# REGULATING IN THE SHADOWS: SYSTEMIC MORAL HAZARD AND THE PROBLEM OF THE TWENTY-FIRST CENTURY BANK RUN

*Zachary J. Gubler*[*]

*An important, emerging literature suggests that the proximate cause of the recent financial crisis was an old-fashioned bank run of the sort that was common prior to the Great Depression. But instead of individuals converging on the local savings and loan, this bank run involved investment banks' short-term creditors who began withdrawing their cash from these banks out of concern for the quality of the underlying collateral, which consisted largely of complex asset-backed securities. A growing chorus of commentators has suggested that we should treat this run on "securitized banking" in the same way that we treated its Depression-era counterpart, including through a form of deposit insurance. In this Article, I question the reliability of this analogy by focusing on what I refer to as the "systemic moral hazard" problem posed by a deposit insurance regime for securitized banking.*

*This problem arises because insuring short-term creditors in this context is likely to introduce moral hazard (or increased risk-taking as the result of insurance) not only at the bank but also in the "securitization process" itself, which is the process for manufacturing the securities that these banks rely on as collateral for their short-term borrowing. Because other investors purchase these securities and may ignore or neglect their risks, the moral hazard problem of deposit insurance in this context is potentially more costly than in the traditional banking context.*

*This analysis gives rise to two implications. First, the systemic moral hazard problem suggests that the scope of the regulated entity under a deposit insurance regime for securitized banking would need to be much broader than the definition adopted by current banking law, which focuses regulatory oversight on the deposit-taking institution alone. However, the*

* Associate Professor of Law, ASU Sandra Day O'Connor College of Law. This Article has benefited from the insights of too many people to be named here, but I am particularly indebted to Jake Brooks, Adam Chodorow, Howell Jackson, Dan Kelly, Morgan Ricks, Mark Roe, Susannah Barton Tobin, David Zaring, and workshop participants at Harvard Law School, University of Connecticut Law School, University of Georgia Law School, Washington University in St. Louis Law School, Loyola Law School in Los Angeles, University of Oklahoma Law School, University of Utah Law School, Arizona State University Law School, University of Miami Law School, Temple Law School, and Vermont Law School. All errors are mine. I can be reached at zachary.gubler@asu.edu.

*more expansive regulatory task implicit in this broader definition would test regulatory competence to a greater degree than in traditional banking. Consequently, the second implication of my analysis is that the systemic moral hazard problem suggests a need to consider potential policy alternatives for dealing with the twenty-first century bank run. I briefly consider three such alternatives, which focus on eliminating, limiting, or circumscribing the securitized bank's reliance on short-term debt to finance its purchase of long-term asset-backed securities.*

Prior to 1933, bank runs were commonplace.[1] They would occur when all or most of a bank's depositors, motivated by a fear (either rational or irrational)[2] that the bank was no longer able to pay back its cash on deposit, would race to withdraw their funds in the hope that they would be among the lucky few who make it to the bank while it was still solvent.[3] However,

1. In 1933, Congress passed the Glass-Steagall Act, which created the Federal Deposit Insurance Corporation. Glass-Steagall, ch. 89, § 8, 48 Stat. 168 (1933) (current version at 12 U.S.C. § 1811 (2006)).

2. When bank runs are motivated by an irrational fear, they are said to be "contagious." *See infra* note 19.

3. For a useful overview of the mechanisms underlying bank runs in the legal literature, see Daniel R. Fischel et al., *The Regulation of Banks and Bank Holding Companies*, 73 VA. L. REV. 301 (1987); *see also* Jonathan R. Macey & Geoffrey P. Miller, *Bank Failures, Risk Monitoring, and the Market for Bank Control*, 88 COLUM. L. REV. 1153, 1156–59 (1988). In the economics literature, the seminal article on bank runs is Douglas W. Diamond & Philip H. Dybvig, *Banking Theory, Deposit Insurance, and Bank Regulation*, 59 J. BUS. 55, 62 & n.10 (1986). In that article, the authors show that banks create liquidity by offering demand–deposit contracts—that is to say, contracts that provide depositors with the right to withdraw their cash on demand—but that this liquidity function comes at a steep price to the extent that it gives rise to panic-based runs. This model has given rise to a literature so vast that it would be neither practical nor particularly useful to cover it here. However, for a survey of this literature, see Gary Gorton & Andrew Winton, *Financial Intermediation*, *in* HANDBOOK OF THE ECONOMICS OF FINANCE 431, 494–518 (George M. Constantinides et al. eds., 2003). One of the questions that emerged from the Diamond–Dybvig model was why banks are structured in such a way that the withdrawal of cash by depositors *en masse* can lead the institution to insolvency. The answer to this question has been explored in a series of papers that serve as an important counterpoint to Diamond–Dybvig's characterization of bank runs as a cost of the bank's liquidity function. These papers argue that depositors' withdrawal rights serve to discipline bank managers who have uniquely intense incentives to engage in various sorts of *ex post* risky behavior. *See, e.g.*, Charles W. Calomiris & Charles M. Kahn, *The Role of Demandable Debt in Structuring Optimal Banking Arrangements*, 81 AM. ECON. REV. 497 (1991); Douglas W. Diamond & Raghuram G. Rajan, *Liquidity Risk, Liquidity Creation, and Financial Fragility: A Theory of Banking*, 109 J. POL. ECON. 287 (2001); Mark J. Flannery, *Debt Maturity and the Deadweight Cost of Leverage: Optimally Financing Banking Firms*, 84 AM. ECON. REV. 320 (1994); *see also* Gorton & Winton, *supra*, at 456–58. Thus, according to these scholars, bank runs may not be all that bad because the threat of a bank run serves to discipline bank

with the arrival of the New Deal came a series of banking reforms that sought to eliminate bank runs and the fragility of banking generally by creating a "federal safety net,"[4] which combines federal deposit insurance with mechanisms like risk-based capital requirements that are aimed at forcing banks to limit the type of excessive risk-taking that is encouraged by insurance.[5]

While the general view is that the U.S. government effectively ended bank runs in 1933, this conventional wisdom has been challenged in recent years by the emergence of institutions that resemble traditional banks in important respects but that fall outside of the federal safety net.[6] In fact, there is mounting evidence, which many prominent economists—including Ben Bernanke, the current Chairman of the Federal Reserve[7]—have found persuasive,[8] that the recent financial crisis involved a run on one of these institutions, the investment bank.[9] In recent years, investment banks[10] have

management and shareholders. For an elaboration of this argument, see *infra* notes 38–43 and accompanying text.

4. *See, e.g.*, Charles W. Calomiris, *Building an Incentive-Compatible Safety Net*, 23 J. BANKING & FIN. 1499, 1499 (1999) (defining "bank safety net" as "a set of policies designed to protect banks from adverse shocks").

5. For an overview of the structure of banking regulation in the United States, see JONATHAN R. MACEY ET AL., BANKING LAW AND REGULATION 70–80 (3d ed. 2001).

6. While the identification of this problem is not particularly new, the acceptance of its importance is. *See infra* notes 49–55 and accompanying text.

7. David Ignatius, *Ben Bernanke, Quiet Tiger at the Fed*, WASH. POST, May 28, 2009, at A19 ("Bernanke recommended studies by Gary Gorton, a Yale economist who has analyzed the ways the recent panic resembled those of the late 19th century.").

8. *See, e.g.*, Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo* (Yale Int'l Ctr. for Fin., Working Paper No. 09-14, Nov. 13, 2009); Paul Krugman, *Six Doctrines In Search of a Policy Regime*, CONSCIENCE OF A LIBERAL, (Apr. 18, 2010, 8:38 PM) http://krugman.blogs.nytimes.com/2010/04/18/six-doctrines-in-search-of-a-policy-regime/; Robert E. Lucas, *The Recession is the More Immediate Problem*, SPIEGEL ONLINE (Nov. 12, 2008), http://www.spiegel.de/international/world/0,1518,590026,00.html; Mark Thoma, *Making Financial Regulation Work: 50 More Years*, WASH. POST (June 12, 2009, 7:47 AM), http://voices.washingtonpost.com/hearing/2009/06/banking_regulation_imposed_in.html?wprss=hearing; Jeremy C. Stein, Monetary Policy as Financial-Stability Regulation (May 2011) (unpublished manuscript), *available at* http://www.economics.harvard.edu/faculty/stein/files/MonetaryPolicyAsRegulation-May-2011.pdf; Brad DeLong, *The Atlantic Monthly Crashes and Burns . . .* , GRASPING REALITY WITH BOTH HANDS (June 15, 2009, 6:52 PM), http://delong.typepad.com/sdj/2009/06/the-atlantic-monthly-crashes-and-burns.html.

9. *See infra* notes 75–79 and accompanying text. There is a distinction to be drawn here between commercial and investment banks. Commercial banks function primarily as providers of liquidity through the maturity transformation process. The core business of investment banks, by contrast, has historically been brokerage, dealing, and underwriting financed by private capital. *See* LARRY HARRIS, TRADING AND EXCHANGES: MARKET MICROSTRUCTURE FOR PRACTITIONERS 140 (2003) (defining "investment banks" as "[b]rokerage firms that engage in large capital transactions," such as block trading, underwritings, and mergers and acquisitions). As a regulatory matter, the difference between commercial and investment banks is that investment banks do not hold an affiliate operating as a depository institution. *See, e.g.*, 15 U.S.C. § 78q(i)(5) (2006) (defining "investment bank holding company" to mean any person that "owns or controls one or more brokers or dealers" and its associated persons). As explained in this Article, securitized banking is a combination of sorts of commercial and investment banking.

begun financing themselves more like traditional commercial banks with a form of short-term debt called "repo."[11] One might think of this debt as a sort of checking account for large institutional depositors with large sums of cash on hand and the desire to earn some interest in the relative short-run. But there are two differences between this type of institutional checking account and a checking account at the neighborhood bank branch. First, there is no deposit insurance (no FDIC) for these institutional depositors, and second, these depositors accept collateral in exchange for the cash that they deposit with the bank. In the summer of 2007, these institutional depositors began withdrawing their cash from the investment banks out of concern over the quality of the collateral they had received in these transactions.

This form of banking has been referred to as "securitized banking"[12] because, at least prior to the crisis, the collateral used in these short-term debt transactions consisted largely of securities created by a "securitizer"[13] through the securitization process.[14] Securitized banking is both economically significant and systemically fragile. Some estimates put its total size, based on total assets, at between $5 trillion and $10 trillion, which on the high end, would rival that of the regulated banking sector in its entirety.[15] It is systemically fragile because, like traditional banking,[16] securitized banking involves "maturity transformation," which is to say that it entails the financing of long-term assets with short-term debt.

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10. Data suggest that investment banks, and not commercial banks, relied primarily on repo financing. In fact, according to one source, prior to the financial crisis, top U.S. investment banks financed up to half of their assets with repo financing. *See* Peter Hördahl & Michael R. King, *Developments in Repo Markets During the Financial Turmoil*, BANK FOR INT'L SETTLEMENTS Q. REV., Dec. 2008, at 37–53. According to the bankruptcy examiner's report in the Chapter 11 proceedings of Lehman Brothers Holdings Inc., the former top-flight investment bank had to borrow "tens or hundreds of billions of dollars in [the repo market] each day from counterparties to be able to open for business." Report of Anton R. Valukas at 3, *In Re* Lehman Brothers Holdings Inc., No. 08-13555 (Bankr. S.D.N.Y. Mar. 11, 2010), *available at* http://lehmanreport.jenner.com/VOLUME%201.pdf.

11. For a general introduction to repo, see SECURITIES FINANCE: SECURITIES LENDING AND REPURCHASE AGREEMENTS (Frank J. Fabozzi & Steven V. Mann eds., 2005) [hereinafter SECURITIES FINANCE]; Jonathan R. Macey & Geoffrey P. Miller, *Nondeposit Deposits and the Future of Bank Regulation*, 91 MICH. L. REV. 237, 254–55 (1992).

12. This term was coined by Gary Gorton and Andrew Metrick. *See* Gorton & Metrick, *supra* note 8, at 1 n.1.

13. This term comes from the Dodd-Frank Act, which defines it as "(A) an issuer of asset-backed security; or (B) a person who organizes and initiates an asset-backed securities transaction by selling or transferring assets, either directly or indirectly, including through an affiliate, to the issuer." Dodd-Frank Wall Street Reform and Consumer Protection Act, No. 111-203, § 941(b), 124 Stat. 1376, 1891 (2010) (codified at 15 U.S.C. § 78o-11(a)(3) (Supp. IV 2010)).

14. *See infra* notes 58–75 and accompanying text.

15. Gorton & Metrick, *supra* note 8, at 10–13.

16. In this Article, I refer to commercial banking—banking that falls within the scope of banking regulation—as "traditional banking" to distinguish it from "securitized banking," which is the focus of the Article. References to "traditional depositors" and "securitized depositors" are intended to distinguish between the depositors who participate in each form of banking.

This maturity mismatch is manageable as long as only a small percentage of the bank's depositors decide to withdraw their cash from the bank at any one time. However, if the depositors decide to withdraw from the bank *en masse*, then the bank is unable to meet its obligations to those depositors and becomes insolvent.[17] If the bank is already insolvent prior to depositors' collective exercise of their withdrawal rights, then bank runs are of little concern and might even be a good thing because the threat of a run may have a deterrent effect on bank managers who otherwise might undertake excessively risky investments.[18] However, if depositors are unable to distinguish accurately between poorly managed and well-managed banks, or if bank runs are contagious[19] (i.e., if bank runs in one corner of the financial system can lead to economic distress in another corner of the financial system), then the right of depositors to withdraw their cash on demand can be socially suboptimal.

The similarities between bank runs in traditional banking and the phenomenon that took place during the recent financial crisis in securitized banking have caused a growing chorus of commentators[20] to argue that securitized banking should be regulated in roughly the same way as traditional banking. Specifically, these commentators have argued for a form of deposit insurance that would guarantee the repo creditors in these investment banks and thereby prevent potentially destructive bank runs.[21]

17. *See infra* notes 33–35 and accompanying text.

18. *See infra* notes 35–41 and accompanying text.

19. The channels through which bank runs might be transmitted from one bank to another include informational channels ("[b]anks are opaque institutions, so that information about a single institution might rationally or irrationally lead to a revision of beliefs about the value of other institutions") and lending channels (banks may become wary of lending to other banks). Gorton & Winton, *supra* note 3, at 516–17. The evidence on whether the Great Depression was precipitated by a contagious bank run is mixed. *Compare, e.g.*, Michael D. Bordo et al., *Real Versus Pseudo-International Systemic Risk: Some Lessons from History* 21–23 (Nat'l Bureau of Econ. Research, Working Paper No. 5371, 1995) *and* Gary Richardson, *Bank Distress During the Great Contraction, 1929 to 1933, New Data from the Archives of the Board of Governors* 24 (Nat'l Bureau of Econ. Research, Working Paper No. 12590, 2006) (finding that a substantial proportion—between one-third and one-half—of bank failures prior to the Great Depression were the result of contagious bank runs) *with* Charles W. Calomiris & Joseph R. Mason, *Causes of U.S. Bank Distress During the Depression* 32–33 (Nat'l Bureau of Econ. Research, Working Paper No. 7919, 2000) (making the claim that most banks failed during the Great Depression as a result of mismanagement and other problems internal to the firm and not because of contagious bank runs).

20. *See, e.g.*, Paul Krugman, *supra* note 8; Morgan Ricks, *Shadow Banking and Financial Regulation* (Columbia Law & Econ., Working Paper No. 370, 2010), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1571290; Gary B. Gorton, Slapped in the Face by the Invisible Hand: Banking and the Panic of 2007 32 (May 9, 2009) (unpublished manuscript), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1401882; Barry Eichengreen, *A Comprehensive Plan for the Shadow Banking System*, BRUEGEL (June 15, 2010), http://www.bruegel.org/publications/publication-detail/publication/543-a-comprehensive-plan-for-the-shadow-banking-system/; Paul Tucker, Deputy Governor for Fin. Stability at the Bank of Eng., Remarks at Bernie Gerald Cantor Partners Seminar: Shadow Banking, Financing Markets and Financial Stability (Jan. 21, 2010).

21. Krugman, *supra* note 8; Ricks, *supra* note 20, at 35.

In this Article, I question the reliability of the analogy between traditional and securitized banking. In particular, I argue that the regulatory costs of a deposit insurance scheme for securitized banking are likely to be substantially greater than those that result from insuring depositors in traditional banking.

It is well understood that the principal cost of insuring depositors in traditional banking is that such insurance creates a "moral hazard"[22] problem.[23] Because depositors know with certainty that they will get their money back regardless of whether the bank thrives or folds as the result of bad bets, they have no incentive to monitor the bank's risk-taking, and the bank consequently assumes greater risks.[24] Thus, regulators must figuratively step into the shoes of depositors to control this moral hazard problem, which regulators attempt to do through the use of various devices that are aimed at forcing the bank to internalize the cost of increased risk.[25] Of course, if regulators are able to perform this monitoring role well, then there is little regulatory cost from deposit insurance. However, evidence suggests that regulators' track record on this score is far from exceptional.[26]

If we were to implement a deposit insurance scheme for short-term creditors in securitized banking, there would also be a moral hazard problem. This should hardly come as a surprise to anyone. However, in this Article, I argue that the moral hazard problem in securitized banking is potentially more costly than the problem that regulators face in traditional banking. In fact, the problem in securitized banking is what I call a

22. The term "moral hazard" refers to the "tendency of an insured to relax his efforts to prevent the occurrence of the risk that he has insured against because he has shifted the risk to an insurance company." RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 121 (5th ed. 1998). In the banking context, deposit insurance results in moral hazard, or increased bank risk-taking, because depositors, realizing that they will be made whole in the event that the bank fails, no longer have an incentive to monitor the bank's risk-taking activities.

23. The moral hazard problem is thought to be particularly acute in banking because of the ease with which banks are able to reshuffle the risks of their asset portfolio. *See* Diamond & Dybvig, *supra* note 3, at 62 n.10 ("[B]ank assets are similarly illiquid, yet their composition can be changed quickly relative to the physical capital of a nonfinancial corporation. Ability to change asset composition quickly explains the larger moral hazard problem faced by banks.").

24. The reason creditors have to monitor a bank's risk-taking in the first place is because traditional banks are particularly susceptible to the asset substitution problem, where, once depositors have deposited their cash with the bank, management increases the bank's risk-taking and thereby expropriates value from depositors to management and shareholders. *See* Sudipto Bhattacharya et al., *The Economics of Bank Regulation*, 30 J. MONEY, CREDIT & BANKING 745, 756 (1998) (explaining that asset substitution may exist in the traditional banking model). The notion of asset substitution is simply a more specific example of a variety of creditor-adverse behavior that the banking literature often generalizes by the notion that bankers might "abscond" with bank assets. *See, e.g.*, Calomiris & Kahn, *supra* note 3, at 500. For a clear numerical example of asset substitution, see Macey & Miller, *supra* note 3, at 1163–64.

25. *See, e.g.*, POSNER, *supra* note 22, at 490–91 (characterizing the federal banking agencies, in the presence of deposit insurance, as "surrogates for the depositors").

26. *See infra* notes 44–48.

"systemic moral hazard problem." In the wake of the financial crisis, much has been written about "systemic risk,"[27] which refers to risk in one corner of the financial system that, if it flares up, can threaten institutions in other, seemingly unrelated corners of the economy. The concept of systemic moral hazard is similar: increased risk-taking resulting from an insurance regime at one entity can lead to increased risk-taking at other, seemingly unrelated entities.

This problem arises because the institutional depositors in securitized banking—those who hold the short-term debt called repo—are monitors not simply of the investment bank's balance sheet as a whole, but, in particular, of that portion of the bank's balance sheet that is devoted to the securities, most of which are asset-backed securities, that these depositors accept as collateral for their short-term loans to the bank. Under a deposit insurance regime, these institutional depositors no longer have any incentive to monitor the investment bank's portfolio of these securities. With these institutional depositors no longer "minding the store," investment banks can increase the profitability of their investment portfolio by demanding and purchasing riskier versions of the asset-backed securities contained therein. Those who manufacture such securities, the securitizers, willingly step up to meet this increased demand. But securitizers sell these complex securities not only to investment banks but to other investors as well, many of whom, as the literature on financial innovation suggests, have reasons to ignore or neglect the risks inherent in these securities.

Thus, what is the ultimate result of a deposit insurance regime in securitized banking? An insurance regime at a regulated entity (the investment bank) leads to increased risk-taking not only at that entity but at other, seemingly unrelated entities as well (the non-investment bank purchasers of asset-backed securities). This is the systemic moral hazard problem. It is a problem because it increases the costs of extending the federal safety net to investment banks, and it does so through two channels. The first channel is through what one might call "buyer strikes," which occur when the non-investment bank purchasers of the asset-backed securities indiscriminately dump these securities in the market during times of crisis and thereby increase the risk of failure of the insured investment

27. One definition of "systemic risk" is the following:

> [T]he risk that (i) an economic shock such as market or institutional failure triggers (through a panic or otherwise) either (X) the failure of a chain of markets or institutions or (Y) a chain of significant losses to financial institutions, (ii) resulting in increases in the cost of capital or decreases in its availability, often evidenced by substantial financial-market price volatility.

Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 204 (2008); *see also* Jonathan R. Macey, *Derivative Instruments: Lessons for the Regulatory State*, 21 J. CORP. L. 69, 82 (1995) (distinguishing systemic risk from the "localized" risk of an individual firm's default).

banks that hold these same securities on their books. The second channel is simply through the increased risk of failure of the non-investment bank purchasers of asset-backed securities who, because of the systemic moral hazard problem, will hold riskier asset-backed securities in the presence of a deposit insurance regime for securitized banking than in its absence, and some of whom may, as a consequence, need to be rescued from failure in the event of a crisis because of their level of "interconnectedness" with other market actors. Either way, the systemic moral hazard problem increases the costs of extending the federal safety net to securitized banking.

This analysis gives rise to two implications. First, the more expansive moral hazard problem in securitized banking suggests that a deposit insurance regime for this form of banking would require a more expansive definition of the bank than that which is supplied by current banking law and which focuses mainly on supervising the deposit-taking institution. However, a broader definition of the regulated entity in securitized banking is likely to test regulatory competence to a greater degree than in traditional banking. This observation brings us to the second implication arising from my analysis, which is that the systemic moral hazard problem suggests a need to consider policy alternatives for managing the twenty-first century bank run. Whether such alternatives should ultimately win out over a deposit insurance regime, I argue, depends on two considerations: (i) the scope of the systemic moral hazard problem in the wake of recent financial reform, and (ii) the relative costs of the policy alternatives. With respect to the first consideration, I analyze the effect that the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act")[28] will have on the systemic moral hazard problem. I conclude that the most relevant provisions of the Dodd-Frank Act, those aimed at improving the quality of credit ratings and the quality of assets included in securitizations, are really targeted at agency cost problems that play a minimal role in the systemic moral hazard problem identified here. And therefore, I conclude that the Dodd-Frank Act will have at best a marginal effect on the systemic moral hazard problem.

In light of this conclusion, the second consideration—the costs of policy alternatives—takes on particular salience. I consider three different policy alternatives for managing the twenty-first century bank run, which are aimed at *eliminating*, *limiting*, or *circumscribing* maturity transformation in securitized banking. We might *eliminate* maturity transformation by either regulatory fiat or, in a more market-friendly manner, through changes to the bankruptcy law's favored treatment of repo

28. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (to be codified in scattered sections of the U.S. Code).

claims. We might *limit* maturity transformation by regulating the discount applied to the asset-backed securities that are used as collateral in repo transactions. Finally, we might *circumscribe* maturity transformation by creating "narrow securitized banks," which would only be permitted to invest in certain classes of "safe" asset-backed securities. While these alternatives would avoid the systemic moral hazard problem of a deposit insurance regime, they themselves are not cost-free. In particular, they have the potential of scaling back lending on a macroeconomic level by increasing the dealer bank's cost of financing its purchase of asset-backed securities. However, given the systemic moral hazard problem, this is probably a cost that is worth enduring.

The Article is organized as follows. In Part I, I review the features of traditional banking that are thought to justify the industry's special regulatory treatment and provide a brief overview of the form banking regulation takes in the United States. I then describe a new institutional arrangement called "securitized banking," which resembles traditional banking in certain respects but that falls outside of the scope of the federal safety net. I review the evidence that a run on securitized banking played a prominent role in the recent financial crisis. Part II consists of a close institutional analysis of the way in which risk, both that which is assumed generally by the dealer bank and that which is created by securitizers, is monitored in securitized banking. This analysis leads to the identification of the "systemic moral hazard" problem that would result from applying a deposit insurance scheme to securitized banking patterned after the scheme which exists in the traditional banking sphere. In Part III, I explore two implications that arise from the analysis concerning systemic moral hazard. First, I explain why the systemic moral hazard problem requires a broader conceptualization of the "regulated entity" in securitized banking than the one that governs in traditional banking, and observe that this broader regulatory oversight would test regulatory competence to a greater degree than in traditional banking. Second, I consider potential policy alternatives for managing the twenty-first century bank run and outline the considerations that should be taken into account in choosing between these alternatives and a deposit insurance regime. The Article ends with a brief conclusion.

## I. THE RISE OF SECURITIZED BANKING

### *A. Traditional Banking: What Makes It Special and How Is It Regulated?*

The principal reason why traditional banking is thought to merit special regulatory treatment has to do with the social costs associated with the way banks finance their operations.[29] Banks engage in what is referred to as "maturity transformation," which is to say that they finance long-term assets with short-term debt.[30] A firm might have a particular investment project that it wishes to pursue. Perhaps the firm is a shoe manufacturer, and its strategic plan involves the construction of a new plant in South America. The firm needs financing for this construction project and so approaches a bank, which evaluates the firm's credit risk, decides whether to finance the project, and if it decides to do so, monitors the investment project over the course of the loan.[31] This loan is long-term and illiquid. But the financing that the bank uses to fund this loan is short-term. It comes from individual depositors who open checking accounts with the bank and who have the right at any time and for any reason to withdraw their cash.

These withdrawal rights provide depositors with liquidity.[32] But they can also lead to bank runs and the social costs associated with such runs.[33]

29. The classic defense of banks as "special" and deserving unique regulatory treatment is by E. Gerald Corrigan, *Are Banks Special?*, FED. RES. BANK OF MINNEAPOLIS ANN. REPORTS (Jan. 1982), *available at* http://www.minneapolisfed.org/pubs/ar/ar1982a.cfm. The exposition that I present here differs from Corrigan's and draws on work that post-dates his classic defense.

30. *See, e.g.*, Macey & Miller, *supra* note 3, at 1162 ("The principal attribute that makes banks 'special' is the asymmetry between assets and liabilities that exacerbates the collective-action problem facing depositors and leads to the threat of bank runs on healthy banks.")

31. For a discussion of the bank's monitoring role, see Zachary J. Gubler, *The Financial Innovation Process: Theory and Application*, 36 DEL. J. CORP. L. 55 (2011). It is worth noting that it is also by virtue of this monitoring role that banks are viewed as one of the levers of corporate governance. *See, e.g.*, Douglas G. Baird & Robert K. Rasmussen, *Private Debt and the Missing Lever of Corporate Governance*, 154 U. PA. L. REV. 1209 (2006); Michael C. Jensen, *Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers*, 76 AM. ECON. REV. (PAPERS & PROC.) 323 (1986); George G. Triantis & Ronald J. Daniels, *The Role of Debt in Interactive Corporate Governance*, 83 CAL. L. REV. 1073 (1995); Frederick Tung, *Leverage in the Board Room: The Unsung Influence of Private Lenders in Corporate Governance*, 57 UCLA L. REV. 115 (2009).

32. *See, e.g.*, John Bryant, *A Model of Reserves, Bank Runs and Deposit Insurance*, 4 J. BANKING & FIN. 335 (1980); Diamond & Dybvig, *supra* note 3, at 62–63. A depositor might have a wallet full of cash but not know for sure what her future consumption needs will be. She might be thinking about using the cash to make a down payment on a car a year from now or she might need to spend it on an unplanned trip in a month. Withdrawal rights provided by a traditional bank deposit account give her the ability to earn interest on the cash while retaining the flexibility to decide whether to consume it in the short or long run. While withdrawal rights in securitized banking might not serve much of a disciplining function, they certainly serve the liquidity function. The fact that depositors in the repo market can withdraw their funds essentially on demand allows these investors, most of which are large corporations looking for a place to park cash, flexibility in determining when to draw on their stockpiles.

33. To be sure, other institutions govern by withdrawal rights. *See* Fischel et al., *supra* note 3 (corporations' generally); Kate Litvak, *Governance Through Exit: Default Penalties and Walkaway*

If a few individual depositors decide to exercise their withdrawal rights at any one time, the bank will surely have sufficient funds to meet these obligations. But because the majority of the bank's assets are tied up in long-term, illiquid projects, the bank will be unable to meet its obligations if depositors exercise their withdrawal rights *en masse*.[34] In an effort to meet the obligations of such a collective withdrawal, or "bank run," the bank will be forced to liquidate its loans, often at fire sale prices, which may ultimately lead to the failure of an otherwise solvent bank. Additionally, bank runs may be contagious, spreading from banks that were in financial distress to begin with to other banks that, at least prior to the run, were perfectly solvent.[35]

While many believe that the risks associated with maturity transformation justify treating banks differently from other non-financial corporations, there is an important contrary view. This view emphasizes the depositor's role in monitoring the bank's risk-taking and in particular the notion that withdrawal rights, and the ability to threaten bank runs, provides the depositor with the leverage necessary to act as an effective monitor.[36] Under this view, banks are particularly prone to excessive risk-taking, and therefore in need of close monitoring, because of the fluid nature of their asset portfolio.[37] Thus, for those who emphasize the

*Options in Venture Capital Partnership Agreements*, 40 WILLAMETTE L. REV. 771 (2004) (venture capital partnerships); John Morley & Quinn Curtis, *Taking Exit Rights Seriously: Why Governance and Fee Litigation Don't Work in Mutual Funds*, 120 YALE L.J. 84 (mutual funds); Andrei Shleifer & Robert W. Vishny, *The Limits of Arbitrage*, 52 J. FIN. 35 (1997) (hedge funds). However, withdrawal rights are more likely to lead to runs in the banking context. This is due in part to the fact that "the ratio of current assets to current liabilities is much lower at banks than in the nonfinancial corporate sector." Fischel et al., *supra* note 3, at 308–09. But another reason is because of the fact that the bank's asset portfolio is relatively more fluid than that of non-banking corporations and therefore the concern for *ex post* risk-taking is greater in banking. *See infra* note 37 and accompanying text.

34. In a sense, depositors face a sort of prisoners' dilemma. *See, e.g.*, Fischel et al., *supra* note 3, at 307–08. Whether the ultimate outcome of the run—the failure of the bank—is socially optimal depends on what class of depositor starts the run, the informed depositor (who presumably withdraws its cash because it objects to the bank's management of risk) or the uninformed depositor (who may not have a rational reason to withdraw its cash).

35. *See supra* note 19.

36. *See supra* note 3.

37. *See* Diamond & Dybvig, *supra* note 3, at 62 n.10 ("[B]ank assets are similarly illiquid, yet their composition can be changed quickly relative to the physical capital of a nonfinancial corporation. Ability to change asset composition quickly explains the larger moral hazard problem faced by banks."); Flannery, *supra* note 3, at 325. To be sure, a bank's assets tend to be illiquid, but the bank's portfolio of assets as a whole can and does change frequently. The demand for loans varies both seasonally and cyclically. *Id.* Consequently, old borrowers who do not need to renew existing loans may be replaced with new borrowers in need of credit. These new borrowers may have a completely different risk profile from older borrowers. And even if new borrowers don't emerge, currently existing loans are constantly being renegotiated to account for changing dynamics at the borrower or for general market conditions. *See* Tung, *supra* note 31, at 141–44 (discussing how the renegotiation of bank loan facilities is both frequent and consequential). The fluid nature of a bank's asset portfolio enables bank managers to engage in risky behavior, such as asset substitution, that is adverse to its creditors and

importance of the depositor's monitoring role, the fragility of the bank's financing structure is not all "gloom and doom" but carries with it an important social benefit. If, after receiving financing from depositors, bank managers attempt to re-shuffle the bank's risk in such a way as to favor shareholders and management at the expense of depositors and other creditors, depositors have a powerful weapon at their disposal—by exercising their right to withdraw their deposits, depositors have the ability to dry up the bank's primary source of financing and force a bankruptcy.[38]

Thus, the fragility of the bank's financing structure provides, on the one hand, a potential transmitter of value-destroying bank runs and, on the other hand, an important governance tool for monitors of a risk-prone institution.[39] In other words, any regulation of banking must face a trade-off between the costs and benefits of fragility. If we are willing to tolerate the fragility of bank runs, and their tendency to spread like a contagion throughout the financial system, affecting both solvent and insolvent firms alike,[40] these runs or the threat of them may actually discipline bank managers who are otherwise inclined to engage in excessive risk-taking. If we instead attempt to eliminate bank runs altogether, we might eliminate market fragility, but we also eliminate the discipline that bank runs impose on banks. If we are unable to replace that lost market discipline with suitable substitutes, the costs of eliminating bank runs may outweigh the benefits.

While there are numerous approaches to negotiating this trade-off,[41] in the United States, we have opted in favor of a regulatory package that combines federal deposit insurance with risk-based capital requirements and deposit insurance premia. Deposit insurance is intended to eliminate bank runs and market fragility by guaranteeing deposits up to a certain specified amount, which is currently set at $250,000.[42] The other two

thereby transfer value from its creditors, including depositors, to its shareholders and managers. *See supra* note 24.

38. *See, e.g.*, Calomiris & Kahn, *supra* note 3, at 500–01; Flannery, *supra* note 3, at 328.

39. Interestingly, the debate over this trade-off in traditional banking is of fairly recent vintage. Some commentators suggest that it wasn't until the Savings and Loan crisis in the 1980s that academics started focusing on the moral hazard problem associated with deposit insurance. *See, e.g.*, CHARLES W. CALOMIRIS, THE POSTMODERN BANK SAFETY NET: LESSONS FROM DEVELOPED AND DEVELOPING ECONOMIES 7–8 (1997).

40. Those commentators that emphasize the social value of the threat of bank runs tend also to question their contagiousness, or in other words, their tendency to spread from sick to healthy firms. *See, e.g.*, Charles W. Calomiris & Joseph R. Mason, *Contagion and Bank Failures During the Great Depression: The June 1932 Chicago Banking Panic*, 87 AM. ECON. REV. 863, 864 (1997) (finding that the banks that failed during the Chicago panic of June 1932 were in general weaker prior to the panic than firms that did not fail and interpreting this evidence as inconsistent with a contagion explanation).

41. For a useful overview, see Bhattacharya et al., *supra* note 24, at 745–46.

42. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 335, 124 Stat. 1376, 1540 (2010) (codified at 12 U.S.C. § 1821(a)(1)(E) (Supp. IV 2010)).

components of the federal safety net—risk-based capital requirements and deposit insurance premia—are intended to solve the "moral hazard" problem that arises by virtue of the fact that deposit insurance eliminates the depositor's monitoring incentives.[43] Risk-based capital requirements serve this purpose by imposing a cost on shareholders for increasing the bank's portfolio risk. Similarly, charging banks a risk-sensitive deposit insurance premium helps control moral hazard by taxing expected profits associated with higher risk at a higher rate.

There is of course no guarantee that regulators will achieve the correct regulatory mix in their effort to control moral hazard, and in fact, there is evidence that they have not done so in the past. For example, there is evidence[44] that moral hazard was responsible for the massive losses incurred by regulated Savings & Loans in the late 1980s.[45] Indeed, some estimates suggest that the deposit insurance cost to taxpayers of that crisis exceeded in real magnitude the losses of all failed banks during the Great Depression, which of course was the catalyst for the adoption of deposit insurance in the first place.[46] Furthermore, there is international evidence that deposit insurance tends to increase the likelihood of banking crises.[47] For these reasons, there is a continuing debate in the literature over the tradeoff between the costs and benefits of bank runs (fragility versus monitoring), with some contending that the costs of moral hazard are too great and that deposit insurance should be scaled back, reformed, or, at the extreme, eliminated altogether.[48]

43. Since by virtue of deposit insurance, depositors know that their cash, at least up to $250,000, is safe regardless of their bank's activities, they no longer have an incentive to monitor their bank's activities and exercise their withdrawal rights at the first sign of mismanagement or excessive *ex post* risk-taking. And if the depositors are no longer holding the threat of bank runs over bank management, then, in the absence of a suitable substitute for the lost market discipline, banks will engage in excessive *ex post* risk-taking.

44. *See, e.g.*, Elijah Brewer III, *The Impact of Deposit Insurance on S&L Shareholders' Risk/Return Tradeoffs*, 9 J. FIN. SERVS. RES. 65 (1995) (presenting evidence that S&Ls that had experienced capital losses due to bad bets on oil assumed higher risks, by investing in commercial real estate development, than S&Ls that had not experienced such losses). *But see* Gorton & Winton, *supra* note 3, at 522–23 (arguing that these studies only show that regulators weren't necessarily able to control moral hazard and say nothing about whether things would have been different if depositors had had incentives to monitor these S&Ls).

45. Between January 1980 and December 1988, nearly 1200 thrifts, which are basically commercial banks that focus on lending to homeowners, failed. *See* Gorton & Winton, *supra* note 3, at 522. For an overview of the S&L crisis, see EDWARD J. KANE, THE S&L INSURANCE MESS: HOW DID IT HAPPEN? (1989); LAWRENCE J. WHITE, THE S&L DEBACLE: PUBLIC POLICY LESSONS FOR BANK AND THRIFT REGULATION (1991).

46. *See* Calomiris, *supra* note 4, at 1500 (citing authorities).

47. *See, e.g.*, JAMES R. BARTH ET AL., RETHINKING BANK REGULATION: TILL ANGELS GOVERN (2006); Asli Demirgüç-Kunt & Enrica Detragiache, *Does Deposit Insurance Increase Banking System Stability? An Empirical Investigation*, 49 J. MON. ECON. 1373 (2002).

48. RAGHURAM G. RAJAN, FAULT LINES: HOW HIDDEN FRACTURES STILL THREATEN THE WORLD ECONOMY 178–80 (2010) (arguing that deposit insurance simply invites moral hazard and

### *B. Securitized Banking: What It Is and Why It's Important*

While traditional banks are subject to a regulatory apparatus that seeks to eliminate bank runs while controlling moral hazard, there is a class of institutional arrangements that resembles traditional banking, particularly with respect to maturity transformation activities, but that falls beyond the reach of the federal safety net. This class of activities is generally referred to as the "shadow banking system."[49] In a sense, there is nothing particularly new about the notion that there exist institutions that function as banks but fall outside the reach of bank regulation.[50] For example, in the law review literature, Jonathan Macey and Geoffrey Miller long ago identified what they referred to as "nondeposit deposits," or transactions that serve the same role as deposit accounts but that are not subject to the same regulations, including, for example, deposit insurance.[51] And before Macey and Miller, the post-Keynesian economist, Hyman Minsky, who has enjoyed a resurgence of popularity in the wake of the financial crisis,[52] identified what he referred to as "fringe banking," by which he meant something similar to functional banking or shadow banking.[53] Although the existence of functional banks, "shadow banks" or "fringe banking" may not be new, the significance of the role that they play in the financial system is clearly no longer up for dispute.[54] The financial crisis demonstrated that

should be phased out); Charles W. Calomiris, *Is Deposit Insurance Necessary? A Historical Perspective*, 50 J. ECON. HIST. 283 (1990) (answering in the negative the question posed in the title); George G. Kaufman, *Bank Failures, Systemic Risk, and Bank Regulation*, 16 CATO J. 17, 28 (1996) (favoring the elimination of federal deposit insurance if it were not a "political fact of life"); *cf.* POSNER, *supra* note 22, at 461 (2003) (suggesting that banking regulation is excessive due to a "perhaps erroneous[]" view that widespread bank failures in the 1930s were a cause of the Great Depression and that "[m]any banking regulations . . . go far beyond what a private creditor would insist upon in the interest of safety and seem . . . dubious").

49. This term was originally coined by PIMCO managing director Paul McCulley. Paul McCulley, *Teton Reflections*, GLOBAL CENT. BANK FOCUS (PIMCO; Newport Beach, CA.), Aug.–Sept. 2007, at 2, *available at* http://media.pimco-global.com/pdfs/pdf/GCB%20Focus%20Sept%2007%20WEB.pdf?WT.cg_n=PIMCO-US&WT.ti=GCB%20Focus%20Sept%2007%20WEB.pdf ("I've dubbed [it] the 'shadow banking system'—the whole alphabet soup of levered up non-bank investment conduits, vehicles, and structures.").

50. *See, e.g.*, Macey & Miller, *supra* note 11, at 253–56.

51. *See* Macey & Miller, *supra* note 11, at 254–55.

52. Tom Streithorst, *Krugman Speaks, the Final Act: "I Was Into Minsky Before Minsky Was Cool."*, PROSPECT (June 11, 2009), http://www.prospectmagazine.co.uk/2009/06/krugman-speaks-the-final-act-i-was-into-minsky-before-minsky-was-cool/ (discussing the rise in popularity of Hyman Minsky in the wake of the recent financial crisis).

53. HYMAN P. MINSKY, STABILIZING AN UNSTABLE ECONOMY (2008).

54. For this reason, it is not the case that "disintermediation"—the ability of companies to bypass financial intermediaries and access funding directly through the capital markets—is making bank runs less of a regulatory concern, notwithstanding assertions to the contrary. *See, e.g.*, Schwarcz, *supra* note 27, at 200 (advancing the claim that disintermediation is making bank runs less of a regulatory concern). Rather, the recent financial crisis demonstrates that bank runs can and do take place in the

these functional banks can suffer functional bank runs that bear an uncanny resemblance to the bank runs that threatened the stability of the financial system prior to the New Deal's creation of the federal safety net.

While there are many different types of shadow banks,[55] I focus in this Article on one particular type: the securitized bank. The reason I do so is mainly because of its significance to the economy. While data is lacking, estimates of aggregate securitized banking assets range between about $5 trillion and $10 trillion, an amount that, on the high end, rivals, if not exceeds, the total assets in the U.S. banking system.[56] Additionally, there is compelling evidence that the run in the financial crisis was centered in the securitized banking sector.[57] Before examining this evidence, let's first consider a brief overview of securitized banking. This type of banking begins, not surprisingly, with a bank, which I'll call the "dealer bank." Usually, though not always, the dealer bank is an investment bank[58] that finances its purchase of long-term assets through a short-term financing arrangement known as a "repurchase agreement" (or repo). The long-term assets for which repo transactions provide financing consist for the most part of asset-backed securities, which are created through a process called securitization. Let me briefly discuss the securitization process and then turn to repo transactions.

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capital markets and that their effects can be just as devastating as when they occur among traditional financial intermediaries.

55. For a catalogue of arrangements that resemble demand–deposit contracts, see Macey & Miller, *supra* note 11, at 245–64. For a discussion of the role of other types of shadow banks in the recent financial crisis, see Daniel M. Covitz et al., *The Evolution of a Financial Crisis: Panic in the Asset-Backed Commercial Paper Market* (Bd. of Governors of the Fed. Reserve Sys., Working Paper No. 2009-36, 2009).

56. Gorton & Metrick, *supra* note 8, at 10; Carlos Arteta et al., Revenge of the Steamroller: ABCP as a Window on Risk Choices (July 27, 2010) (unpublished manuscript), *available at* http://webuser.bus.umich.edu/jkotter/papers/revengesteamroller.pdf.

57. *See infra* notes 75–79 and accompanying text.

58. *See supra* note 10. The recent financial crisis affected the investment banking sector in two important ways. First, it whittled down the number of "bulge-bracket" Wall Street investment banks with the bankruptcy of Lehman Brothers and the federally choreographed acquisition of Bear Stearns and Merrill Lynch by JP Morgan Chase and Bank of America, respectively. *See In re* Bank of Am. Corp. Sec., Derivative & ERISA Litig., 258 F.R.D. 260, 266–67 (S.D.N.Y. 2009) (discussing the circumstances surrounding the acquisition of Merrill Lynch); Bryan Burrough, *Bringing Down Bear Stearns*, VANITY FAIR, Aug. 2008, at 106; James B. Stewart, *Eight Days*, NEW YORKER, Sept. 21, 2009, at 59 (describing the events that led to the decision by federal regulators to let Lehman Brothers enter insolvency); Louise Story & Ben White, *The Road to Lehman's Failure Was Littered with Lost Chances*, N.Y. TIMES, Oct. 6, 2008, at B1. The second way in which the recent financial crisis affected the investment banking sector was by putting an end to the regulatory model that had applied to investment banks for nearly three-quarters of a century. This occurred when Goldman Sachs and Morgan Stanley, the last remaining bulge-bracket Wall Street investment banks, converted into bank holding companies, which allowed them for the first time to be regulated at the holding company level by the Board of Governors of the Federal Reserve System. *See* Onnig H. Dombalagian, *Requiem for the Bulge Bracket?: Revisiting Investment Bank Regulation*, 85 IND. L.J. 777 (2010) (discussing these events and developing a self-regulation model applicable to investment banks).

The securitization process begins with a securitization sponsor, or, in other words, a bank that has a set of loans in its inventory. These loans might include mortgages, student loans, credit-card receivables, equipment loans, or commercial loans.[59] The sponsor bank pools[60] these loans together and then transfers[61] them to an entity known as a "special purpose vehicle" (SPV).[62] The SPV then issues securities called "asset-backed securities" (ABS) that are backed by the cash flows on the SPV's underlying pool of loans.[63] The asset-backed securities themselves are divided up into layers, called "tranches," the purpose of which is to specify the rights of the security holder in the event of losses on the underlying pool of loans.[64] These tranches might be thought of as the rungs of a ladder in the middle of a flood. As the flood water rises, it washes over and ultimately covers each successive rung of the ladder. Anyone seeking refuge on the lower rungs will be washed away whereas those perched on the higher rungs will likely remain safe, unless of course the flood is particularly fierce. Like the rising flood water washing over each successive rung of the ladder, accruing defaults on the pool of loans that underlies the ABS are charged against each successive tranche. So, if an investor purchases the "junior" tranche of an ABS that is divided up into three different tranches, then losses arising from defaults on any of the loans in the pool would be charged against those junior-level securities first. If losses were so high that they were not covered by the junior securities, then the ABS investor who purchased the middle, or "mezzanine" level, tranche would be forced to suffer the additional losses, and so on, continuing up the chain.

In a slightly more complicated structure referred to as a "collateralized debt obligation" (CDO),[65] the sponsor bank could purchase the tranches of ABS and transfer those to another SPV that follows the same process just discussed. The sponsor would create a pool of assets (in this case, tranches

59. Prior to the financial crisis, many of the mortgages that were financed via securitization were subprime mortgages. *See* Gorton & Metrick, *supra* note 8, at 7 ("In 2005 and 2006, about 80 percent of the subprime mortgages were financed via securitization . . . ."). For a discussion of what types of loans can be securitized, see TAMAR FRANKEL, 1 SECURITIZATION: STRUCTURED FINANCING, FINANCIAL ASSETS POOLS, AND ASSET-BACKED SECURITIES 72–81 (2d ed. 2005).

60. For a discussion of the history of pooling in securitization, see FRANKEL, *supra* note 59, at 202–11.

61. The bank transfers these loans to SPVs, and ultimately to the market, because it is more profitable to sell them and make room for new assets on its balance sheet that are more complicated and therefore more profitable to manage. *See e.g.*, Gubler, *supra* note 31, at 59–60. For an overview of the legal treatment of the bank's transfer of loans, see FRANKEL, *supra* note 59, at 322–49.

62. *See* JOHN DOWNES & JORDAN ELLIOT GOODMAN, DICTIONARY OF FINANCE AND INVESTMENT TERMS 662–63; STEVEN L. SCHWARCZ, STRUCTURED FINANCE: A GUIDE TO THE PRINCIPLES OF ASSET SECURITIZATION (2003).

63. *See* DOWNES & GOODMAN, *supra* note 62, at 35.

64. *See* Gary Gorton, *The Panic of 2007*, 32 ECON. SYMP. CONF. PROC. 131, 159–62 (2008).

65. For a highly detailed discussion of the design of CDOs, see Gorton, *supra* note 64, at 179–85.

of ABS, not the actual underlying loans) and then issue securities backed by the cash flows on those assets. In practice, most of the tranches of ABS and CDOs that were created prior to the financial crisis were senior tranches that were rated[66] as "safe" by the credit rating agencies.[67]

Once the asset-backed securities have been issued by the SPV, they are sold to various investors, including the dealer bank with which we began this story. The dealer bank finances the purchase of these securities through a repo transaction.[68] In this type of transaction, a large institution with excess cash on hand agrees to purchase these securities under an agreement to resell to the seller at a later date, usually no more than a few days later, or even on the immediately following day. The purchaser in the repo transaction might be a mutual fund,[69] pension fund,[70] hedge fund,[71] or large public corporation.[72] The repo creditor, therefore, is a short-term collateralized lender to the dealer bank, where the relevant collateral is the asset-backed securities.

66. For a discussion of the importance of the rating process in securitization generally, see FRANKEL, *supra* note 59, at 463–77.

67. *See* Gorton & Metrick, *supra* note 8, at 9.

68. For a general introduction to repurchase agreements, see SECURITIES FINANCE, *supra* note 11; Macey & Miller, *supra* note 11, at 254–55.

69. "A mutual fund is a pool of investment securities that issues only redeemable common stock, is sold widely to the public, and is composed almost entirely of debt or minority equity holdings in many companies. To sell shares widely to the public, a mutual fund must register with the SEC and comply with the [Investment Company Act of 1940]." Morley & Curtis, *supra* note 33, at 92. At the end of 2008, the mutual fund industry held assets worth more than $10 trillion. *See* 2009 INVESTMENT COMPANY FACTBOOK, INV. CO. INST. 9 fig.1.1, 10 fig.1.2, 11 fig.1.4, 100 fig.7.17 (2009), http://www.ici.org/pdf/2009_factbook.pdf.

70. A pension fund is a fund "set up by a corporation, labor union, governmental entity, or other organization to pay the pension benefits of retired workers." DOWNES & GOODMAN, *supra* note 62, at 510. Pension funds are significant investors in the capital markets and in recent years have played an increasingly visible role in the corporate governance of public corporations. *See* Roberta Romano, *Public Pension Fund Activism in Corporate Governance Reconsidered*, 93 COLUM. L. REV. 795 (1993).

71. A hedge fund is a private investment vehicle that, unlike a mutual fund, is able to take both long and short positions and engage in virtually any investment strategy, provided that it accurately discloses the nature of the strategy in the offering memoranda that is filed with the SEC. Hedge funds are estimated to have assets exceeding a trillion dollars. *See* Troy A. Paredes, *On the Decision To Regulate Hedge Funds: The SEC's Regulatory Philosophy, Style, and Mission*, 2006 U. ILL. L. REV. 975, 981–82 (2006). While hedge funds have historically been unregulated, Title IV of the recently adopted Dodd-Frank Act will require many currently unregistered hedge fund managers to register with the SEC pursuant to the Investment Advisers Act of 1940 and impose increased recordkeeping and reporting obligations on advisors to certain funds. *See* Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, §§ 401–16, 124 Stat. 1376, 1570–78 (2010) (codified at 15 U.S.C. § 80b (Supp. IV 2010)); *see also* HEATHER CRUZ, PRIVATE FUND INVESTMENT ADVISERS, THE DODD-FRANK ACT: COMMENTARY AND INSIGHTS 37 (Skadden, Arps, Slate, Meagher & Flom LLP & Affiliates 2010), *available at* http://www.skadden.com/Cimages/siteFile/Skadden_Insights_Special_Edition_Dodd-Frank_Act1.pdf.

72. *See* JOHN MICKLETHWAIT & ADRIAN WOOLDRIDGE, THE COMPANY: A SHORT HISTORY OF A REVOLUTIONARY IDEA (2003).

Under the terms of the repo agreement, the bank will automatically roll the institution's money over into another repurchase agreement on the same terms unless the purchaser indicates a different arrangement.[73] Because the securitized depositor has the option of requiring the bank to repurchase the tranche of asset-backed securities, it has "withdrawal rights" with respect to its deposit just like traditional depositors. Why might the purchaser desire to exercise these withdrawal rights? There are two possibilities. The purchaser might have an immediate need for its cash and want to close out its account. Or, alternatively, the purchaser might have reason to believe that the value of the securities that it has purchased has decreased in the interim and demand a lower price. In repo transactions, the price of the securities that are purchased is called the "haircut" and represents a discount to the fair market value of the securities.[74] So, for example, if the fair market value of a tranche of asset-backed securities is $10 million and the applicable haircut is 5%, then under a repo agreement, the purchaser would purchase the security for $9.5 million and the bank would agree to "repurchase" the security at a later date for the $9.5 million, plus interest.

Thus, the dealer bank purchases asset-backed securities from the SPV and then uses these securities as collateral in a repurchase agreement with large institutional investors. This relationship is depicted in Figure 1 below:

Figure 1: Securitized Banking

Because securitized banking involves the financing of long-term, illiquid assets (the asset-backed securities) with short-term debt (in the form of the repurchase agreement), it engages in maturity transformation,

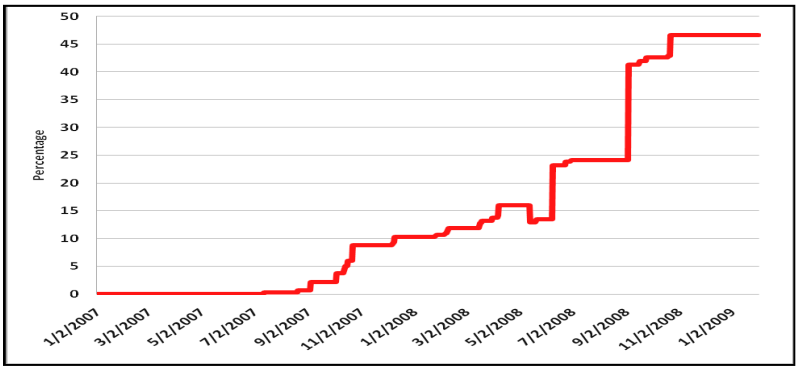
73. Macey & Miller, *supra* note 11, at 255.

74. *See* Gorton & Metrick, *supra* note 8, at 3.

just like a traditional bank.[75] And just like a traditional bank, securitized banking also exhibits the fragility of maturity transformation since the depositors (in this case, the repo creditors) have the right to withdraw their cash essentially at any time and for any reason. If a few depositors decide to make intermittent withdrawals here and there, the bank will no doubt be able to meet these obligations. However, if the depositors for some reason decide to exercise their withdrawal rights *en masse*, the bank will be forced to sell other assets, likely at fire sale prices, which will ultimately threaten the bank's solvency.

There is compelling evidence that this type of run on securitized banking is precisely what occurred in the financial crisis. This evidence centers on the "haircuts" (or discounts) applicable to tranches of asset-backed securities in repo transactions. Upon the expiration of a repo transaction, and before the bank rolls over the contract, if the purchaser demands a higher haircut on the relevant securities, this is equivalent to a partial withdrawal of cash from the securitized bank. For example, if the purchaser demands that the haircut applicable to the tranche of asset-backed securities in our previous hypothetical be increased from 5% to 10%, that would mean that the purchaser's deposit with the bank would decrease from $9.5 million to $9 million. Thus, the higher the haircut, the greater the amount of cash withdrawn from the securitized bank. Accordingly, if the financial crisis involved a run on securitized banking, one would expect to see a dramatic increase in haircuts on tranches of asset-backed securities beginning in the late summer of 2007. The following graph depicts precisely that anticipated pattern:[76]

Figure 2: Average Repo Haircut on Structured Debt




75. *See* Covitz et al., *supra* note 55, at 6; Macey & Miller, *supra* note 11, at 254–55 (characterizing repurchase agreements as "nondeposit deposit accounts").

76. This graph comes from Gorton, *supra* note 20, at 33. The data underlying the graph comes from Gorton & Metrick, *supra* note 8, at 50 tbl.II panel D.

The above graph includes repo haircuts on all classes of asset-backed securities, including those securities that were backed by subprime mortgages. However, while the implosion of the subprime market in 2007 was the prelude to the financial crisis,[77] the run on securitized banking was not limited to a run on subprime assets. Indeed, haircuts on exclusively non-subprime asset-backed securities followed the same dramatic upward trajectory as that traced by all asset classes in the graph above.[78]

Thus, not only does securitized banking appear to resemble traditional banking in its maturity transformation activities and in its tendency to give rise to bank runs, but also there is compelling evidence that a run on securitized banking was an important feature of the recent financial crisis. Further, this run was "contagious" in the sense that it was limited not only to those banks that had troubled, subprime assets, but rather also to other banks whose assets were far removed from the source of the disease.[79] Finally, this run had the same effect as pre-Depression era bank runs: a significant source of bank financing suddenly dried up, and banks, facing the threat of insolvency, had to be bailed out by the federal government.[80]

77. A subprime mortgage is a mortgage that is extended to a borrower who has a relatively low credit score, is unable to make a substantial down payment on a home, and lacks a significant paper trail documenting a reliable source of income. *See* Christopher J. Mayer & Karen M. Pence, *Subprime Mortgages: What, Where, and to Whom?* (Nat'l Bureau of Econ. Research, Working Paper No. 14083, 2008). Between 2001 and 2006, the number of subprime loans that were originated nearly tripled, going from 985,000 to almost three million. *See* Oren Bar-Gill, *The Law, Economics and Psychology of Subprime Mortgage Contracts*, 94 CORNELL L. REV. 1073, 1088–89 (2009). An important feature of subprime mortgages was the fact that their payment schedule would start out modestly enough but would then increase dramatically. *See id*. at 1076 ("The majority of subprime loans . . . exhibited an increasing payment schedule: they set a low interest rate for an introductory period—commonly two years—and a higher interest rate for the remaining term of the loan. . . . A direct implication of an escalating-payments contract is the 'payment shock,' which occurs when a rate reset leads to a significant, up to 100 percent, increase in the monthly payment."). The theory apparently was that subprime borrowers could refinance their home and, as long as housing prices continued to increase, essentially build up equity. Of course, when housing prices failed to increase, this strategy imploded. For an overview of the determinants of the rise and fall of the U.S. housing market, see ROBERT POZEN, TOO BIG TO SAVE?: HOW TO FIX THE U.S. FINANCIAL SYSTEM 1–25 (2010).

78. *See* Gorton & Metrick, *supra* note 8, at 50 tbl.II panel D (presenting evidence that average haircuts on non-subprime asset-backed securities increased in 2007 and then even more dramatically in 2008); *see also* Jeremy C. Stein, *Securitization, Shadow Banking & Financial Fragility*, DAEDALUS, Fall 2010, at 41, 45–46.

79. The literature on contagion in banking panics identifies a number of different channels through which a run on one financially distressed bank may lead to a chain reaction on other banks, including solvent ones. *See supra* note 19. The most likely explanation for contagion in the run on securitized banking is informational: concerns about plummeting values of subprime assets, combined with uncertainty about the location of such assets in the securitized banking market, led to widespread bank runs.

80. In addition to the federally orchestrated takeovers of Bear Stearns and Merrill Lynch, *see supra* note 58, the U.S. Treasury purchased preferred stock in the country's largest banks, including Bank of America ($25 billion), J.P. Morgan ($25 billion), Citigroup ($25 billion), Wells Fargo ($20 to $25 billion), Goldman Sachs ($10 billion), and Morgan Stanley ($10 billion). Deborah Solomon et al., *U.S. to Buy Stakes in Nation's Largest Banks*, WALL ST. J., Oct. 14, 2008, at A1.

These similarities between traditional and securitized banking have caused a growing chorus of commentators, including prominent economists and others,[81] to argue that securitized banking should be regulated in roughly the same way as traditional banking, with a form of deposit insurance that would guarantee short-term creditors in these dealer firms and thereby prevent potentially destructive bank-like runs. In the remainder of this Article, I identify a major difference that the discussion has overlooked thus far between traditional and securitized banking. In particular, I argue that the regulatory costs of a deposit insurance scheme for securitized banking are likely to be substantially greater than those that result from insuring depositors in traditional banking. I make this argument in two steps in the next Part, first by analyzing the structure that exists in securitized banking for monitoring risk and, second, by evaluating how the introduction of deposit insurance would affect this monitoring structure.

## II. THE RISK MONITORING STRUCTURE OF SECURITIZED BANKING AND SYSTEMIC MORAL HAZARD

To understand how the introduction of a deposit insurance regime would affect the dealer bank's and other market actors' risk-taking activities, it is first necessary to understand the role that repo creditors play in monitoring the dealer bank's risks and how the dealer bank, and other market actors, might react to the elimination of these monitoring incentives.[82] The entity that binds these various parties together is the securitizer who in a sense is a manufacturer of risk[83] through the creation of asset-backed securities, which it sells to the dealer bank and other investors. As I argue below, the securitizer can act as a sort of "dispersant" of the dealer bank's increased risk-taking and therefore is the key to understanding how a moral hazard problem that appears isolated at the dealer bank can become "systemic." But first, who are the monitors in securitized banking and what is their role?

81. *See* supra note 20.

82. For a useful, although somewhat dated, overview of the literature on the role of "monitors" in commercial and corporate settings, see Saul Levmore, *Monitors and Freeriders in Commercial and Corporate Settings*, 92 YALE L.J. 49, 49 n.1 (1982). A somewhat more updated overview is Mark J. Flannery, *The Faces of "Market Discipline,"* 20 J. FIN. SERV. RESEARCH 107 (2001).

83. *See* Viral V. Acharya et al., *Manufacturing Tail Risk: A Perspective on the Financial Crisis of 2007–2009*, *in* 1 FOUNDS. & TRENDS IN FIN. 247 (2009).

### *A. The Risk Monitoring Structure of Securitized Banking*

#### *1. The Dealer Bank Screens the Asset-Backed Securities It Purchases from the Securitizer but May Have Incentives to Overlook Risks*

The dealer bank purchases asset-backed securities as an investment and therefore should, in theory, screen the risks inherent in these securities when it purchases them from the securitizer. However, clearly, in the run-up to the financial crisis, the dealer bank's risk-screening function went terribly awry when highly risky securities ended up on the dealer bank's balance sheet, and most of these securities were financed with short-term debt through repo transactions. How did this happen? One prominent explanation suggests that far from being ignorant of these risks, dealer banks actively sought them out.[84] This is because, in the finance world, a trader is rewarded handsomely for her performance, and that performance is measured against the return that the investment would have earned in a risk-free asset. This difference, known as "alpha,"[85] is extraordinarily difficult to achieve, and yet it is absolutely essential if a trader wishes to grow her reputation and personal wealth.

So what does a mediocre (or even average) trader do to stay competitive? He seeks out a certain type of risk that is rewarded with higher returns but that materializes so infrequently that it often goes undetected for long periods of time by investors. This risk, called tail risk because it is located in the tails of the probability distribution,[86] may go undetected for so long that it won't materialize until after the trader has left the firm. Or, it might materialize while the trader is still at the firm, but he will have profited so handsomely from his apparent ingenuity over the course of the trade that he is hardly deterred by the prospect of a bad final period. For example, there is evidence from the financial crisis that even though managers at dealer firms like Bear Stearns and Lehman Brothers lost a significant amount of personal wealth when the implosion of their

84. The most prominent advocate of this explanation is Raghuram Rajan. *See* RAJAN, *supra* note 48, at 136–39; Raghuram G. Rajan, *Has Financial Development Made the World Riskier?* 20–21 (Nat'l Bureau of Econ. Research, Working Paper No. 11728, 2005) [hereinafter Rajan, *Financial Development*]; *see also* Anil K. Kashyap, Lessons from the Financial Crisis ror Risk Management, Paper Prepared for the Financial Crisis Inquiry Commission (Feb. 27, 2010), *available at* http://faculty.chicagobooth.edu/anil.kashyap/research/papers/lesson_for_fcic.pdf. For the theoretical work that motivates this explanation, see Raghuram G. Rajan, *Why Bank Credit Policies Fluctuate: A Theory and Some Evidence*, 109 Q. J. ECON. 399 (1994); Jeremy C. Stein, *Efficient Capital Markets, Inefficient Firms: A Model of Myopic Corporate Behavior*, 104 Q. J. ECON. 655 (1989).

85. *See* DOWNES & GOODMAN, *supra* note 62, at 23 (defining "alpha" as "a mathematical estimate of the amount of return expected from an investment's inherent values").

86. For a discussion of tail risk, see Acharya, *supra* note 83; *see also* NASSIM NICHOLAS TALEB, THE BLACK SWAN: THE IMPACT OF THE HIGHLY IMPROBABLE (2007).

firms rendered their stock options worthless, these same managers nevertheless "came out ahead" because of the huge profits they had acquired in the preceding years.[87] Of course, if the final period threatens to be so bad that the trader will have trouble finding another job in the industry, there might be some deterrent effect.[88] But for that reason, the trader might find it advantageous to seek tail risks that are also popular with other finance firms. Such correlated tail risk-taking has the benefit that, in the event of an earlier-than-expected blowup, if one trader falls, they all fall, and the trader will be shielded by the reality that there is safety in numbers, even in the midst of disaster.[89] Dealer banks are much more susceptible to tail risk-taking than traditional commercial banks in part because of the pressure on the dealer to be right in the short run.[90]

### *2. The Repo Creditor Monitors the Risks of Its Collateral (Often Asset-Backed Securities) and the Counterparty Risk Posed by the Dealer Bank*

Not only does the dealer bank monitor (however imperfectly) the risks of the asset-backed securities that it purchases, but so does the repo creditor who accepts such securities as collateral for its short-term loans to the dealer. The literature on secured lending generally concludes that one of the purposes of collateral is to increase the effectiveness of the lender's efforts to monitor the borrower's risky behavior.[91] Collateral is thought to

87. *See* Lucian A. Bebchuk et al., *The Wages of Failure: Executive Compensation at Bear Stearns and Lehman 2000–2008*, 27 YALE J. REG. 257, 257 (2010) ("[W]e estimate that the top executive teams of Bear Stearns and Lehman Brothers derived cash flows of about $1.4 billion and $1 billion, respectively, from cash bonuses and equity sales during 2000–2008. These cash flows substantially exceeded the value of the executives' initial holdings at the beginning of the period, and the executives' net payoffs for the period were thus decidedly positive.").

88. Possibly. However, those involved with the most infamous meltdown of an investment management firm prior to the financial crisis, the hedge fund Long-Term Capital Management (LTCM) in 1998, did not seem to have much trouble finding a soft landing. *See* ROGER LOWENSTEIN, WHEN GENIUS FAILED: THE RISE AND FALL OF LONG-TERM CAPITAL MANAGEMENT 219–36 (2000) (discussing how all of the major participants in LTCM, although perhaps bruised and beaten after the collapse of the fund, wound up in respectable and lucrative Wall Street jobs).

89. To the extent that regulation plays a coordinating function, *see, e.g.*, Robert B. Ahdieh, *The Visible Hand: Coordination Functions of the Regulatory State* (Emory Pub. Law Research Paper No. 09-86, 2009), it may have a role to play in coordinating such outcomes. *See* Charles K. Whitehead, *Destructive Coordination*, 96 CORNELL L. REV. 323 (2011).

90. *See* MARCIA STIGUM & ANTHONY CRESCENZI, STIGUM'S MONEY MARKET 425 (2007) ("One difference between dealers and banks is that there is much more pressure on the dealer to be right and to be right in the short run. One reason is that dealers mark their assets to market daily and track daily their profits and losses overall and by instrument. A second reason is that dealers' annual compensation is tied closely to performance through bonuses or other devices.").

91. *See generally* Ronald J. Mann, *Explaining the Pattern of Secured Credit*, 110 HARV. L. REV. 625, 650 (1997); *see also* George G. Triantis, *Secured Debt Under Conditions of Imperfect Information*, 21 J. LEGAL STUD. 225 (1992) (making same point).

accomplish this task by decreasing monitoring costs since a collateralized lender can focus its monitoring efforts on a small slice of the counterparty's assets rather than the entire portfolio.[92] Thus, most scholars assume that fully collateralized lenders, like repo creditors, monitor their collateral but do not have any incentives to monitor the counterparty's entire balance sheet.[93]

However, this doesn't necessarily have to be the case. Although the repo creditor is fully collateralized (meaning that she possesses collateral whose fair market value is worth at least as much as the cash that she deposited with the dealer bank), she might still be concerned about the possibility that the dealer bank, as the result of too many bets gone bad, will be unable to return her cash at the close of the transaction.[94] To be sure, in that case, the repo creditor would have the legal right to the

92. *See*, *e.g.*, Mann, *supra* note 91, at 650.

93. *See*, *e.g.*, Raghuram Rajan & Andrew Winton, *Covenants and Collateral as Incentives to Monitor*, 50 J. FIN. 1113, 1113–36 (1995) ("Obviously, a fully collateralized lender is immunized from borrower performance and has no incentive to monitor [the borrower].").

94. According to The Task Force on Tri-Party Repo Infrastructure (the "Task Force"), "many [tri-party repo creditors] focus primarily if not almost exclusively on counterparty concerns and . . . they will withdraw secured funding on the same or very similar timeframes as they would withdraw unsecured funding." PAYMENTS RISK COMMITTEE, TASK FORCE ON TRI-PARTY REPO INFRASTRUCTURE 19 (May 17, 2010), *available at* http://www.newyorkfed.org/prc/report_100517.pdf. The Task Force's mandate was limited to what is called tri-party repo, which is an arrangement where the collateral in question is held by a third party (typically, a commercial bank) that acts as the custodian of that collateral instead of being held by the dealer bank. *See* STIGUM & CRESCENZI, *supra* note 90, at 547–48. There are essentially only two "tri-party agents" in the United States, Bank of New York Mellon and J.P. Morgan. Concerns that the fear of insolvency of either of these institutions could spread contagion through the economy by means of the tri-party repo market was one of the concerns behind the creation during the crisis of the "Primary Dealer Credit Facility," which was intended to create a lender of last resort for these institutions. The Task Force therefore was commissioned to address this issue. However, by focusing solely on the tri-party repo market (which, to be sure, is a significant market), it is easy to overlook the dynamics of the repo market as a whole. Indeed, it appears that the dynamics of the repo relationship may be affected by which party—the dealer bank or a third party—acts as custodian of the collateral underlying the repurchase agreement. For example, consider the graph that was presented earlier in this Article and that depicts rising haircuts on asset-backed securities used in repo transactions. That graph was derived from data from the bilateral repo market (where the collateral is held by the dealer bank) and therefore does not reflect the behavior of the tri-party repo market (where the collateral is held by a third-party). *See* Gorton & Metrick, *supra* note 8, at 18; ANTOINE MARTIN ET AL., FED. RES. BANK OF N.Y., STAFF REPT. NO. 44, REPO RUNS 4–5 (2010). The available evidence from the tri-party repo market paints a very different picture: unlike in the bilateral market, haircuts in the tri-party market barely increased at all during the crisis. *See* MARTIN ET AL., *supra*, at 2 (citing ADAM COPELAND ET AL., FED. RES. BANK OF N.Y., STAFF REPT. NO. 477, THE TRI-PARTY REPO MARKET BEFORE THE 2010 REFORMS (2010)). One possible reason for this peculiar difference in the two markets is a difference in collateral monitoring incentives. As the Task Force suggested, lenders may not engage in much, if any, collateral monitoring in a tri-party repo relationship, and this accounts for the relatively uniform haircuts in this market. But we do see rising haircuts in the bilateral market, which suggests that some collateral monitoring is taking place there. Finally, there is evidence that the lending parties in slightly longer-term repos (who nevertheless still retain the right to withdraw their cash prior to the expiration of the stated term of the transaction) do not always permit the dealer bank to replace old collateral with new collateral during the life of the repo, suggesting that the repo creditor in that case invests in monitoring its collateral. *See* STIGUM & CRESCENZI, *supra* note 90, at 544.

collateral, but she might still prefer the cash to the collateral, which she may have trouble selling and converting into cash. So, she might still have some interest in monitoring the dealer bank's counterparty risk.[95] Yet, even in that case, it would still be important for her to monitor or at least be familiar with her collateral for two reasons. First, the collateral constitutes, after all, a slice of the dealer bank's asset portfolio and therefore contributes to its overall risk. And second, familiarizing herself with the risk characteristics of the collateral may hold important clues regarding the composition of the rest of the bank's balance sheet, particularly with respect to those assets that resemble the collateral.[96]

To be clear, I am not suggesting that repo creditors were optimal monitors of either their collateral or the risk of their counterparties, the dealer banks. They most certainly were not. To a large degree, repo creditors outsourced the monitoring of their collateral to credit rating agencies.[97] And because they thought they were fully collateralized, repo creditors had reduced incentives to monitor counterparty risk.[98]

Nevertheless, it is likely that repo creditors were still engaging in some monitoring. Indeed, haircuts on repo fluctuate daily and are thought to reflect both counterparty risk and collateral risk.[99] More importantly, however, repo creditors are likely to engage in increased monitoring going forward. True, they might count on a government bailout. But, as other commentators have suggested, there is genuine uncertainty on this score.[100] Lehman Brothers, for example, relied significantly on repo and was allowed to fail.[101]

95. This incentive to monitor counterparty risk may be diminished by the priorities given to repo creditors through the Bankruptcy Code. *See* Mark J. Roe, *The Derivatives Market's Payment Priorities as Financial Crisis Accelerator*, 63 STAN. L. REV. 539 (2011).

96. Triantis, *supra* note 91, at 251 ("To the extent that the property rights of secured lenders allow them to enforce their security interests quickly and with little cost, a secured creditor who enjoys a comfortable cushion in the value of the collateral should not engage in general screening of the debtor but should focus on a subset of screening activities that are related to its collateral.").

97. *See, e.g.*, Steven L. Schwarcz, *Regulating Complexity in Financial Markets*, 87 WASH. U. L. REV. 211, 222 (2009) (describing how investors relied on credit ratings as an available heuristic).

98. *See* Roe, *supra* note 95, at 570 n.74.

99. *See* MICHAEL J. FLEMING ET AL., FED. RES. BANK OF N.Y., STAFF REPT. NO. 426, REPO MARKET EFFECTS OF THE TERM SECURITIES LENDING FACILITY 5 (2010) ("The size of the haircut reflects the credit risk of the borrower and the riskiness of the pledged collateral."); STIGUM & CRESCENZI, *supra* note 90, at 535 ("[T]he size of the haircut varies depending on the maturity, quality, scarcity value, and price volatility of the underlying collateral, on the term of the repo, and on the creditworthiness of the [dealer bank].").

100. Roe, supra note 95, at 576.

101. *See id.* at 557.

### *3. Non-Dealer Bank Investors Also Monitor the Asset-Backed Securities That They Purchase from the Securitizer but May Overlook or Neglect the Risks*

The dealer bank is not the only long-term investor in asset-backed securities. Other investors purchase these securities as well, including hedge funds, pension funds, mutual funds, and other institutional investors. Thus, these purchasers also screen the risks of these securities. However, there is reason to believe that these investors may also overlook or neglect the risks of these financial instruments. One reason may be the incentive-based theory that likely applies to dealer banks, as discussed above.[102] Another reason, however, is rooted in behavioral economics.[103] This theory is built on the notion that when individuals engage in quick, intuitive reasoning, they are likely to overlook important pieces of information that would be taken into account if they were to engage in more studied, deliberative thinking.

How might this theory apply to a purchaser's evaluation of the risks inherent in asset-backed securities? One possibility is through reliance on the opinions of credit rating agencies. Credit rating agencies use the same metric regardless of the type of risk that they are assessing.[104] So, General Electric's corporate debt, Ireland's sovereign debt, and the senior-most tranches of a securitization might all receive triple-A ratings. Yet, what these ratings mean for purposes of evaluating the riskiness of debt may vary significantly depending on the type of debt in question. For this reason, in the extreme case, a triple-A rating on structured products like asset-backed securities may have served no purpose other than to allow comparisons within the same debt type but not across debt types. Thus, a triple-A rating of a tranche of a securitization might support the inference that that tranche is relatively safer than a tranche rated lower than triple-A, but it would not support the inference that that the triple-A tranche is as safe as General Electric's corporate debt, despite the fact that it might have the same rating. Any comparison across debt types would require the investor to examine more closely the differences between those types of debt. However, quick, intuitive reasoning might cause an investor to

102. *See supra* notes 83–90 and accompanying text.

103. *See, e.g.*, Nicola Gennaioli et al., *Neglected Risks, Financial Innovation, and Financial Fragility* 32 (Nat'l Bureau of Econ. Research, Working Paper No. 16068, 2010), *available at* http://nber.org/papers/w16068.pdf; Nicola Gennaioli & Andrei Schleifer, *What Comes to Mind* 42 (Nat'l Bureau of Econ. Research, Working Paper No. 15084, 2009), *available at* http://nber.org/papers/w15084.pdf.

104. Amadou N.R. Sy, *The Systemic Regulation of Credit Rating Agencies and Rated Markets* 18 (Int'l Monetary Fund, Working Paper 09/129, 2009), *available at* www.imf.org/external/pubs/ft/wp/2009/wp09129.pdf.

overlook that important fact and view a triple-A tranche of a securitization as having the same risk properties as other types of debt that have received the same rating, like General Electric's corporate debt.

*4. Summary*

The principal points of the foregoing discussion are depicted in Figure 3 below. The dealer bank has incentives to seek out tail risk, and asset-backed securities offer a way to "manufacture" such tail risks.[105] Repo creditors serve as a backstop on the ability of the dealer bank to purchase particularly risky asset-backed securities, because these creditors are concerned about both the dealer bank's balance sheet risk in general and the balance sheet risks attributable to the dealer bank's asset-backed securities in particular (which the repo creditor accepts as collateral). And those purchasers of asset-backed securities other than dealer banks have the potential to screen the risks of these securities, but there are both incentive-based and behavioral reasons why these investors might overlook or neglect such risks. In the next section, I argue that, given this complicated risk-monitoring landscape, implementing a deposit insurance regime that would guarantee repayment to the repo creditor would lead to a more complex moral hazard problem than that which is emphasized in the traditional banking literature.

Figure 3: The Risk-Monitoring Structure of Securitized Banking

105. *See* Acharya et al., *supra* note 83, at 250.

### *B. Identifying the Systemic Moral Hazard Problem*

The systemic moral hazard problem arises because of the way in which dealer banks and securitizers would respond to a form of deposit insurance that guarantees the repo creditors in securitized banking. The dealer bank responds to the elimination of the repo creditor's monitoring incentives by increasing its demand for risk generally but in particular its demand for risky asset-backed securities. This is, in part, because asset-backed securities make up a significant portion of the dealer bank's balance sheet; therefore, the dealer bank's increased risk-taking will likely take the form of the purchase of increasingly risky asset-backed securities. However, guaranteeing repo creditors will also increase the dealer bank's demand for riskier asset-backed securities because the repo creditor acts as a screen on the bank's investment in these securities, since the repo creditor accepts these securities as collateral on its short-term loans to the bank and must be satisfied regarding the quality of this collateral.

What about the securitizer? How will it respond to the dealer bank's increased demand for asset-backed securities in the wake of the implementation of a deposit insurance regime? The securitizer will of course eagerly meet this demand. But unless the securitizer is able to find other purchasers of the securities, besides simply the dealer bank, the enterprise is unlikely to be profitable. So, it will turn to other potential purchasers, including corporations, mutual funds, pension funds, and hedge funds. The problem is that these other purchasers may overlook or neglect the risks of these securities for the same reasons that they are thought to have done so during the financial crisis, as discussed above.[106]

Of course, one might argue that the fact that the dealer bank is subject to a deposit insurance regime will signal to these other potential purchasers that they cannot necessarily rely on the dealer bank's valuation of the asset-backed securities. However, purchasers of asset-backed securities are not always or even often aware of the other parties who have purchased the securities or who were involved in generating the initial demand for the product.[107] And even if they are aware that the dealer bank is the one who initially demanded the product and that that dealer bank is operating under

106. *See supra* notes 83–105 and accompanying text.

107. The SEC's recent case against Goldman Sachs for alleged securities law violations implied that Goldman should have made it clear to the other buyers of a particular asset-backed security of Goldman's creation that the investment bank had created the security at the request of John Paulson (the hedge fund guru). *See* Complaint at 2, Sec. & Exch. Comm'n v. Goldman, Sachs & Co. (S.D.N.Y. 2011) (No. 10 Civ. 3229), 2011 WL 2305988; Litigation Release No. 21489, Sec. & Exch. Comm'n v. Goldman, Sachs & Co., 10 Civ. 3229 (Apr. 16, 2010), *available at* http://www.sec.gov/litigation/litreleases/2010/lr21489.htm. However, that theory was never subject to judicial scrutiny because Goldman ultimately settled the suit. Susanne Craig & Kara Scannell, *Goldman Settles Its Battle with SEC: $550 Million Deal Ends Showdown that Shook Street*, WALL ST. J., July 16, 2010, at A1.

a deposit insurance regime, these facts are unlikely to have the signaling quality that one might expect. Any deposit insurance regime applied to dealer banks would have to be accompanied by regulatory oversight of the dealer bank that is similar to the oversight that exists in traditional banking. I consider below why regulators are likely to have a more difficult time carrying out this task in the context of securitized banking.[108] But the important point here is that, given the regulatory presence, it might not be clear to institutions that are buying into a securitization generated by the dealer bank's increased demand for risk (which itself is the result of deposit insurance) that the dealer bank has incentives to overlook that risk and hence overpay for the security.

As a more concrete example of how systemic moral hazard might occur in practice, consider the facts underlying the recent civil suit brought by the Securities and Exchange Commission (SEC) against Goldman Sachs. The case involved John Paulson, the hedge fund manager who became famous for making a fortune by betting against the housing market in the run-up to the financial crisis.[109] According to the allegations in that case,[110] Paulson approached Goldman Sachs in early 2007 with an idea for a trade. The idea was that Goldman would act as a financial sponsor for a highly risky asset-backed security of Paulson's design. The source of the risk was subprime residential mortgages that Paulson handpicked to create a particularly volatile instrument. That the security was to be highly risky was crucial to Paulson's investment strategy because Paulson wasn't interested in the security as a long-term investment but rather as a product that would allow him to bet against the U.S. housing market.

Once Goldman had created the security and rounded up purchasers, Paulson's hedge fund entered into an arrangement with Goldman under which the investment bank promised to pay Paulson if the assets underlying the securities declined in value. Paulson ended up making about $1 billion on the investment when the bottom fell out of the housing market. The SEC brought the suit against Goldman, alleging that it violated the securities laws by failing to inform the purchasers of the asset-backed securities that Paulson had handpicked the underlying assets and had taken a short position with respect to the securities.[111] Goldman ended up settling the case for $550 million.[112]

108. *See infra* notes 129–143 and accompanying text.

109. *See* GREGORY ZUCKERMAN, THE GREATEST TRADE EVER: THE BEHIND-THE-SCENES STORY OF HOW JOHN PAULSON DEFIED WALL STREET AND MADE FINANCIAL HISTORY (2009).

110. Complaint, *supra* note 107, at 6–7; Litigation Release No. 21489, *supra* note 107.

111. Complaint, *supra* note 107, at 11.

112. Craig & Scannell, *supra* note 107, at A1.

While of interest in its own right, particularly with respect to the intriguing question about the legitimacy of the SEC's claim under the securities laws,[113] this case is useful for illustrating how the systemic moral hazard problem might play out in reality. Let's say that Morgan Stanley relies on repo creditors for a significant amount of its financing. Under a deposit insurance scheme that guarantees the bank's repo creditors, Morgan Stanley would be exposed to the standard moral hazard problem of deposit insurance: in the absence of its repo creditors' monitoring of both the asset-backed securities that Morgan Stanley purchases, as well as its balance sheet risk generally, the dealer bank would have the incentive to increase its risk-taking, particularly with respect to asset-backed securities. For example, perhaps there is a hypothetical security that Morgan Stanley would like to invest in because of its tail risks, but its repo creditors would have charged it too much in interest in exchange for the increased risk to make that investment profitable.

In the absence of the repo creditors' constraining influence, Morgan Stanley might take the John Paulson role and approach Goldman Sachs, or some other securitizer, with an idea for a particularly risky financial instrument.[114] The security might be particularly attractive to Morgan Stanley because it has significant tail risk—there is a small probability that it will blow up, but if it does, the magnitude of the damage is huge, and it may become completely worthless or nearly so. Because of these tail risks, the yield on the security is significant. But Morgan Stanley overlooks the tail risks for the reasons discussed above.[115]

Like Paulson, Morgan Stanley is looking to engineer a very risky security. But unlike Paulson, the dealer bank wants to actually purchase and hold on to the security because it is attracted by the yield. Moreover, it is willing to overlook the security's risks, and the repo creditors no longer have the incentives to speak up and demand a higher interest rate or threaten to withdraw their cash from the dealer bank. Protected by deposit insurance, they know that they will get paid regardless of whether the bank's bets turn out to be good or bad.

There is one other similarity between Morgan Stanley and Paulson in this example: the need to find other purchasers for the security in order to make the deal work. Here, the purchasers overlook the risks for the same

113. *See, e.g.*, Charles K. Whitehead, *Shorting the SEC's Case Against Goldman Sachs*, REUTERS (Apr. 23, 2010), http://blogs.reuters.com/great-debate/2010/04/23/shorting-the-secs-case-against-goldman-sachs/ (questioning whether John Paulson's involvement in selecting the assets underlying the collateralized debt obligation created by Goldman would have been considered material information at the time).

114. Or, alternatively, Morgan Stanley might act as the financial sponsor of the proposed instrument itself.

115. *See supra* notes 101–105 and accompanying text.

reasons that they are thought to have overlooked them in the financial crisis. And even if the purchasers are told that Morgan Stanley is behind the deal, it is unlikely to make a difference because Morgan Stanley is now being regulated, which provides a sense of comfort, false though it may be.

So, what is the ultimate result of treating securitized banking like traditional banking and insuring the bank's depositors (the repo creditors)? By insuring depositors at one institution (the dealer bank), deposit insurance creates a moral hazard problem at that institution. This is the standard moral hazard problem of traditional banking. But the dealer bank's increased demand for risk, and the availability of a way to manufacture, through the securitization process, the type of risk that the dealer bank prefers (i.e., tail risk) amplify these moral hazard costs and spreads them to other institutions.[116] This is the systemic moral hazard problem.[117]

### *C. Why the Systemic Moral Hazard Problem Leads to Increased Risk of Failure of the Securitized Bank and Other Entities*

Of course, if the systemic moral hazard problem simply increased "risk" in the financial system as a general matter, then this might not in and of itself be cause for alarm. The traditional concern about increased risk-taking as a result of applying the federal safety net to banks is that moral hazard will increase the risk of the bank's failure, which the federal government will of course have to insure against. Thus, the systemic moral hazard story should only be a cause for concern if it somehow leads to increased failure risk at entities that the government will likely have to rescue through government bailout and *ex post* guarantees. The systemic moral hazard problem is likely to lead to increased failure risk at both the securitized bank and at other entities that are "too interconnected to fail."

116. *See* Joshua Coval et al., *The Economics of Structured Finance*, 23 J. ECON. PERSPS. 3 (2009).

117. Some might object to my use of the moral hazard label. Moral hazard typically involves an increase in the *demand* for risk as a result of insurance. Yet, in the argument that I have made here, it is only the dealer bank that increases its demand for risk in response to insurance. The non-dealer bank also increases its risk-taking, but not because the insurance causes these entities to increase their *demand* for risk; rather because these entities tend to ignore or neglect the type of tail risk created by securitization. And the deposit insurance regime causes the dealer bank to demand riskier asset-backed securities and the securitizers to produce such riskier securities. Thus, one might argue that because the deposit insurance regime for securitized banking does not actually cause the non-dealer bank purchasers of asset-backed securities to increase their demand for risk, this is not technically a moral hazard problem. Those who take this view might instead characterize the increased risk that I identify here as spillover effects that result from a moral hazard problem at the dealer bank. But whether one characterizes this increased risk-taking as systemic moral hazard or spillover effects, the ultimate result is the same: an insurance regime leads to increased risk-taking at institutions other than simply the one that is the target of the insurance. I prefer the "systemic moral hazard" label because I think it effectively captures the ultimate point of the argument, which is that insurance in this context will lead to increased risk-taking that is systemic.

The reason that the systemic moral hazard problem might lead to increased failure risk at insured securitized banks is because of what one might refer to as "buyer's strikes." When investors purchase asset-backed securities but ignore or neglect their risks, there is likely to be a "day of reckoning" when those risks become apparent and therefore can no longer be ignored or neglected. When this happens, investors respond by scrambling to dump the asset-backed securities in the market as quickly as possible in an effort to minimize their losses.[118] These "fire sales" might result in efforts to dispose of not only the overly risky assets but the safer assets as well because of uncertainty about the location of the actual risk. Thus, these buyer's strikes can exhibit their own form of contagion[119] and therefore may resemble bank runs even though they are not driven by the exercise of withdrawal rights attached to debt, like demand deposits. The effect of these fire sales on the insured dealer firm is that they would cause the firm's assets to decrease in value, just as if there had been a run on the securitized bank. If the bank's asset-backed securities portfolio absorbs sufficiently large losses as a result of the buyer's strike, the bank will be insolvent. The systemic moral hazard problem effectively feeds these types of buyer's strikes by supplying increasingly risky asset-backed securities to investors. Thus, the systemic moral hazard problem may increase the securitized bank's risk of failure by fueling buyer's strikes.

Not only would the systemic moral hazard problem lead to increased failure risk at insured securitized banks but also at other entities that are likely to be considered "too interconnected to fail." As commentators have noted, financial market development has created institutions that may need to be rescued from failure in the event of a crisis not because they are too big to fail.[120] Indeed, they might be relatively small based on standard size metrics, such as assets under management. Rather, these institutions must be rescued from failure because they are too interconnected with other institutions in the capital markets.[121] A failure of such an institution would cause a domino effect of failing firms throughout the financial system and therefore would have a similar effect as the failure of an institution that truly is "too big to fail," like some financial intermediaries. It is not entirely clear what types of institutions generally or which institutions in particular

118. *See* Stein, *supra* note 78, at 47.

119. *See supra* note 19 and accompanying text.

120. *See* Julia Collins, *Hard Hats Required: The Risky Business of Repairing the U.S. Financial System*, HARV. L. BULL. (2010), *available at* http://www.law.harvard.edu/news/bulletin/2010/summer/feature_2.php.

121. *See* Schwarcz, *supra* note 27, at 200 (explaining how "capital-market linkages" have become just as, or more, important than banking relationships in determining which institutions pose a systemic risk); Collins, *supra* note 120 (quoting Hal Scott as saying that the crucial question in thinking about financial reform design is what entities are "too interconnected to fail").

exhibit this level of interconnectedness.[122] However, hedge funds are often presented as an example,[123] most likely because of our experience with Long-Term Capital Management, which was a hedge fund that was rescued from failure in the late 1990s out of concern for its interconnectedness with major financial players.[124] The point to make here, however, is that these institutions invest, among other things, in asset-backed securities. And the systemic moral hazard problem is therefore poised to increase risk-taking at these institutions as well, which would lead to increased risk of failure. Because they are "too interconnected to fail," this increased risk of failure increases the likelihood of government rescue. Thus, this is another channel through which systemic moral hazard increases the regulatory costs of expanding the federal safety net to securitized banking.

## III. IMPLICATIONS

### *A. Because of the Systemic Moral Hazard Problem, a Deposit Insurance Regime for Securitized Banking Would Require a Broader Definition of the Regulated Entity Than That Supplied by Current Banking Law*

In the previous Part, I argued that the systemic moral hazard problem increases the risk of failure of the securitized bank and other entities that are likely to be considered "too interconnected to fail." Consequently, systemic moral hazard represents a cost of extending the federal safety net to securitized banks that is not present in the traditional banking context (or at the very least has not been the focus of the debate in the traditional banking context). In this Part, I argue that in order to enable regulators to manage the costs of this more expansive moral hazard problem, a deposit insurance regime for securitized banking would require the scope of the regulated entity to be drawn more broadly than it is in traditional banking. In banking law, the entity that is the focus of regulatory oversight and enforcement is defined with respect to the institution's deposit-taking services.[125] Thus, under the Bank Holding Company Act of 1956, a "bank" is defined as "an institution . . . which both—(i) accepts demand deposits or

122. *See* Collins, *supra* note 120 (quoting Hal Scott as saying that we have not yet identified which entities exhibit this level of interconnectedness).

123. *See* Schwarcz, *supra* note 27, at 201–03 (arguing that entities like hedge funds that have a tendency to "herd" with other firms are likely to be too interconnected to fail); Rajan, *Financial Development*, *supra* note 84, at 32 (making the same argument with respect to hedge funds in particular).

124. *See generally* LOWENSTEIN, *supra* note 88.

125. *See* MACEY ET AL., *supra* note 5, at 48 (noting that the Bank Holding Company Act relies on a definition of the regulated banking entity that is tied to the deposit-taking services provided by the institution).

deposits that the depositor may withdraw . . . ; and (ii) is engaged in the business of making commercial loans."[126] Bank regulation and enforcement is then limited to that deposit-taking institution and any other entity that controls that institution.[127]

A definition of the regulated entity that focuses solely on the deposit-taking institution might be appropriate in a context like traditional banking where the moral hazard problem is thought to be confined largely to the deposit-taking institution (and, possibly, its affiliates). However, a definition of the regulated entity that focuses exclusively on the deposit-taking institution is unlikely to rein in the systemic moral hazard problem. To be sure, if regulators were able to prevent the dealer bank from increasing its risk-taking in response to insurance, then there would be no systemic moral hazard problem. In that idealized world, regulators would effectively deploy regulatory tools, including insurance premiums and risk-based capital requirements, so that dealer banks would have no incentive to increase their risk-taking. Consequently, there would be no increased demand on the part of the dealer bank for riskier asset-backed securities, and thus the securitization process itself would be insulated from the effects of increased risk-taking at the dealer bank.

However, it is unlikely that regulators would be successful in altogether eliminating the moral hazard problem at the dealer bank. There is, after all, some evidence that regulators have not succeeded in eliminating moral hazard in the traditional banking context.[128] Further, the type of risk assessment that is necessary to curb excessive risk-taking at the dealer bank is likely to be more complicated than in traditional banking,[129] particularly in light of the complexity of the dealer bank's large asset-backed securities portfolio. Different commentators have captured this complexity in different ways.[130] But one of the most striking measures is also one of the most simple: the number of pages required to be disclosed upon the issuance of an asset-backed security. For example, recall that a CDO is a pool of various asset-backed securities. The typical CDO contains a pool of an average of 150 such securities.[131] This implies a reading requirement of over 30,000 pages. And this is one of the simpler types of CDOs. More complex variations, such as the CDO "squared,"

126. 12 U.S.C. § 1841(c)(1)(B) (2006).

127. 12 U.S.C. §§ 1841(a)(1)–(2) (defining "bank holding company" as a company that controls a bank, where "control" is defined in terms of voting power or board power).

128. *See supra* notes 44–48 and accompanying text.

129. *See* Stein, *supra* note 78, at 43.

130. *See, e.g.*, Gorton, *supra* note 64, at 45–48*;* Gubler, *supra* note 31, at 72–73.

131. *See* Andrew G. Haldane, Exec. Dir., Fin. Stability, Bank of Eng., Speech Delivered at the Financial Student Association, Amsterdam: Rethinking the Financial Network (Apr. 2009), *available at* http://www.bankofengland.co.uk/publications/speeches/2009/speech386.pdf.

which is essentially a CDO created from other CDOs, would literally require due diligence in the millions of pages.[132]

Highly sophisticated and highly paid market actors failed to accurately assess risk in the face of such complexity,[133] and therefore it seems unreasonably optimistic to expect less sophisticated and less highly paid regulators to do much better. Of course, some of these market actors, such as credit rating agencies, are thought to have missed the mark due to conflicts of interest,[134] which regulators might be able to overcome, but there are also reasons to doubt the forcefulness of this explanation.[135] Further, regulators essentially have no experience analyzing and pricing these types of complex securities. Indeed, in the past, regulators have effectively delegated this regulatory task to financial models and market actors.[136]

In light of these considerations, and given regulators' less-than-impressive history in managing the moral hazard problem of traditional banking, it seems unlikely that a regulatory approach that focuses exclusively on the deposit-taking institution in securitized banking would eliminate increased risk-taking on the part of the dealer bank, thereby avoiding the systemic moral hazard problem.[137] Because the moral hazard problem arising from an insurance regime for securitized banking extends beyond the deposit-taking institution, the definition of the regulated entity should also extend beyond the deposit-taking institution, as represented in the following figure:

132. *See id.*

133. *See, e.g.*, Press Release, President's Working Grp. on Fin. Mkts., Policy Statement of Financial Market Developments 2 (2008), *available at* http://www.law.du.edu/images/uploads/presidents-working-group.pdf (citing "risk management weaknesses at some large U.S. and European financial institutions" as one of "the principal underlying causes of the turmoil in financial markets").

134. *See, e.g.*, Jeffrey Manns, *Rating Risk After the Subprime Mortgage Crisis: A User Fee Approach for Rating Agency Accountability*, 87 N.C. L. REV. 1011, 1052–53 (2009).

135. Claire A. Hill, *Why Did Rating Agencies Do Such a Bad Job Rating Subprime Securities?*, 71 U. PITT. L. REV. 585, 589, 593–95 (2010).

136. *See, e.g.*, Erik F. Gerding, *Code, Crash, and Open Source: The Outsourcing of Financial Regulation to Risk Models and the Global Financial Crisis*, 84 WASH. L. REV. 127 (2009); Kenneth A. Bamberger, *Technologies of Compliance: Risk and Regulation in a Digital Age*, 88 TEX. L. REV. 669 (2010).

137. Jeremy Stein makes similar arguments for why regulators cannot be expected to effectively manage moral hazard at the dealer bank if we were to extend the federal safety net to these entities. *See* Stein, *supra* note 78, at 48–49. Stein thinks that on this basis alone, the federal safety net should not be extended to dealer banks. This Article suggests of course that even Stein underestimates the regulatory costs of deposit insurance for securitized depositors.

Figure 4: The Expanding Definition of the Regulated Entity in Securitized Banking

Where to draw the boundary of the regulated entity here is anybody's guess. However, it seems that at the very least, it would need to include not only the dealer bank but also the securitization vehicle itself. How would the regulatory regime look under that scenario? Under that more expansive definition of the "bank," regulators would oversee the choice of assets that underlie the SPV and the process of creating securities with different risk profiles that derive their value from the cash flows generated by those underlying assets.[138] By overseeing the securitization process itself, regulators would acquire more finely grained information to help them better assess and price the risks of the asset-backed securities that the dealer bank purchases from the SPV. There is anecdotal evidence that proximity to the creation of these complex securities provides an advantage in understanding how they are likely to behave in the market.[139]

138. This approach bears some resemblance to the proposal by Gary Gorton. *See* Gorton, *supra* note 20, at 40.

139. This anecdote comes from Gillian Tett. *See* GILLIAN TETT, FOOL'S GOLD: HOW THE BOLD DREAM OF A SMALL TRIBE AT J.P. MORGAN WAS CORRUPTED BY WALL STREET GREED AND UNLEASHED A CATASTROPHE (2009). In the mid-1990s, J.P. Morgan pioneered a particular type of CDO, which was a precursor to the subprime mortgage-backed securities at the epicenter of the financial crisis. Instead of bundling together subprime assets, however, the original J.P. Morgan CDO,

Additionally, overseeing the securitization process would provide regulators with information concerning the origins of the particular asset-backed security, including whether the dealer bank (if it is not also the financial sponsor) was the party who approached the sponsor to create a particular security with a particular risk profile. This information could be valuable to the extent that it alerts the regulator to the possibility that the dealer bank is trying to create a particularly risky security to exploit the regulator's under-pricing of asset-backed securities for regulatory purposes. If this were the case, it might constitute a "red flag" that that particular securitization has the potential to create systemic moral hazard and that the regulator should revisit its risk assessments of asset-backed securities both generally and with respect to that issuance in particular.

While regulatory oversight of the securitization process might provide regulators with a greater likelihood of effectively managing systemic moral hazard than focusing solely on limiting risk-taking at the dealer bank, this broad regulatory oversight is unlikely to eliminate the systemic moral hazard problem altogether. The nature of the securitization process is such that even an entity without any conflicts of interest and with the sole goal of producing risk assessments that are as accurate as possible could still generate a view of the asset-backed security's risk attributes that falls far from the mark. The problem is that securitization consists of a process by which a pool of risky assets is combined and then sliced up in a way that many of the individual slices turn out to be safer than the average asset in the underlying pool.[140] In order to accomplish this goal, however, one must estimate the underlying assets' default risks and the likelihood that defaults

which eventually was referred to as a "synthetic" CDO, actually bundled together credit default swaps (CDSs). As CDSs act like insurance on the risk of default of some credit instrument, the investors in these synthetic CDOs were essentially purchasing a claim to a pool of insurance premiums. At the time, the same J.P. Morgan team that created these synthetic CDOs also considered constructing them out of a pool of mortgages but ultimately decided against it, concluding that the risks didn't make the security profitable. *See id.* at 125. When other banks began offering such products, copying J.P. Morgan's original invention but replacing the pool of CDSs with a pool of subprime mortgages, J.P. Morgan twice reconsidered entering the market, motivated by the apparently booming business being conducted by its competitors. *Id.* at 125, 140. But each time, the team reached the same conclusion that it had originally—the business was not profitable in light of the risks. *Id.* In retrospect, one explanation for why the other banks were willing to shoulder these risks whereas J.P. Morgan was not is that only J.P. Morgan truly understood the nature of the risks inherent in such securities because it successfully developed and marketed the original version. A competing explanation might be that the other banks were aware of and understood the risks involved in mortgage-backed CDOs but that they were seduced by the allure of short-term profits and figured that they would ride out the bubble until it burst. But this explanation almost raises more questions than it answers, not least of which is how to account for such dramatic differences in culture and intra-firm incentives among Wall Street banks.

140. *See* Coval et al., *supra* note 116, at 3.

are correlated. A mistake with respect to either of these two estimates, even a small mistake, can result in huge errors down the road.[141]

The fundamental point is that a broader definition of the regulated entity, which was of course motivated by our identification of the systemic moral hazard problem, is likely to test regulatory competence to a much greater degree here than in the traditional banking context. And recall that regulators do not have a stellar track record in controlling moral hazard even in the traditional banking context.[142] In light of this observation, the systemic moral hazard problem, and its implications regarding the scope of the regulated entity, supply a reason for treating traditional banking and securitized banking differently for regulatory purposes. I consider this possibility in the next Subpart.

### *B. Alternative Regulatory Approaches?*

As I argued in the previous Subpart, the systemic moral hazard problem in securitized banking is more expansive than the moral hazard problem that is the focus of traditional commercial banking. And consequently, a deposit insurance regime for securitized banking would require a definition of the regulated entity commensurate with the scope of the problem. However, this more expansive conception of the regulated entity would test regulatory competence to a greater degree than in traditional banking. Thus, the systemic moral hazard problem supplies a reason to treat the two forms of banking differently for regulatory purposes. Whether to do so, as I argue in this Subpart, depends on two considerations: (i) the scope of the systemic moral hazard problem in the wake of recent financial reform and (ii) the costs of the policy alternatives.

#### *1. Scope of Problem, or Would the Dodd-Frank Act Help Minimize Systemic Moral Hazard?*

How might the reforms adopted by the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act" or the "Act")[143] affect the systemic moral hazard problem that would result from extending the federal safety net to securitized banking? There are two sections of the Dodd Frank Act that might have implications for evaluating the scope of the systemic moral hazard problem: those that pertain to reform of the

141. *See id.* at 4 (noting "the extreme fragility of [an asset backed security's risk rating] to modest imprecision in evaluating underlying risks . . . go[es] a long way in explaining the spectacular rise and fall of structured finance").

142. *See supra* notes 44–48 and accompanying text.

143. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (to be codified in scattered sections of the U.S. Code).

credit rating agencies and those that pertain to reform of the securitization process. While these reforms may cushion the effects of systemic moral hazard on the margin, they are unlikely to make a significant difference.

*a. Credit Rating Agency Reform*

The Dodd-Frank Act takes a double-barreled approach with respect to credit rating agencies in that it attempts to improve the quality of credit ratings themselves and to reduce the incentives of potential investors in asset-backed securities to rely solely on these ratings in making investment decisions. The Act seeks to accomplish the first goal through rules aimed at improving the internal governance of credit rating agencies and eliminating potential conflicts of interest between credit rating agencies and the issuers whose securities they rate.[144] It also attempts to improve the quality of credit ratings by increasing the transparency of the rating process, which would allow for methodological comparisons across different agencies, and by creating potential liability for credit rating agencies if they consent to the inclusion of a credit rating in a registration statement filed under the Securities Act of 1933.[145] The Act seeks to accomplish the second goal—reducing investors' incentives to rely solely on credit ratings for investment decisions—by amending federal regulations so that they no longer allow investors to rely exclusively on credit ratings for purposes of examining a security's creditworthiness.[146]

To understand how these credit rating reforms might help manage the systemic moral hazard problem, consider the steps involved in that problem again. First, dealer firms subject to deposit insurance demand riskier securities than they would in the absence of insurance. Second, securitizers create these securities and sell them not only to dealer banks but to other investors as well. And, third, investors purchase these securities while overlooking or neglecting their risks. In the absence of this third step, the moral hazard problem would not be systemic because it would not affect any firm other than the dealer bank. Thus, if it were possible to prevent investors from overlooking or neglecting the risks of asset-backed securities, then it would be possible to minimize or eliminate the effects of systemic moral hazard.

144. *Id.*

145. *Id.*

146. A large number of federal laws rely on credit ratings as a means of regulating the quality of assets that certain regulated entities purchase. *See generally* Frank Partnoy, *The Siskel and Ebert of Financial Markets?: Two Thumbs Down for the Credit Rating Agencies*, 77 WASH. U. L. Q. 619, 690–704 (1999). For example, rules promulgated by the SEC under the Investment Company Act of 1940 regulate the quality of assets that a money market mutual fund is permitted to invest in, where the quality is defined with reference to credit ratings. *See id.*

The credit rating agency reforms might help on this score but probably not in a significant way. First, it is far from clear that investors' reliance on credit ratings is due to federal regulations that make credit ratings an acceptable means of investigating a security's creditworthiness. It seems much more likely that regardless of what the regulations say, investors have an incentive to rely on a third party to incur the due diligence costs of inspecting these securities. Consequently, amending these regulations to say that investors should independently investigate a security's creditworthiness is unlikely to make much of a difference.

If investors are going to be relying on credit ratings regardless of what regulations say, one approach to minimize their ability to overlook or neglect risks in these instruments would be to improve the accuracy of the credit ratings themselves. Yet, it is not evident that conflicts of interest and governance issues internal to the credit rating firms themselves have much power in explaining these firms' dismal performance rating asset-backed securities. As commentators have pointed out, these same alleged conflicts and internal governance issues should apply to ratings of other types of securities as well, and not just asset-backed securities.[147] But ratings of other securities, like corporate bonds, have, if anything, become more conservative over time, suggesting that conflicts are not driving ratings with respect to those securities.[148] Further, while increased transparency might provide market participants with more information with which to compare raters, it is a double-edged sword in that it gives other market participants who wish to game the ratings, such as securitizers, greater ability to do so.

But even assuming that the credit rating agency reforms can accomplish their dual purpose of weaning investors from exclusive reliance on credit ratings and making the ratings themselves more accurate, even in that best-of-all-possible-worlds scenario, these reforms are unlikely to eliminate the systemic moral hazard problem. This is because there are plausible theories for why investors might overlook risks in asset-backed securities that do not involve over-reliance on credit rating agencies. The incentive-based theory explored in Part II is one of these.[149] If this theory has any explanatory power whatsoever, then there will still be a systemic moral hazard problem regardless of the effectiveness of credit rating agency reforms.

147. Hill, *supra* note 135, at 585–86.

148. *See id.*

149. *See supra* notes 84–90 and accompanying text.

*b. Credit-Risk Retention for Securitizations*

The second part of the Dodd-Frank Act that might help limit the systemic moral hazard problem pertains to the securitization process. The Dodd-Frank Act requires the SEC and the federal banking agencies[150] to promulgate regulations requiring securitizers (and the originators of a securitization's underlying loans if the originator and the securitizer are different entities) to retain a certain amount of credit risk with respect to the assets used in a securitization.[151] The Act specifies parameters for these regulations. In particular, a "securitizer"[152] must retain no less than five percent of the credit risk in assets it sells into a securitization;[153] however, if the securitizer and the originator of the loans are not the same entity, then the amount of credit risk retained by the two entities is to be allocated according to certain considerations, including whether the assets reflect a lower credit risk, whether the transaction creates incentives for imprudent origination of loans and the possible impact of risk allocation on consumer credit.[154]

These provisions were intended to respond to an agency problem that is alleged to exist in the securitization process.[155] Called the "originate-to-distribute" model, this view maintains that securitization leads to a gradual decay of underwriting standards since loan originators have little incentive to worry about the quality of the assets that they sell to SPVs because they do not retain any exposure to these assets' underlying risks.[156] The

150. The term "federal banking agencies" under the Act means the Office of Comptroller of the Currency, the Board of Governors and the FDIC. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 941(b), 124 Stat. 1376, 1891 (codified at 15 U.S.C. § 78o-11(a)(1) (Supp. IV 2010)).

151. § 941(b) (codified at 15 U.S.C. § 78o-11(c)(1)(C)).

152. "Securitizer" is defined in the Act as "(A) an issuer of an asset-backed security; or (B) a person who organizes and initiates an asset-backed securities transaction by selling or transferring assets, either directly or indirectly, including through an affiliate, to the issuer." § 941(b) (codified at 15 U.S.C. § 78o-11(a)(3)).

153. § 941(b) (codified at 15 U.S.C. § 78o-11(c)(1)(B)).

154. § 941(b) (codified at 15 U.S.C. § 78o-11(e)).

155. Many prominent policymakers adopted this view early on in the financial crisis. *See, e.g.*, Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Speech before the World Affairs Council of Greater Richmond's Virginia Global Ambassador Award Luncheon: Addressing Weaknesses in the Global Financial Markets: The Report of the President's Working Group on Financial Markets (Apr. 10, 2008); Nout Wellink, Chairman, Basel Comm. on Banking Supervision, Speech at the GARP 2007 Eighth Annual Risk Management Convention and Exhibition: Risk Management and Financial Stability—Basel II and Beyond (Feb. 27, 2007); Malcolm D. Knight, Gen. Manager of the Bank for Int'l Settlements, Speech before the Euro 50 Group Roundtable: Some Reflections on the Future of the Originate-to-Distribute Model in the Context of the Current Financial Turmoil (Apr. 21, 2008); John Gieve, Deputy Governor, Bank of Eng., Speech before the Euromoney Bond Investors Congress: The Return of the Credit Cycle: Old Lessons in New Markets (Feb. 27, 2008).

156. POZEN, *supra* note 77, at 18.

evidence supporting the originate-to-distribute view is mixed,[157] and some criticize the theory on the ground that it overlooks ways in which the incentives of originators and securitizers are in fact aligned.[158]

How might these provisions help control the systemic moral hazard problem? Recall that the systemic moral hazard problem arises because of the dealer bank's increased demand for risk and particularly for riskier asset-backed securities, which, of course, is the result of insurance that effectively guarantees its repo creditors. By requiring securitizers to retain exposure to the risks that it includes in the asset portfolio that underlies the SPV, these risk retention provisions might deter securitizers from including riskier loans in a securitization and thereby meeting the dealer bank's increased demand for risky asset-backed securities. However, in practice, this is unlikely to be the case for three reasons.

First, while the Dodd-Frank Act's credit risk retention provisions might deter a securitizer from including riskier loans in a securitization due to inattention and disregard for underwriting standards and basic due diligence, they do not deter a securitizer from including riskier loans in a securitization because of an increased demand for riskier asset-backed securities. If the dealer bank is willing to overlook the risks of asset-backed securities because of insurance and therefore pay more for the securities generated by a securitization than is warranted by their risk profile, then the securitizer may be willing to execute the transaction. In the transaction involving Goldman Sachs and the Paulson hedge fund, discussed above,[159] Goldman Sachs had significant exposure not merely to the assets underlying the SPV but also to the asset-backed securities themselves, even though these were designed to be riskier than average in order to facilitate the Paulson fund's strategy of shorting the housing market.[160] Presumably, Goldman Sachs took this position because it thought that it would be profitable.

Second, if the securitizer is the dealer bank itself, rather than a third party, then the credit risk retention provisions are likely to have little effect

157. *Compare, e.g.*, Amiyatosh K. Purnanandam, *Originate-to-Distribute Model and the Subprime Mortgage Crisis* (AFA Atlanta Meetings Paper, Apr. 2010), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract-id=1167786 (finding that loans sold to SPVs were of poorer quality than loans that originators retained), *with* Geetesh Bhardwaj & Rajdeep Sengupta, *Subprime Loan Quality* (Fed. Reserve Bank of St. Louis, Working Paper 2008-036D, Sept. 2011), *available at* http://research.stlouisfed.org/wp/2008/2008-036.pdf (finding that, over the period from 1998 to 2007, while lending standards may have weakened along some dimensions, they actually improved along other dimensions).

158. *See, e.g.*, Gorton, *supra* note 64, at 69–73 (rejecting the originate-to-distribute model by arguing that securitization leaves securitizers and originators exposed to risk through both security design and implicit contracts).

159. *See supra* notes 108–112 and accompanying text.

160. ZUCKERMAN, *supra* note 109, at 154–55.

on systemic moral hazard. This is because the dealer bank has the incentive to gain exposure to greater risk as a result of the moral hazard effect of deposit insurance. Thus, in that case, the rules would simply facilitate the dealer bank's overarching goal of increasing its risk-taking.

Finally, it is important to recognize that one does not need riskier assets in order to create relatively riskier asset-backed securities. Risk can be introduced through other steps in the securitization process, including tranching, which is the process of defining the claims on the pool's cash flows.[161] These claims, or tranches, are prioritized in how they absorb losses from the underlying asset portfolio. Thus, the Dodd-Frank Act's credit risk retention provisions do not prevent, or deter, the securitizer from influencing the risk of the ultimate securities that are created from the securitization process. Consequently, the Act will not constrain securitizers in meeting the increased demand on the part of insured dealer banks for risky asset-backed securities, which is central to the systemic moral hazard problem.

### *2. What Are the Costs of the Policy Alternatives?*

The systemic moral hazard problem implies that regulatory competence would be tested to a much greater degree under an insurance regime for securitized banking than in the traditional banking context. Thus, despite the similarities between securitized banks and traditional banks, there may be reasons to consider alternatives to deposit insurance for eliminating (or at least minimizing the effects of) the twenty-first century bank run.

In this subsection, I consider three potential alternatives that can be thought of as either *eliminating*, *limiting*, or *circumscribing* maturity transformation in securitized banking. Recall that maturity transformation, or the financing of long-term assets with short-term debt, gives rise to bank runs (in both securitized banking and traditional commercial banking alike) by encouraging short-term creditors to withdraw their cash from the bank at the first hint of financial distress, thereby avoiding being the last one standing at an insolvent institution.[162] By eliminating, limiting, or circumscribing maturity transformation in securitized banking, the proposals discussed below would reduce the incentives underlying such collective withdrawals. However, because these proposals do not involve a deposit insurance regime for securitized banking, they avoid the systemic moral hazard problem identified in the previous section. Of course, the proposals themselves are not costless. First of all, they would not be as effective as an insurance regime at eliminating bank runs. And moreover,

161. *See* Coval et al., *supra* note 116, at 2–8.

162. *See* Fischel et al., *supra* note 3, at 307–08; Macey & Miller, *supra* note 3, at 1158.

each proposal would, to varying degrees, increase the cost of financing asset-backed securities and therefore might scale back lending on a macroeconomic level. Nevertheless, these costs may be justifiable in light of the systemic moral hazard problem posed by the alternative.

*a. Eliminating Maturity Transformation in Securitized Banking: Repealing Bankruptcy Law's Favored Treatment of Repo Claims*

The first alternative to a deposit insurance regime for securitized banking is to attempt to eliminate maturity transformation at dealer banks altogether. Recall that maturity transformation refers to a bank's function of financing long-term assets with short-term debt.[163] The repo transaction is an illustration of maturity transformation because it involves tying, through the collateralization process, short-term debt with long-term assets, including asset-backed securities. Although the repo market has always existed in one form or another, its meteoric rise in importance for dealer banks is of fairly recent vintage.[164] Thus, the possibility of reversing course and returning to a market practice where dealer banks rely more heavily on long-term financing holds not only certain appeal but potential promise as well.

One proposal along these lines focuses on the role that the Bankruptcy Code possibly played in giving rise to dealer banks' use of repo for purposes of financing the banks' acquisitions of certain long-term assets. Under the Bankruptcy Code, repo creditors are treated differently from other creditors of the bankrupt firm.[165] While, as a general matter, collateralized lenders to a bankrupt firm must wait for the firm to reorganize before they can seize their collateral, a process that can take considerable time, repo creditors are permitted to seize their collateral immediately.[166] Nor are repo creditors subject to the Code's general prohibition against the receipt of preferential payments and fraudulent conveyance.[167] This "super-priority" treatment of repo creditors, it is argued, creates a ready market for repo financing, which consequently is cheaper for dealer banks than longer-term financing alternatives.[168] The

163. Morgan Ricks, *Regulating Money Creation After the Crisis*, 1 HARV. BUS. L. REV. 76, 81 (2011).

164. Viral V. Acharya & T. Sabri Öncü, *The Dodd-Frank Wall Street Reform and Consumer Protection Act and a Little Known Corner of Wall Street: The Repo Market*, REGULATING WALL STREET (July 16, 2010, 6:22 PM), http://w4.stern.nyu.edu/blogs/regulatingwallstreet/2010/07/the-doddfrank-wall-street-refo.html.

165. *See* Roe, *supra* note 95, at 541–43.

166. *Id.* at 546.

167. *Id.* at 547.

168. *Id.* at 546–59.

policy implication, of course, is to repeal these super-priority provisions of the Bankruptcy Code so that repo creditors are treated just like any other creditor. A repeal, the argument goes, might therefore cause dealer banks to "substitute away into stronger, longer-term financing."[169]

*b. Limiting Maturity Transformation in Securitized Banking: Regulating Haircuts on Collateral Used in Repo Transactions*

Another alternative to deposit insurance for securitized banking would be to regulate the value that repo creditors place on the collateral they receive in exchange for their loans to the bank. Recall that the evidence of a run on securitized banking focuses on an increase in the "haircut" that the repo creditor placed on its collateral, which was in part a reflection of the repo creditor's view of the collateral's quality.[170] Importantly, this evidence shows that prior to the financial crisis, repo creditors applied virtually no haircut to their collateral, suggesting that they viewed these asset-backed securities as almost indistinguishable from risk-free securities, such as Treasury Bills. And dealer banks could therefore borrow from repo creditors nearly the full amount necessary to purchase these securities. In effect, the low haircuts allowed dealer banks to buy these securities with virtually no down payment. However, in the summer of 2007, repo creditors began bidding up the haircut applicable to these asset-backed securities because of rising fear, attributable to bad news emerging from the subprime mortgage market, over the dealer bank's counterparty risk and the risks posed by the collateral itself. When these haircuts went from close to zero, in the summer of 2007, to almost 50% in 2008, the repo creditors were effectively withdrawing their cash from the dealer banks, and these banks had no choice but to sell some of these asset-backed securities, often at fire sale prices, because they were short of funds.[171]

By regulating the haircuts applicable to asset-backed securities that dealer banks use as collateral in repo transactions, regulators might be able to stave off runs on securitized banks. Economists have noted the existence of a "leverage cycle" where lenders are overly optimistic during boom times and overly pessimistic during bad times, and therefore leverage is either too high or too low during these periods.[172] By increasing the haircut

169. *See* Roe, *supra* note 95, at 578. To be sure, this is only one of the benefits of repeal that Professor Roe identifies. The other potential advantage to repeal would be to create incentives for repo creditors to monitor the risk of their counterparties more closely.

170. *See supra* notes 70–80 and accompanying text.

171. Viral Acharya et al., *Rollover Risk and Market Freezes* 24 (Nat'l Bureau of Econ. Research, Working Paper No. 15674, 2010), *available at* http://www.nber.org/papers/w15674.pdf [hereinafter Acharya et al., *Rollover Risk*].

172. *See, e.g.*, JOHN GEANAKOPLOS, THE LEVERAGE CYCLE 2 (2010).

applicable to collateral used in repo transactions, particularly during the overly optimistic times, regulators might manage to correct for this over-optimism and stave off the runs that occur when that over-optimism turns to panic. For a repo creditor, higher haircuts are associated with a higher probability that the repo creditor will get his cash back in the event of a problem at the dealer bank or with the quality of the collateral. So, for example, if haircuts are set at 20% instead of 0%, then the repo creditor is subject to a cushion. If the bank fails and the repo creditor seizes and then sells his collateral, he knows that as long as the collateral doesn't drop by more than 20% in price between the bank's failure and the time of the sale of the collateral, his proceeds from the sale of the collateral will be at least as great as the amount of cash that he had originally deposited with the bank. Similarly, if new information arises concerning the collateral's underlying risks, the repo creditor has more of the collateral than he otherwise would have and therefore has greater ability to absorb these increased risks.

#### *c. Circumscribing Maturity Transformation in Securitized Banking: Toward a "Narrow Securitized Banking" Proposal*

The foregoing approaches to managing the twenty-first century bank run would either limit or eliminate altogether maturity transformation in securitized banking. Yet another alternative might be to circumscribe maturity transformation in securitized banking in an effort to make it relatively "safe" and thereby forestall bank runs. In order to construct the contours of such a proposal, it might be useful to consider briefly the conceptual precursor of such an approach, which is the "narrow banking proposal."[173]

In the traditional banking context, narrow banking proposals have been around in one form or another for a very long time and in fact can be traced back to at least the original debate over deposit insurance in the 1930s.[174] As a general matter, narrow banking proposals attempt to provide deposit-taking services but without the fragility that is typically created by maturity transformation.[175] To this end, narrow banking proposals seek to limit deposit-taking to specially created banks that are permitted to invest only in certain "safe" assets. While some versions of narrow banking add the

173. *See* Shuji Kobayakawa & Hisashi Nakamura, *A Theoretical Analysis of Narrow Banking Proposals*, MONETARY & ECON. STUD. 105, 108 (2000).

174. *See id.*

175. *Id.* at 107.

further limitation that such "safe" assets also must be short-term,[176] others would permit long-term assets as well, provided, of course, that they are safe.[177] It is this latter formulation of the proposal that holds the most promise for the twenty-first century bank run.

Under this type of proposal, only certain qualified entities would be permitted to finance the purchase of asset-backed securities using repo transactions, and, even then, only those asset-backed securities that are deemed eligible by regulators would be available for use as collateral.[178] For example, the bank would likely be prohibited from purchasing asset-backed securities that are collateralized with non-traditional assets, like subprime loans,[179] or more exotic and complex versions of structured financial products, like collateralized debt obligations (CDOs), CDO-squareds, and CDO-cubeds.[180] These narrow securitized banks would need to be subject to substantial regulatory oversight. In order to assist regulators in what would undoubtedly be a challenging task, the narrow securitized banks might be required to finance themselves with a certain amount of subordinated debt, or debt that is junior to the repo claims,[181] the yield of which would be subject to some cap, which would be measured by reference to the yield on riskless securities, such as short-term Treasury bills.[182] The idea here is that holders of subordinated debt would have to be satisfied that the portfolio risk of the narrow securitized bank is sufficiently

176. *See generally* JAMES L. PIERCE, THE FUTURE OF BANKING (1991). Proposals along these lines are much closer in spirit to the proposal considered above that would eliminate maturity transformation in securitized banking altogether.

177. *See generally* LOWELL L. BRYAN, BREAKING UP THE BANK: RETHINKING AN INDUSTRY UNDER SIEGE (1988); ROBERT E. LITAN, WHAT SHOULD BANKS DO? (1987).

178. Andrew Metrick and Gary Gorton recently announced a similar proposal as the one that I sketch here; however, under their proposal, only such narrow securitized banks would be permitted to purchase asset-backed securities. Andrew Metrick & Gary Gorton, Regulating the Shadow Banking System (Oct. 18, 2010) (unpublished manuscript). I see no particular reason to impose such a limitation, provided that other purchasers of asset-backed securities are not able to finance their purchase using repo.

179. Subprime mortgages differ in a number of respects from assets that have been traditionally used in plain vanilla securitizations. In particular, subprime mortgage-backed bonds are much more sensitive to cash flows generated by the underlying mortgages than safer prime mortgages. *See* Gorton, *supra* note 64, at 4, 20–23 ("No other securitization asset class works like subprime mortgages, that is, no other asset class (e.g., credit card receivables, auto loans) is linked so sensitively to underlying prices.").

180. As previously discussed, a CDO is created by issuing securities from a pool of asset-backed securities. *See supra* notes 65–67 and accompanying text. A CDO squared is created by issuing securities from a pool consisting of tranches of a CDO, and a CDO cubed is created by issuing securities from a pool consisting of tranches of a CDO squared.

181. Subordinated debt proposals had numerous advocates in the late 1980s but ultimately were rejected, likely due to heavy lobbying by banks who wished to avoid increased market discipline. *See* CALOMIRIS, *supra* note 39, at 27.

182. *See* DOWNES & GOODMAN, *supra* note 62, at 752 (defining "Treasuries" as "negotiable debt obligations of the U.S. government, secured by its full faith and credit and issued at various schedules and maturities").

low to justify the low yield spread on the debt. If the narrow securitized bank is unable to convince debt markets of the prudence of its investments, it would be unable to satisfy this subordinated debt financing requirement and would be obligated to reduce its risk-taking.[183]

*d. How These Alternatives Compare to a Deposit Insurance Regime for Securitized Banking*

*i. First, the Benefits . . .*

The primary advantage of these three alternatives is that they do not involve explicit guarantees and therefore do not entail the moral hazard created by extending the federal safety net to securitized banking. This claim is most clearly true with respect to the first alternative, which seeks to eliminate maturity transformation altogether and would not involve the use of any government guarantees, either explicit or implicit. But what about the second and third alternatives? One might be inclined to think that the second proposal, which, recall, contemplates a role for regulators in determining the haircut applicable to collateral used in repo transactions, would eliminate the repo creditor's incentives to monitor the dealer bank and therefore involve some moral hazard even in the absence of explicit guarantees. However, this is unlikely to be the case. Consider the consequences to monitoring incentives in the event of regulatory error. If the regulator sets the haircut lower than where the repo creditor thinks it should be set, then the repo creditor will simply refuse to enter into the transaction, and the dealer bank will not have the financing to engage in increased risk-taking. If, by contrast, the regulator sets the haircut higher than where the repo creditor thinks it should be set, then the dealer bank has even less incentive to invest in that security than in the absence of the collateral regulation. Thus, regulating haircuts applicable to the repo creditor's collateral does not exhibit a moral hazard problem.

The narrow securitized banking proposal, by contrast, might be thought to entail moral hazard. After all, it would likely create implicit guarantees, since it is improbable that regulators would allow a narrow securitized bank to fail. But these still would only be implicit guarantees. More importantly, however, the purpose of the narrow securitized bank is to create a "safe" bank that won't fail. This type of proposal seeks to achieve this goal by dramatically circumscribing the activities that the bank is permitted to engage in, including limiting investments to only investment-grade debt

183. This proposal, or at least one like it, actually gained some traction not just among academics but among policymakers as well. Ultimately, however, it was not adopted, possibly because of successful lobbying against it by banks who wanted to avoid the market discipline of subordinated debt holders. *See* CALOMIRIS, *supra* note 39, at 27.

and certain types of plain vanilla asset-backed securities. Thus, while the narrow securitized bank alternative might involve implicit guarantees, the cost of those guarantees are minimal since they are only incurred if the government must bail out the bank in the case of failure, and the primary purpose of the narrow securitized bank, as in narrow banking proposals generally,[184] is to create an entity that minimizes the risk of failure.

*ii. . . . And Now for the Costs*

The three policy alternatives considered in this subpart would entail two cost categories that do not exist with respect to a deposit insurance regime for securitized banking. The first cost is that, with the exception of the narrow securitized banking proposal, these alternatives would not completely eliminate runs on securitized banking. To be sure, the first approach is intended to eliminate such bank runs by eliminating or at least dramatically curtailing the use of repo financing for long-term assets. However, even if bankruptcy law's favored treatment of repo claims[185] was the motivating factor behind the rise in the dealer bank's reliance on repo financing, it is not entirely clear that amending the law will put the genie back in the bottle. To be sure, repealing those provisions of the law that give repo claims priority treatment in bankruptcy would increase, from the repo creditor's perspective, the costs of lending through repo. Consequently, the repo creditor may demand a higher interest rate, which may cause the dealer bank to substitute away from repo financing in favor of safer, long-term financing. However, the reason repo creditors lend through repo is that the same reason that retail depositors open up a savings account at their local bank branch: they have idle cash on hand and uncertain consumption requirements. There may simply not be a good short-term lending alternative to repo for large institutions in need of parking a considerable amount of cash for an uncertain period of time. In that case, changes in the law would have little effect on the repo creditor's demand for repo. Thus, it is unclear whether this policy alternative would be able to deliver on its promise of eliminating maturity transformation. And to the extent that maturity transformation still exists, it is still likely that there will be runs.

The same can be said of the second policy alternative, which would require the regulation of haircuts on collateral used in repo transactions. To be sure, this type of proposal might attenuate such runs by resulting in the over-collateralization of the underlying loans. For example, if in the summer of 2007, haircuts on asset-backed securities had been set at 20%,

184. *See supra* notes 173–177 and accompanying text.

185. 11 U.S.C. §§ 555, 559 (2006).

this might have deterred a run on securitized banks for a certain period of time. However, eventually, repo creditors would have bid the haircut up to close to 50%, just as they in fact did, thereby precipitating a run.[186] The only difference is that the actual run may have taken place a few months later. Furthermore, by increasing haircuts on collateral used in repo transactions, this policy alternative may have the perverse effect of actually reducing the repo creditor's incentives to monitor its collateral, which may actually fuel panic-induced bank runs.[187] Thus, these policy alternatives could not be relied upon to completely eliminate bank runs in securitized banking.

The second trade-off created by these policy alternatives is that they may reduce lending on a macroeconomic level. Traditionally, financial intermediaries such as banks stood between the capital markets and institutional borrowers in need of capital for investment projects. The bank would raise money in the capital markets and then lend it to the borrower. However, over the past twenty years or so, the prominence of the bank's role in this process of capital-raising has diminished dramatically as institutional borrowers have become able to bypass traditional financial intermediaries and access capital markets directly.[188] Securitization is central to this trend, which is known as "disintermediation," because by virtue of securitization, loans that would traditionally be financed by banks are packaged and sold off in discrete slices to investors in the capital markets.[189] For this reason, securitization has become the "key to lending" in the United States.[190]

Relying, as securitized banks do, on short-term financing, such as repo, to purchase securities that are created through the securitization process is a much less expensive way of financing the purchase of these securities than relying on longer-term financing. Yet, each of the proposals considered in this sub-part would, to varying degrees, limit the securitized bank's incentives or ability to rely on repo financing to purchase asset-backed securities. Removing bankruptcy law's priority treatment of repo debt would make that type of claim less attractive from the perspective of the repo creditor, who would likely respond by demanding a higher interest rate from banks. Similarly, increasing the haircut applicable to collateral used in repo transactions would require a bank to make a larger "down

186. Acharya et al., *Rollover Risk*, *supra* note 171.

187. I thank Mark Roe for this point.

188. *See, e.g.*, Robert C. Merton, *A Functional Perspective of Financial Intermediation*, 24 FIN. MGMT. 23, 26 (1995) (discussing how financial intermediaries and markets compete to provide financial products); *see also* Schwarcz, *supra* note 27, at 200 (discussing disintermediation generally).

189. MEIR KOHN, FINANCIAL INSTITUTIONS AND MARKETS 378 (2d ed. 2004).

190. Tim Reason, *"We've Got to Find the Middle Ground"*, CFO.COM (Nov. 10, 2009), http://www.cfo.com/article.cfm/14454063 (interview with Robert Pozen).

payment" on any assets that it purchases using repo, and therefore the second policy alternative also increases the bank's financing costs. Finally, limiting repo transactions to only narrow securitized banks would imply that those assets that the narrow securitized bank is prohibited from purchasing would have to be financed by some other entity in some other way, presumably with a form of debt with a longer maturity, which is costlier for the borrower.[191]Thus, each of these policy alternatives would increase the costs of financing asset-backed securities, and consequently, these policies may curtail the lending that takes place through the securitization process.

The significance of this cost should not be ignored. However, as we have seen, a deposit insurance regime for securitized banking has costs of its own. Furthermore, while these policy alternatives might curtail lending on a macroeconomic level, it is possible that the level of credit availability has been pegged at an unsustainable and unsafe rate for too many years. This view finds some support in the evidence that repo financing benefits from favored treatment under bankruptcy law.[192] But it is also supported by the fact that dealer banks were never really the intended purchasers of asset-backed securities in the first place, since the theory behind the securitization model was to transfer risk from the bank's balance sheet and into the capital markets.[193] And, although the data here is scant to say the least, the conventional wisdom is that the intended purchasers of asset-backed securities—including pension funds, hedge funds, mutual funds and the like—do not purchase these securities using repo financing. Thus, it is possible that curtailing lending generally by virtue of limiting, eliminating or circumscribing maturity transformation in securitized banking is an acceptable trade-off.[194]

## IV. CONCLUSION

Analogies are useful tools, but only to the extent that we are aware of their limitations. In this Article, I have tried to highlight the limitations of a particularly timely and compelling analogy: the bank run at the heart of the recent financial crisis and its Depression era counterpart. That the two phenomena are similar is indisputable. That this similarity justifies their

191. The borrower's cost of a loan is typically inversely related to the loan's maturity date. In other words, the longer the money is tied up, the more the lender charges the borrower for the funds.

192. 11 U.S.C. §§ 555, 559 (2006)

193. *See* Merton, *supra* note 188, at 25.

194. *See* Stein, *supra* note 78, at 49 (opining that there is not "nearly enough empirical evidence" to prove the social value of repo financing).

being treated the same for regulatory purposes, however, is another matter entirely, and it depends on the analogy's limits.

I have argued here that what the analogy overlooks is the potential for a deposit insurance regime for this form of banking (called "securitized banking") to give rise to what I have termed "systemic moral hazard." Unlike in traditional commercial banking, securitized banks rely on the securitization process to supply asset-backed securities that the bank can use as collateral for its short-term borrowing. Insuring the bank's short-term creditors, who care about the quality of this collateral, is likely to lead the bank to demand (and the securitizer to supply) increasingly riskier asset-backed securities. As the literature on financial innovation suggests, when other investors then purchase these securities, they may overlook their risks. Consequently, the insurance regime established at one entity leads to risk-taking at other entities that are related only through the securitization process. This problem is what I call "systemic moral hazard" because it is a moral hazard problem that affects institutions that were not the target of the insurance in the first place.

The "systemic moral hazard" problem seems almost inevitable in light of recent developments in financial markets. Securitization is often said to result in "financial disintermediation," meaning that it enables borrowers to bypass financial intermediaries and gain access directly to capital markets in order to satisfy their capital-raising needs.[195] Securitization accomplishes this objective, in theory at least, since it enables banks with a portfolio of mortgages and other loans to sell discrete slices of this portfolio to investors in the capital markets. However, securitized banking represents a sort of hybrid model where the bank still engages in intermediation by purchasing asset-backed securities and thereby creates a certain amount of interconnectedness between the bank and the capital markets. Thus, importing a regulatory regime, like deposit insurance, from the traditional commercial banking context, where this interconnectedness between intermediaries and capital markets is at a low ebb, to a context where it is much greater requires us to think about the effects that such a regime will have beyond the boundaries of the institution itself and on capital markets more generally. I have argued that the resulting systemic moral hazard problem suggests a need to think twice about relying on an insurance regime to eliminate the twenty-first century bank run. While the policy alternatives are themselves not cost-free, these costs are likely justifiable in light of the substantial spillover effects created by explicit government guarantees.

195. Schwarcz, *supra* note 27, at 200.