rather than on the safety and soundness of broker dealers. ('Safety and soundness' regulation can for most purposes be used synonymously with 'prudential' regulation.) The SEC has differed in this respect from the regulators of commercial banks because broker-dealers did not traditionally fund themselves with deposit-like debt, and so their failure was unlikely to have the same type of systemic implications as a commercial bank. Even today, after the rise of shadow banking and the crisis, there is resistance to the notion that the SEC should incorporate prudential concerns into its mission.")

⁶⁹See the discussion of "entanglement," *infra* Part III.A.3.

Second, even if there were no expectation of regulatory intervention, equity provides a noisy signal regarding the risk of default. As Oliver Hart and Luigi Zingales observe,

While equity is very liquid and its market price hard to manipulate, it does not provide a good indicator of the probability of default. Equity is insensitive on the downside (because of limited liability) and very sensitive on the upside; thus, a small probability of a positive event can sustain significant equity prices even in the presence of a high probability of default.⁷⁰

Debt, on the other hand, “is insensitive to the upside but very sensitive to the downside”⁷¹—thus providing a much clearer signal for regulators and punishing firms that are perceived as more likely to default.⁷²

Finally, and most troublingly, to the degree equity interests do affect firm decision making—either through formal or informal investor activism, or through incentive compensation of firm executives⁷³—the impact may not be to limit risk.⁷⁴ The strategy that maximizes the

⁷⁰Oliver Hart & Luigi Zingales, *A New Capital Regulation for Large Financial Institutions*, 13 AM. L. & ECON. REV. 453, 478 (2011).

⁷¹*Id.*

⁷²*Id.*; see also Stephanou, *supra* note 19, at 10 n.13 (“the option-like character of equity holdings (limited liability and residual claims) implies that shareholders may not be relied upon to exercise discipline if the increase in risk of failure is offset by increased probability of a higher return, as in the [game of] so-called ‘gambling for resurrection’”); HAL S. SCOTT ET AL., CAPITAL STUDY REPORT: USE OF MARKET DISCIPLINE 20 (2014) (“A guiding premise... is that market discipline is more effectively achieved through debt instruments, rather than equity instruments. Equity holders do not provide appropriate market discipline, and stock returns are a poor leading indicator of financial instability because of the limited liability of shareholders and the *optionality* of large returns that are inherently priced into equity.”) (emphasis added).

⁷³The trend to align firm decision makers’ incentives more closely with those of shareholders has been a major trend in corporate governance over the past several decades. See, e.g., Edward B. Rock, *Adapting to the New Shareholder-Centric Reality*, 161 U. PA. L. REV. 1907, 1910 (2013) (“[S]ince the early 1980s, the U.S. system has shifted from a manager-centric system to a shareholder-centric system. This shift has occurred primarily through changes in managerial compensation, shareholder concentration and activism, and board composition, outlook, and ideology”); Bebchuk et al., *supra* note 65 (discussing the trend as it developed specifically at the largest financial institutions).

⁷⁴See, e.g., Martin Hellwig, *Systemic Risk in the Financial Sector: An Analysis of the Subprime-Mortgage Financial Crisis*, Max Planck Institute for Research on Collective Goods, Report no. 2008-43 (2008) (arguing “market discipline as a mechanism of corporate governance

expected return for shareholders will often not be the strategy that minimizes the risk of default. For example, assume a firm with an equity cushion of \$2 and borrowings of \$10 must decide whether to pursue a strategy that has a 50% chance of yielding a profit of \$3 and a 50% chance of losing \$5. The bet has a negative expected value from the perspective of the firm ($0.5 \times \$3 - 0.5 \times \$5 = -\$1$), but a positive expected value for shareholders, whose losses are capped at \$2 ($0.5 \times \$3 - 0.5 \times \$2 = \0.50). Because shareholders know they can shift losses beyond the equity cushion onto creditors (or the taxpayer!), their “discipline” of management may lead to perverse results.⁷⁵

This “risk-shifting” problem is not a major issue for most nonfinancial firms for two related reasons. First, creditor discipline constrains this type of opportunism. It may do this directly, for example, through covenants on loans.⁷⁶ Further, because the risk of default rises with leverage, holding all else equal,⁷⁷ creditors tend to charge higher interest rates as leverage rises. This tendency makes high levels of borrowing less attractive for most nonfinancial firms, leading to larger equity buffers.⁷⁸ More equity relative to debt constitutes the second reason risk-shifting is not a major issue for most

[by shareholders] is intrinsically biased in favor of strategies that involve greater risk-taking”).

⁷⁵See Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305, 334–37 (1976) (describing the potentially distortive incentive effects of debt on a firm’s investment decisions, since shareholders can shift the downside risk of losses that outstrip the equity buffer onto creditors). For an account of how risk-shifting incentives by equity claimants may have distorted investment decisions in the run-up to the recent crisis, see Richard Squire, *Shareholder Opportunism in a World of Risky Debt*, 123 HARV. L. REV. 1151 (2010).

⁷⁶See, e.g., Bratton, *supra* note 26.

⁷⁷Assume there are two firms with \$100 in identical assets each; but one firm has \$90 in liabilities, while the other has only \$50 in liabilities. The first firm will default if its assets fall in value by more than ten percent; the second firm, of course, will remain solvent unless assets fall by more than fifty percent.

⁷⁸See, e.g., Edmund L. Andrews, *Anat Admati: The Bankers’ Addiction to Borrowing*, STAN. GRADUATE SCH. BUS.: INSIGHTS BY STANFORD BUSINESS (Oct. 29, 2013), <https://www.gsb.stanford.edu/insights/anat-admati-bankers-addiction-borrowing> (“For bank holding companies in the United States, recent proposals would still allow debt to account for up to 95% of a bank’s assets. Even without regulation, nonfinancial corporations in the United States have, on average, only about 30% debt relative to their assets.”).

nonfinancial firms: a larger equity buffer makes it less likely that a given investment strategy will involve potential losses large enough for shareholders to be insensitive to a significant portion of such losses. Neither of these risk-mitigating factors applies well in the case of SIFIs, which are highly leveraged relative to nonfinancial firms,⁷⁹ and face weak creditor discipline due to bailout expectations.⁸⁰

2. Criterion 2: The Claim Must Be Nonsystemically Relevant

Among debt claims, a distinction should be drawn between what Oliver Hart and Luigi Zingales call systemically relevant claims and nonsystemically relevant claims.⁸¹ Other commentators draw similar distinctions using slightly different terms: Robert Merton and Richard Thakor distinguish the claims of “customers” and “investors.”⁸² Assistant vice president of the Federal Reserve Bank of New York Joseph Sommer speaks of “financial liabilities” as opposed to “bonded debt.”⁸³ Morgan Ricks draws a distinction between “money claims” and securities traded on capital markets.⁸⁴ What falls on the systemically relevant side of the divide? First and foremost, bank deposits. Second, other types of short-term debt that create similar run-like risks.⁸⁵ Several commentators include derivatives and insurance claims as well.⁸⁶

⁷⁹*Id.*

⁸⁰See *supra* note 43 and accompanying text.

⁸¹Hart & Zingales, *supra* note 70.

⁸²Robert C. Merton & Richard T. Thakor, *Customers and Investors: A Framework for Understanding Financial Institutions* (MIT Sloan Sch. Mgmt., Working Paper No. 21258, 2015).

⁸³Joseph H. Sommer, *Why Bail-In? And How!*, FED. RES. BANK OF N.Y. ECON. POL'Y REV., Dec. 2014 at 207–17.

⁸⁴Morgan Ricks, *Regulating Money Creation After the Crisis*, 1 HARV. BUS. L. REV. 75, 82 (2012).

⁸⁵See Gorton, *supra* note 41, at 27. An example of such short-term debt is the repurchase agreement, or repo loan. Repo loans are short term, often rolling over daily and (thus) creating a run risk; are treated by the lenders as part of their “transaction reserve”; and are used by borrowers to fund longer-term investments.

⁸⁶See, e.g., Sommer, *supra* note 83; Merton & Thakor, *supra* note 82. This article will not focus on insurance or derivatives but will generally agree with the commentators cited that they are not good candidates for credible loser status.

I will focus here on short-term debt—bank deposits and short-term claims issued outside the commercial banking system. The latter debt is the cornerstone of the so-called shadow banking system.⁸⁷ Shadow banks issue deposit *substitutes*, such as repurchase agreements,⁸⁸ and use the money raised by these instruments to fund longer-term positions—engaging in the classic maturity transformation that had previously been the province of actual deposit-taking banks. Because shadow banking does not enjoy the formal guarantees of deposit insurance or (automatic) access to the Federal Reserve’s discount window, it proved vulnerable to runs—this was the crux of the crisis in 2008.⁸⁹

The fact that default on this type of debt can trigger contagious runs makes it systemically relevant. This article argues that the *type* of discipline these systemically relevant claimants might impose on an institution is, on balance, inconsistent with prudential goals, because its very effectiveness will tend to propagate the market failures described above.⁹⁰ Indeed, each of the commentators cited above argues that

⁸⁷See Tobias Adrian & Hyun Song Shin, *The Shadow Banking System: Implications for Financial Regulation*, (Fed. Res. Bank of N.Y. Staff Report No. 382) (July 2009), http://www.newyorkfed.org/research/staff_reports/sr382.pdf (giving an account of the shadow banking system).

⁸⁸See Gorton, *supra* note 41.

⁸⁹This was illustrated by the runs on Lehman Brothers, Bear Stearns, and the entire prime money market fund industry—none part of the federally insured commercial banking system, all part of the shadow banking system. See FCIC REPORT, *supra* note 48, at Part IV.

⁹⁰See *supra* Part II.A. (noting the importance of the systemically relevant debt having an instrumental value for its holders that goes beyond any investment return); see also Ricks, *supra* note 84, at 91 (arguing that “deposits serve an instrumental purpose: as a medium of exchange, they make trade easier. We might say that deposits are a component of an economic agent’s *transaction reserve*—the set of assets that the agent holds primarily to facilitate desired exchanges.”) (emphasis added). Because of this, the impairment of these assets often imposes costs on their holders that exceed—often substantially—any investment losses. See *id.* at 83 (“[B]ecause money-claims are held for *instrumental* purposes, their defaults cause *consequential* losses to their holders—opportunity costs, operational disruption, reputational damage, or even default. (Critically, these losses are distinct from, and might far exceed, any *investment* losses that their holders may experience.)”) Beyond this, short-term debt, because it is runnable, can incite panics spreading from one institution to another in ways LTD typically cannot—for example, as bank *A* fails, depositors at bank *B* may fear similar problems at their own bank and start a run as well. See Diamond & Dybvig, *supra* note 52, at 410 (listing among potential triggers of a run “a commonly observed run at some other bank”).

these types of claims should be protected—held “sacrosanct” per Hart and Zingales⁹¹—whereas losses on nonsystemically important debt should ideally *not* be subject to protection or bailout.

This view is not, however, universally embraced. Charles Calomiris and Charles Kahn, for example, develop a model in which the ability of depositors to force liquidation constrains bankers from acting against depositors’ interests and halts destructive activities by bank managers.⁹² (Again, depositors will have no incentive to force liquidation if they do not fear loss).⁹³ Other influential works posit a similar disciplinary role for short-term debt.⁹⁴ The idea has spread from academia to policy-making circles: in a speech at Jackson Hole in August 2009, Federal Reserve Chairman Ben Bernanke cited the disciplinary role of short-term debt as a justification for its use.⁹⁵

There are, however, at least two problems with this narrative of short-term debt discipline. First, it maps imperfectly onto the way short-term creditors and bank decision makers actually behave.⁹⁶ Second, to the

⁹¹See Hart & Zingales, *supra* note 70.

⁹²See Calomiris & Kahn, *supra* note 30.

⁹³For depositors, fear of loss *or* delay in recovery can incentivize them to run. I include both under the general rubric of “loss,” since what makes delay so damaging for instruments such as deposits is the possibility of consequential losses. See Ricks, *supra* note 84, at 83.

⁹⁴See, e.g., Anat Admati & Martin Hellwig, *Does Debt Discipline Bankers? An Academic Myth About Bank Indebtedness* 10 (Rock Ctr. for Corp. Governance at Stan. Univ., Working Paper No. 132, 2013), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2216811 (describing accounts in which depositors and other short-term creditors “monitor the managers and withdraw their funds if the managers don’t behave the way depositors wish” (citing, *inter alia*, Douglas W. Diamond & Raghuram G. Rajan, *Liquidity Risk, Liquidity Creation, and Financial Fragility*, 109 J. POL. ECON. 287 (2001); Mathias Dewatripont & Jean Tirole, *A Theory of Debt and Equity: Diversity of Securities and Manager-Shareholder Congruence*, 109 Q. J. ECON. 1027 (1994)).

⁹⁵Ben S. Bernanke, Chairman, Remarks at the Federal Reserve Bank of Kansas City’s Annual Economic Symposium: Reflections on a Year of Crisis at n.14 (Aug. 21, 2009) (“short-term creditors can help to impose market discipline on financial institutions”).

⁹⁶Paul Pfleiderer cites the most influential accounts of how short-term creditors discipline financial institutions as one of his paradigmatic examples of a “chameleon”—a model that is put forward as saying something important about the real world, but whose proponents defend it against criticism, or scrutiny of its unrealistic assumptions, by claiming it is just a “bookshelf” model. Paul Pfleiderer, *Chameleons: The Misuse of Theoretical Models in Finance and Economics* (Stan. Graduate Sch. Bus., Working Paper No. 3020, 2014), <https://www>.

degree it describes their behavior, policy should try to counteract it. To be clear, the claim is not that short-term debt cannot provide discipline. It is that such discipline depends on short-term claimants being credible losers, which creates the risk of a run, which (in turn) is precisely the systemic event regulators wish to prevent, particularly at SIFIs.⁹⁷

The first problem is that models of short-term debt discipline seem to assume that short-term creditors exercise some degree of monitoring to ensure that the issuer is solvent and not taking unwise risks.⁹⁸ Anat Admati and Martin Hellwig point out a basic inconsistency, however, between this view and a competing view of deposits and deposit-like debt. The competing view, primarily associated with Gary Gorton, sees “[s]hort-term borrowing by banks [as creating] ‘liquid assets’” for the creditors (e.g., depositors): “Creating these assets is viewed as useful because, being safe and easily converted into cash, these assets can facilitate transactions and provide means of payment.”⁹⁹ Gorton describes this type of debt—that is, the kind that can meet depositors’ liquidity needs for near-term transaction purposes—as “informationally insensitive.”¹⁰⁰ If the debt were sensitive to information—if its value

gsb.stanford.edu/faculty-research/working-papers/chameleons-misuse-theoretical-models-finance-economics.

⁹⁷See *supra* note 90.

⁹⁸Deposit insurance removes the incentive for the most obvious group of short-term creditors—viz., insured depositors—to monitor bank health and safety. See, e.g., Jonathan R. Macey & Geoffrey P. Miller, *Bank Failures, Risk Monitoring, and the Market for Bank Control*, 88 COLUM. L. REV. 1153 (1988). However, uninsured depositors and other short-term creditors must still be considered. On one hand, a number of studies indicate that uninsured depositors do engage in some monitoring of banks. See Min, *supra* note 19, at 1436 (“There has been extensive research on this topic, with the vast majority of studies concluding that, despite the information asymmetry problems they face, uninsured depositors do attempt to monitor and discipline risky banks either by withdrawing their funding or by demanding higher interest rates.”) On the other hand, investors in uninsured short-term debt of “shadow banks” leading up to the crisis appear to have engaged in little monitoring or discipline. See, e.g., *id.* at 1472 n.208 (citing commentators who “point out, regardless of what we think investors should be doing, . . . that investors in safe shadow banking liabilities such as MMFs were not paying attention to risk disclosures”).

⁹⁹Admati & Hellwig, *supra* note 94, at 4.

¹⁰⁰Gorton, *supra* note 41, at 23 (“[I]nformation-insensitive debt is debt that no one need devote a lot of resources to investigating.”).

fluctuated with the health or soundness of the issuer, for example—it would lose much of its value as a sort of money substitute.¹⁰¹ The value of this debt derives from its informational insensitivity, which is premised on the *lack* of monitoring or the perceived necessity of it.¹⁰² The issue may not be starkly binary—that is, it is possible both models may shed light on what is going on in particular corners of the short-term funding markets. To the degree that Gorton’s description captures at least part of what is going on in these markets, however, it undermines the disciplinary efficacy of short-term debt—even if such debt is expected to bear losses in extreme tail events.

The more serious problem with relying on short-term claimants as disciplinarians is that there is no way to sustain their status as credible losers while simultaneously protecting the system from runs. Worse yet, the trigger for a run often has as much to do with general uncertainty in the markets as it does with specific problems of a particular issuer—creating quite a haphazard sort of discipline.¹⁰³ In any event, if there is

¹⁰¹See generally Ricks, *supra* note 84 (discussing the sensitivity of debt to information and the effect on its value).

¹⁰²This is linked to the fact that these claims are held not primarily as investments, but as a storage mechanism for cash required to meet near-term transactional needs. *Id.* at 94–96. While these claims do pay interest, “it does not follow that these assets are primarily held for reasons other than satisfying the transactions motive. As *Stigum’s Money Market* observes, ‘the [money market] portfolio manager’s job is first to ensure that the funds he invests will be available whenever his firm needs them and *only second* to maximize the return he earns on those funds.’ In fact, there is really no good reason for any economic agent to hold these instruments *unless* it thinks it might engage in near-term transactions.” *Id.*

¹⁰³A good example of this is the run on money market funds (MMFs) in the wake of Lehman Brothers’ collapse in September 2008. See, e.g., Crawford, *supra* note 46, at 106–12. MMFs are a close substitute for deposits, whose investors (1) can redeem—that is, withdraw—on short notice (essentially on demand); and (2) expect to suffer no losses—that is, they expect back 100 cents for every dollar they invest. The Reserve Primary Fund, a large MMF, had invested in Lehman Brothers commercial paper and suffered losses after the firm’s collapse that would expose its investors to losses of a few cents on the dollar. Not only did this trigger a run on Reserve Primary, it triggered a run on *all* similar MMFs—several trillion dollars’ worth of claims. It is important to note that this “discipline” was completely unanchored to any sort of fundamental analysis by MMF investors or to any widespread weakness among MMFs themselves. Indeed, after the run was halted by a Treasury Department guarantee of all MMF liabilities, the government collected \$1 billion in premiums but did not have to pay out a single dime as part of the guarantee program. *Id.*

a run, this is precisely the point at which regulators will have a strong incentive to ensure that short-term debt—particularly short-term debt issued by a SIFI—does not default. As indicated above, the risks of default on this type of debt are considerable: one fear is that short-term creditors at similarly situated issuers will grow nervous and decide to err on the side of caution by withdrawing *their* funding—a sort of “contagion by simile.”¹⁰⁴ This could lead to a vicious cycle of destabilizing runs, with a number of large potential costs to the financial system and the real economy.¹⁰⁵

In short, the “discipline” of short-term debt, to the degree it works, is highly destabilizing, and is thus, on balance, inconsistent with the goals of prudential regulation. Because of this, deposits and deposit-like debt are not credible losers, *nor should we want them to be*. Regulators’ justified aversion to giving free rein to the discipline of this sort of debt is reflected in federal deposit insurance and the resolution process for banks¹⁰⁶ as well as in the new resolution process proposed under Title II of the Dodd-Frank Act.¹⁰⁷

3. Criterion 3: Disentanglement

The most promising candidate for a credible loser providing direct discipline of the sort that supports prudential regulatory goals, then, is long-term debt—nonsystemically relevant debt, as discussed above in Part II.B.2.¹⁰⁸ Unlike short-term debt, long-term debt tends to be held

¹⁰⁴The run on MMFs, see *supra* note 103 and accompanying text, provides one example of this type of contagion. Another example is the effect of the failure of Washington Mutual on Wachovia in September 2008. See FCIC REPORT, *supra* note 48, at 366–67.

¹⁰⁵See *supra* notes 52–53, 90, and accompanying text (providing a partial description of these costs).

¹⁰⁶See, e.g., Carnell et al., *supra* note 34, at 502 (describing the steps taken during a typical bank resolution to ensure depositors have immediate access to the full value of their accounts).

¹⁰⁷Under this strategy, which would likely be invoked to resolve a faltering SIFI, short-term claims on a SIFI’s operating subsidiaries would be honored completely and without delay, while losses would be absorbed by long-term claimants of the holding company. See *infra* Part III.A.3.

¹⁰⁸It is worth noting that Admati and Hellwig attack the idea that *any* debt could serve a disciplinary function for bankers. Admati & Hellwig, *supra* note 94. I believe their analysis works for short-term but not LTD. See, e.g., Matt Levine, *Regulators Want Banks to Rescue*

for investment purposes rather than near-term transaction needs, and cannot be withdrawn on short notice; thus its default does not create the same risk of panic and severe knock-on losses. In other words, regulators need not fear the consequences of default on long-term SIFI debt per se. This basic insight, along with the fact that long-term SIFI creditors were nevertheless routinely bailed out during the recent crisis, has led some critics to attack the “bank-centric” view of crisis response, which equates saving the banks with saving the economy. For example, in their highly lauded¹⁰⁹ book *House of Debt*, Atif Mian and Amir Sufi, though applauding the drastic steps taken to protect systemically relevant debt during the crisis, claim that “[t]o prevent runs and preserve the payment system, there is absolutely no reason for the government to protect long-term creditors and shareholders of the banks.”¹¹⁰

Though correct in principle, Mian and Sufi are arguably wrong in fact, at least with respect to the actions the government took to save SIFIs during the crisis. Under the institutional framework existing at the time, and given the legal authorities that were available for regulators, it was likely impossible for them to impose losses on long-term SIFI creditors without *also* creating the risk of delay or impairment for systemically relevant debt—precisely what Mian and Sufi agree *should* be avoided.¹¹¹

Themselves Next Time, BLOOMBERG (Nov. 11, 2014), <https://www.bloomberg.com/view/articles/2014-11-11/regulators-want-banks-to-rescue-themselves-next-time> (“[(Admati is)] probably right that bank creditors tend to be more dispersed, and have less power to discipline management with covenants, than say banks have over industrial companies. On the other hand her concerns seem to be aimed at ‘money-like’ debt rather than the sort of unsecured holding-company debt that would count for TLAC, and perhaps caution prudence.”).

¹⁰⁹See, e.g., Larry Summers, *Larry Summers on ‘House of Debt’*, FIN. TIMES (June 6, 2014), <http://www.ft.com/cms/s/2/3ec604c0-ec96-11e3-8963-00144feabdc0.html> (“Atif Mian and Amir Sufi’s *House of Debt*, despite some tough competition, looks likely to be the most important economics book of 2014; it could be the most important book to come out of the 2008 financial crisis and subsequent Great Recession.”).

¹¹⁰ATIF MIAN & AMIR SUFI, *HOUSE OF DEBT: HOW THEY (AND YOU) CAUSED THE GREAT RECESSION, AND HOW WE CAN PREVENT IT FROM HAPPENING AGAIN* 126 (2014).

¹¹¹*Id.* at 125 (describing various steps taken by regulators to protect short-term debt and stating, “[w]e view these policies as advisable and fitting within the appropriate role of the government and central bank in preventing crippling bank runs”).

Nobel laureate Robert Merton has adopted something like this view in explaining the rationale behind “too-big-to-fail” policies.¹¹² Merton and his coauthor Richard Thakor describe the problem giving rise to such policies as one of “entanglement,” such that impairing one class of SIFI claims could ipso facto impair other claims that are meant to be protected.¹¹³ The examples Merton and Thakor provide of entanglement, however, involve the same individual or entity holding both “customer claims” (such as deposits) and investment claims (such as shares or bonds) on the SIFI. Thus, if a depositor also owns a share of her bank and the share is impaired, they argue, the depositor will “rush to withdraw [her] deposits—even if these deposits are insured and hence safe—in order to meet [her] own liquidity needs and invest the money elsewhere in order to meet their investment goals.”¹¹⁴ I am skeptical of this account of entanglement. First, if the deposits are indeed safe, as Merton and Thakor posit in their illustration, there should be no change in the incentive to “withdraw” them to meet near-term transactional needs.¹¹⁵ Second, because there is an incentive, particularly among larger depositors, such as businesses, to minimize the amount kept in a transaction reserve like a deposit account,¹¹⁶ it is unlikely that *investment* losses will lead to a near-term reallocation of resources *away* from the deposit account. In any event, Merton and Thakor do not offer empirical support for the claim that a significant percentage of any particular banking giant’s depositors have devoted a large

¹¹²Merton & Thakor, *supra* note 82.

¹¹³*Id.*

¹¹⁴*Id.* at 40.

¹¹⁵Deposits serve as part of one’s transaction reserve; people withdraw from them as needed to meet near-term obligations such as rent for an individual or payroll for a business. As long as deposits are safe, there should be no incentive to withdraw cash early to meet these needs. If the deposits are *not* safe, then it does not matter whether the bank’s bonds and shares have suffered losses or not—depositors will want to withdraw.

¹¹⁶*See, e.g.,* Ricks, *supra* note 84, at 95 (stating holders of deposits and other short-term debt claims “usually think of them... as precisely the set of assets they are *not* investing”); *Id.* at 91 (“Allocating resources to transaction reserves is costly: these resources are both diverted from the firm’s operating activities (its comparative advantage) and withheld from distributions to shareholders. On the other hand, shortfalls in transaction reserves are expensive too: such shortages can interfere with production or even lead to default. To determine the optimal size of its transaction reserve, the firm makes its best estimate of foreseeable transactional needs and seeks to minimize its total expected carrying costs and shortage costs.”).

chunk of their *investment* portfolio, without adequate diversification, to the same bank's longer-term debt and shares.

Entanglement nevertheless remains a serious concern in establishing credible losers at SIFIs—but for a different reason. Specifically, entanglement is a problem because of the delay and uncertainty caused by a typical bankruptcy or resolution process, irrespective of any overlap among groups of claimants. Imposing haircuts on unwilling long-term creditors generally empowers them to place the issuer into bankruptcy proceedings.¹¹⁷ A central pillar of bankruptcy law is the “automatic stay,” which prohibits creditors from trying to collect outside the bankruptcy court.¹¹⁸ Even if a particular class of creditor eventually receives 100 cents on the dollar, the process can be slow and uncertain. For example, one species of systemically relevant debt issued by Lehman Brothers was commercial paper, a type of short-term, unsecured debt: a delay in repayment of such debt can cause consequential losses to the claimant and trigger runs

¹¹⁷11 U.S.C. § 303 (2016).

¹¹⁸11 U.S.C. § 362 (2010). It is important to note that *some* systemically relevant obligations enjoy certain exemptions from the automatic stay and other provisions of the bankruptcy code. These claims are typically termed “qualified financial contracts” (QFCs). See Charles W. Mooney Jr., *The Bankruptcy Code's Safe Harbors for Settlement Payments and Securities Contracts: When Is Safe Too Safe?*, 49 TEX. INT'L L.J. 243, 244 n.2 (2014) (explaining that QFC “is the term used for these financial contracts in the Federal Deposit Insurance Act and in Title II of the Dodd-Frank Act, which also contain safe harbors. The Bankruptcy Code contains no such universal term.”). For definitions of specific contracts that are typically categorized as QFCs, see 11 U.S.C. § 101(25) (2016) (forward contract); *id.* § 101(38A) (master netting agreement); § 101(47) (repurchase agreement); § 101(53B) (swap agreement); § 741(7) (securities contract); § 761(4) (commodity contract). A key advantage enjoyed by QFC counterparties to a failed firm is the ability to seize and liquidate collateral and use the proceeds to offset their claim—something the automatic stay normally prohibits. 11 U.S.C. § 362(b)(17), (27) (2010); see also Mark J. Roe, *The Derivatives Market's Payment Priorities as Financial Crisis Accelerator*, 63 STAN. L. REV. 539 (2011). This does *not*, however, solve the “disentanglement” problem. For example, it did not forestall contagious runs on repo loans to Lehman Brothers or Bear Stearns—including loans fully collateralized with liquid Treasury securities. See Ricks, *supra* note 84, at 105 n.64 (“[F]or the secured money-claimant, there is never any upside in default. If an over-collateralized repo creditor liquidates its collateral and thereby generates proceeds in excess of the face amount of the repo claim, it must turn those excess proceeds over to the estate. Accordingly, during the recent crisis, some dealers saw runs even on repo instruments that were fully collateralized by U.S. Treasury and agency securities—a development which apparently came as a shock to regulators.”).

on sister issuers of commercial paper.¹¹⁹ The first distribution to *any* Lehman creditors, including commercial paper claimants, occurred in April 2012, more than three years after Lehman Brothers filed for bankruptcy.¹²⁰ Creating delay and uncertainty for *depositors*, it is well established, can be extremely costly to them, independent of any ultimate *investment* losses,¹²¹ and it can trigger runs on similar institutions—the hallmark of a panic. The same is true for *other* types of systemically relevant instruments, such as commercial paper—the funding instruments, that is, of the “shadow banking” sector.¹²²

The bank resolution process of the Federal Deposit Insurance Corporation (FDIC) has largely solved this problem for bank deposits: deposit insurance addresses concerns about losses, and an extraordinary degree of regulatory discretion and speed eliminates delay and uncertainty for depositors, even as it puts nonsystemically relevant claimants at risk of loss.¹²³ The FDIC’s traditional bank resolution authority does not apply to most SIFIs, however; indeed, it does not even apply to GSIBs best known for their banking services, such as Citigroup or JP Morgan, because these GSIBs are not, in fact, banks: they are financial conglomerates that engage through subsidiaries in *both* commercial banking (subject to FDIC resolution) *and* shadow-banking activities such as broker–dealer repo financing.¹²⁴

¹¹⁹Commercial paper is systemically relevant, because it typically serves as part of the lender’s “transaction reserve” and because it is vulnerable to runs. See Ricks, *supra* note 84, at 89 (counting commercial paper among the various types of “money claims”); Sam Jones, *Why Letting Lehman Go Did Crush Financial Markets*, FT ALPHAVILLE BLOG (Mar. 12, 2009), <http://ftalphaville.ft.com/2009/03/12/53515/why-letting-lehman-go-did-crush-the-financial-markets> (arguing that “[w]hat happened in the commercial paper market... really shows the true scale of the Lehman disaster: an electronic run on the banks.”).

¹²⁰See generally, e.g., Notice Regarding Initial Distributions Pursuant to the Modified Third Amended Joint Chapter 11 Plan of Lehman Brothers Holdings Inc. and Its Affiliated Debtors, *In re* Lehman Brothers Holdings, Inc., Bankr. S.D.N.Y. (Apr. 11, 2012), dm.e-piq11.com/LBH/Document/GetDocument/2452717.

¹²¹See *supra* note 90.

¹²²This was illustrated during 2008 by the runs on Lehman Brothers, Bear Stearns, MMFs, and other instruments of the shadow banking system. See FCIC REPORT, *supra* note 48, at Part IV.

¹²³See, e.g., Carnell et al., *supra* note 34, at 502.

¹²⁴See *infra* Part III.A.3.

For long-term creditors to be credible losers and to exercise market discipline on GSIBs and other SIFIs, then, requires the *disentanglement* of systemically important from unimportant claims. The most promising effort on this front involves the development of new rules for GSIBs developed by the Federal Reserve.¹²⁵

III. THE NEW PROPOSED LONG-TERM DEBT REQUIREMENT FOR GSIBS

This part describes a recent effort to create credible losers among GSIB claims, as well as to promote price discovery for such claims, so that their price signals will be more timely and accurate. At the end of 2015, the Federal Reserve issued a proposed rule (the “Rule”) that will require GSIBs to issue a certain quantity of equity and LTD claims.¹²⁶ Together, these claims are called total loss-absorbing capacity (TLAC), and must be issued out of the GSIB’s parent holding company rather than out any of its operating subsidiaries.¹²⁷ In return for money invested by TLAC claimants, the GSIB must make periodic payments to them, in the form of dividends for shareholders and principal and interest payments for creditors. If the GSIB suffers losses, the idea is that these claimants will absorb them: by halting payments to these claimants, the GSIB will, it is hoped, have enough left over on a consolidated basis to continue meeting its systemically relevant obligations without interruption or threat of default.

TLAC has two constitutive elements for U.S. GSIBs. The first element is “Tier 1” regulatory capital issued directly by the holding company—primarily common equity.¹²⁸ The second element is

¹²⁵See *infra* Part III.

¹²⁶Total 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; Regulatory Capital Deduction for Investments in Certain Unsecured Debt of Systemically Important U.S. Bank Holding Companies, 80 Fed. Reg. 74926 (proposed Nov. 30, 2015) (to be codified at 12 C.F.R. 217, 252), <https://www.gpo.gov/fdsys/pkg/FR-2015-11-30/pdf/2015-29740.pdf> [hereinafter Rule].

¹²⁷See *infra* Figure 2.

¹²⁸Tier 1 capital includes common equity, noncumulative perpetual preferred shares, and a handful of other “rarefied” instruments. See Carnell et al., *supra* note 34, at 223–24.

“external”¹²⁹ LTD with various required features.¹³⁰ Covered GSIBs must maintain two related but distinct loss-absorbing buffers at the holding company level. First, TLAC must equal the *greater* of (1) 18% of the total risk-weighted assets of the bank holding company (BHC) or (2) 9.5% of the covered BHC’s total leverage exposure.¹³¹ Second, the qualifying external LTD component of TLAC must equal the *greater* of (i) 6% of total risk-weighted assets, plus “the surcharge applicable under the GSIB surcharge rule”; or (ii) 4.5% of total leverage exposure.¹³² The “GSIB surcharge rule” requires GSIBs to maintain a higher capital buffer than other banks and BHCs, based on their size and risk.¹³³ Using the risk-weighted asset approach, and adding in the capital surcharge for each U.S. GSIB, Figure 1 illustrates the estimated size of the required LTD buffer for each covered U.S. GSIB.

¹²⁹See Rule, *supra* note 126, at 74928 (“The term ‘external’ refers to the fact that the requirement would apply to loss-absorbing instruments issued by the covered BHC to third-party investors, and the instrument would be used to pass losses from the banking organization to those investors in case of failure. This is in contrast to ‘internal’ loss-absorbing capacity, which could be used to transfer losses among legal entities within a banking organization (for instance, from the operating subsidiaries to the parent holding company).”).

¹³⁰*Id.*

¹³¹*Id.* at 74929. “Risk-weighted assets” and “total leverage exposure” are two measures of a bank’s or BHC’s exposure to losses, and subsequently their need for a loss-absorbing buffer. “Risk-weighting” adjusts the size of the required buffer based on risk, while “total leverage exposure” is risk insensitive. (Banks must clear *both* a risk-insensitive “leverage ratio” requirement and various risk-based capital requirements that measure capital against risk-weighted assets; it is a sort of “belt and suspenders” approach.) See generally Carnell et al., *supra* note 34, at 216–39; see also Rule, *supra* note 126, at 74931 n.45 (“A covered BHC would calculate risk-weighted assets for purposes of the external TLAC requirement using the same methodology it uses to calculate risk-weighted assets under the Board’s regulatory capital rules. The Board’s regulatory capital rules require an advanced approaches banking organization (generally, a banking organization with \$250 billion or more in total consolidated assets or \$10 billion or more in total on-balance sheet foreign exposure) that has successfully completed its parallel run to calculate each of its risk-based capital ratios using the standardized approach and the advanced approaches, and directs the banking organization to use the lower of each ratio as its governing ratio.”) (internal citations omitted). The regulatory definition of “total leverage exposure”—simple in concept, extraordinarily complicated in application—can be found at 12 C.F.R. § 217.10(c)(4)(ii) (2015).

¹³²Rule, *supra* note 126, at 74929.

¹³³*Id.* at 74928. See also 12 C.F.R. § 217.402 (2015); 12 C.F.R. § 217.403 (2015).

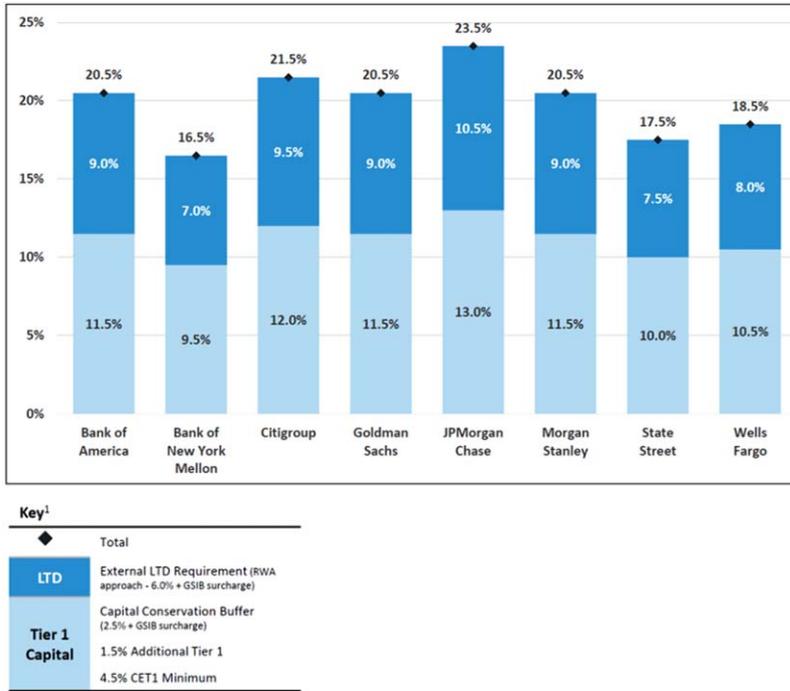


FIGURE 1. Proposed LTD Requirement + Tier 1 Risk-Based Capital Requirements.¹³⁴

To translate this into dollar amounts, Bank of America (for example) had \$1.392 trillion in total risk-weighted assets as of September 30, 2015.¹³⁵ Bank of America’s anticipated GSIB surcharge is 3%; thus its eligible external LTD must equal 9% of its risk-weighted assets.¹³⁶ Under the Rule, therefore, Bank of America will be required to have

¹³⁴BD. OF GOVERNORS OF THE FED. RES. SYS., *Depiction of Proposed LTD Requirement and Fully Phased-in Tier 1 Risk-Based Capital Requirements*, <http://www.federalreserve.gov/aboutthefed/boardmeetings/ltd-chart-20151030.pdf>. Note that the chart “does not depict (i) the amount of external TLAC that would be required under the proposed rulemaking or (ii) any higher amount of LTD that could be required if calibrated under the proposed external LTD requirement’s leverage approach (4.5 percent of the firm’s total leverage exposure).” *Id.*

¹³⁵See Bank of Am. Corp., Quarterly Report 7 (Form 10-Q) (Sept. 30, 2015). Its total assets were \$2.153 trillion. *Id.* at 11.

¹³⁶*Id.* at 62. Again, under the Rule, GSIBs must at a minimum maintain eligible external LTD relative to risk-weighted assets of 6 percent + the GSIB surcharge.

issued and outstanding approximately \$125 billion in eligible external LTD.¹³⁷

A. LTD and Credible Loser Criteria

In this part, I will examine how the Rule meets the criteria set out above for establishing, in its LTD requirement, a credible loser that can support the goals of prudential regulation.

1. Sensitivity to Downside

First, and most obviously, LTD must be issued as *debt*, not equity, and therefore it is much more sensitive to the risk of default than it is to the potential for large gains from risky bets. Furthermore, to be eligible to meet the LTD requirement, debt must be “plain vanilla.”¹³⁸ This excludes potential features such as convertibility and embedded derivatives “linked to one or more equity securities, commodities, assets or entities.”¹³⁹ While the primary purpose of this requirement is to eliminate “complexity [that could] diminish the prospects for an orderly resolution,”¹⁴⁰ it also ensures that the price of the bond does not overly reflect expectations about potential upside gain.¹⁴¹

2. Systemic (Ir)relevance

There are several features that help ensure that bonds satisfying the LTD requirement are not themselves systemically relevant. First and foremost, they must be long term: they are therefore unlikely to serve as part of the holder’s “transaction reserve.”¹⁴² Just as important, they are “unrunnable”: claimants cannot demand the principal back in the

¹³⁷The dollar amount is $0.09 \times \$1.392$ trillion = \$125 billion.

¹³⁸See Rule, *supra* note 126, at 74935.

¹³⁹*Id.*

¹⁴⁰*Id.*

¹⁴¹For example, if a bond is convertible into equity at the option of the bondholder, it will incorporate expectations about the potentially large gains from risky strategies in the same way that common shares do. As discussed *infra* Part V.A, appropriately designed convertible instruments might still be good credible losers for prudential purposes.

¹⁴²See *supra* note 90.

near term. A potential problem may occur to the reader, however: what if the debt had a long maturity when issued but is about to come due when a crisis hits? If the GSIB is *in* resolution, this should not matter: imposing losses on the LTD claimants will not create consequential losses in the same way that loss or delay in paying off short-term debt claims will.¹⁴³ On the other hand, if the GSIB is not yet in resolution, a large tranche of LTD coming due could be destabilizing; indeed, its effect may be much the same as that of short-term creditors who decline to roll over their debt.¹⁴⁴ To address this issue, the Rule amortizes the eligibility of GSIBs' LTD: only half the face value of LTD instruments that mature in less than two years but more than one year can be counted toward the LTD requirement; and LTD with less than one year remaining until maturity cannot be counted at all toward the requirement.¹⁴⁵ This should motivate GSIBs to stagger their bond issuances in such a way as to minimize the impact of any single tranche of long-term bonds coming due during a period of market turmoil.

3. Disentanglement

The most challenging criterion for the creation of credible losers among claimants on a GSIB is their disentanglement from systemically relevant debt. As discussed, this must involve a mechanism that allows losses to be imposed on some creditors without creating delay or uncertainty in meeting systemically relevant obligations. There are two ways the Rule seeks to accomplish this: first, by disentangling LTD from the failed SIFI's *own* systemically important debt, and second, by disentangling it with systemically important debt issued by *other* firms. Taking the second point first, if an LTD *claimant* is *itself* the issuer of systemically relevant claims, then imposing losses on it could exacerbate systemic stress. The

¹⁴³See *supra* Part II.B.2.

¹⁴⁴The concern about banks in a crisis rolling over LTD about to come due inspired the FDIC to establish a guarantee program for LTD issued by banks and BHCs in late 2008 and the first half of 2009, with an upper limit for each participating institution of 125 percent of LTD due to mature between September 30, 2008, and June 30, 2009. See DAVIS POLK & WARDWELL LLP, FINANCIAL CRISIS MANUAL: A GUIDE TO THE LAWS, REGULATIONS AND CONTRACTS OF THE FINANCIAL CRISIS, 116–43 (2009). The program—part of the FDIC's "Temporary Liquidity Guarantee Program"—was extended several times. *Temporary Liquidity Guarantee Program*, FDIC (2013), <https://www.fdic.gov/regulations/resources/TLGP/>.

¹⁴⁵See Rule, *supra* note 126, at 74936.

effect should be much more muted if the claimant does not itself issue systemically relevant claims. The Rule addresses this problem with a provision aiming to discourage the chief types of *issuers* of systemically relevant claims—banks and BHCs—from *buying* LTD instruments for their own portfolios. It does this by imposing regulatory capital deductions on banks and BHCs for any LTD they hold.¹⁴⁶ To illustrate the effect of this provision, it is important to note that banks and BHCs must calculate two figures in complying with capital regulations: (1) *required* capital and (2) *actual* capital. For banks to pass regulatory muster, actual capital must exceed required capital. The effect of this provision is to force banks to take deductions from *actual* capital, making compliance more difficult. Equivalently, it will force banks to raise more capital than they would have to if they held an equivalent debt claim not issued by a covered GSIB. Because banks have incentives to minimize capital,¹⁴⁷ this provision serves to discourage them from buying LTD instruments, leaving such instruments to be sold to less systemically relevant claimants such as mutual funds or pension funds.¹⁴⁸

¹⁴⁶*Id.* at 74949–51.

¹⁴⁷Capital is generally seen as an “expensive” way to fund a bank’s activities. A powerful critique of this notion in recent years argues that capital is only expensive because of social subsidies such as “too-big-to-fail” guarantees and the deductibility of interest (but not dividend) payments. *See, e.g.,* Anat R. Admati et al., *Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity Is Not Socially Expensive* (Stan. Graduate Sch. Bus., Working Paper No. 2065, 2013). The critique does not, however, undermine the notion that capital is *privately* expensive.

¹⁴⁸Some critics view this as a troubling aspect of the Rule. *See, e.g.,* Arthur Wilmarth, *The Financial Industry’s Plan for Resolving Failed Megabanks Will Ensure Future Bailouts for Wall Street*, 50 GA. L. REV. 43, 64 (2015) (“Selling bail-in debt to pension funds and retail mutual funds would simply shift some of the costs of resolving failed SIFIs from taxpayers to individual savers while protecting favored Wall Street creditors.”). I believe these criticisms are misguided. If bank *debt* is too risky for ordinary investors, *a fortiori* bank equity is too risky: indeed, virtually any equity claim is likely to be too risky. Yet mutual funds focusing on equity abound. The Investment Company Institute’s 2016 Factbook shows that at year-end 2015, equity-focused mutual funds held over \$8 trillion in assets (approximately \$6 trillion in U.S. equities and \$2 trillion in “world” equities). *See, e.g.,* INV. CO. INST., *2016 Investment Company Factbook*, 174, tbl. 3 (2016), https://www.ici.org/pdf/2016_factbook.pdf. The issue, then, seems to be more about disclosure than risk. If the first-loss position of LTD is fully disclosed—as the Rule requires that it be—then investors (“ordinary” or not) will be compensated for the extra risk, just as they are with equity claims. Matt Levine poses the problem more generally (“Is bank debt too risky for big insurers and asset managers to hold? Are insurers and asset managers too important to hold bank debt? If so, that would be a

The question then is whether losses can be imposed on LTD claimants without creating uncertainty or delay for the failed SIFI's *own* systemically important debt. Title II of the Dodd-Frank Act provides regulators with “orderly liquidation authority” to resolve GSIBs and other SIFIs without resorting to bankruptcy.¹⁴⁹ The FDIC has proposed a rule that would employ this authority in a way that could achieve the necessary disentanglement.¹⁵⁰ The FDIC's rule would adopt a “single point of entry” (SPOE) approach to GSIB resolution, resolving *only* the holding company, and not any of the “operating subsidiaries that comprise hundreds, or even thousands, of interconnected entities that span legal and regulatory jurisdictions across international borders and share funding and support services.”¹⁵¹ Figure 2 illustrates—in highly stylized form—the structure of a U.S. GSIB.

SPOE resolution would focus *only* on “ABC Holding Company.” “Banks,” “Broker/Dealer,” and “Other” would be transferred to a “bridge” holding company, their operations continuing (if all works as

little weird. Someone has to ultimately bear this risk of bank failures. You need a sink, somewhere, for financial-system risk. That's an important job, and whoever does it is going to be important. But you can't protect them from the consequences of the job. Bearing those consequences is the job.”) Matt Levine, *Regulators Want Banks to Rescue Themselves Next Time*, BLOOMBERGVIEW (Nov. 11, 2014), <http://www.bloombergvew.com/articles/2014-11-11/regulators-want-banks-to-rescue-themselves-next-time>. The point about the importance of disclosure versus risk extends to the imposition of losses on retail investors who buy bonds directly. In general, imposing losses on retail investors should not by itself create systemic concerns—if it did, retail investors should be banned from equity markets. If, however, bank bonds are marketed as the equivalent of time deposits, then imposing losses on them could create significant problems. As of July 2016, this appears to be an important concern with the world's oldest bank, Monte dei Paschi of Italy. See, e.g., Giovanni Legorano, *World's Newest Banking Crisis Revolves Around World's Oldest Bank*, WALL ST. J. (July 14, 2016), <http://www.wsj.com/articles/worlds-newest-banking-crisis-revolves-around-worlds-oldest-bank-1468523416> (“Italian officials are looking for loopholes in new European rules to avoid wiping out retail investors who hold €187 billion in Italian bank bonds. Around €30 billion of those bonds are junior, or the riskier type of bonds, which would be targeted first in case of a bailout. Monte dei Paschi has €5 billion in outstanding junior bonds, with about half believed to be in the hands of Italian households.”).

¹⁴⁹12 U.S.C. § 5384 (2015).

¹⁵⁰Resolution of Systemically Important Financial Institutions: The Single Point of Entry Strategy, 78 Fed. Reg. 76614 (proposed Dec. 18, 2013), <https://www.gpo.gov/fdsys/pkg/FR-2013-12-18/pdf/2013-30057.pdf> [hereinafter FDIC Proposed Rule].

¹⁵¹*Id.* at 76615.

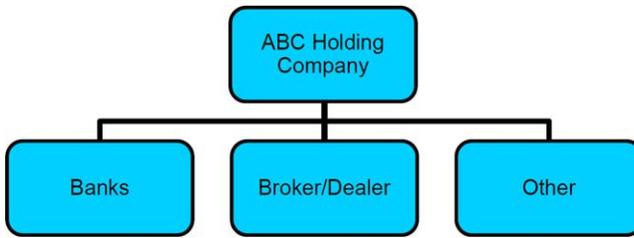


FIGURE 2. Illustrative GSIB Structure.¹⁵²

planned) without interruption.¹⁵³ As the Federal Reserve explained when it proposed the TLAC and LTD requirements,

Certain structural features of the U.S. GSIBs facilitate SPOE resolution. In the United States, the top-tier parent company of a large banking organization generally does not itself engage in material operations. Rather, it generally acts primarily as a holding company, by, for example, measuring and managing the consolidated risks of the organization, undertaking capital and liquidity planning, coordinating the operations of its subsidiaries, and raising equity capital and long-term debt to fund those operations. Its assets therefore largely consist of cash, liquid securities, and equity and debt investments in its subsidiaries. As a result of this organizational structure, in the context of SPOE resolution the liabilities of the parent holding company are generally “structurally subordinated” to the liabilities of the operating subsidiaries.¹⁵⁴

In short, virtually all systemically relevant claims are issued out of subsidiaries; and the holding company issues few if any systemically relevant claims. Keeping the subsidiaries operating while putting the (old)

¹⁵²FDIC, *Title II Resolution Strategy Overview*, at slide 14, Aug. 2012, <https://www.fdic.gov/resauthority/sifiresolution.pdf>.

¹⁵³FDIC Proposed Rule, *supra* note 151, at 76616. The SPOE approach is not without critics. See, e.g., Wilmarth, *supra* note 149; Stephen J. Lubben, *OLA After Single Point of Entry: Has Anything Changed?*, in AN UNFINISHED MISSION: MAKING WALL STREET WORK FOR US 13, 13 (Mike Konczal & Marcus Stanley eds., 2013); David A. Skeel Jr., *Single Point of Entry and the Bankruptcy Alternative*, in ACROSS THE GREAT DIVIDE: NEW PERSPECTIVES ON THE FINANCIAL CRISIS 312 (Martin Neil Bailly & John B. Taylor eds., 2014). In general, however, the Rule has inspired cautious optimism among regulators. See, e.g., Joint Comment Letter from John Court et al. to Robert E. Feldman, Exec. Sec’y, FDIC 7–10 (Feb. 18, 2014), <https://perma.cc/U3S9-64QV> (reporting positive views on SPOE by, inter alia, Federal Reserve Board Chair Janet Yellen, Federal Reserve Board Governors Jerome Powell and Daniel Tarullo, and former FDIC Chair Sheila Bair).

¹⁵⁴Rule, *supra* note 126, at 74928.

holding company into resolution can potentially achieve disentanglement by allowing losses to be imposed on holding company creditors without creating delay or uncertainty for the systemically relevant claimants of the subsidiaries. Assets that would have gone to making dividend, principal, and interest payments to claimants on the holding company will be diverted to the subsidiaries to ensure they can meet all of their third-party obligations.

There are, however, risks to relying on the historical accident of U.S. GSIB structure.¹⁵⁵ How can we be sure, going forward, that GSIB holding companies will not become too entangled with their subsidiaries—for example, through “upstream guarantees” of holding company debt by the subsidiaries? Further, how can we be sure that the holding company itself will not issue systemically relevant claims, so that putting it into resolution and imposing losses on LTD claimants would be just as destabilizing as resolving the subsidiaries would have been? These risks motivate a key feature of the Rule: the “clean holding company” requirement.¹⁵⁶

There are two aspects to ensuring the holding company is “clean” in this respect: (1) ensuring that the holding company itself does not directly incur systemically relevant obligations and (2) ensuring that the holding company’s resolution does not trigger new obligations for its subsidiaries. Meeting the first prong is straightforward: GSIB holding companies will be prohibited from issuing external short-term debt instruments, as well as from entering into qualified financial contracts with third parties, as obligations under such contracts are also often systemically relevant.¹⁵⁷

With respect to the second prong, ensuring that a SPOE resolution does not affect the continuing operation of the subsidiaries, the holding company will not be able to incur liabilities subject to “upstream guarantees” from a subsidiary.¹⁵⁸ An upstream guarantee—from subsidiary to parent—would effectively subordinate the subsidiary and its creditors to holding company claimants. This means the subsidiary would bear losses ahead of, or instead

¹⁵⁵European GSIBs, by and large, do not exhibit the same structural features. See *infra* note 177.

¹⁵⁶Rule, *supra* note 126, at 74944.

¹⁵⁷*Id.* at 74930. For a description of QFCs, see *supra* note 118. In addition, the value of holding company liabilities that are *pari passu* or junior to eligible external TLAC and LTD will be capped at five percent of eligible external TLAC. *Id.*

¹⁵⁸*Id.*

of, TLAC and LTD claimants, defeating the logic and appeal of the SPOE strategy. In addition, the holding company will not be able to incur any liabilities that are subject to rights by a “third party to offset its debt to a subsidiary upon the covered holding company’s default[.]”¹⁵⁹ Again, such rights would mean the transfer of losses from the LTD claimants onto the subsidiaries, undermining the ability of regulators to maintain systemic stability while resolving a GSIB.

Finally, the holding company will not be able to issue *downstream* guarantees of its subsidiaries’ obligations if the terms of the guarantee provide that the holding company’s resolution triggers a default on the liability subject to the guarantee.¹⁶⁰ If guarantees with such terms were permitted, the resolution of the holding company could trigger bankruptcy or resolution proceedings for the subsidiary, undercutting regulators’ attempt to preserve the subsidiaries while resolving the parent.

B. Price Discovery

One other aspect of the Rule distinct from *establishing* credible losers may nonetheless help bolster the disciplinary role of LTD claimants. As noted above, there is a “plain vanilla” requirement for instruments qualifying as LTD.¹⁶¹ The principal purpose of this requirement is to ensure transparency with respect to LTD’s loss-absorbing capacity and facilitate the resolution process. As noted, the requirement also helps ensure that no features of the debt make it more sensitive to potential upside gains from risky bets than it is to the risk of default.¹⁶² An additional benefit of this requirement is that it could promote indirect discipline by increasing the clarity of signals about GSIB health available to regulators, even aside from the question of upside gains. It can do this by promoting more standardized terms for LTD instruments. Hart and Zingales have observed that a lack of standardization in bond markets reduces the reliability of bond prices:

[B]ond prices suffer from the problem of market segmentation and illiquidity. Bond issues differ along several dimensions: promised yield, maturity,

¹⁵⁹*Id.* at 74944.

¹⁶⁰*Id.*

¹⁶¹*See supra* notes 139–142 and accompanying text.

¹⁶²*Id.*

covenants, callability, and so on. As a result of this lack of standardization, the market for each bond issue tends to be rather illiquid, with most bond issues trading only occasionally. This illiquidity makes bond prices a less reliable indicator than [CDS] prices.¹⁶³

Some degree of variation among LTD instruments is likely impossible to eliminate entirely—for example, in promised yield and maturity. The plain vanilla requirement nevertheless eliminates some of the nastiest variations such as features that function as embedded derivatives. This could promote liquidity and improve price discovery, bolstering indirect discipline.

IV. OBJECTIONS

In this part, I consider several possible objections to the efficacy of the Rule in establishing market discipline for SIFIs.

A. The Single-Point of Entry Approach Is Untested

Perhaps the chief concern about LTD's status as a credible loser arises from the fact that the SPOE strategy is untested. Thus, questions about whether it will, in fact, work as planned may make regulators trigger shy about invoking it instead of intervening in other ways to keep the GSIB from defaulting.¹⁶⁴ A possible concern regulators may have about SPOE is that it does not technically *guarantee* that systemically important debt will be protected—if TLAC is insufficient to absorb all the GSIB's consolidated losses, then regulators are formally obligated to resolve the operating subsidiary and impose haircuts as necessary.¹⁶⁵ While this formal requirement may not in practice prevent regulators from protecting systemically important claims in a SPOE resolution,¹⁶⁶ the uncertainty it creates could trigger the very run-like dynamics SPOE is meant to avoid.

¹⁶³Hart & Zingales, *supra* note 70, at 478.

¹⁶⁴See *supra* notes 46–48 and accompanying text.

¹⁶⁵FDIC Proposed Rule, *supra* note 151, at 76615.

¹⁶⁶Many critics believe that regulators could affect a “backdoor bailout” in such a situation. See, e.g., Crawford, *supra* note 46, at 122–23.

One obvious solution to this would be to provide *ex ante* insurance for all systemically important claims, as the FDIC does for deposits, but this is likely to be a political nonstarter.¹⁶⁷

Another possible measure that would ease uncertainty about the impact of a resolution without creating an *ex ante* commitment by the government to bail out all subsidiary claims would take a page from traditional bank resolution: the FDIC can extend guarantees to uninsured claimants on a traditional bank if it determines that failing to do so would create systemic risk.¹⁶⁸ This “systemic risk” safety valve might usefully be extended to nonbank GSIB subsidiaries in the context of a Title II resolution.

In any event, markets—as noted earlier—likely assign a probability of neither 1 nor 0 to government bailouts of a GSIB as it stands. It could be argued, therefore, that TLAC and LTD are not about moving the perceived probability of a bailout from 1 to 0, but rather from, say, 0.9 to 0.1—a huge step forward, even if it falls short of perfection.

B. Only U.S. GSIBs Must Issue LTD to Third Parties

Another potential limitation of the Rule is the circumscribed set of SIFIs—U.S. GSIBs—with respect to which the Rule will help establish credible losers. Other types of SIFIs may lack credible losers, but the Rule offers little or no help for them. For example, foreign GSIBs—such as Deutschebank, Barclays, and UBS—are required to set up “intermediate holding companies” (IHCs) for their U.S. operations, and under the Rule, these IHCs must maintain levels of TLAC and LTD similar to those of the BHCs of the U.S. GSIBs.¹⁶⁹ The IHC’s LTD does not, however, have to be issued to “external” third parties; rather, it will be issued “internally” to its own foreign parent.¹⁷⁰

¹⁶⁷Of course, it would be unwise to extend such insurance without extensive safeguards to constrain moral hazard and protect taxpayers from incurring liabilities for losses. *See* Ricks, *supra* note 84 (arguing in favor of limiting not only the issuance of deposits, but of functional substitutes for deposits, to banks, with insurance applied to all such claims, but also significant risk constraints and oversight).

¹⁶⁸12 U.S.C. § 1823(c)(4)(G) (2011). Regulators can already invoke this exception to avoid the least cost requirement for resolving banks.

¹⁶⁹*See generally* Rule, *supra* note 126.

¹⁷⁰*See, e.g., id.* at 74929.

While this will certainly promote stability and perhaps improve the incentive to limit risk on the part of the foreign bank parent, it will not provide regulators with a market-based price for the default risk of the foreign GSIB's U.S. operating subsidiaries.

Furthermore, the Rule does not apply at all to financial behemoths that are not organized as BHCs, even when these firms are engaged extensively in shadow banking activities. For example, MetLife, the giant insurer, finances itself extensively through short-term loans by money market funds, such that its bankruptcy could be extraordinarily disruptive to the financial system.¹⁷¹ Yet it is not clear that "credible losers" exist at the largest nonbank financial institutions.

V. OTHER CREDIBLE LOSERS

This part proposes potential policy responses to the lack of credible losers at SIFIs not addressed by the Rule—that is, all SIFIs that are not U.S. GSIBs.

A. *Contingent Convertible Bonds*

If other SIFIs lack credible losers, one might ask why not simply impose the same LTD requirement onto them as the rule imposes on GSIBs. It is important to recall that one of the virtues of the Rule is that it builds off a quirk in the organizational structure of U.S. GSIBs.¹⁷² Creating such a structure where it does not already exist in order to establish a credible loser may not pass a cost-benefit test,¹⁷³ particularly if there is the possibility of meeting all three criteria to establish credible losers *without* mandating such an

¹⁷¹See, e.g., Brief of Professors of Law and Finance as *Amici Curiae* Supporting Defendant at 20–21, *MetLife, Inc. v. Financial Stability Oversight Council* (D.D.C., May 22, 2015) (No. CV 15-0045 (RMC)).

¹⁷²See *supra* Part III.A.3.

¹⁷³Of course, there are reasons to be skeptical of any sort of *quantified* cost benefit analysis. See, e.g., Coates, *supra* note 59 ("Detailed case studies of six rules—(1) disclosure rules under Sarbanes-Oxley section 404; (2) the SEC's mutual fund governance reforms; (3) Basel III's heightened capital requirements for banks; (4) the Volcker Rule; (5) the SEC's cross-border swap proposals; and (6) the FSA's mortgage reforms—finds that precise, reliable, quantified CBA remains unfeasible. Quantified CBA of such rules can be no more than "guesstimated," as it entails (a) causal inferences that are unreliable under standard regulatory conditions; (b) using problematic data; and/or (c) the same contestable, assumption-sensitive macroeconomic and/or political modeling used to make monetary policy, which even CBA advocates would exempt from CBA law.").

organizational overhaul. One possible way to accomplish this is to create claims that pay a fixed amount, like debt, but that can absorb losses *without* it constituting default by the issuer. Such CoCo instruments would thus avoid entanglement with systemically important claims entailed by bankruptcy proceedings. A number of writers have proposed the creation of such CoCo claims in the United States,¹⁷⁴ and European GSIBs—which tend not to have the SPOE-friendly structure of U.S. GSIBs¹⁷⁵—have issued approximately \$100 billion of CoCo debt since 2012.¹⁷⁶

CoCos may vary along a number of dimensions, but the key ones are the conversion trigger and the manner of loss absorption.¹⁷⁷ Triggers in

¹⁷⁴Mark Flannery is generally acknowledged as the first to propose CoCos in 2002 (in a paper ultimately published several years later). See generally Mark J. Flannery, *No Pain, No Gain: Effecting Market Discipline via Reverse Convertible Debentures*, in CAPITAL ADEQUACY BEYOND BASEL: BANKING, SECURITIES, AND INSURANCE (Hal S. Scott ed., 2005). There has been an impressive quantity and variety of CoCo proposals since, particularly postcrisis. Charles Calomiris and Richard Herring provide a comprehensive summary of these proposals as an appendix to their own CoCo proposal paper. Charles W. Calomiris & Richard J. Herring, *How to Design a Contingent Convertible Debt Requirement That Helps Solve Our Too-Big-to-Fail Problem*, J. APPLIED CORP. FIN., Spring 2013, at 21, 39.

¹⁷⁵European GSIBs have not traditionally been structured with a holding company at the top and an array of subsidiaries beneath—the parent company of the European GSIB is typically deeply engaged in client-facing operations. For a proposal to change this, see Wolf-Georg Ringe & Jeffrey N. Gordon, *Bank Resolution in Europe: The Unfinished Agenda of Structural Reform*, VOXEU.ORG (Jan. 28, 2015), <http://voxeu.org/article/restructure-eu-banks-facilitate-resolution>. It should be noted, however, that there has been some recent movement in the direction of the U.S. model among European GSIBs. See, e.g., Wolf-Georg Ringe, *Bail-in Between Liquidity and Solvency* 13–14 (Oxford Legal Research Paper Series, Research Paper No. 33/2016, 2016) (“There is a rich debate ongoing on how (and if) to require European banks to adopt a holding company structure to facilitate SPOE. Several European regulators have begun to set incentives accordingly. For example, Swiss rules on banks’ capital requirements lower those requirements for banks that adjust their organizational structure to make the bank more easily resolvable. This move has prompted the two Swiss SIFIs (UBS and Credit Suisse) to change their structure in a way similar to the U.S. holding company structure. Once the new structure is in place, Credit Suisse plans to issue ample bail-in-able debt from its group holding company, in order to facilitate the SPOE approach. Following new regulation in the UK, British banks are also beginning to issue debt at the holding company level. And more recently, Italian SIFI Unicredit has announced plans to reorganize its operations in a holding structure more amenable to resolution.” (internal citations omitted)).

¹⁷⁶See, e.g., Christopher Whittall & Juliet Samuel, *Buyer Beware: The Vulnerability of One Complex Debt Investment*, WALL ST. J. (Feb. 20, 2016), <http://www.wsj.com/articles/buyer-beware-the-vulnerability-of-one-complex-debt-investment-1455964204>.

¹⁷⁷See Stefan Avdjiev et al., *CoCos: A Primer*, BIS QUARTERLY REV., Sept. 2013, at 43, http://www.bis.org/publ/qtrpdf/r_qt1309f.pdf.

CoCo proposals come in at least one of three flavors: (1) a regulatory capital measure, (2) a market-based measure such as stock price, and (3) a regulatory determination that the issuer is nonviable.¹⁷⁸ Each of these has potential drawbacks.¹⁷⁹ Loss absorption may involve a suspension of coupon payments, a principal write-down, or a conversion to equity.¹⁸⁰

One way of understanding the LTD requirement is that it is, in essence, a conversion-to-equity CoCo triggered by a regulatory determination that the issuer is nonviable and married to a resolution process—though this is an analytic rather than a terminological point.¹⁸¹ In line with this, it is easy to see how appropriate design choices could make

¹⁷⁸*Id.*

¹⁷⁹The potential problem with a discretionary preinsolvency trigger is that uncertainty about timing can create valuation uncertainty. *Id.* at 50. The potential problem with tying to trigger to an accounting measure, such as regulatory capital, is that such a measure can be manipulated and often lags real-time problems. *See, e.g.,* Calomiris & Herring, *supra* note 176, at 23 (“The measure of shareholders’ equity employed by Basel is an accounting measure that inevitably lags its true economic value, thus avoiding timely recognition of loss.”); *see also* Darrell Duffie, *Contractual Methods for Out-of-Court Restructuring of Systemically Important Financial Institutions* 4 (Stan. Graduate Sch. Bus., Working Paper, Dec. 9, 2009), <http://media.hoover.org/sites/default/files/documents/06EndingGovernmentBailoutsAsWeKnowThemDuffie.pdf> (“Citibank, a SIFI that did receive a significant government bailout during the recent financial crisis, had a Tier-1 capital ratio that never fell below 7% during the course of the financial crisis, and was measured at 11.8% at roughly its weakest moment in December 2008, when the stock-market capitalization of Citibank’s holding company fell to around \$20 billion dollars, or about 1% of its total accounting assets. Because of the limited-liability treatment of equity and because of significant prevailing uncertainty over the true valuation of Citibank’s assets, this stock-market valuation suggests that Citibank’s assets probably had a market value well below its debt principal in late 2008. Nevertheless, any reasonable Tier-1-capital-based tripwire for distress-contingent convertible debt would probably not have been tripped.”). As for market-based measures, debt claims are an unlikely candidate, since it is the *lack* of other credible losers among debt claimants in a SIFI’s capital structure that motivates CoCo proposals in the first place. The obvious candidate, then, is the share price, which would quite possibly be a better option than any accounting measure. *See, e.g.,* Calomiris & Herring, *supra* note 176, at 29 (“Equity values, if used properly, would provide the best source of information for designing a trigger. Indeed, some of the best-known cases of large-firm failures that surprised rating agencies and regulators were signaled well in advance by *severe and persistent declines in the aggregate market values of their equity.*”) On the other hand, we have already seen that share price can be an untrustworthy signal for the likelihood of default, because the possibility of large upside gains could offset a relatively high likelihood of default. *See supra* Part II.B.1.

¹⁸⁰*See* Avdjiev et al., *supra* note 179.

¹⁸¹Most commentators would likely resist calling LTD claims CoCos.

“traditional” CoCos a credible loser for prudential purposes. CoCos would be long term and unrunnable and, therefore, not systemically important. Loss absorption by principal write-down would make them more sensitive to downside risks than potential upside gains; and if the trigger for CoCo losses did not simultaneously trigger SIFI default, then losses could be imposed without creating the risk of delay or loss on systemically important claims.

The literature on CoCo design, though young, is rich, and it is beyond the scope of what I hope to accomplish in this article to weigh in on the optimal design of such instruments. Two important and related differences may, however, be worth highlighting between the proposed LTD requirement and virtually all proposed traditional CoCos. First, LTD only absorbs losses if a SPOE resolution is triggered. Because the resolution process is untested and may carry implementation risks, this would seem to be a disadvantage of the LTD proposal.¹⁸² On the other hand, if LTD absorbs losses, it is likely to occur only after equity has been zeroed out.¹⁸³ Mileage may vary on this point, but this strikes me as a desirable feature, in that it prevents (further) distortion of shareholder incentives with respect to risk-taking.¹⁸⁴

Of course, we do not need to rely only on theoretical proposals in assessing CoCos; as noted, European GSIBs have issued a large number

¹⁸²See *supra* Part IV.A.

¹⁸³See, e.g., FDIC Proposed Rule, *supra* note 151, at 76619–20.

¹⁸⁴The idea here is that by insulating shareholders further from the risk of being zeroed out, it makes them even more eager to pursue projects with a high upside by a greater risk of loss. Despite this point, a very interesting strand of the CoCo literature proposes solving the distorted shareholder incentive problem by ensuring that CoCo claimants are *not* credible losers—instead, CoCo conversion to equity would lead to massive dilution of pre-existing shareholders, essentially ensuring that there is a loss “cliff” for shareholders well in advance of insolvency, and incentivizing the firm to issue new equity at more favorable terms prior to such a conversion. See, e.g., Calomiris & Herring, *supra* note 176. Again, a critique of this proposal is beyond the scope of this article, but it is enough to note that if it is successful, it will work largely by counteracting, at least in part, equity’s shortcoming as a candidate for credible loser status in support of *prudential* goals. The loss cliff will heighten shareholders’ sensitivity to the risk of loss. In terms of disciplinary signals and mechanisms, it would involve a trade-off: a weaker pricing signal (as CoCos would be protected from losses in this scheme, and shareholders would ultimately retain the potential for upside gain) in exchange for stronger shareholder incentives to support new equity issuances prior the point of conversion.

of them.¹⁸⁵ In the first few months of 2016, the European CoCo market experienced significant turmoil and volatility.¹⁸⁶ The episode was not an unmitigated triumph for CoCos' role as a disciplinarian: many saw the dip in prices not as a pure signal of increased bank risk, but rather as the result of CoCo holders waking up to certain complicated features of the instruments.¹⁸⁷ This was exacerbated by profound uncertainty in the changing regulatory landscape for CoCos.¹⁸⁸ In light of this experience, the advantages of LTD rule's plain vanilla requirement come into focus. If it is finalized, the uniform nature and clarity of the rule will also help LTD promote market discipline.¹⁸⁹ If CoCos do become a permanent feature of the European GSIB landscape or the capital structure of nonbank SIFIs, the same sort of care in crafting clear, comprehensive requirements would be called for to ensure the CoCos serve their purpose both in absorbing losses and in promoting market discipline.

B. "Side Bets"

Certain "side bets" on a SIFI, such as CDS and prediction market contracts, could also potentially satisfy the criteria for credible loser status.

¹⁸⁵See *supra* note 178 and accompanying text.

¹⁸⁶See, e.g., Richard Barley, *The Real Crisis Is for Bank Bonds, Not Banks*, WALL ST. J. (Feb. 17, 2016), <http://www.wsj.com/articles/the-real-crisis-is-for-bank-bonds-not-banks-1455703543>.

¹⁸⁷See *id.* ("The big risk that investors have woken up to isn't that these bonds can be bailed-in if a bank hits trouble—it is that interest payments on them can be skipped under certain circumstances. In turn, falling prices have raised concerns that banks won't exercise their option to redeem them at the first opportunity, requiring a further repricing downwards.").

¹⁸⁸See, e.g., Whittall & Samuel, *supra* note 178 (quoting a professional money manager's statement that "[i]t's even tough for us professionals to really keep on top of everything that is changing in the details of the regulation"); Thomas Hale, *The Tale of the Swiss Coco*, FT ALPHAVILLE (Feb. 26, 2016), <http://ftalphaville.ft.com/2016/02/26/2154308/the-tale-of-the-swiss-coco/> (providing an account of the pricing roller coaster experienced by one of Credit Suisse's CoCos, and concluding that the CoCo's "ups and downs... are embedded in a vast regulatory saga... To buy any of the almost €100bn of outstanding European AT1 debt is to buy all kinds of options on potential regulatory decisions. You are trading authorial psychology. You are trading instruments which may, for whatever political or technocratic reason, go out of fashion.").

¹⁸⁹See *supra* Part III.B.

These side bets would involve contracts between parties that have no necessary affiliation with the firm, at least one of whom nevertheless stands to lose money if the firm falters. The bets can be structured in a way that makes them nonsystemically relevant, and sensitive only to the downside risk of failure. Furthermore, because imposing losses on such bettors should not trigger any sort of resolution or bankruptcy process for the firm itself, they are easily disentangled from the firm's systemically relevant claims. By satisfying these three criteria, the bets can create credible losers, and the pricing of the bets can then provide signals to regulators. At the very least then, such side bets can help promote indirect discipline.¹⁹⁰ Of the two types of side bets considered here, one (the CDS) is currently widely in use, and the other (the prediction market) would likely require legislative action to establish.¹⁹¹

1. Credit Default Swaps

The first type of side bet is the CDS. Figure 3 illustrates the structure of a typical CDS. One party—the protection buyer—pays a periodic premium to another party—the protection seller—who in turn promises to make payments covering losses on a notional sum of a reference security, such as a GSIB bond.

The protection buyer may be hedging some exposure to the GSIB, or to a correlated asset, in which case the CDS serves a quasi-insurance

¹⁹⁰There have also been several proposals to create a *direct* link between side bets and firm decision makers—essentially turning what was a purely indirect disciplinary tool into a direct one. For example, Patrick Bolton and his coauthors propose “tying a CEO’s compensation in part to the financial firm’s credit default swap (CDS) spread. A high and increasing CDS spread would result in lower compensation, and vice-versa. The CDS spread provides an innovation previously unavailable as a policy instrument: a market estimate of the default risk of the firm.” Patrick Bolton et al., *Executive Compensation and Risk Taking* 32, (Fed. Res. Bank of N.Y. Staff Report No. 456) (revised Nov. 2011), http://www.newyorkfed.org/research/staff_reports/sr456.pdf. Bolton and his coauthors prefer CDS to debt. *Id.* at 32 (“Individual debt issues vary by maturity, seniority, and specific covenants, while the CDS spread does not. . . . As credit default swaps become even more standardized and liquid by being moved onto exchanges, their benefits may be magnified.” (Internal citations omitted)). The CDS prices could, thus, provide a direct incentive to financial firm executives to rein in risk.

¹⁹¹See *infra* note 198.

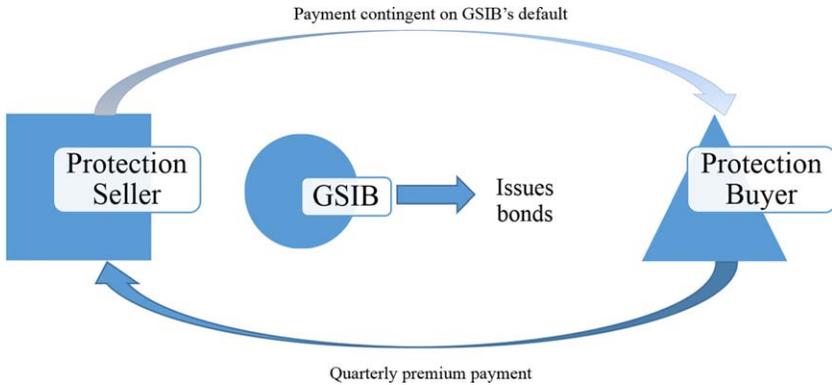


FIGURE 3. CDS Structure.

function.¹⁹² The CDS can also, however, serve a speculative purpose: the protection buyer may have no “insurable interest,” or exposure that the CDS helps to hedge, at all.¹⁹³ Instead, the CDS may be an efficient way for the protection buyer to bet that the issuer will default and for the protection seller to bet the issuer will not default. This is much the same as two parties with no connection to a sporting event betting on its outcome.¹⁹⁴

¹⁹²A CDS may help hedge exposure to the GSIB even if the protection buyer does not own the bond. See, e.g., *Is Wall Street Over?*, WALL ST. J. (Mar. 30, 2009), <http://www.wsj.com/articles/SB123835920915467021> (providing a transcript of an interview with Goldman Sachs executive Gary Cohn, in which he responds to a proposal that one should not be allowed to buy a CDS if one does not own the underlying bond by observing, “If you have the bond and you don’t like the credit, it’s really easy: sell the bond. The CDS market really is needed for people that don’t have the bond but have the credit exposure. So if you’re a trade creditor, and you’ve got big obligations to a company and you want to make sure you’re going to get paid, that’s when you need the CDS market, you need to hedge yourself.”).

¹⁹³See, e.g., Stacy-Marie Ishmael, *Repeat After Me: CDS Are Not Insurance*, FT ALPHAVILLE (Mar. 9, 2010), <http://ftalphaville.ft.com/2010/03/09/169811/repeat-after-me-cds-are-not-insurance/>.

¹⁹⁴This speculative function of CDS lies at the heart of Michael Lewis’s celebrated account of the crisis in the book *The Big Short*. See generally MICHAEL LEWIS, *THE BIG SHORT: INSIDE THE DOOMSDAY MACHINE* (2010). People who were convinced in the early 2000s that housing was overpriced were constrained in their ability to “short” the market—that is, bet that it would fall in value. If one believes a *stock* is overpriced and wants to bet that it will fall, one can short it by borrowing the stock, selling it on the market, waiting for the share

The higher the market estimate of default likelihood rises, the more the protection seller should demand in premiums from the protection buyer, and the more the protection buyer should be willing to pay. Thus, just as the prices of bonds themselves reflect default risk, so the prices of CDS reflect this risk. There is, however, at least one significant drawback to CDS from a disciplinary perspective. The drawback is that as they currently exist,¹⁹⁵ CDS are *parasitic* on bonds in the provision of information: if the reference bonds are not credible losers, then CDS protection sellers cannot be credible losers. Thus, CDS prices should not be expected to provide timely and accurate information about the downside risk of the issuer. Of course, CDS are private contracts; there is no legal obstacle to including bail-out activities as a trigger. The fact that a market for such CDS does not appear to have developed yet, however, may indicate a lack of sufficient demand among private actors. This is an area where government intervention, as described in the next section, may play a useful role.

price to fall, buying back another share, and returning it to the lender. For a good account of the mechanics of securities lending, see Frank M. Keane, *Securities Loans Collateralized by Cash: Reinvestment Risk, Run Risk, and Incentive Issues*, 19 CURRENT ISSUES IN ECON. & FIN. 1 (2013), https://www.newyorkfed.org/medialibrary/media/research/current_issues/ci19-3.pdf. One could not, however, do this with housing, or with mortgages, or even with mortgage-backed securities (MBS), which did not have active secondary markets. The traders Lewis writes about figured out how to short MBS without having to borrow them: using CDS as a way to make a side-bet on them. See Lewis, *supra*.

¹⁹⁵Under current definitions used by the International Swaps and Derivatives Association, Inc., there are seven categories of “credit event” that can trigger a CDS payout: bankruptcy, obligation acceleration, obligation default, failure to pay, repudiation/moratorium, restructuring, and governmental intervention. See, e.g., Credit Derivatives—Overview, LexisPSL Banking & Finance, <https://www.lexisnexis.com/uk/lexispsl/bankingandfinance/document/391289/5DB7-7F11-F185-X2M4-00000-00/Credit%20derivatives%E2%80%94940-overview>. However, “government intervention”—newly added in 2014—is limited to non-U.S. financial institutions, and refers not to “bail-out,” but rather to “bail-in,” where-in government action results in the impairment of privately-held debt. See, e.g., Fabien Carruzzo, *New ISDA 2014 Credit Derivatives Definitions*, HARVARD L. SCH. F. ON CORE GOVERNANCE & FIN. REG. (Aug. 24, 2014), <https://corpgov.law.harvard.edu/2014/08/24/new-isd-2014-credit-derivatives-definitions/>.

2. Prediction Markets

A final potential credible loser is a bettor in a prediction market. The mechanics of a prediction market are beyond the scope of this article,¹⁹⁶ but the basic concept is that the market allows participants to bet on the outcome to future events, and the price of various “contracts” provides information about the perceived likelihood of the event.¹⁹⁷ The disadvantage of a prediction market is that none exists that would allow betting on GSIBs and other SIFIs, and establishing one would likely require legislative action.¹⁹⁸ The potential advantages, however, are considerable: such markets could be tailored to meet the informational needs of regulators, and could be subsidized to ensure robust trading and price signals.

With respect to information, a prediction market—in contrast to the CDS market as currently configured—could provide signals about downside risk to regulators even if no credible loser existed among the actual debt claims on the firm. For example, a prediction market contract could be written so that the payout would be triggered either by a “default” event (as with CDS) or by a “rescue event” (which CDS fail to capture).¹⁹⁹ Thus, the “protection buyer” in the prediction market contract would win if the reference firm defaulted or if it were bailed out. Defining what counts as a bailout or “rescue event” with enough breadth to cover the various ways regulators could intervene to save a systemically important firm or its creditors, but also with enough specificity to make it easily justiciable in the event of a dispute, would be a difficult but likely not an insurmountable challenge.²⁰⁰ The resulting

¹⁹⁶For a fuller account, along with various objections to prediction markets and responses, see generally John Crawford, *Predicting Failure*, 7 VA. L. & BUS. REV. 171 (2012).

¹⁹⁷For example, if a “contract” on a Steelers–Ravens football game pays \$1 if the Steelers win and nothing if they lose, and currently trades at \$0.60, this can be interpreted as the market’s judgment that the Steelers have a sixty percent chance of winning. *Id.* at 175.

¹⁹⁸See generally, e.g., Kenneth J. ARROW et al., *Statement on Prediction Markets*, AEI-BROOKINGS JOINT CENTER FOR REGULATORY STUDIES (May 2007), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=984584.

¹⁹⁹*Id.*

²⁰⁰See, e.g., M. Todd Henderson et al., *Predicting Crime*, 52 ARIZ. L. REV. 15, 51–52, 51 n.93 (2010) (arguing that prediction markets often operate with significant ambiguity, but “market makers do not have to frequently unwind trades or settle disputes”).

information could provide regulators a picture of the financial health of the IHCs of foreign GSIBs as well as of nonbank SIFIs. It could also serve as a useful benchmark for judging the effectiveness of the regulatory design of LTD in creating a credible loser.

Prediction markets are a further potential advantage; because they also offer a way to overcome liquidity issues in a manner other markets do not. While most markets produce information as a byproduct of speculation, risk-hedging, or bets placed for entertainment value (as with much sports betting), prediction markets “turn this side effect [of information aggregation] into the main effect: if you want to know more on a topic, create and subsidize betting markets on that topic to elicit more accurate estimates.”²⁰¹ Subsidies would help ensure liquid trading and better price discovery. The various ways in which subsidies could be provided is beyond the scope of this article, but a typical proposal is for some regulatory body to be given a budget to accept bids and offers on contracts in the prediction market at random—essentially providing “dumb money” to market makers.²⁰²

A final potential advantage of prediction markets is that they could provide more granular information about where *risks lie* within GSIBs and other SIFIs. For example, contracts could be written that would pay out if losses within a given unit of a firm exceeded some threshold magnitude over a defined number of quarters during the contract life.²⁰³ Of course, this would only work to the degree that appropriate disclosures were required of the firm to provide a basis for distinguishing the performance of the different units.²⁰⁴

CONCLUSION

Achieving effective prudential regulation without stymieing the dynamic benefits of the financial system can be difficult; regulators should ideally

²⁰¹Robin Hanson, *The Policy Analysis Market: A Thwarted Experiment in the Use of Prediction Markets for Public Policy*, INNOVATIONS: TECHNOLOGY, GOVERNANCE, GLOBALIZATION, Summer 2007, at 73.

²⁰²See Crawford, *supra* note 198.

²⁰³See *id.* at 210.

²⁰⁴This could conceivably become part of the “Pillar 3” disclosures that the largest BHCs now make. See *supra* note 36.

be able to avail themselves of a wide array of tools and information sources. Markets can provide invaluable support in these efforts through the actions of a firm's creditors protecting against losses. In protecting themselves, creditors can exert direct discipline on firms as well as provide information that regulators can use to inform their oversight functions. In order for these investors to play this role, they must expect to bear losses if the firm fails. This article sets out a framework for creating credible losers at GSIBs and other SIFIs. It identifies three key criteria for establishing credible losers who can support prudential aims: that the claims be (1) sensitive primarily to the downside risk of default and that they be neither (2) systemically important themselves nor (3) entangled with systemically important claims. Claims that meet these criteria will support regulatory goals in ways that are difficult to duplicate through other means. I use this framework to analyze the recent proposed rule that will require GSIBs to issue LTD, and suggest that the rule is largely successful in meeting the three criteria for establishing credible losers. The rule's primary justification is the establishment of loss absorbers who can serve as a buffer between SIFI failure and taxpayer support, but the potential for credible losers to exert market discipline on SIFIs constitutes an independent reason to support the rule. The article also identifies gaps left by the rule—first and foremost its applicability only to U.S. GSIBs. It suggests that the three criteria might be met for non-GSIB SIFIs in one of two ways: by CoCo bonds, which can absorb losses prior to, rather than as a part of, insolvency and resolution; and by side bets, which can create credible losers among third parties without a direct claim on the firm, but whose prices can provide valuable signals to regulators. In any event, establishing and honing a wider range of credible losers whose fates are tied to SIFIs should be a priority of prudential regulatory reform.

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