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Confronting Financial Crisis: Dodd-Frank's Dangers and the Case for a Systemic Emergency Insurance Fund

Jeffrey N. Gordon
Columbia Law School, jgordon@law.columbia.edu

Christopher Muller

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Confronting Financial Crisis: Dodd-Frank's Dangers and the Case for a Systemic Emergency Insurance Fund

Jeffrey N. Gordon & Christopher Muller†

Inherent tensions in the financial sector mean that episodes of extreme stress are inevitable, if unpredictable. This is true even when financial regulatory and supervisory regimes are effective in many respects. The government's capacity to intervene may determine whether distress is confined to the financial sector or breaks out into the real economy. Although adequate resolution authority to address a failing financial firm is a necessary objective of the current regulatory reforms, a firm-by-firm approach cannot address a major systemic failure. Major blows to the financial system, such as the financial crisis of 2007-2009, may require capital support of the financial sector to prevent severe economic harm. We therefore propose the creation of a Systemic Emergency Insurance Fund ("SEIF" or "Fund"), initially set at \$1 trillion, but periodically rescaled to the size of the U.S. economy. SEIF should be funded (and partially pre-funded) by risk-adjusted assessments on all large financial firms—including hedge funds—that benefit from systemic stability. The Department of the Treasury ("Treasury") would administer the Fund, the use of which would be triggered by a "triple key" concurrence among the Treasury, the Federal Deposit Insurance Corporation ("FDIC"), and the Federal Reserve ("Fed"). Unlike taxpayer "bailouts," such a fund would mutualize systemic risk among financial firms through a facility overseen by regulators. Moreover, its funding mechanism would give financial firms a greater incentive to warn regulators of growing systemic risk. And this standby emergency authority would avoid the need for high-stakes legislative action mid-crisis, which can be destabilizing even if successful and catastrophic if not. Such an approach is superior to the financial sector nationalization strategy embodied in the newly enacted Dodd-Frank financial reform bill.

† Jeffrey N. Gordon is the Alfred W. Bressler Professor of Law and Co-Director of the Center for Law and Economic Studies at Columbia Law School and a Fellow of the European Corporate Governance Institute. Christopher Muller is an attorney in New York City. We would like to acknowledge helpful discussion and comments on prior drafts from workshop participants at Columbia, Harvard, Oxford, Pennsylvania, and Virginia; session participants at the Association of American Law Schools and the American Law and Economic Association; and members of the Corporate Law Reading Group at Columbia Law School during the 2010 spring semester. Correspondence should be sent to jgordon@law.columbia.edu.

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Introduction

The ambition of the newly enacted financial regulation reform legislation (“Dodd-Frank”)¹ is to minimize the probability of financial sector distress by creating regulatory and market structures for financial derivatives, empowering regulators to impose higher capital requirements and additional conduct restraints on large financial firms, and establishing systemic risk monitoring and intervention authority. The legislation’s heart concerns the resolution of failing nonbank financial firms. Its goal is to create better options than the Fed and the Treasury had during the financial crisis of 2007-2009 when they resolved failing firms such as Bear Stearns, Lehman Brothers, AIG, and

1. The legislation is more formally known as the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, 124 Stat. 1376.

Citigroup. Instead of bankruptcy or bailout, Dodd-Frank offers an FDIC receivership that would amount to a controlled liquidation—a winding up of the failing firm rather than a reorganization or rescue. A major difference from bankruptcy is that the FDIC can now provide operating capital to keep the firm afloat pending liquidation in order to prevent shockwaves from a Lehman-like sudden collapse. Unsecured creditors will bear losses to the extent that asset values are less than the firm's liabilities, and the shareholders will be paid last. But Dodd-Frank not only substitutes FDIC receivership for bankruptcy, it also makes receivership the only way to assist a large, troubled financial firm. The legislation both strips the Fed of the power to make emergency loans to a specific firm and eliminates the FDIC's emergency loan guarantee authority. Dodd-Frank also precludes anything—like the Troubled Asset Relief Program (“TARP”) II—that would give the Treasury power to inject capital into the financial sector.

This resolution straitjacket is a prescription for disaster. In an effort to avoid “moral hazard” and ensure that none of those terrible “bailouts” happen, the legislation significantly limits regulators' authority to intervene in a financial emergency. Dodd-Frank offers only one real option: a cascade of receiverships imposed on large U.S. financial firms. The result would be the nationalization of the financial sector, an untested and potentially destabilizing intervention, the mere threat of which could hasten a slide from financial instability into financial emergency. This resolution strategy has been chosen without apparent reflection on its potentially destabilizing impact on the international financial system, as demonstrated by the way U.S. and U.K. resolution discontinuities exacerbated the systemic distress caused by the Lehman bankruptcy. Moreover, the international impact of financial sector nationalization would be much aggravated by multiple close-in-time receiverships. This “nuclear option” thus in place, Dodd-Frank seems to assume that if we set the incentives right, the self-interest of private actors will so moderate risk-taking by financial firms that systemic failures will never happen.

History suggests otherwise: major systemic distress is inevitable over time. The Dodd-Frank nuclear option is simply too dangerous. Therefore, we think regulators need standby emergency authority, supported by a “Systemic Emergency Insurance Fund” (“SEIF” or “Fund”), to prevent either financial sector nationalization or desperate mid-crisis pleas to Congress that shake economic confidence (if acceded to), and lead to economic catastrophe (if not).

The problem is that while greater risk of creditor losses may well reduce risk-taking at many firms, improving incentives does not assure that all parties will correctly calculate risks so as to avoid systemic financial crises. Barring regulatory omniscience, the interactions of financial innovation and globalizing capital flows will outstrip the calculative powers of even conservative parties, let alone major players in an industry necessarily fueled by risk-taking. As demonstrated by the heated debates over the causes of the recent financial

crisis, it will be impossible to guarantee the safety of a complex financial system operating on global scale. The result? The failure of any systemically important firm will be a shock. The receivership of a large firm, even if well managed, will roil markets domestically and internationally. It could well result in an immediate fall in asset values, meaning that anticipated creditor losses in a “liquidating” resolution would be very large. Some of the creditors may be systemically important themselves (like money market funds or insurance companies), and their capital suppliers may decide to cash in immediately rather than bear the risk of subsequent loss.

The failure of a large financial firm may threaten others both because financial firms are interlinked and because firms following similar business strategies are likely to sink together. As in the recent financial crisis, uncertainty about the creditworthiness of many financial firms will be debilitating. As an approach, firm-by-firm resolution fails in such a crisis; it will produce a series of falling dominos. This cascade is accelerated by creditor uncertainty about the “haircut” that follows a controlled liquidation. The Dodd-Frank response is to “put them all in receivership.” The practical effect of this response would be to nationalize a large part of the financial sector, which may be a highly destabilizing outcome. In short, Dodd-Frank provides a valuable mechanism to “resolve” a failing financial firm. It does not provide a satisfactory mechanism to “resolve” a financial crisis.

What is the alternative? To be sure, FDIC resolution authority and the risk of significant creditor losses are critical elements of any effective strategy. In ordinary times, FDIC resolution of a failing financial firm should be the exclusive approach. But in the event of a genuine financial emergency, the Treasury should have the option of using SEIF to protect the entire financial system by providing temporary capital injections to an array of threatened financial firms. The funding mechanism must be designed to make clear that this is not a “taxpayer bailout” but rather an insurance fund designed to force the financial sector to internalize the costs of financial distress. There are two important elements of this insurance fund. First, it should be funded, indeed pre-funded, by risk-adjusted premiums charged to financial firms. The analogy, of course, is to the Federal Deposit Insurance Fund, which is designed to protect the banking system against systemic risk and only incidentally protects depositors. With the growth of nonbank financial intermediaries like money market funds and the commercial paper market—the so-called “shadow banking” system—we need to broaden this concept. Second, all large financial firms, including hedge funds and money market funds, should pay premiums because they benefit from systemic stability. Moreover, their potential exposure to insurance fund losses will give them a greater incentive to warn regulators of systemically dangerous risk-taking.

Appropriate risk-limiting regulation and supervisory oversight are surely important to reduce the likelihood of systemic crisis, but we need to anticipate that our best efforts will fail. We need emergency tools to prevent a genuine

economic catastrophe. The proposed SEIF requires large financial firms to mutually self-insure against outbreaks of systemic distress, and it gives regulators the power to tailor their intervention.

Part I of this Article argues that systemic crises are inevitable, notwithstanding good faith regulatory efforts to avoid them. The recurrence of financial crises throughout history can be explained in at least four different but nonexclusive ways. The first is the inherent fragility of banks (and their nonbank substitutes), given their liquidity promise to their capital suppliers and the illiquid nature of their assets. The second is the inherent instability of a capitalist financial system, which has a strongly pro-cyclical bias tending toward asset bubbles and increased leverage. The third is the potential that the systemic risks posed by any given financial innovation will, over the course of its evolution, unforeseeably flip from the minor to the major. A fourth explanation cuts across all of these accounts: regulators have a constrained capacity, in light of gaps in human cognition and pro-cyclical political economy pressures, to foresee systemic risks and cabin them. Moreover, even successful control of systemic risk is paradoxically risk-creating, as it causes parties to rely on a benign financial environment. Thus, systemic breaks in the financial sector are inevitable.

Part II argues that the ongoing restructuring of U.S. financial sector regulation must incorporate two elements to confront the risks posed by systemic breaks. The first element is resolution authority over failing nonbank financial institutions similar in breadth to the FDIC's resolution authority over failing banks. Regulators need better resolution options to address failing firms like Bear Stearns, Lehman Brothers, AIG, and Citigroup. While Dodd-Frank provided new resolution authority, it did not address the second element: the ability to confront systemic breaks with standby emergency authority, and specifically, a SEIF for the Treasury's use in appropriate circumstances. The Fund must be available for three purposes: 1) to provide capital support for particular receivership plans; 2) to provide capital and other assistance to financial firms; and 3) to support emergency credit facilities created by the Federal Reserve (and the FDIC) to preserve financial stability. To be effective, the Fund needs to be scaled to the size of the economy and the financial sector. The initial fund should be \$1 trillion, indexed to an appropriate measure of financial sector growth. The Fund should be partly pre-funded by risk-adjusted fees charged to large or systemically important financial firms. To fully mutualize risk within the financial sector, losses beyond the initial fund should be recovered via similarly allocated assessments.

To be clear, recourse to SEIF should be available only in the event of a genuine systemic emergency and not for the nonemergency resolution of failing financial institutions. The goal is to avoid a cascade of financial sector failures that will severely disrupt the real economy, without nationalizing the financial sector. To address legitimacy and accountability concerns, we propose a "triple key" approach to use of this authority, which would require the concurrence of

the Fed (reflected in a Board of Governors' vote), the Secretary of the Treasury (necessary for the Treasury's commitment of funds), and the FDIC (in light of its assigned role in nonbank resolutions), along with notification of and consultation with the appropriate House and Senate committees. We also contemplate that this authority would be subject to monitoring (as provided for in Dodd-Frank) and review through congressional hearings.²

Part III discusses what we take to be the main objection to our proposal: that the availability of such a Fund will increase "moral hazard" and thereby increase the likelihood of systemic distress. Moral hazard comes in two forms. "Micro" moral hazard operates at the level of individuals and firms and is over-emphasized as a cause of financial crises. Individual firms should be allowed to fail—meaning significant losses for employees, shareholders, and unsecured creditors—in a regime with appropriate resolution authority. No single firm should be "too big to fail," and SEIF does not disrupt the constraints on firm-specific moral hazard. Parties are unlikely to calculate that SEIF would be casually used, so firm-specific risks remain real. "Macro" moral hazard is based on a belief that the government will prevent financial sector collapse and may well contribute to overall risk-taking by reducing incentives for diversified credit suppliers to insist on risk moderation. But the non-SEIF alternative—extensive capital supplier losses from the imposition of receiverships across the entire financial sector—carries two serious consequences. First, in anticipation of serial receiverships, capital suppliers will respond adversely earlier in the path between "financial instability" and "financial crisis." At a minimum, their response will raise the cost of capital; it may also produce a liquidity meltdown. Either way, the result makes a financial crisis more likely. Second, capital suppliers will reduce their investment in the financial sector, even during periods of financial stability. This is likely to increase the cost of debt and could reduce economic growth. In other words, we are better off if the relevant parties believe that the government will protect the financial sector rather than nationalize it or abandon it in a crisis. SEIF will provide that assurance. Moreover, the industry funding mechanism that we propose for SEIF will give sophisticated parties incentives to alert regulators about increases in systemic risk and unwise risk-taking by systemically important firms. Since premiums will be risk-adjusted, parties will also have incentives to blow the whistle on firms that are underpaying.

2. We also favor restoration of the FDIC's debt guarantee authority, subject to the same "triple key" approval procedure and follow-on accountability mechanisms we propose for SEIF. *See infra* text accompanying notes 156-164. In the case of both SEIF and FDIC guarantees, the Treasury should receive appropriate compensation from the recipient firms—whether in fees, stock warrants, or both. We also favor reversal of the provision in the Emergency Economic Stabilization Act that strips the Treasury of the authority to use the Exchange Stabilization Fund to guarantee money market fund obligations, provided appropriate fees are collected. *See infra* text accompanying notes 171-172. To strip away such guarantee authority without addressing the systemic instability of money market funds is simply reckless.

Financial emergencies are no less a threat to the nation's well being than other contingencies for which Congress has granted emergency authority. To object "on principle" that emergency financial assistance authority encourages risk-taking or rewards unworthy recipients ignores the consequences for third parties in the real economy. For example, TARP's capital infusions were a critical and cost-effective intervention in resolving the financial crisis.³ TARP's capital infusions provided an important interval in which financial firms could find additional private capital. The government intervention to stave off the failure of large financial firms also stabilized the real economy because it gave nonfinancial firms assurances that investments in production were likely to pay off. We think much of the objection to TARP arose because its funds came directly from taxpayers and appeared to allow the financial sector to internalize profits and socialize risk. An emergency insurance fund, like SEIF, funded by the financial sector (especially if pre-funded) but deployed by regulators, should adequately address this objection.

I. The Inevitability of Systemic Crisis

Since long before the recent financial crisis, a cottage industry of economic historians has documented and attempted to explain the historical recurrence of systemic financial crises.⁴ Three general accounts shake out of this literature, each focusing on different sources of financial instability at

3. The TARP program authorized disbursements of up to \$700 billion for a wide array of programs supporting the financial sector and the parties harmed by the financial crisis. As of October 2010, the Treasury expected total disbursements of approximately \$475 billion and costs of \$50 billion. One-third of these costs are related to support for the auto industry, especially General Motors. U.S. DEP'T. OF THE TREASURY, TROUBLED ASSET RELIEF PROGRAM: TWO YEAR RETROSPECTIVE i, 3, 48 (2010), available at http://www.financialstability.gov/docs/TARP%20Two%20Year%20Retrospective_10%2005%2010_transmittal%20letter.pdf.

A recent report on the effectiveness of financial and fiscal policies at mitigating economic fallout from the financial crisis concludes that financial policies, including TARP, were particularly important. ALAN S. BLINDER & MARK ZANDI, HOW THE GREAT RECESSION WAS BROUGHT TO AN END (2010), available at <http://www.economy.com/mark-zandi/documents/End-of-Great-Recession.pdf>. With an exclusively fiscal response (that is, the stimulus package), the estimated unemployment rate would have peaked at 12.8% (compared to 10% actual unemployment), a difference of 5 million jobs. *Id.* at 8 tbl.5. The authors do not try to disaggregate the effects of TARP and the Fed's various credit programs, though they say that TARP made the Fed's credit support activities more effective. The authors conclude that "Ben Bernanke was probably right when he said that '[w]e came very close in October [2008] to Depression 2.0.'" *Id.* at 7. They observe: "Without [TARP's] equity infusions, the entire system might have come to a grinding halt." *Id.*

4. Notable contributions include: CHARLES P. KINDLEBERGER & ROBERT ALIBER, MANIAS, PANICS AND CRASHES (5th ed. 2005); CARMEN M. REINHART & KENNETH ROGOFF, THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL CRISES (2009); Michael D. Bordo & Antu Panini Murshid, *Are Financial Crises Becoming Increasingly More Contagious? What Is the Historical Evidence on Contagion?*, in INTERNATIONAL FINANCIAL CONTAGION: HOW IT SPREADS AND HOW IT CAN BE STOPPED 367 (Kristin Forbes & Stijn Claessens eds., 2001); Michael D. Bordo et al., *Is the Crisis Problem Growing More Severe?*, 16 ECON. POL'Y 51 (2001); Charles Goodhart & P.J.R. Delargy, *Financial Crises: Plus ça Change, plus c'est la Même Chose*, 1 INT'L FIN. 261 (1998); and Larry Neal & Marc Weidenmier, *Crises in the Global Economy from Tulips to Today: Contagion and Consequences*, in GLOBALIZATION IN HISTORICAL PERSPECTIVE (Michael D. Bordo et al. eds., 2003).

varying levels of institutional particularity: in the banking system, in the financial system as a whole, and in financial innovation. A fourth general account relates to political economy factors that constrain regulators from intervening even as a crisis mounts.

A. *Inherent Fragility of the Banking System*

Banking system fragility derives from three interlocked elements: first, the inherent fragility of banks; second, the potential dissemination of local distress to the banking system as a whole; and third, the expandable boundaries of the banking system.

1. Fragility

Banks (and their nonbank substitutes) are inherently fragile because of the liquidity mismatch between bank liabilities and bank assets.⁵ Banks typically raise a large fraction of their funds from depositors—holders of checking accounts, savings accounts, and certificates of deposit—who expect ready access to their funds. Banks classically use depositors' short-term commitments to perform a "maturity transformation," lending to consumers and businesses for long-term investments.⁶ Maturity transformation is a profitable business when the short-term rates paid to depositors are lower than the long-term rates borrowers are charged. Banks also develop and exploit superiority over public securities markets when assessing initial creditworthiness, monitoring ongoing creditor behavior, and addressing changes in the borrower's ability to repay. Banks customarily maintain only "fractional reserves" to cover depositor

5. This account draws from FRANKLIN ALLEN & DOUGLAS GALE, *UNDERSTANDING FINANCIAL CRISES* (2007); MARKUS BRUNNERMEIER ET AL., *THE FUNDAMENTAL PRINCIPLES OF FINANCIAL REGULATION* (2009); JEAN-CHARLES ROCHET, *WHY ARE THERE SO MANY BANKING CRISES? THE POLITICS AND POLICY OF BANK REGULATION* (2008); and Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POL. ECON. 401 (1983).

6. "Maturity transformation" is the conversion of the short-term liquidity needs of depositors into long-term funding commitments for borrowers. Banks have traditionally performed this function. Depositors put funds into checking accounts, savings accounts, and certificates of deposit, which can be withdrawn from the bank on demand, though perhaps with some notice in the case of savings accounts and the forfeiture of some interest in the case of CDs. In turn, the bank lends these deposited funds to borrowers as part of a long-term lending commitment or to fund specific projects or asset purchases. Regardless, the lending typically takes place on much longer terms. This bank activity thus transforms short-term liabilities into long-term assets—hence "maturity transformation." Under this arrangement, the bank will not necessarily have cash immediately available in the event of unexpected depositor withdrawals. But the bank can borrow money from other financial institutions on the security of its assets, and in the case of systemic liquidity pressure, can borrow from a lender of last resort like the Federal Reserve. The process by which the different time horizons of depositors and borrowers are matched up is at the core of a successful system of financial intermediation. See FINANCIAL SERVICES AUTHORITY, *THE TURNER REVIEW: A REGULATORY RESPONSE TO THE GLOBAL BANKING CRISIS* 21 (2009) (discussing how the growth of "shadow banking" reflected changes in the forms of maturity transformation); Jeffrey N. Gordon, *Comment Letter to the SEC on Money Market Reform* (Columbia Law & Econ., Working Paper No. 352, 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1473275.

withdrawals, relying on the aggregate uncorrelated liquidity needs of their depositors and a reputation for prudential loan-making that preserves depositors' ongoing confidence.⁷

Assume some event disrupts depositor confidence, perhaps a rumor of bad luck on the lending side that seems to pose some risk that depositor claims will not be paid in full.⁸ Suddenly, depositor liquidity demands may become correlated on the dimension of solvency risk. This run exhibits the dynamics of a prisoner's dilemma: it is rational to be at the head of the line to withdraw your money from a bank that might fail. If you think others will run, you want to run first.

Fragility exists because the run is rational, even if the depositors individually believe that the bank's assets are worth more than its liabilities, provided depositors also believe that the contrary view may be widely held. If a depositor believes that a bank's credit losses have given it a negative net worth regardless of its assets being sold at fair market values, the depositor wants to withdraw before the bank's assets are depleted. Alternatively, even if a depositor believes that the bank's net worth is currently positive, the depositor may conclude that the rapid disposal of long-term assets to satisfy running depositors will give the bank a negative net worth. This fire-sale discount is driven by two factors: first, a "congestion effect" from the unexpected sale (more technically, from short-term inelasticity of liquidity supply); and second, asymmetric information: purchasers will offer prices discounted in anticipation of the bank's rational exploitation of its superior knowledge of asset values. The bank will be hard pressed in the short timeframe of a liquidity crisis to credibly demonstrate the assets' high quality.⁹ Thus, a run can occur even when the bank would be solvent in the absence of the run.

7. In addition to deposits, banks also fund themselves with an equity capital layer to provide a cushion against possible credit losses. The ratio of bank assets to equity is a bank's leverage. The combination of such leverage and the practice of banks holding only a small portion of their assets as cash or cash equivalents, "fractional reserves," are important sources of bank fragility. Note that the inherent fragility of banks persists even with full reserves if deposits can be withdrawn on demand but assets are illiquid. Modern banking regulation both permits fractional reserve banking to enhance the availability of credit in the economy and controls its extent through reserve requirements that reduce the risk that the bank will be unable to meet depositor withdrawal demands.

8. Economists differ on whether the crisis initiation can be genuinely random—a "sunspot equilibrium"—or will invariably be triggered by a macroeconomic event. See Charles W. Calomiris & Joseph R. Mason, *Fundamentals, Panics, and Bank Distress During the Depression*, 93 AM. ECON. REV. 1615 (2003). Following a macroeconomic shock, depositors' inability to distinguish a solvent bank from an insolvent one may trigger a run—a problem of asymmetric information. Charles W. Calomiris & Gary Gorton, *The Origins of Banking Panics: Models, Facts, and Bank Regulation*, in FINANCIAL MARKETS AND FINANCIAL CRISES 109 (R. Glenn Hubbard ed., 1992). The 1933 bank holiday and the 2009 stress tests of major financial firms thus provided information that depositors and other credit-suppliers could rely upon to assess firm solvency.

9. Note that this source of fragility will increase with the valuation opacity of the assets that the bank may want to sell.

2. Dissemination of Distress

There are two general mechanisms that spread local financial distress to the broader banking system. The first is “contagion,” meaning that the failure of one bank so significantly increases the solvency risk at other banks through interbank credit relationships that it triggers a cascading series of runs. The second is “similarity” (or “commonality”), meaning that depositors learn from the failure of one bank with a particular asset and liability strategy that similarly situated banks are at risk. These two primary dissemination mechanisms are exacerbated by the opacity of counterparty exposures and financial firm balance sheets. Thus, an important secondary dissemination mechanism is significant uncertainty about the exposure of particular institutions to contagion or similarity risks, heightened by banks’ inability to credibly certify that they are not so exposed. All of these mechanisms operated in the recent financial crisis.

It was commonly stated that Bear Stearns was not “too big to fail,” the general moral hazard objection to government rescues, but “too interconnected to fail.” This is a classic case of contagion risk. Bear Stearns and its peers throughout the financial sector were tied together through a web of counterparty relationships—derivatives, financing contracts, and buy/sell orders—so that a failure by Bear Stearns might cause other financial firms to not meet their counterparty obligations. Bear Stearns’s failure was contagious not because it would *necessarily* result in another firm’s failure but because it could *probabilistically* result in a failure. All it takes to trigger a run is the necessary quantum of uncertainty.¹⁰

Even though Bear Stearns was rescued through a Fed-supported merger with JPMorgan Chase, its failure provided information to market participants about the high solvency risk at firms whose business models depended on holding or underwriting large numbers of mortgage-backed securities (“MBSs”). Similar strategies would, at least theoretically, fail in common. Thus, an important reason the crisis soon engulfed Lehman Brothers, Merrill Lynch, and Citigroup was “similarity” (or “commonality”). Like Bear Stearns, these firms invested heavily in MBSs on the asset side, and they also depended on mortgage origination and underwriting MBSs to generate operating income. When Bear Stearns failed, the writing was on the wall for these firms. Thus, even without interconnections to similarly situated firms, Bear Stearns’s failure could disseminate throughout the financial sector.

10. For investment banks, short-term credit suppliers are the functional equivalent of bank depositors.

3. Expandable Boundaries

Various confidence-sustaining mechanisms have arisen to combat the problem of bank runs, including interbank lending and liquidity support arrangements (lending funds to a solvent bank using its assets as collateral),¹¹ deposit insurance (protecting depositors of insolvent banks),¹² and central bank lender-of-last-resort liquidity support (lending when private parties will not).¹³ Indeed, regulatory oversight of the banking sector in the name of “safety and soundness” has confidence-sustaining objectives. These mechanisms, however, built on the experiences of preceding crises, may not be sufficient to avoid fragility because unforeseen circumstances may arise in even a relatively static banking system. More seriously, the banking system is not static because parties will attempt to avoid the costs of confidence-sustaining mechanisms while free-riding on the banking system stability that these mechanisms

11. Before the creation of the Federal Reserve System, the clearinghouse organized by money-center banks to clear interbank transactions in ordinary times would issue “clearing house certificates”—temporary emergency loans to supply liquidity to a bank facing a run, which in effect provided support through the credit of the banking collective. See ROBERT F. BRUNER & SEAN D. CARR, *THE PANIC OF 1907*, at 107-08, 168-69 (2007); Gary Gorton, *Clearinghouses and the Origin of Central Banking in the U.S.*, 45 J. ECON. HIST. 277 (1985); Gary Gorton & Donald Mullineaux, *The Joint Production of Confidence: Endogenous Regulation and Nineteenth Century Commercial-Bank Clearinghouses*, 19 J. MONEY, CREDIT & BANKING 457 (1987). In their account, Friedman and Schwartz attribute the atrophying of this clearinghouse support capability to the formation of the Federal Reserve System. MILTON FRIEDMAN & ANNA J. SCHWARTZ, *A MONETARY HISTORY OF THE UNITED STATES, 1867-1960* (1963).

12. For example, as provided in the United States by the FDIC.

13. WALTER BAGEHOT, *LOMBARD STREET: A DESCRIPTION OF THE MONEY MARKET* (14th ed., John Murray 1931) (1873) (explaining the role of the central banker as lender of last resort). In practice, the central bank’s capacity to play this role is limited by the sense of panic its intervention may create. Some Fed insiders believe that at least the timing of Bear Stearns’s failure was tied to the Fed’s announcement of a special program to support the liquidity of primary dealers in Treasury securities, which the market apparently misinterpreted as the Fed’s anticipation of a Bear Stearns failure. Markus K. Brunnermeier, *Deciphering the Liquidity and Credit Crunch 2007-2008*, 23 J. ECON. PERSP. 77, 88 (2009). The Fed has been reluctant to invoke its emergency powers in the past for fear of panicking market participants. In the United Kingdom, the Bank of England’s announcement that it was providing liquidity support to Northern Rock seems to have triggered the retail deposit run that played so vividly on television. See Hyun Song Shin, *Reflections on Northern Rock: The Bank Run that Heralded the Global Financial Crisis*, 23 J. ECON. PERSP. 101, 102 (2009). Indeed, U.S. banks have historically been reluctant to access the Fed’s discount window—a much milder signal of financial distress—to avoid sending a signal of financial weakness. Stephen G. Cecchetti, *Crisis and Responses: The Federal Reserve in the Early Stages of the Financial Crisis*, 23 J. ECON. PERSP. 51, 55-56 (2009); Craig Furfine, *The Reluctance To Borrow from the Fed*, 72 ECON. LETTERS 209 (2001).

First-world economies have generally rejected the standard theoretical solution to single or system-wide bank runs: the immediate suspension of convertibility by freezing deposits in place. Under such a regime, depositors would know that no one could withdraw ahead of them and thus would lose the incentive to run in the first instance. See Diamond & Dybvig, *supra* note 5. The maintenance of such a regime is not credible, even if ex ante efficient, because governments are likely to permit “hardship” or “high need” claims for withdrawal. A mechanism that distinguishes among withdrawal claims would be ex post efficient, but this reintroduces depositor incentives to avoid the risk of losing the worthiness competition and finding that earlier withdrawals at par have produced lower recovery rates on later withdrawals. For formalization of this “time-inconsistency problem in banking policy,” see Huberto M. Ennis & Todd Keister, *Bank Runs and Institutions: The Perils of Intervention*, 99 AM. ECON. REV. 1588, 1589 (2009).

provide. Some costs are direct, such as the deposit insurance fee. Other costs are indirect, such as the imposition of capital requirements, regulatory accounting, and conduct constraints. In the effort to avoid these costs, various banks and nonbanks will test the possibilities of regulatory arbitrage by moving some traditional banking activity outside the banking system (as it is defined for regulatory purposes), thereby expanding the boundaries of the banking system. As “shadow banking” grows, the confidence-sustaining measures designed for a narrower banking system will lose their capacity to stabilize the system as a whole. This development reintroduces the fragility that such measures were designed to mitigate. Moreover, discrete acts of boundary expansion can collectively induce fragility because of their unforeseen interactions. The banking system may unknowingly cross over from relatively stable to fragile as it expands.¹⁴

Once again, the recent financial crisis offers good examples of boundary expansion both by banks and nonbanks, as well as the consequences for banking system fragility.

a. Boundary Expansion by Banks: Off-Balance-Sheet Banking

In the early-to-mid-2000s, banks established various conduits to finance the growth of mortgage-based assets.¹⁵ These vehicles were designed to avoid capital charges while free-riding on banking system stability. Although off-balance sheet for regulatory capital purposes, conduits benefited from explicit arrangements, like liquidity puts to the bank and letters of credit, and implicit reputational concerns that would give credit suppliers full recourse to the bank itself.¹⁶ Like the bank, these vehicles were used for maturity transformation: here, the financing of long-term mortgage-related assets with short-term liabilities.¹⁷ The liabilities were not retail deposits locked firmly in place by

14. For a very useful account of the structure and growth of the “shadow banking” system, see Zoltan Paszar et al., *Shadow Banking*, in FEDERAL RESERVE BANK OF NEW YORK STAFF REPORTS 458 (2010), available at <http://ssrn.com/abstract=1640545>. For an argument that the shadow banking system should be brought within the support and regulatory umbrella of the regular banking system, see Morgan Ricks, *Shadow Banking and Financial Regulation* (Columbia Univ. Ctr. for Law and Econ. Studies, Working Paper No. 370, 2010), available at <http://ssrn.com/abstract=1571290>.

15. See GILLIAN TETT, *FOOL'S GOLD* (2009); Daniel M. Covitz, Nellie Liang & Gustavo A. Suarez, *The Evolution of a Financial Crisis: Panic in the Asset-Backed Commercial Paper Market* (Fed. Reserve Bank Fin. and Econ. Discussion Series, Working Paper No. 2009-36, 2009), available at <http://ssrn.com/abstract=1364576>.

16. The Basel I Accords, which reflect harmonized worldwide practices on capital requirements for banks, have a favorable capital charge for contractual credit lines and no charge at all for implicit, reputation-based credit lines. See Brunnermeier, *supra* note 13, at 80-81. For financial accounting purposes, mortgage securitizations supported by a third-party guarantee (as is common) that are held through “Special Purpose Entities” are not consolidated in the bank’s financial statements. FIN. ACCOUNTING STANDARDS BD., STATEMENT OF FINANCIAL ACCOUNTING STANDARD NO. 140 ¶¶ 35, 46, 182 (2000).

17. The conduits also supported the banks’ underwriting of mortgage-based securities by providing a captive buyer of particular tranches of such securities.

deposit insurance but rather short-term wholesale credit market instruments, typically asset-backed commercial paper bought by institutional investors (including money market funds) and corporate treasury departments. These assets are a much more volatile funding source than retail deposits because of the greater exposure of the uninsured creditors to default risk, their greater monitoring capacity, and the high likelihood of correlated creditor judgments. The simple decision not to roll over these instruments would amount to a withdrawal, and if sufficiently pervasive, could lead to a run.¹⁸

Banking system expansion entailed serious consequences for bank fragility. First, as market indices began to reflect investor pessimism about the safety of MBSs, banks had to perform on their explicit and implicit commitments, which meant bringing these assets explicitly onto the balance sheet to avoid runs, defaults, and immediate calamity. This move both exposed banks to losses on these assets and made apparent the weakness of the banks' capital bases, which in turn reduced the confidence of banks' depositors and other credit suppliers.¹⁹ Second, the loss of the source of short-term credit for a substantial portion of the banks' assets made entire banks more fragile. As a result of the expanded boundaries of the banking system, long-term illiquid assets had come to be funded by the jumpiest of short-term creditors.

b. Boundary Expansion by Nonbanks

Money market mutual funds ("MMFs"), which as of pre-crisis 2007 held over \$3 trillion in short-term credit assets (as compared with bank deposits of \$9 billion), are good examples of "nonbank" banks that have grown outside the boundaries of the banking system.²⁰ MMFs arose in the 1970s as an arbitrage of "Regulation Q": the ceiling on interest rates that depository institutions, that is, banks and thrifts, could offer to depositors.²¹ At a time of high short-term

18. Thus, the televised retail depositor run in September 2007 on Northern Rock, the U.K. building society, was preceded and precipitated by a much less visible run by wholesale credit suppliers who were adjusting their own risk profiles and liquidity positions. Yet, Northern Rock had not made itself a particularly risky financial institution; it avoided both off-balance-sheet financing and subprime lending. See Song Shin, *supra* note 13.

19. Thus, the fragility of the conduits stuffed with mortgage-backed securities undermined the stability of other conduits that held other asset-based securities, such as credit cards and other receivables. The asset-backed securitization market, which relies on these conduit mechanisms, shrank from a 2007 peak of nearly \$1.2 trillion to \$460 million in October 2009. See Covitz et al., *supra* note 15, at 39 tbl.2; *Federal Reserve Release: Commercial Paper Rates and Outstanding*, FED. RESERVE BD., <http://www.federalreserve.gov/datadownload/Download.aspx?rel=CP&series=40f558ddc745a653699dbcdf7d6baef9&filetype=sheet&label=include&layout=seriescolumn&from=01/01/2007&to=10/31/2009> (last visited Nov. 15, 2009).

20. *Flow of Funds Accounts of the United States Release Z.1*, FED. RESERVE BD., at 60 tbl.L.5 ll. 7-10, available at <http://www.federalreserve.gov/RELEASES/z1/20090611/z1.pdf>.

21. Interest rate ceilings for depository institutions were defended as stability-enhancing because they mitigated the interest rate risks in the maturity mismatch between short-term deposits and long-term assets. The rise of MMFs was particularly devastating to thrifts, whose assets were concentrated in fixed-rate, long-term mortgage loans. The flow of retail deposits out of thrifts and into MMFs led to the insolvency of many thrifts, various futile and counterproductive efforts to save the

interest rates, MMFs provided retail savers access to money market rates and became a substitute for both savings and checking accounts. Accounts at MMFs, however, are not federally insured. The industry is premised on providing the functional equivalent of insurance: a credible commitment that MMFs will maintain a \$1 per share net asset value and that funds will be immediately accessible. This commitment is supported by SEC regulatory requirements of high credit quality and short-term maturity (fewer than 180 days on average) of MMF holdings.²² The focus on not “breaking the buck,” buttressed by historical success in this regard, is the industry’s protection against runs.²³

The limitations of these SEC-crafted substitutes for deposit insurance became apparent in the recent financial crisis, which vividly demonstrated the fragility of MMFs and the ramifications of that fragility for the banking system as a whole. At the time of the Lehman failure, the Reserve Fund (a major MMF) held \$785 million in Lehman commercial paper, an economically significant amount, but even if the eventual recovery in bankruptcy was \$0, it was still only 1.2% of the Reserve Fund’s \$62 billion in assets. Yet, knowing that the composition of the Reserve Fund’s portfolio meant it was likely to “break the buck,” its depositors immediately began a run—eventually amounting to redemption requests of \$40 billion—that was halted only by a freeze in redemptions.²⁴ The run at the Reserve Fund threatened to disseminate through the \$3 trillion MMF sector via the mechanism of similarity or commonality, not contagion. Many MMFs had substantial holdings of commercial paper issued by financial firms, meaning that, like the Reserve Fund, many MMFs would be threatened by further financial firm insolvencies. The Treasury immediately stepped into the breach with an explicit guarantee of all money market funds on deposit prior to the Lehman bankruptcy filing.²⁵

industry, and finally an enormous federal bailout program, \$400 billion by some estimates, the largest such program until the recent financial crisis.

22. The SEC also provides a form of regulatory forbearance that permits MMFs to use “hold to maturity” rather than “mark to market” valuations to smooth over small deviations from par, 15 U.S.C. § 80a (2006), and grants regulatory relief to permit MMF sponsors to support \$1 net asset values through buying distressed securities in MMF portfolios. The successful (and very modest) SEC reform proposal provides a useful summary of the current rules. See Rules and Regulations, Investment Company Act of 1940, 75 Fed. Reg. 42, 10,109 (March 4, 2010) (codified at 17 C.F.R. § 270 (2010)); Forms Prescribed Under the Investment Company Act of 1940, 75 Fed. Reg. 42, 10,118 (March 4, 2010) (codified at 17 C.F.R. § 274 (2010)).

23. For an account of the longstanding practice of MMF sponsors backstopping MMF portfolios to protect \$1 net asset values, see MOODY’S INVESTOR SERVICE, SPONSOR SUPPORT KEY TO MONEY MARKET FUNDS (2010). During the 2007-2009 period, sponsors intervened on behalf of at least thirty-six large MMFs. *Id.* at 4. Most sponsors run extensive families of mutual funds, and protecting the “family” MMF preserves valuable reputation. The Reserve Fund was part of a narrowly focused fund family.

24. See Aaron Elstein, *Inside the Panic at Reserve Fund*, CRAIN’S N.Y. BUS., May 11, 2009.

25. The Treasury offered a jury-rigged use of the Exchange Stabilization Fund—\$50 billion laid against \$3 trillion in MMF assets. U.S. DEP’T OF THE TREASURY, EXCHANGE STABILIZATION FUND, FINANCIAL REPORT FISCAL YEAR 2008, at 14 (2008). On the other hand, a Reserve Fund-type loss averaged across all MMF assets would amount to only \$36 billion.

Concern for the fragility of MMFs apparently shaped other key regulatory actions in the financial crisis. For example, some industry participants believe that FDIC actions, which fully protected creditors of Wachovia, but not Washington Mutual, were based on a well-founded belief that a Wachovia default would have “broken the buck” of one of the largest MMFs.²⁶ In other words, in order to address the fragility of MMFs as nonbank banks, the FDIC was forced into interventions that created instability because of their seemingly arbitrary treatment of bank creditors.

The fragility of MMFs affected the banking system generally, and indeed, the entire financial sector. Notwithstanding the Treasury’s guarantee (or perhaps because of its insufficiency), MMF depositors withdrew funds from so-called “prime” MMFs and reinvested in “Treasury” MMFs or directly in U.S. Treasury instruments.²⁷ MMFs themselves reallocated funds from the private short-term credit market to Treasury issuances.²⁸ The shift added stress to the banking system in two ways. First, many banks and other financial intermediaries had come to finance both on- and off-balance-sheet assets through the short-term credit markets, where MMFs played a significant role.²⁹ Those markets virtually disappeared.³⁰ Second, banks regularly provided backup credit lines to protect industrial firms from the rollover risk associated with commercial paper. Ordinarily, this risk related to a firm’s particular

26. The plausibility of this concern is supported by detailed disclosure by the Federal Reserve, which showed that nine of the ten largest MMFs, representing two-thirds of all MMF assets, turned to the Asset-Backed Commercial Paper Money-Market Mutual Fund Liquidity Facility. Only Vanguard did not use the emergency credit facility. See Ben Levisohn & Daisy Maxey, *Absent Help, More Funds Might Have Broken Buck*, WALL ST. J. ONLINE, Dec. 1, 2010, <http://online.wsj.com/article/SB10001424052748704594804575648872562084814.html>.

27. See INV. CO. INST., 2009 INVESTMENT COMPANY FACT BOOK 147-51 tbls.38, 41 & 42 (49th ed. 2009) (showing, for 2008, (1) outflows of cash from nongovernment MMFs and inflows into government MMFs; (2) asset composition shift by nongovernment MMFs away from private firm issuances into government issuances; (3) asset composition shift by government MMFs away from repurchase agreements secured by government securities to direct government issuances, especially Treasury bills). *Id.*

28. *Id.* at 150-51 tbls.41 & 42.

29. See Gordon, *supra* note 6; see also Philip Swagel, *The Financial Crisis: An Inside View*, in BROOKINGS PAPERS ON ECON. ACTIVITY 1, 31 (David Romer & Justin Wolfers eds., 2009), available at http://www.brookings.edu/economics/bpea/~media/Files/Programs/ES/BPEA/2009_spring_bpea_papers/2009_spring_bpea_swagel.pdf (explaining that as wholesale credit markets froze, “broker-dealers began cutting their credit lines to clients such as hedge funds and other counterparties . . . [which] threatened to lead to fire sales of assets and a disorderly deleveraging”).

30. To be sure, MMF behavior was only part of the reason for the seizing-up of short-term credit markets in 2008, as MMFs accounted for only 20-25% of these markets. See Gordon, *supra* note 6. Nevertheless, rules designed by the SEC to stabilize the net asset values of MMFs, in particular the shortening of portfolio maturities, artificially increased the supply of short-term credit. In turn, this increased the use of securities markets to transform short-term liabilities into long-term assets. This meant that bank finance and corporate finance were subject to the dysfunction of short-term credit markets at times of financial stress. The propensity of short-term credit markets to seize up is modeled in Viral V. Acharya, Douglas M. Gale & Tanju Yorulmazer, Rollover Risk and Market Freezes (July 1, 2010) (unpublished manuscript), available at <http://ssrn.com/abstract=1325887> (noting that for assets with small default risks funded by rollovers, shift in sentiment from optimistic to pessimistic can lead to sudden market freezes).

business circumstances, but as short-term credit markets shut down, many firms called on their backup lines.³¹ This meant that banks were forced to extend credit unselectively at a time when they needed to build reserves.

Restoring a semblance of bank stability required the Fed's emergency creation of the Commercial Paper Funding Facility to buy commercial paper.³² As the Fed's press release explained: "A large share of outstanding commercial paper is issued or sponsored by financial intermediaries, and their difficulties placing commercial paper have made it more difficult for those intermediaries to play their vital role in meeting the credit needs of businesses and households."³³

4. Summary of Fragility

The argument is not that banks and the banking system are "fragile" in the sense that there is a high probability of bank failure or that the combination of banks and nonbanks is highly probable to fail. Rather, "fragility" means that relatively small shocks can have disruptive effects arising from the time-varying liquidity demands of capital suppliers and the illiquidity needs of capital users. This fragility may grow along with the complexity of financial intermediation and quickly outstrip the already imperfect confidence-sustaining measures previously put in place. One can believe not only that "panics are [not] an inherent feature of banking generally" and that the "details of the institutional setting" matter crucially,³⁴ but also that with complexity and inevitable changes in circumstances and institutions, the tensions comprehended within the banking system will recurrently break out into financial sector crisis.

B. Pro-Cyclical Bias of Capitalist Financial System

A second source of systemic instability in the financial sector may be the structure of the capitalist financial system, which has a strongly pro-cyclical bias tending toward asset bubbles and increased leverage. This thesis has two versions: first, the "strong form" associated with the economist Hyman Minsky and part of a broader Keynesian theory of the business cycle and the government's role; and second, the "semi-strong" offshoot that focuses on the

31. See Victoria Ivashina & David Scharfstein, *Bank Lending During the Financial Crisis of 2008*, at 2-3, 13-16 (July 2009) (unpublished manuscript), available at <http://ssrn.com/abstract=1297337>.

32. For a regulatory history of the facility, see the New York Federal Reserve Bank's compilation, <http://www.newyorkfed.org/markets/cpff.html> (last visited Oct. 12, 2010).

33. Press Release, Bd. of Governors of the Fed. Reserve Sys. (Oct. 7, 2008), <http://www.federalreserve.gov/newsevents/press/monetary/20081007c.htm>.

34. Gary Gorton, *The Panic of 2007*, at 2 (Int'l Ctr. for Fin. at Yale Sch. of Mgmt. Research Paper Series, Working Paper No. 08-24, 2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1255362.

interaction of asset bubbles and credit expansion, particularly innovations in credit supply.

1. Minsky's "Financial Instability Hypothesis"

Minsky's particular take on Keynes adds a "financial theory of investment" in which the uncertainty of payoffs plays a significant role in business investments that require external funds.³⁵ Lenders and borrowers each require a "margin of safety" for their decisions. At the bottom of the business cycle (or sectoral cycle), firms are pessimistic, and external finance is demanded (supplied) only to the extent that debt and principal payments can be covered by current cash flows—that is, making no profit assumptions about the new productive capacities that are externally funded. Minsky calls this stage "hedge finance." If profit targets are reached, borrowers (lenders) become bolder and obtain (provide) external finance to fund new projects on a narrower margin of safety that requires only that interest payments be covered from current cash flows; debt repayment, by contrast, will require new profits. This is "speculative finance." In the final stage, some firms move into "Ponzi finance," meaning that coverage of both debt and principal payments requires profitability from new projects (profits which may include assumptions about declining refinancing costs or the ability to sell appreciated assets).

Critically, individual decisions feed into the overall business cycle: as total investments increase, the multiplier effect on demand produces higher profits. This effect increases the likelihood that firms will meet or exceed profit targets on new projects, consistent with the desired margin of safety, and thus, encourages greater demand (supply) for external finance. Soon, of course, these expectations are built in. Thus, not only do future profits depend on current aggregate investing, but also the individual borrower's (lender's) assessment of whether an investment has met its target in light of the desired margin of safety. If some borrowers (lenders) become pessimistic about realizing profit targets from further investment, and they will cut back. This action reduces aggregate demand and, via the multiplier effect, lowers profits, which in turns constrains investing in the next period as firms begin to miss their profit targets. As the economy (or the sector) contracts, financial distress spreads first to Ponzi-financed firms and then to speculatively financed firms and their credit suppliers. A prolonged expansion that depends heavily on external finance will

35. What follows is based on HYMAN P. MINSKY, *SECURITIZATION* (L. Randall Wray ed., 2008); HYMAN P. MINSKY, *STABILIZING AN UNSTABLE ECONOMY* 171-253 (1986); Hyman P. Minsky, *The Financial Instability Hypothesis* (Levy Econ. Inst. of Bard Coll., Working Paper No. 74, 1992), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=161024; and L. Randall Wray & Eric Tymoigne, *Macroeconomics Meets Hyman P. Minsky: The Financial Theory of Investment* (Levy Econ. Inst. of Bard Coll., Working Paper No. 543, 2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1262296. See also KINDLEBERGER & ALIBER, *supra* note 4, at 16-37.

produce an unraveling with significant, even severe, impacts on the financial system.³⁶

2. Asset Bubbles and Credit Expansion

A modified or semi-strong version of the financial instability thesis focuses particularly on the appeal and dangers of credit-financed asset bubbles, particularly where new forms of credit help fuel the bubble. This account helps distinguish between the dot-com bubble, which left the financial system unscathed when it collapsed, and the housing bubble, which had very different consequences.

a. Bubbles

If markets were “complete,” meaning parties could acquire security positions that would provide certain payoffs in all possible contingencies, and if all information were common knowledge, then bubbles, at least “rational bubbles,” would be highly unlikely.³⁷ These are strong assumptions that obviously do not hold. Many mechanisms have been proposed by which buyers might overpay for securities, including incorrect beliefs about fundamental values based on inadequate information, mistaken beliefs about what other parties believe about fundamental values,³⁸ agency costs in investment management,³⁹ and heuristic biases that interfere with rational decision-making.⁴⁰ In theory, arbitrage activity by informed traders should bring share

36. Some have suggested that the Minsky thesis requires irrational behavior on the part of firms and lenders. See, e.g., Ben S. Bernanke, *Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression*, 73 AM. ECON. REV. 257, 258 (1983). But irrationality is not required once we assume that parties generally have insufficient information to distinguish between profits on new investments that were correctly forecasted based on the prior state of the world and profits from unforecasted increases in the investment of others that raised overall demand. A different critique of the Minsky thesis is that its deterministic character does not account for the differences across countries and over time in the appearance of pathological asset bubbles. Minsky may describe a tendency or vulnerability, but other institutional (and noninstitutional) elements are critical prerequisites of severe financial distress.

37. This discussion draws from MARKUS K. BRUNNERMEIER ET AL., *THE FUNDAMENTAL PRINCIPLES OF FINANCIAL REGULATION* (2009); ANDREI SHLEIFER, *INEFFICIENT MARKETS* (2000); Franklin Allen & Douglas Gale, *Bubbles and Crises*, 110 ECON. J. 236 (2000); and Markus K. Brunnermeier, *Bubbles*, in 1 *THE NEW PALGRAVE DICTIONARY OF ECONOMICS* 578 (2d ed. 2008).

38. For example, all investors may share the same beliefs about the fundamental value of a security but not knowledge of that shared belief. Many parties may believe that other parties will mistakenly value the security, and so bid up the security price in expectation of a future sale to misinformed investors.

39. For example, investment managers may want to demonstrate their investment prowess to clients by investing; investment managers may engage in herd behavior because of relative performance evaluation against peers and the market itself; and investment managers have limited liability and can otherwise shift risk to clients in the pursuit of upside potential.

40. For example, over-optimism bias, in which parties on a lucky trend overestimate their ability to outperform the market, or “loss aversion,” in which parties are unwilling to sell-out loss positions despite information that would suggest such a course.

prices back in line and prevent a bubble from getting much headway. But arbitrage may be under supplied because of institutional or legal constraints on short sales⁴¹ or because arbitrage is costly. Arbitrageurs face “fundamental risk,” the possibility that a change in fundamentals will reverse the previous overpricing, saddling them with losses; arbitrageurs also face “noise trader risk.”⁴² Uninformed traders may continue to buy, or worse, buy in greater volume, which increases mispricing. There is no set time for prices to converge on fundamental value. Meanwhile, the arbitrageur’s potential losses increase. In both instances, absorbing these losses is particularly costly for an undiversified investor or for the hedge fund manager who faces potential withdrawals from investors who can directly observe only ex post results, not managerial skill. Indeed, if arbitrage is insufficient to constrain a bubble, arbitrageurs—who are trading to make money, not to provide the public good of more accurate asset prices—may flip to become “momentum traders” who contribute to the bubble.⁴³

b. Bubbles and Credit Expansion

Asset bubbles may come and go without leaving the financial sector and the economy in ruins. What may produce a financial sector crisis is the interaction between a bubble and credit expansion that occurs either through deregulation or through financial innovation. Assuming that the short-term supply of a particular asset is fixed, a credit expansion increases demand for the asset (because of lower interest costs from the increase in the effective money supply), and thus, its price. If the lender relies on the asset as collateral, price appreciation will increase the amount that can be lent (assuming a fixed capital requirement). This further expansion of credit may in turn raise asset prices and promote activity to increase the asset’s supply. If the “boom” continues for a while, the bank may adjust downward its risk assessment of lending to acquire the asset. This action also lowers interest rates, and thus, supports even higher asset prices. Eventually, parties discover that assets are overvalued relative to the nonfinancial sector cash flows on which their value depends. For example, commercial landlords discover that businesses cannot pay escalating rents. Asset values decline; parties default on loans; collateral is insufficient to cover the losses; and collateral sales further depress asset prices—a spiral that may result in the impairment of bank capital. The damaged banks begin to ration credit, limiting it to their most credit-worthy borrowers. As the debt-fueled

41. See Ronald J. Gilson & Reinier Kraakman, *The Mechanisms of Market Efficiency Twenty Years Later: The Hindsight Bias*, 28 J. CORP. L. 715, 726-29 (2003).

42. *Id.* at 725 (regarding fundamental risk); *id.* at 726 (regarding noise trader risk). It might be possible to hedge against fundamental industry risk—for example, going long on Intel while shorting AMD—but that will not protect the arbitrageur against an unexpected turnaround if AMD releases a superior processor at a lower price.

43. *Id.* at 730.

bubble collapses, the industry devoted to meeting the demand for assets also collapses, a further macroeconomic shock. The process by which stronger bank balance sheets helped promote the bubble now reverses itself; the feedback loop becomes negative.

In theory, regulation should be programmed to force counter-cyclical behavior. In particular, it should constrain bank lending in good times—through a compulsory increase in reserves, for example. The impulse will be strong to evade a regime compelling banks to stockpile funds when the opportunity cost seems highest, even if the regime is designed to reduce the risk of some great systemic harm.

A different regulatory move is to limit credit creation and extension and to resist the siren call of deregulation. The 1920s stock market bubble was fueled by the innovation of margin lending for stock purchases. High margin requirements now enforced by the Fed limit that form of credit creation. The 2000s housing bubble was fueled in part by asset securitization, which, by converting low-quality home mortgages into ostensibly high-quality (AAA-rated) securities, expanded the credit available for home finance. Tight regulation of banks and the financial system more generally may hold down the incidence of financial crises, as illustrated by the almost complete absence of banking crises in the 1945-1971 period compared to prior and subsequent periods.⁴⁴ In 1971, the United States abandoned the gold standard, a change that heralded a period of financial liberalization that is associated with many more crises.

Notwithstanding government efforts to constrain and even control the growth of credit, private efforts to expand credit drive many financial innovations. Charles Kindleberger and Ronald Aliber document many historical instances of this phenomenon, including a telling case of how nineteenth-century British merchants evaded the government's credit creation constraints through the use of successively endorsed bills of exchange as a currency substitute. Successive holders relied on the credit of the endorsers as well as the bill's issuer, sometimes passing the notes at a discount to face value.⁴⁵ The chain of signatories opened up the endorsers to counterparty risk from merchants who levered up using bills that were only sporadically redeemed—until holders lost confidence and began to redeem suddenly. Moving one-hundred years forward, part of what powered the recent subprime mortgage boom was the banks' desire to avoid capital requirements that limited their leverage.⁴⁶ As described previously but now understood as an effort to evade leverage constraints, banks established off-balance-sheet conduits or

44. FRANCIS ALLEN & DOUGLAS GALE, *supra* note 5, at 2, 11. Among the regulatory constraints were entry barriers and price controls that protected banks from competition. See JEAN-CHARLES ROCHET, *supra* note 5, at 30.

45. KINDLEBERGER & ALIBER, *supra* note 4, at 64-83.

46. This discussion follows TETT, *supra* note 15, at 65-66.

special investment vehicles (“SIVs”) that held large quantities of the “super senior” tranches of mortgage-backed collateralized debt obligations (“CDOs”). The banks financed these long-term debt holdings through short-term wholesale credit markets and profited from the difference between long-term and short-term rates, a so-called “carry trade.” As noted above, these structures did not require additional capital, and thus, were a tempting way to increase the supply of credit for real estate finance.

Credit’s role in fueling asset bubbles and the persistent effort by banks and other financial intermediaries to create more credit (evading the regulatory regime if necessary) help to explain why financial sector crises are recurrent. Otherwise put, credit will predictably expand in unpredictable ways, tending to produce asset bubbles, the collapse of which can produce severe financial sector distress.

C. *The Uncertain Effects of Financial Innovation*

A third source of systemic instability in the financial sector is the role of financial innovation, which can have unpredictable but powerful effects on financial firms.

1. The Systemic Conundrum

Financial innovation presents a conundrum. Its inception may be entirely benign, a genuine advance that lowers the cost of capital by, for example, reducing information requirements, lowering the costs of diversification, or enabling superior risk sharing, which are all straightforward efficiencies.⁴⁷ But then, as the innovation disseminates, its properties and its consequences change. Think of an S-curve of innovation effects. At a critical point of dissemination (which may not map onto the S-curve of dissemination itself), the innovation’s principal effects switch from the local to the systemic. Effects may become systemic when dissemination of the innovation transforms practices on which the innovation relied,⁴⁸ significantly changes the patterns of risk distribution,⁴⁹ substantially substitutes for alternative methods of achieving

47. Some might dispute a pro-efficiency account of financial innovation. Paul Volcker, for example, is famously noted as saying that the last genuine financial innovation in the past few decades has been the ATM. Alan Murray, *Paul Volcker: Think More Boldly*, WALL ST. J., Dec. 14, 2009, at R7. Nonefficiency drivers of financial innovation may include: regulatory arbitrage around capital or activity limits; repackaging of standard devices into custom forms to mask higher prices; creation of financial products that create exploitable information asymmetries; and signaling firm quality where financial ideas have little intellectual property protection. We take an agnostic view on whether financial innovation is generally efficient, all things considered. It seems to be a recurrent feature in capital markets.

48. For example, the way in which the increasingly lax underwriting standards in mortgage origination undermined the reliability of the loans that entered into mortgage backed securities.

49. For example, the way in which credit default swaps ended up concentrating risk in AIG.

a similar result,⁵⁰ or attracts new investment flows that affect asset prices and underlying risk assumptions.⁵¹ When an innovation's effects are principally local, they are relatively easy to assess, and if on balance the innovation does not pan out, the consequences are not harmful. If the consequences of innovation, however, are locally good but systemically bad, the net consequences can be quite costly.⁵² The systemic effects of an innovation are often hard to appreciate *ex ante* and even harder to calculate. Systemic risk may be described by a curve that starts off concave and then, at some inflection point in the innovation's adoption, becomes sharply convex.⁵³

Indeed, in the early stages, the systemic risk curve may be downward-sloping; innovation may reduce systemic risk—that was an argument for securitization. It is only at the inflection point that systemic risk shifts direction, but it may do so sharply. Innovation's risk is that, even if the functional form can be predicted, the inflection point cannot be. Unless regulators severely clamp down on innovation (which is difficult in many respects), particular financial innovations will disseminate rapidly with unexpected systemic consequences that may eventually produce a financial sector crisis.⁵⁴

One response might be for regulators to clamp down on innovations that are obviously an evasion of a regulatory restraint, such as pure regulatory arbitrage. The problem is that the initial innovation may not have that purpose or immediate effect, but in application (or sub-innovation), it may take on that character in ways that are hard to monitor.

Securitization is a good example. A bank may have a comparative advantage in identifying good borrowers but not in risk bearing. Because of regulatory or prudential limits, some parties can bear only AAA risks while others can be more aggressive. Securitization, which separates credit allocation and risk-bearing, worked successfully for many years in the finance of car

50. For example, the way in which the commercial paper market, fueled in part by money market funds, became a substitute for long-term finance.

51. For example, the way in which mortgage-backed securitization contributed to the escalation of real estate prices and the increase in systemic risk associated with such assets. Mortgage-backed securities provided a low cost way to diversify against the idiosyncratic risk of real estate assets, and when tranching, augmented the supply of purportedly AAA assets. The demand for such assets—for example by banks seeking to satisfy regulatory capital requirements at lowest cost or by other investors seeking highly safe assets yielding more than sovereign debt—drew a flood of funds into real estate markets that increased the price of real estate assets and thus changed the systemic risk associated with real estate investment.

52. The systemic effects can arise from an overly optimistic assessment of the innovation driven by initial positive returns under benign economic conditions before competition has competed away rents. This can lead to a quick infusion of resources into the innovation that changes background assumptions. See Emine Boz & Enrique Mendoza, *Financial Innovation, the Discovery of Risk, and the U.S. Credit Crisis* (Int'l Monetary Fund, Working Paper No. 10/164, 2010), available at <http://ssrn.com/abstract=1641015>.

53. In this regard, systemic risk is just the dark side of “network externalities” that are often much praised.

54. One way to understand the regulators' job in a dynamic environment is to identify the factors that point to an inflection point.

loans, credit card receivables, and conventional mortgages long before subprime mortgages were thrown into the mix. Indeed, insofar as securitization took long-lived assets like home mortgages off banks' balance sheets, it was heralded as reducing fragility. Even after the securitization of subprimes, further innovation was required to fuel the crisis: the creation of CDOs built on packages of subprime MBSs⁵⁵ and the banks' creation of conduits and SIVs to hold such securities in evasion of capital requirements. Where exactly on this curve should the regulators have intervened?

The ultimate irony, of course, is that even innovations that appear to reduce systemic risk may be laying the groundwork for an eventual crisis.⁵⁶ Take a risk-spreading innovation that enhances stability in the short or medium run. Financial innovations run on models that critically depend on historical data for their calibration. A period of stability reduces measures of volatility, and that low-volatility experience gets factored into pricing models and estimates of liquidity. As the yield-differentials between risky and risk-free assets narrow, risk-taking becomes more aggressive, producing a keg of gunpowder waiting for a spark.

The challenge of financial innovation is that its systemic effects may simply be unforeseeable until they materialize to create or contribute to a financial sector crisis.⁵⁷ For example, indices based on super-senior tranches of MBSs reflected only very small default risk levels throughout the first half of July 2007, despite the fact that such securities were already a ticking time bomb

55. Another example of this phenomenon is CDOs created with tranches of other CDOs, so-called "CDO-squareds" and "synthetic CDOs," which often were the long side of hedging positions or negative directional bets. See GREGORY ZUCKERMAN, *THE GREATEST TRADE EVER* 176 (2009).

56. See, e.g., INT'L MONETARY FUND, *GLOBAL FINANCIAL STABILITY REPORT: GLOBAL FINANCIAL SYSTEM RESILIENCE IN THE FACE OF CYCLICAL CHALLENGES* 51 (2006) ("There is growing recognition that the dispersion of credit risk by banks to a broader and more diverse group of investors, rather than warehousing such risk on their balance sheets, has helped to make the banking and overall financial system more resilient. . . . These new participants . . . help to mitigate and absorb shocks to the financial system. . . . The improved resilience may be seen in fewer bank failures and more consistent credit provision."); COUNTERPARTY RISK MGMT. POLICY GP. II, *TOWARD GREATER FINANCIAL STABILITY: A PRIVATE SECTOR PERSPECTIVE* 1 (2005), available at <http://www.crmppolicygroup.org/crmppg2/docs/CRMPG-II.pdf> ("[T]he Policy Group shared a broad consensus that the already low statistical probabilities of the occurrence of truly systemic financial shocks had further declined over time. The belief that the risk of systemic financial shocks had fallen was based on a number of considerations including: (1) the strength of the key financial institutions at the core of the financial system; (2) improved risk management techniques; (3) improved official supervision; (4) more effective disclosure and greater transparency; (5) strengthened financial infrastructure; and (6) more effective techniques to hedge and widely distribute financial risks. Indeed, members took some collective comfort from the fact that in the post LTCM/Russia period, financial markets had absorbed with remarkable resiliency the effects of multiple disturbances, including but not limited to: (1) the bursting of the technology bubble of the late 1990s; (2) a mild recession; (3) September 11; (4) two wars; (5) an oil shock; and (6) a wave of corporate scandals (including a handful of major bankruptcies).").

57. For a perspective from complexity theory, see DIDIER SORNETTE, *WHY STOCK MARKETS CRASH: CRITICAL EVENTS IN COMPLEX FINANCIAL SYSTEMS* (2002). Sornette nevertheless believes that the timing of crashes is somewhat predictable from statistical anomalies in the time series of relevant data, even if the particular features that lead to the crash are not. Didier Sornette, *Dragon-Kings, Black Swans and the Prediction of Crises*, 2 INT'L J. TERRASPACE SCI. & ENGINEERING 1 (2009).

on financial firms' balance sheets.⁵⁸ Although the recent financial crisis offers many examples, two effects of one important innovation—credit default swaps—illustrate the unpredictable but sometimes devastating consequences of financial innovation.

2. The Effects of Credit Default Swaps on Investment Bank Fragility

One example of the disruptive effects of credit default swaps (“CDSs”) is the way they made obsolete the free-standing investment bank on the Bear Stearns/Lehman/Goldman Sachs model by significantly increasing its financial fragility. How so? Investment banks start with the fragility of banks (and then some) because investment banks fund many of their activities through short-term debt obligations that are on a much quicker trigger than retail deposits or even commercial paper. A significant portion of an investment bank's funding needs are covered by very short-term loans, sometimes overnight loans, which are typically collateralized through a pledge of high-quality securities whose notional value is greater than the loan. An investment bank also covers its funding needs through the “rehypothecation” of customer assets, that is, the pledging of securities and cash in a customer's margin accounts as collateral for the bank's own loans. If the investment bank begins to look undercapitalized, lenders can break off their funding arrangements overnight. Even if a loan is fully collateralized, who wants to be involved in a potentially messy insolvency and liquidation when there are more credit-worthy borrowers? Customers can immediately close accounts to avoid similar entanglements. Because the investment bank does not have recourse to a lender of last resort, a run can be devastating. Of course, this model of investment banking has a long history. The reliance on short-term funding has been explained as a commitment device to maintain sufficient capital to assure “confidence,” and as a ruthless survival mechanism that eliminates nonexpert bankers.⁵⁹

Credit default swaps add a fatal fragility because they provide information that was not previously available: first, about comparative investment bank default risk; and second, about collateral default risk. Large investment banks will have significant issues of debt securities outstanding. With the advent of CDSs, market participants can now buy (or sell) credit protection on the bank's debt to protect themselves against default risk on portfolio securities, to protect themselves against the loss of other valuable relationships with the bank, or to speculate on default risk. The cost of this protection is readily observable even though CDSs are (currently) traded over the counter (“OTC”) rather than on exchanges. Thus, as financial conditions become choppy, CDS spreads reflect

58. See, e.g., Brunnermeier, *supra* note 13, at 83 fig.1; Gorton, *supra* note 34, at 7-23.

59. Charles 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).

the market consensus about the default risks of any particular investment bank, and just as importantly, the comparative risk of each. Instead of hunches, body language, local gossip, and rumors, a lender or customer can look to a quantitative measure of absolute and comparative risk, a far superior monitoring mechanism. The market measure may even be inaccurate, but it provides a node around which sophisticated opinion can crystallize. It provides common knowledge that can coordinate the behavior of disparate individuals, a classic condition for a run.

Similarly, CDS prices (including CDS indices) inform the valuation of securities that the investment bank might offer to collateralize a loan.⁶⁰ As spreads widen, suggesting greater default risk for a particular kind of collateral (high-grade tranches of MBSs, most recently), lenders may insist on greater “haircuts” for collateral purposes (for example, a bond may be valued at 90% of face value, rather than 95%), or they may refuse to accept the collateral at all.⁶¹ This practice reduces the supply of collateral and makes it harder for the investment bank to meet its short-term funding needs. The runs on Bear Stearns and Lehman were driven both by absolute and comparative default factors, as well as increasing haircuts on collateral.⁶² The remaining investment banks converted to bank holding companies, which are sheltered by access to the Fed discount window and other liquidity facilities that the Fed can readily provide.

The point is that the inventors had no idea that CDSs would have such important consequences for a long-standing form of economic organization. Nothing about the risk distribution features of CDSs themselves was critical; rather, it was the new information provided by market making in CDSs that sounded the death knell for investment banks. Certainly, this was a surprise to the banks, which were active CDS dealers whose market-making activity contributed significantly to the dissemination of this innovation.

60. For example, a new index, the ABX index, was created in January 2006 to measure the payment probability of MBSs by vintage (month of issuance) and tranche (credit rating/relative seniority), as reflected in CDS costs for selected issues. For the first time, market participants had a clear view of the expectations of other participants of the likely track of mortgage delinquencies and housing prices, that is, the value of the mortgages that were folded into the securities, and thus, the value of the securities themselves. See Gorton, *supra* note 34, at 7-23; Gary Gorton, *Information, Liquidity, and the (Ongoing) Panic of 2007*, 99(2) AM. ECON. REV. 567 (2009). In July 2007, the ABX index for the AAA tranche of recently issued MBSs began to fall from par (100%)—quite notable for newly issued, highly rated securities—and eventually fell below 40% at the end of 2008. See Brunnermeier, *supra* note 13, at 83 fig.1.

61. See, e.g., Franklin Allen & Elena Carletti, *The Role of Liquidity in Financial Crises, in LIQUIDITY AND CRISES* (forthcoming 2010) (manuscript at 33 tbl.1), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1268367 (showing that the haircut on AAA-rated, asset-backed CDOs increased from 2-4% in January-May 2007 to 15% in April 2008).

62. See, e.g., Patrick Bolton, Bruce Kogut & Tano Santos, Presentation at the Preventing the Next Financial Crisis Conference at Columbia Business School 9 (Dec. 11, 2008) (slideshow on file with authors) (showing higher CDS spreads for Lehman); Alistair Barr, *Lehman CDS Spreads Wider than Bear's Before Bailout: CDR*, MARKETWATCH, Sept. 11, 2008, <http://www.marketwatch.com/story/lehman-cds-spreads-wider-than-bears-before-bailout-cdr>.

3. The Uncertain Incidence of CDS Losses

Credit default swaps had another unintended effect. In the face of systemic financial distress, the uncertainty engendered by the CDS market about the solvency of the various firms that traded them played a major role in the seizing up of interbank lending markets that marked the most critical moment of the crisis.⁶³ The fallout from the Lehman collapse in September 2008 illustrates the point. Lehman filed for bankruptcy with outstanding liabilities of approximately \$650 billion. There were approximately \$450 billion (in notional amount) of CDSs written on Lehman's debt. "Notional amount" is not by any stretch the same as "net amount," since CDS dealers commonly hedge almost all of their counterparty exposure on a particular position through a trade with the same or a different party. At its peak, the total CDS market was approximately \$57 trillion in notional amount, which reportedly netted out to a gross market value of only \$2 trillion.⁶⁴ Nevertheless, \$450 billion is a substantial sum, and many critical things were unknown: the valuation gap between Lehman's assets and its liabilities; the extent of offsetting CDS trades; firm-specific exposures; firm-specific capacity to perform on CDS obligations to counterparties; and the domino effect of CDS defaults by one or more firms on the solvency of other firms.⁶⁵

Indeed, a default on CDS obligations by AIG, which absorbed risk rather than hedging it, was regarded as such a serious threat to the financial system that the Fed provided \$85 billion initially (and \$120 billion eventually) to rescue AIG after the Lehman collapse. When Lehman's CDSs were settled two weeks later, per the terms in the standard-form CDS contract, the parties ran an auction to determine the loss incurred, and the Lehman bonds were valued at 8 cents on the dollar—almost a total loss.⁶⁶ Yet remarkably, the total that subsequently changed hands in settlement of \$414 billion in notional losses was \$6 billion, dispersed among several dealers—a sum that posed no threat to the solvency of any bank, much less the world financial system. Adding the \$20 billion in previously posted collateral (a known loss) to the \$6 billion, this

63. For example, the "TED-spread," the interest rate differential between U.S. Treasury securities and the LIBOR index of the rate banks charge on short-term interbank loans, shot up from roughly 100 basis points in early September 2008 to 450 basis points following Lehman's bankruptcy filing. Brunnermeier, *supra* note 13, at 86 fig.3. As Paul Krugman put it, "indicators of financial distress have soared to the equivalent of a 107-degree fever, and large parts of the financial system have simply shut down." Paul Krugman, *Edge of the Abyss*, N.Y. TIMES, Oct. 2, 2008, at A25.

64. See INT'L MONETARY FUND, GLOBAL FINANCIAL STABILITY REPORT: RESPONDING TO THE FINANCIAL CRISIS AND MEASURING SYSTEMIC RISK 179 (2009).

65. See Mary Williams Walsh, *Insurance on Lehman Debt Is the Industry's Next Test*, N.Y. TIMES, Oct. 11, 2008, at B1. For a useful discussion of the debate about CDS riskiness, see Rene Stulz, *Credit Default Swaps and the Credit Crisis* (Nat'l Bureau of Econ. Research, Working Paper No. w15384, 2009), available at <http://ssrn.com/abstract=1478802>.

66. See Serena Ng, Emily Barrett & Jacob Bunge, *Lehman Swap Payments Look Bigger than Expected*, WALL ST. J., Oct. 11, 2008, at B2.

meant that there had not been much risk-shifting on Lehman's debt, but there had been a debilitating level of uncertainty.

The arguments for shifting CDS market-making to a clearinghouse (or other central counterparty) rather than the present system of bilateral OTC arrangements are: first, that it would provide particularized information on risk-shifting; and second, that it would reduce counterparty risk by mutualizing any failures on CDS obligations among clearinghouse members.⁶⁷ Yet, at the time credit default swaps were invented, they were a classic OTC product, a "start-up" in the financial innovation field and hardly a risk to anyone. As to the foreseeable importance of a clearinghouse: other OTC swap markets—equity swaps and interest rate swaps—all functioned throughout the crisis. Moreover, even expert risk evaluators like the Group of 30, which recommended improvement in CDS clearing and settlement procedures in 2003 and produced a final monitoring report that called for further improvements in 2006,⁶⁸ did not focus on the systemic risks of the OTC structure.⁶⁹

The unpredictable ways that financial innovation may critically contribute to financial sector crises do not counsel regulatory despair. Mitigation of foreseeable systemic risks and systemic risks that later materialize is, of course, always the regulators' job. But the likelihood, if not inevitability, of innovation's surprises will predictably produce financial sector distress.

D. The Political Economy of Regulation

A fourth source of systemic risk is the regulators' frequent failure to address new risks as they emerge during a period of financial sector expansion, whether because of failures of cognition or, more likely, interest group pressure. The systemic effect lies in the regulators' chronic inability to identify and then rein in systemic risks that arise from private activity. In the run-up to the recent financial crisis, for example, it is hard to believe that regulators were unaware of declining standards in the underwriting of subprime mortgages, the increased exposure of firms to subprime securitization, and the systemic risks

67. Of course, the concern is that if risk-taking by one or more members is imperfectly monitored, mutualizing risk may become a vector of contagion.

68. GROUP OF 30, *GLOBAL CLEARING AND SETTLEMENT: A PLAN OF ACTION* (2003).

69. Nor did the Group of 30 focus on what, in hindsight, was a major flaw in the standard form CDS agreement produced by the International Swap Dealers Association ("ISDA"): not requiring collateral posting by AAA protection writers against adverse market moves on a CDS. This oversight became an invitation to AIG Financial Products to write protection for the fee income without considering risks of market volatility. When AIG lost its AAA rating in 2005, it stopped writing most CDS protection, but the firm was by then massively exposed to mortgage market volatility. Robert O'Harrow Jr. & Brady Dennis, *Downgrades and Downfall*, WASH. POST, Dec. 31, 2008, at A1. More generally, collateral posting on a CDS was tied in part to the credit rating of the counterparty rather than only to the changing value of the instrument, reasonable perhaps in light of thin markets in many specific CDSs, but a source of systemic risk.

of the rapidly escalating CDS marketplace.⁷⁰ Yet, instances of regulatory intervention were minor or nonexistent before the recent financial crisis. Much to the relief of market participants, for example, the Fed's intervention in the CDS market was limited to mechanical settlement issues.⁷¹

Regulatory inaction is tied up with the cycle of expansion itself.⁷² As the strategies of financial firms generate increasing profits, the industry proponents of potentially risky practices gain power vis-à-vis the regulators. First, the growing profits seem to attest to the skill and sagacity of industry participants and increase normative deference to their views. Second, the added profits generate additional resources for lobbying, campaign contributions, and media campaigns that enhance the industry's ability not only to block new legislation, but also to enlist legislative and executive pressure against regulatory intervention under existing authorities. Third, the enhanced profitability of the financial sector typically produces economic spillovers that add to overall economic growth, which is highly desired by political actors. Prosperity becomes hostage to financial sector expansion, and industry objection to regulatory action carries weight even with those who do not directly receive industry largesse.⁷³

An additional political economy factor that inhibits regulatory intervention is the ability of industry participants to credibly threaten exit to a more lax regulatory regime. This threat becomes more credible as profits increase because more is at stake for the industry should "intrusive" regulation diminish profitability. Ironically, if profits are positively linked to the riskiness of the underlying activity, the credibility of the industry's exit threat grows along with the case for intervention. Thus, for example, it is not a coincidence

70. See, e.g., Timothy F. Geithner, President and Chief Exec. Officer of the Fed. Reserve Bank of N.Y., Risk Management Challenges in the U.S. Financial System, Remarks at the Global Association of Risk Professionals ("GARP") 7th Annual Risk Management Convention & Exhibition 2 (Feb. 28, 2006) (transcript available at <http://www.bis.org/review/r060303a.pdf>) (observing bank exposure to securitization in both balance sheet and revenue sense and noting increased but uncertain risks from growth of CDS market from the "scale of losses in the event of default in the underlying credits or the consequences of a prolonged disruption to market liquidity").

71. See LAWRENCE G. McDONALD & PATRICK ROBINSON, A COLOSSAL FAILURE OF COMMON SENSE (2009); see also COUNTERPARTY RISK MGMT. POLICY GP. II, *supra* note 56, at iv (calling for "urgent" industry-wide efforts to resolve "serious 'back office'" and trade assignment problems). The report's lead-up to a modest reform agenda gives a chillingly prescient account of how a systemic crisis would unfold, starting with a decline in asset prices "sufficiently steep to raise questions about the creditworthiness of major counterparties or institutions," leading to "risk mitigation efforts [that] add . . . pressures on asset prices" and "the evaporation of asset liquidity." *Id.* at 6-11.

72. For an account that focuses on the related problem of securities market bubbles, see Erik F. Gerding, *The Next Epidemic: Bubbles and the Growth and Decay of Securities Regulation*, 38 CONN. L. REV. 393 (2006).

73. In discussing the regulators' difficulties in introducing counter-cyclicality, Professor Goodhart observes: "[R]egulators/supervisors will be roundly condemned for tightening regulatory conditions in asset prime booms by the combined forces of lenders, borrowers and politicians, the latter tending to regard cyclical bubbles as beneficent trend improvements due to their own improved policies." Charles A.E. Goodhart, *Central Banks' Function To Maintain Financial Stability: An Uncompleted Task*, VOX (June 24, 2008), <http://www.voxeu.org/index.php?q=node/1263>.

that officially sanctioned reports worrying about New York City's decline as financial center vis-à-vis London because of allegedly intrusive U.S. regulation appeared at the height of the financial sector boom.⁷⁴

The political economy constraint operates on two different regulatory levels. First, there is the constraint on efforts to regulate primary activity, whether by administrative action under existing authority or new legislation. But second, and perhaps more insidious, there is the constraint on the regulators' capacity to collect information on new practices or important new actors. Such information is necessary to assess potential increases in systemic risk and to prepare contingency plans in light of the changing level and incidence of risk. For example, in the recent crisis, no one—not private parties nor regulators—knew the current risk distribution from the trillions of dollars in CDSs. Based on central bank reports, the Bank for International Settlements reduced worldwide notional amounts to gross market values,⁷⁵ but it was not common industry (much less regulatory) knowledge that, for example, AIG was warehousing risk.⁷⁶ Similarly, as shown by the systemic consequences of the Lehman failure, regulators had a grievously incomplete awareness of the

74. Jenny Anderson, *U.S. Financial Sector Is Losing Its Edge, Report Says*, N.Y. TIMES, Jan. 22, 2007, at C3 (discussing a report released by Mayor Bloomberg and Senator Schumer); COMM. ON CAPITAL MARKETS REGULATION, INTERIM REPORT ix (2006), available at http://capmktsreg.org/pdfs/11.30Committee_Interim_ReportREV2.pdf (“But the evidence presented here suggests that the United States is losing its leading competitive position as compared to stock markets and financial centers abroad.”); Rene Stulz, *Comment*, in BROOKINGS PAPERS ON ECON. ACTIVITY, *supra* note 29, at 64, 67-68 (noting that instead of responding to “wake up” calls from unprecedented money market activity in 2007, regulators persisted in deregulatory focus).

75. See *Statistical Annex*, BIS Q. REV., Sept. 2010, at A121 tbl.19, available at http://www.bis.org/publ/qtrpdf/r_qa1009.pdf. This table is based on quarterly or semi-annual reports from central banks throughout the world.

76. See COUNTERPARTY RISK MGMT. POLICY GP. II, *supra* note 56, at A-17; Paul Van den Bergh, *Data Issues in the Context of the Recent Financial Turmoil*, in IFC BULL. NO. 31: MEASURING FINANCIAL INNOVATION AND ITS IMPACT 515 (2009), available at <http://www.bis.org/ifc/publ/ifcb31.pdf> (discussing limits on data on CDS). The Fed collects data on banks and other large derivative dealers, but not “end-users.” See Sally Davies, *Cross-Border Derivatives Exposure: How Global Are Derivatives Markets?*, in IFC BULL. NO. 31, *supra* note 76, at 159. A recent compilation of the top twenty CDS counterparties did not include AIG in 2006 and put them at the bottom in 2005, obviously not reflecting its unhedged risk. See David Mengle, *Credit Derivatives: An Overview*, FED. RESERVE BANK ATLANTA ECON. REV., no. 4, 2007, at 10 tbl.4 (reporting Fitch Credit survey data).

In response to these criticisms, the major industry clearing institution, Depository Trust and Clearing Corporation (“DTCC”), agreed to make a public release of historical and current data on credit default swap activity in its Trade Information Warehouse, “the only comprehensive global repository for the OTC derivatives market.” Press Release, Depository Trust & Clearing Corp., Further CDS Transparency (Sept. 2, 2009), available at http://www.dtcc.com/news/press/releases/2009/further_cds_transparency.php. DTCC now makes available considerably more information, including exposure by specific “reference names,” (that is, companies or other entities that have issued debt) and information on the various indices. See Depository Trust & Clearing Corp., DTCC Deriv/Serve Trade Information Warehouse Credit Derivatives Data Report Terms of Use Agreement, http://www.dtcc.com/products/derivserv/data_table_i.php (last visited Nov. 30, 2010). Among other things, it appears that the notional exposure on CDS was overstated by approximately 100%, since the BIS tallied reports from both sides of the swap, whereas DTCC can avoid such double counting.

risk incidence from boom-era financial innovations, even after the failure of Bear Stearns put them on notice of systemic fragility just six months earlier.

Political economy factors that inhibit regulatory intervention will thus operate in many circumstances to increase the likelihood of systemic failure. Such failures are predictably unpredictable and inescapable.

II. Why Resolution Authority Is an Insufficient Response to Systemic Risk

A. *Crafting Resolution Authority for Failing Financial Firms*

The dilemma faced by the Fed and the Treasury in confronting Bear Stearns, Lehman, and AIG shows the need for additional resolution authority to address failing nonbank financial firms of systemic importance. In each case, the available options were bankruptcy and some form of business combination. Bankruptcy did not protect the financial system from financial distress; indeed, it heightened it. Business combination fully protected creditors and partially protected shareholders, meaning that the firm's capital suppliers were insufficiently exposed to failure.⁷⁷ Thus, the final Dodd-Frank regulatory reform legislation adopted a new form of resolution authority modeled on the FDIC's powers in connection with failing banks.

1. The Problems with Bankruptcy

The downside of the bankruptcy option was on full display in the case of Lehman. As presently constructed, bankruptcy ill-suits the business model of a financial institution deeply engaged in trading and market making. First, such a firm depends on collateralized short-term rollover financing for its core business activities, as well as to finance portfolio positions at a significant leverage ratio. In order to avoid the systemic distress that could follow from a cascading series of failures arising from the bankrupt firm's inability to repay its financing, the Bankruptcy Code provides safe harbors from the automatic stay for various financial contracts. These include the repurchase agreements ("repos") that are the vehicle for short-term finance.⁷⁸ Repo creditors can net out their position with the bankrupt firm, seize pledged collateral, and sell it to discharge the indebtedness. This step will happen immediately upon the filing.

77. The details of the Fed's exercise of authority with respect to the Bear Stearns rescue and its refusal to rescue Lehman are addressed in Jeffrey N. Gordon & Christopher Muller, *Avoiding Eight-Alarm Fires in the Political Economy of Systemic Risk Management* (European Corp. Governance Inst., Working Paper No. 277/2010, 2010), available at http://papers.ssm.com/sol3/papers.cfm?abstract_id=1553880.

78. See Edward R. Morrison & Joerg Riegel, *Financial Contracts and the New Bankruptcy Code: Insulating Markets from Bankrupt Debtors and Bankruptcy Judges*, 13 AM. BANKR. INST. L. REV. 641 (2005). Additionally, if the exemption from the automatic stay is reversed or applied in an ad hoc fashion, the result could be to produce runs at an earlier stage as short-term secured creditors act to avoid being trapped in a bankruptcy filing. This effect may increase the risk of crowded trades, firesale exits, and contagion.

No new creditors will step into the breach, and the firm's business will rapidly unravel.

Second, a bankrupt firm will stop paying on obligations, both short-term and long-term, to creditors who may be financially fragile, depending on market conditions. A consequence of the Lehman bankruptcy, for example, was the unexpected "breaking of the buck" by the Reserve Fund's MMF, which held Lehman commercial paper.⁷⁹ This action, in turn, devastated the commercial paper market, as nervous money market participants headed for Treasury bills.⁸⁰ In the case of obligations like swaps, such as CDSs, a counterparty might well be exposed to unhedged risk that could threaten its own solvency.

Third, financial contracts are often supported by margin. In other words, they are partly collateralized. The bankruptcy filing gives a counterparty the right to terminate the contract, net out its position with the bankrupt party, and sell the collateral to the extent it is a net obligee. Such termination forces rapid correlative responses by the bankrupt firm that can reduce the realizable value from these contracts. Lehman, for example, disposed of over a million contract positions in the two weeks post-bankruptcy at a supposed opportunity loss of \$75 billion, almost a third of its ultimate loss.⁸¹ Even more seriously, the firesale of collateral by the counterparties of one bankrupt firm can depress asset values on the books for other market participants and lead to a negative spiral of credit supply throughout the market.⁸²

Fourth, and more generally, bankruptcy is not set up to resolve financial distress in a time of financial emergency.⁸³ The due process rights of creditors, both procedural and substantive, are protected in bankruptcy.⁸⁴ A plan of

79. The Reserve Fund was forced to write off \$785 million in Lehman debt, and consequently, its net asset value dropped to \$0.97 per share. See Press Release, The Reserve Fund (Sept. 16, 2008), available at http://www.reservefunds.com/pdfs/Press%20Release%202008_0916.pdf.

80. Following the announcement, other MMFs admitted Lehman-related problems, and investors pulled more than \$170 billion out of the funds in the following week. Steven M. Davidoff & David Zaring, *Regulation by Deal: The Government's Response to the Financial Crisis*, 61 ADMIN. L. REV. 463, 504-06 (2009).

81. See Jeffrey McCracken, *Lehman's Chaotic Bankruptcy Filing Destroyed Billions in Value*, WALL. ST. J., Dec. 29, 2008, at A10.

82. This general problem is modeled in Marcus Miller & Joseph Stiglitz, *Leverage and Asset Bubbles: Averting Armageddon with Chapter 11?* (Nat'l Bureau of Econ. Research, Working Paper No. 15817, 2010), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1583794.

83. Note that although a broker-dealer must file under Chapter 7 (liquidation) a holding company that owns a broker-dealer can file under Chapter 11 (reorganization). For Lehman, the holding company parent filed, but not the U.S. broker-dealer. Part of the negative fallout was because the applicable U.K. law resulted in the initiation of liquidation of Lehman's U.K. broker-dealer subsidiary, and unlike in the United States, the failure to segregate customer funds in separate accounts meant those funds were frozen for a substantial period of time. Tony Lomas, Chairman of Bus. Recovery Grp. at PricewaterhouseCoopers, *Unwinding Lehman Brothers in the U.K.*, Address at the London School of Economics' Regulatory Response to the Financial Crisis Conference (Jan. 19, 2009) (transcript on file with authors).

84. "These include formal rights given to creditors' committees, the opportunity of creditors to object to the terms and timing of asset sales, and indirect control over the debtor through covenants in

reorganization requires judicial approval. It would be impossible to consult and negotiate with creditors of a financial firm about a “prepackaged” bankruptcy without starting a run on the firm. Moreover, when systemic concerns are important, market conditions may be changing sufficiently rapidly so as to destabilize negotiations. Similarly, tamping down systemic risk is not high on the list of bankruptcy goals, which include maximizing the value of the firm, respecting the bargained-for priorities of the creditors, and assuring equal treatment of comparably situated parties.

2. The Problems with Business Combinations

A second resolution option is some form of business combination with a credit-worthy party: either a merger, as in the case of Bear Stearns; or a quasi-takeover, as in the case of AIG.

a. Merger

Merger as a resolution mechanism suffers from two inconvenient institutional facts. First, mergers under standard U.S. state corporation statutes⁸⁵ require, at a minimum, approval of those shareholders holding a majority of outstanding common shares of the target.⁸⁶ This constraint has three practical entailments. First, target shareholders must receive some appreciable share of the post-rescue value of the firm as inducement for their consent. Otherwise, they may roll the dice on the value of the firm in a changed economic environment. Second, and less obviously, target shareholders get a free option with respect to the rescue proposal during the proxy solicitation period, a minimum of forty days under the federal securities law.⁸⁷ This situation exists because during the post-signing/pre-closing period, someone needs to guarantee the debts and trading obligations of the rescued firm to

DIP [debtor-in-possession] loan agreements.” Kenneth Ayotte & David A. Skeel Jr., *Bankruptcy or Bailouts?*, 35 J. CORP. L. 469, 481 (2010).

85. E.g., DEL. CODE ANN. tit. 8, §§ 251 *et seq.* (2010); MODEL BUS. CORP. ACT § 11.01-.04 (2002).

86. Both Delaware law and the Model Business Corporation Act permit *acquirers* to avoid a shareholder vote through use of a triangular structure in which the required shareholder approval is satisfied by the parent’s vote of its shares in the acquisition subsidiary. Even if an acquirer does not have sufficient authorized but unissued common shares, corporate finance statutes and standard planning mean that the acquirer can use fractional shares of a class of “blank check” preferred stock configured by board resolution to mimic the economic and governance rights of common shares.

On the other hand, where the acquirer uses as consideration common stock that amounts to 20% or more of the currently outstanding common stock, a NYSE listing rule requires a shareholder vote even in the case of a triangular merger. *See* NYSE LISTED COMPANY MANUAL § 312.03(c) (2010). The disclosure requirements in connection with such a shareholder vote have figured in controversies associated with the Bank of America-Merrill Lynch merger.

87. Securities Exchange Act of 1934, Pub. L. No. 73-291, 48 Stat. 881 (codified as amended at 15 U.S.C. §§ 78a-78ll (2006)). Where the jurisdiction’s laws insist on an acquirer shareholder vote, deal uncertainty becomes an even greater problem.

avoid its unraveling, and to be effective, this guarantee must cover obligations entered into during this period even if the merger is subsequently terminated. Target shareholders can exploit this “bridge guarantee” to look for a better offer or simply to hope for a turnaround in the economic environment that would let them renegotiate the deal. In the meantime, the guarantor bears the risk of loss. Finally, the combination of the first two points means that a merger agreement probably must contain: (1) deal-forcing provisions, such as “lock-ups,” designed to deprive target shareholders of effective choice; or (2) compensatory provisions such as high break fees or uncapped stock options that give the first bidder a significant payoff from a higher-valuing bid. Otherwise, the bridge guarantor would bear too much uncompensated-for risk. But the required deal protections would probably exceed the conventional limits of mergers and acquisitions law and so require a kind of judicial forbearance. That itself injects some uncertainty. In other words, the corporate governance provisions of “merger” create deal uncertainty that makes it much harder to put together a transaction, as in the case of Lehman.

The second inconvenient institutional fact is the hard-wiring in the merger statutes that require the acquirer to take on the debts and other obligations of the target.⁸⁸ There is no provision in “merger” for imposing loss-sharing, or contingent loss-sharing, on any creditor of a financially distressed or insolvent firm. “Merger” provides no way to distinguish between senior and subordinated creditors, secured or unsecured, or to require creditors to swap debt for equity or in any other way facilitate a merger that might well enhance the enterprise value of the firm. If the acquirer is unwilling to bear such losses or risk of loss on hard-to-value assets, then a transaction is not possible unless public or private third parties with systemic interests provide financial assistance. Similarly, the merger statutes do not permit the acquirer to reject or unilaterally modify contractual obligations of the target, such as executive compensation contracts. This fact has played out vividly in the compensation controversies arising from Bank of America’s acquisition of Merrill Lynch, in which litigation over the disclosure of bonuses may be driven by objections to a “pay for failure” approach.⁸⁹

Both of these structural limitations of “merger” as a resolution mechanism increase third-party rescue costs. Since the increased costs inure to the benefit

88. See DEL. CODE ANN. tit. 8, § 259; MODEL BUS. CORP. ACT § 11.07(a). The Model Business Corporation Act’s Official Comment states: “The survivor automatically becomes the owner of all real and personal property and becomes subject to all the liabilities, actual or contingent, of each party merged into it.” MODEL BUS. CORP. ACT § 11.07 cmt. In mergers of industrial firms, use of an acquisition subsidiary might succeed in insulating the acquirer from some of the liabilities of the target. In a financial firm merger where trading and banking operations will be consolidated, such insulation will not be practicable; and of course, if the merger is arranged as a rescue in the midst of a financial crisis, such liability avoidance could be self-defeating.

89. See Final Consent Judgment as to Defendant Bank of America Corp, SEC v. Bank of America Corp., No. 09 Civ. 6829 & 10 Civ. 0215 (S.D.N.Y. Feb. 22, 2010), available at <http://www.sec.gov/litigation/litreleases/2010/boexanotice.pdf>.

of a failing firm's shareholders and creditors, merger as a resolution mechanism promotes moral hazard. If the third party is a public entity, the visible limits to loss-sharing will predictably stir political backlash.

There is an additional inconvenient fact about a "merger" that follows its accomplishment: the resulting financial firm is bigger. A merger concentrates systemic risk and may put an implicit government guarantee behind the now "too big to fail" institution. Moreover, the merger may reduce competition in the relevant consumer, commercial, and investment banking markets.⁹⁰ These are major long-run costs.

b. Quasi-Takeover

The Fed's assistance to AIG amounted to another kind of business combination, a quasi-takeover. In exchange for an \$85 billion loan, the Fed took total control rights and equity claims to 79.9% of AIG's profits.⁹¹ (The Fed limited its claim to less than 80% to avoid consolidation of AIG's and the Fed's balance sheets under applicable accounting rules.) As with a merger, although shareholders' shares were diluted, all creditors were fully protected, and there was no easy road to impose loss-sharing on any creditor or any other contractual claimant. The absence of loss-sharing has become a source of great controversy.⁹²

3. The FDIC Resolution Alternative

This Subsection sketches the FDIC's historical resolution authority for banks and the precedents for its use. It then describes the FDIC's new resolution authority for nonbank financial firms. It also points to a serious limitation of resolution authority: it works best in the case of financial firms that fail because of idiosyncratic reasons and whose failure produces only isolated consequences. Resolution authority will be inadequate to address serious financial sector distress if single-firm failure spreads systemically because of counterparty exposure or similarity risk.⁹³

90. See, e.g., Dan Fitzpatrick & Robin Sidel, *A City Feels the Squeeze in the Age of Mega-Banks*, WALL ST. J., July 20, 2010, at A1 (describing competitive pressure exerted by large banks in the Orlando, Florida banking market).

91. The initial transaction is described in William K. Sjostrom, Jr., *The AIG Bailout*, 66 WASH. & LEE L. REV. 943 (2009). The transaction required AIG board approval but not shareholder approval because of the use of "blank check" preferred stock to transfer voting rights and cash flow rights. *Id.* at 976-77.

92. See *The Federal Bailout of AIG: Hearing Before the H. Comm. on Oversight and Gov't Reform*, 111th Cong. (2010) (statement of Neil Barofsky, Special Inspector General for the Troubled Asset Relief Program); CONGRESSIONAL OVERSIGHT PANEL, JUNE OVERSIGHT REPORT: THE AIG RESCUE, ITS IMPACT ON MARKETS, AND THE GOVERNMENT'S EXIT STRATEGY 7-10, 101-28 (2010); OFFICE OF THE SPECIAL INSPECTOR GEN. FOR THE TROUBLED ASSET RELIEF PROGRAM, FACTORS AFFECTING EFFORTS TO LIMIT PAYMENTS TO AIG COUNTERPARTIES, 15-20, 28-30 (2009).

93. Note that similarity risk will be increasing in financial firms' exposure to equity market pressure, as firms come under pressure to follow apparently successful strategies at peer firms.

a. The FDIC's Resolution Authority (Before Dodd-Frank)

The FDIC's core business since its 1933 establishment as an independent government agency has been the protection of insured depositors at banks and thrifts ("banks") through the provision of deposit insurance. In furtherance of that role, it monitors banks against the risk of failure and intervenes in cases of failed or failing banks as appropriate. At the outset of the financial crisis, the FDIC insured more than \$4 trillion in deposits. This commitment was backed by an insurance fund of \$45 billion raised through assessments on participating banks and a \$30 billion line of credit at the Treasury. Depositors presumably relied upon an implicit U.S. government guarantee.

The FDIC's resolution authority was built for "banks," not for complex and systemically important financial institutions, though its basic form provides a promising starting point. Upon a determination by a bank's supervisor (for example, the Comptroller of the Currency, a Treasury official, in the case of nationally chartered banks) that the depository institution has failed or is failing, the FDIC steps in as either conservator or receiver.⁹⁴ The usual basis for such a determination is that the bank is insolvent in either a balance sheet or going concern sense or nearing insolvency with no prospects for becoming adequately capitalized. As receiver, the FDIC has the option of liquidating the bank's assets and simply paying off the insured depositors (which may entail high losses to other creditors). Instead, the FDIC generally engineers a "purchase and assumption" transaction: it purchases "bad" assets at a premium and arranges for a third party, generally a stronger bank, to purchase "good" assets and assume the insured deposits and certain other liabilities of the failing bank, aided by FDIC financial support.⁹⁵ The transaction commonly takes the form of a "merger" governed by the Federal Deposit Insurance Act rather than state law.

A purchase and assumption can preserve the going concern value of the failing bank, which can promptly reopen under the purchaser's name. The "bad" assets can be whittled down over time, with ultimate losses borne by the insurance fund and creditors whose claims were not assumed by the third-party bank.⁹⁶ Thus, while a purchase and assumption transaction may reduce the

Executive compensation is only one conduit for such pressure. Augmenting shareholder power could well be another.

94. A provision added by the Federal Deposit Insurance Corporation Improvement Act of 1991, Pub. L. No. 102-242, 105 Stat. 2236 (codified in scattered sections of 12 U.S.C.), also gives the FDIC power to assert a conservatorship or receivership on its own motion.

95. The practice is to transfer all depositor claims, whether or not they are insured.

96. See PATRICIA A. MCCOY, *BANKING LAW MANUAL: FEDERAL REGULATION OF FINANCIAL HOLDING COMPANIES, BANKS AND THRIFTS* § 15.05(3) (2d ed. 2003). A variation on this is the establishment of a "bridge bank" by which the FDIC transfers the "good" assets and the liabilities into a new bank, which operates until it can be sold. A bridge bank can be a useful stabilizing technique that gives the FDIC time to arrange a follow-on sale, and thus, to realize more of the going concern value of the failing bank.

losses to the Deposit Insurance Fund and to uninsured creditors, its structure gives the FDIC significant discretion to disfavor particular creditor claims by not including them in the transferred liabilities. The nontransferred creditors will be left with recourse to the receivership only, which will have been depleted by the assisted assumption.⁹⁷ But note that amid the clashes among creditors, any sort of receivership, even a purchase and assumption transaction, will wipe out the common shareholders and probably the preferred shareholders as well.⁹⁸

In most bank resolution cases, the FDIC steps in as receiver. Less commonly, the FDIC acts as conservator and operates a bank with the objective of restoring it to solvency. Historically, the FDIC has also had the power to provide “open bank” assistance, which avoids an adverse finding and commonly leaves management in place. Shareholders favor conservatorship or open bank assistance to receivership because of the greater chance of salvaging some value from their claims. In theory, the choice among receivership, conservatorship, and open bank assistance should follow a hierarchy of pre-intervention capital adequacy. During a wave of bank failures in the 1980s, the FDIC liberally used its open bank assistance powers to resolve failing banks, particularly the larger ones. In the most salient cases, this had the effect of minimizing loss-sharing with uninsured depositors, other creditors, and shareholders. Congress responded with a provision in the Federal Deposit Insurance Corporation Improvement Act (“FDICIA”) in 1991 that required the FDIC to resolve cases at the “least cost.” This was intended to limit FDIC assistance to cases where it was necessary to protect the deposit fund and where such assistance was the least costly resolution method for the Deposit Insurance Fund.⁹⁹

There was an important carve-out to the least cost rule: it did not apply to cases of systemic financial distress where the FDIC, the Secretary of the Treasury, and the Board of Governors agreed that adherence to the rule “would

97. See Russell Manning, Note, *Creditors' Remedies Against the FDIC as Receiver of a Failed National Bank*, 64 TEX. L. REV. 1429 (1986). In the 1980s, creditors initially won some victories against such disparate treatment of creditors of a similar class, but Congress overruled these results in the Financial Institutions Reform, Recovery, and Enforcement Act of 1989, Pub. L. No. 101-73, 103 Stat. 183. The relevant provisions limit creditor claims to the amount that would have been received in a liquidation, see 12 U.S.C. § 1821(i)(2) (2006), and specifically permit “supplemental payments” to some but not all creditors, see 12 U.S.C. § 1821(i)(3)(a). See also Note, *Unsecured Creditors of Failed Banks: It's Not a Wonderful Life*, 104 HARV. L. REV. 1052 (1991).

98. In comparing purchase and assumption transactions that try to capture going concern value with straight liquidations that protect only uninsured deposits, it is important to note that in liquidations, the FDIC recovers *pari passu* with uninsured depositors and other unsecured creditors. Thus, a broader rescue that protects additional creditor claims along with going concern value may not impose higher costs on the Deposit Insurance Fund. See FED. DEPOSIT INS. CORP., *MANAGING THE CRISIS: THE FDIC AND THE RTC EXPERIENCE 1980-1994*, at 561 (1998).

99. 12 U.S.C. § 1823(c)(4)(A). This provision was added by the Federal Deposit Insurance Corporation Improvement Act § 141, which amended the Federal Deposit Insurance Act § 13(c). *Id.* § 1823(c).

have serious adverse effects on economic conditions or financial stability.”¹⁰⁰ As part of its general anti-bailout program, Dodd-Frank now limits the FDIC’s capacity to provide other than “least costly” assistance to cases in which the FDIC had been installed as receiver and the assistance was used to wind down the institution.¹⁰¹

b. The FDIC’s Struggle with “Too Big To Fail”

The events that led to congressional curbs on a too-forgiving FDIC resolution practice more than twenty years ago are hauntingly similar to current events. That era’s crisis was the imminent failure of Continental Illinois, then the seventh largest U.S. bank by assets.¹⁰² In the 1976-1981 period, Continental was the banking sector’s star performer, trebling assets and doubling its stock price, principally through aggressive growth of its commercial and industrial lending. It ran aground in 1982 due to large purchases of participations in defaulting oil and gas loans originated by Penn Square Bank of Oklahoma and exposure to shaky emerging market economy debt. Nevertheless, it was a general deterioration in confidence rather than fresh adverse news that triggered a run by Continental’s wholesale credit suppliers in May 1984.¹⁰³ The Fed provided liquidity, the FDIC provided “open bank” assistance in the form of subordinated notes, a group of large commercial banks provided a substantial bridge loan, and, most controversially, the FDIC promised to protect all depositors and creditors without regard for the insured deposit cap (then \$100,000) while a “permanent solution” through merger could be found. No white knight emerged, and deposit outflows continued. Two months later, the FDIC resolved the case by purchasing a large chunk of Continental’s troubled assets (\$4.5 billion, approximately 10% of the bank’s total assets) and infusing \$1 billion into the bank’s holding company parent, taking an 80% equity stake.¹⁰⁴ There seemed to be no practical way to rescue the bank without protecting the creditors of the holding company as well.¹⁰⁵

100. *Id.* § 1823(c)(4)(G)(ii).

101. Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, § 1106(b), 124 Stat. 1376, 2125 (to be codified at 12 U.S.C. § 5613) (amending § 13(c)(4)(G) of the Federal Deposit Insurance Act, 12 U.S.C. § 1823(c)(4)(G)).

102. This discussion follows chapter seven, *Continental Illinois and ‘Too Big To Fail’*, in FED. DEPOSIT INS. CORP., HISTORY OF THE EIGHTIES—LESSONS FOR THE FUTURE 235 (1997). See also FED. DEPOSIT INS. CORP., *supra* note 98, at 545-65.

103. Continental had approximately \$3 billion in insured deposits and \$40 billion in assets, making it more dependent on wholesale funding than Citigroup. *Id.*

104. The FDIC began selling off its equity position in 1986, two years after the rescue, but the final divestiture occurred only in 1991. Ultimately, the rescue of Continental cost the FDIC \$1.1 billion, 3.28% of Continental’s assets at the time of the intervention. *Id.* The shareholders eventually surrendered their position. *Id.*

105. First, holding company bonds included a covenant that barred dilution of the parent’s 100% ownership stake in the bank subsidiary without bondholder consent. These debt instruments were widely held throughout the world, often in bearer form, making consent difficult to obtain. Second, the holding company was a funding intermediary for the bank in the wholesale credit market. It funneled

The alternative to such a resolution, which protected all creditors and left shareholders with some chance of an upside, was a straightforward liquidation: sell off the assets, pay off the insured depositors, pay the remaining creditors the residual, and move on. The reasons for the rescue of Continental Illinois and of many other large banks in the 1980s were many. These included concerns about systemic risk of national and international dimensions, the logistical challenges of liquidating a large bank, the knock-on effects on other banks, and the disruptive tying-up of uninsured depositor funds during a liquidation proceeding.

The systemic risk concern is paramount to explaining the FDIC's strategy for Continental. Among other things, Continental's correspondent banks had heavily invested in Continental; in the era before interstate banking, local banks funneled capital to money-center banks for the presumably higher rates of return than those available on local loans. Continental's failure would have imposed significant losses on dozens of other banks, producing a number of follow-on failures and tying up bank capital during the liquidation process. As the then-Comptroller of the Currency put it:

We [the FDIC directors, the Fed chair, the Secretary of the Treasury] debated at some length how to handle the Continental situation. . . . In our collective judgment, had Continental failed and been treated in a way in which depositors and creditors were not made whole, we could very well have seen a national, if not an international, financial crisis the dimensions of which were difficult to imagine. None of us wanted to find out.¹⁰⁶

The bank rescues of the 1980s led to a debate over "too big to fail" that in turn eventually produced the "least costly" resolution strategy of FDICIA, along with its exception for cases of systemic distress.¹⁰⁷ The legislative change

those funds to the bank in the form of deposits, which it drew down to pay creditors. Thus, the FDIC's protection of bank depositors would inure to the benefit of a substantial group of the holding company's creditors. With foresight, presumably the FDIC could have carved out such intercompany deposits from its blanket protection. *Id.*

106. *Inquiry into Continental Illinois Corp. and Continental Illinois National Bank: Hearing Before the H. Subcomm. on Fin. Insts. Supervision, Regulation & Ins. of the H. Comm. on Banking, Fin. & Urban Affairs*, 98th Cong. 2d Sess. 287-88 (1984) [hereinafter *H. Subcomm. Inquiry*]. As was pointed out by Chairman St. Germain, the government's overall aid package included \$7.5 billion in Fed discount window borrowing. *Id.* at 289. Tallying up to include the private banking parties' assistance, the total rescue package was \$17 billion. *Id.*

107. The major effect of the legislative change appears to have been to end the growing use of an "essentiality" test, which invited the FDIC to give significant weight to regional and even local factors rather than systemic concerns. The pre-FDICIA version of 12 U.S.C. § 1823(c)(4)(A) permitted the FDIC to expend more than the cost of liquidation "in any case where the Corporation determines that the continued operation of such insured depository institution is essential to provide adequate depository services to its community." The legislative record suggests that many members were more offended by the disparate treatment of large banks—whose depositors were commonly fully protected—and small banks—where protection was commonly limited to insured depositors—than they were by the moral hazard issues of "too big to fail." *See, e.g., H. Subcomm. Inquiry, supra* note 106, at 292 (statement of

produced some operational changes at the FDIC. Over the 1986-1991 period, the height of open bank assistance, uninsured depositor losses in resolution cases averaged approximately 12%; in the period immediately following, 1992-1994, the average losses were 65%.¹⁰⁸ Nevertheless, the precedents of 1980-1991 seemed to establish that depositors in large banks would be fully protected against loss, whether or not they were insured.¹⁰⁹ The modification of FDIC authority in the FDICIA did not really change that proposition for depositors in the largest banks, which were most likely to be found systemically critical.¹¹⁰

The lessons become somewhat more complicated in the case of a bank holding company (“BHC”). In the Continental case, BHC creditors were fully protected, as were parent credit advances to the banking subsidiary (styled “deposits”). In the 1991 case involving the Bank of New England Corporation, the results were significantly different. The FDIC did not protect the parent BHC bondholders or include parent credit advances in the liabilities transferred to the bridge banks that took over the banking subsidiaries.¹¹¹ The Bank of New England Corporation filed for bankruptcy, and the bondholders were left to fight out the allocation of the receivership estate in litigation against the FDIC that was finally settled almost eight years later.¹¹² Still, the bondholder claims were relatively small in both absolute (\$700 million) and relative terms. Of the \$22.7 billion in liabilities carried on the BHC’s consolidated balance sheet, \$21.3 billion in liabilities were associated with the banking subsidiaries, and all but the BHC credit claims were fully taken over by the bridge banks.

The gap in the FDIC’s resolution authority in the case of large, complex financial institutions resulted from two important developments. First, some of the core functions of “banking” shifted to nonbank financial firms. Brokerage firms like Lehman performed financial intermediation and maturity transformation, yet because they themselves did not hold insured deposits, they

Rep. Wylie) (referring to “serious policy question” about the existence of a “dual system” in which Continental is saved while “smaller community banks . . . in the Midwest have been allowed to fail”).

Another significant change was to restrict the Fed’s capacity to engage in below-the-radar bailouts of troubled banks through use of the Fed window. In making such loans, the Fed would take the best collateral, which exposed the FDIC to greater risk.

108. *Id.* at 253.

109. In an important post-Continental 1991 case involving the Bank of New England Corporation, the FDIC created bridge banks for all three banking subsidiaries (using power provided in 1987 by the Competitive Equality Banking Act) and fully protected all bank depositors relying principally on essentiality grounds. *See* FED. DEPOSIT INS. CORP., *supra* note 98, at 635-40.

110. Indeed, the Federal Deposit Insurance Corporation Improvement Act may have perversely encouraged deposit migration from regional banks to money-center banks or, alternatively, may have encouraged the roll-up of regional banks into national banks, because of the cost of funds advantage associated with the implicit deposit guarantee.

111. *See* FED. DEPOSIT INS. CORP., *supra* note 98, at 635-40. The FDIC conceded the different treatment of uninsured depositors in large bank failures, as compared to small bank failures. *Id.* at 650-51.

112. *See* Steve Bailey & Steven Syre, *Bank of New England Reaches Accord with FDIC: Creditors Would Receive \$140 Million*, BOS. GLOBE, Sept. 19, 1998, at F1.

were outside the banking system. Second, the administrative unwinding and then legislative repeal of Glass-Steagall's separation of banking and investment banking dramatically increased the balance sheet complexity of large financial firms. The financial sector deregulation in the 1999 Graham-Leach-Bliley legislation was flawed in not considering how the expansion of BHC balance sheets would affect the FDIC's capacity to resolve failing banking firms, particularly in light of the resolution difficulties posed by much simpler BHC cases. The tough question for the FDIC with respect to uninsured deposits in a failing bank becomes a problem of a different dimension when major banks are part of financial conglomerates and are all funded, even at the bank level, through wholesale credit markets rather than retail deposits.

c. The FDIC's New Resolution Authority and Its Shortfalls

The FDIC received important new resolution authority for failing nonbank financial institutions, styled "Orderly Liquidation Authority," in Title II of Dodd-Frank.¹¹³ Upon an appropriate determination by the Secretary of the Treasury, following recommendations by the Fed and the FDIC,¹¹⁴ regarding the impact of a particular financial firm's impending failure on "financial stability in the United States,"¹¹⁵ the FDIC is to step in as receiver, preempting the role of a bankruptcy court.¹¹⁶ This new authority is similar to the FDIC's powers with respect to a failing bank, with important limitations. The FDIC's mission is the "orderly liquidation" of the financial firm, not a conservatorship or open bank assistance.¹¹⁷ The "mandatory terms and conditions" of the

113. Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, § 201-217, 124 Stat. 1376, 1442-1520.

114. Two-thirds of the Governors of the Federal Reserve Board and two-thirds of the FDIC board must concur in the recommendation. *Id.* § 203. Where the largest U.S. subsidiary of the failing entity is a broker or dealer, the SEC's recommendation is required. Where the largest subsidiary is an insurance company, the Director of the Federal Insurance Office (a new position), must approve. *Id.* § 203(a)(1)(B)-(C).

115. *Id.* § 203(b). The Secretary also needs to make various other determinations, including that other available resolution methods (for example, bankruptcy) would be inadequate, that "no viable private sector alternative is available," and that the proposed resolution would "avoid or mitigate . . . adverse effects" on "claims or interests of creditors, counterparties and shareholders of the [resolved] financial company and other market participants," taking into account the cost to Treasury and the potential to "increase excessive risk taking on the part of creditors, counterparties, and shareholders." *Id.* The broad range of factors that the Secretary should consider seems aimed at broadening the resolution strategies.

116. *Id.* § 202(c)(2). If the firm's board does not consent to the FDIC's receivership, the Secretary of the Treasury can confidentially petition the U.S. District Court for the District of Columbia for imposition of an involuntary receivership. *Id.* § 202(a)(1)(A)(iii). The scope of review is narrow: only whether the Secretary's determination that the financial company is "covered" by the Act, "is in danger of default," is "arbitrary and capricious." *Id.* "Danger of default" includes an impending bankruptcy filing, losses (or likely losses) that will unavoidably deplete a firm's capital, and insolvency (or likely insolvency) on either a balance sheet or equity (going concern) basis. *Id.* § 203(c)(4).

117. *Id.* §§ 204(a), 206, 214. For an initial comparison of the FDIC's powers in the resolution of a failing bank with its powers in this "orderly liquidation" process, see DAVIS POLK, SUMMARY OF THE DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT, ENACTED INTO LAW ON

liquidation require that the intervention be necessary for “financial stability,” not “for preserving the covered financial company.”¹¹⁸ The liquidation must be structured to impose any losses on unsecured creditors¹¹⁹ and shareholders (who are paid last),¹²⁰ and the management and board members “responsible for the failed condition” of the firm must be removed.¹²¹ Amounts owed to highly compensated employees are treated as unsecured claims in the recovery pecking order,¹²² and the FDIC may repudiate employment contracts.¹²³ The FDIC cannot take any “equity interest” in the firm.¹²⁴ Nevertheless, it has broad authority to provide financing to facilitate the firm’s liquidation, which includes extending credit, purchasing assets, and assuming or guaranteeing obligations.¹²⁵ The FDIC can also establish a “bridge financial company,” presumably to protect the viable business and sound assets of a failing financial firm pending a subsequent sale.¹²⁶ Even though the FDIC cannot take on equity interests, it can provide operating funds “in lieu of capital” to a bridge financial company¹²⁷ and can provide financing to facilitate a subsequent sale.¹²⁸ For the receivership and the bridge financial company, the maximum term of the FDIC’s mandate, including potential extensions, is five years.¹²⁹

In effect, the FDIC will provide a special kind of “debtor in possession” financing to protect the financial system while the failing firm is wound down or sold via the bridge company mechanism. As for the actual funding, Dodd-Frank provides for an “Orderly Liquidation Fund,” supplied by Treasury borrowings.¹³⁰ This Fund is not capped and requires no legislative action for

JULY 21, 2010, at 27-34 (July 21, 2010), available at http://www.davispolk.com/files/Publication/efb9442899114472b5dd006e9c6185bb/Presentation/PublicationAttachment/efd835f6-2014-4a48-832d-00aa2a4e3fdd/070910_Financial_Reform_Summary.pdf.

Despite the emphasis on “liquidation,” the FDIC is also directed “to take account actions to avoid or mitigate potential adverse effects on low income, minority, or underserved communities affected by the failure of the covered financial company,” Dodd-Frank Wall Street Reform and Consumer Protection Act § 209(n)(9), a loophole of potentially large scope.

118. *Id.* § 206(1).

119. *Id.* § 206(3); *see also id.* §§ 209(o)(1)(D)(i), 210(a)(1)(M), 210(b)(1), (5).

120. *Id.* § 206(2).

121. *Id.* § 206(4), (5). Individuals are also subject to liability for negligence. *Id.* § 210(f).

122. *Id.* § 210(b)(1)(C), (D), (G).

123. *Id.* § 210(c)(1), (7)(C).

124. *Id.* § 206(6).

125. *Id.* § 204(d).

126. *See supra* note 109 (discussing bridge banks).

127. Dodd-Frank Wall Street Reform and Consumer Protection Act § 210(h)(2)(G)(iv).

128. *Id.* § 210(h)(9). The power to use a bridge company to facilitate a resolution means that the FDIC is highly likely (in practice) to attempt to preserve the entity as a going concern, pending an eventual sale, rather than to “liquidate” it.

129. The initial maximum term of a receivership is three years, but the FDIC can obtain two one-year extensions with appropriate findings. *Id.* § 202(d). The initial term of a bridge financial company is two years, but the FDIC can extend its status for three one-year periods. *Id.* § 210(h)(12). It appears that the time periods of “receivership” and “bridge financial company status” do not tack. On the other hand, the maximum repayment period on Treasury borrowings to fund the resolution is five years. *Id.* § 210(o)(1)(B).

130. *Id.* § 210(n).

unlimited borrowing, though it is subject to debt ceiling constraints. The FDIC also has the authority to guarantee any obligations of the failing company that were issued during the receivership.¹³¹ Thus, the Fund can be leveraged by liberal use of the FDIC's guarantee authority.¹³² The Fund, including disbursements on guarantees, will be repaid through the proceeds of asset sales and other dispositions, as well as authorized recoveries. An ex post risk-based assessment on systemically important financial firms will cover any shortfalls.¹³³

Under Dodd-Frank, an FDIC receivership displaces not only bankruptcy but also other potential sources of government financial assistance for a failing firm. In particular, the legislation eliminates the Fed's emergency authority to lend to specific firms. The Fed's section 13(3) emergency lending authority is limited to "broadly available" facilities rather than "single and specific" borrowers; its lending must aim to provide "liquidity to the financial system, and not to aid a failing financial company"; and its loans may not be made to "insolvent" borrowers.¹³⁴ Moreover, any such Fed program requires the prior approval of the Secretary of the Treasury.¹³⁵

There are many things to admire in this effort to provide for the orderly winding up of a failing financial firm. Among other things, it avoids the anomalous results of a merger, which fully protects creditors and partially saves otherwise worthless shareholder claims. It provides for a smoother path to the liquidation of a failing financial firm than an abrupt dissolution like Lehman's. It also rests accountability for specific resolution decisions with the executive branch rather than with the Fed, thereby somewhat insulating the Fed from responsibility for any ensuing political fallout.

Nevertheless, the resolution authority provided by Dodd-Frank is seriously flawed. The anti-bailout rhetoric that seized Congress in the course of the bill's enactment has resulted in a resolution strategy that could well increase the probability of a systemic financial crisis and will result in nationalization of a substantial part of the financial sector should one occur. This potential outcome is the case for two principal reasons: first, the lack of any pre-funding of the Orderly Liquidation Fund will lead regulators to postpone intervention with techniques that are likely to foster financial instability; second, the stringent constraints on government financial support of firms not in FDIC

131. *Id.* § 204(d).

132. *Id.* For example, the FDIC used two guarantee programs to provide systemic support during the recent financial crisis, the Temporary Liquidity Guarantee Program and the Transaction Account Guarantee Program. The total commitment was approximately \$1.5 trillion. *See* FED. DEPOSIT INS. CORP., TEMPORARY LIQUIDITY GUARANTEE PROGRAM: SECOND QUARTER 2009, at tbls.III-C & IV-C (2009), available at <http://www2.fdic.gov/qbp/2009jun/qbptlqp.html>.

133. Dodd-Frank Wall Street Reform and Consumer Protection Act §§ 210(n)(9)(B), 210(o), 214.

134. *Id.* § 1101(a).

135. *Id.* § 1101(a)(6).

receivership will drive firms into receivership. The exclusivity of receivership, combined with an uncapped Orderly Liquidation Fund as augmented by the FDIC's guarantee authority, makes the nationalization of much of the financial sector the likely outcome of a financial crisis. Beyond the questionable wisdom of this nationalization strategy, the anticipation of nationalization will itself hasten financial crises.

Lack of pre-funding. The legislation initially passed by the House contained a \$150 billion "Systemic Dissolution Fund" pre-funded through risk-based assessments on large financial firms.¹³⁶ Senator Dodd's "chairman's mark" proposed an Orderly Liquidation Fund of \$50 billion, similarly pre-funded.¹³⁷ Attacked as fostering "bailouts," this industry pre-funding was stripped from the final Senate legislation, and the Senate's version prevailed in the Conference Committee. Thus, Dodd-Frank contains no industry pre-funding. Resolution funds will be borrowed from the Treasury and, ultimately, the taxpayers. Politically, this will likely register as a taxpayer "bailout," notwithstanding the strong repayment mandate. The Treasury (read: taxpayer) funding comes up front, when the public is in a politically "hot" state. Repayment comes later. As with TARP, repayment of most of the outlays will not change the public's initial impressions. Regulators will therefore be hesitant to go this route and are likely to delay putting a troubled financial firm into receivership. Instead, they may engage in various forms of regulatory forbearance and nonemergency Fed discount window lending in the hopes of avoiding a firm's insolvency. The high political cost of "taxpayer funding" as opposed to industry pre-funding is reflected in the FDIC's decision—in the midst of the financial crisis—to augment the dwindling Deposit Insurance Fund by raising bank assessments rather than borrowing from the Treasury.¹³⁸ The savings-and-loan crisis provides the roadmap for regulators who want to "finesse" the problems of failing financial firms to avoid the use of taxpayer funds.¹³⁹

The lack of pre-funding will therefore have systemic consequences. By the time regulators put a failing firm into receivership, the particular firm will be in a greater loss position, potentially enhancing contagion effects. The pursuit of ultimately unsustainable risk-taking, prolonged in part by regulatory forbearance, may render the entire financial sector less stable.

Potential resolution funding shortfall. Although the Orderly Liquidation Fund is not capped and may be augmented by FDIC guarantees, Dodd-Frank may nevertheless provide inadequate funding for the orderly resolution of

136. H.R. 4173, 111th Cong. § 1609 (2009).

137. S. 3217, 111th Cong. § 210(n) (2010) (Chairman's mark).

138. Eric Lipton, *F.D.I.C. Increases Fees To Insure Deposit Banks*, N.Y. TIMES, Feb. 28, 2009, at B4.

139. LAWRENCE J. WHITE, *THE S&L DEBACLE: PUBLIC POLICY LESSONS FOR BANK AND THRIFT REGULATION* (1991).

individual firms. The bill imposes two firm-specific borrowing limits: first, for funds drawn down during the first thirty days of the receivership, borrowing cannot exceed 10% of the firm's consolidated assets (based on the most recent financial statements); second, for funds drawn down thereafter, borrowing cannot exceed 90% of the "fair value" of the assets "available for repayment."¹⁴⁰ The denominators of these measures will be quite different. For the first cap, applicable balance-sheet valuations are unlikely to be fully marked down to reflect market valuations and would not reflect the effects of the resolution process. For the second cap, the denominator will be much less, since "fair value" suggests current market valuations and "available for repayment" seems to exclude assets subject to security interests because secured creditors are not subject to loss-sharing. The potential shortfalls created by these caps could destabilize the FDIC resolution process.

For AIG, for example, the differences between the denominators would be meaningful, and the shortfall issues are evident. As of December 2007, AIG's consolidated balance-sheet assets were roughly \$1.1 trillion, 10% of which is \$110 billion.¹⁴¹ This amount would cover the initial Fed loans of approximately \$85 billion but not the ultimate Treasury-Fed commitment of \$185 billion. Under the post-thirty day cap, matters are more complex. Of the nearly \$1.1 trillion in assets, approximately \$800 billion appears to be associated with insurance or otherwise secured liabilities not available for repayment.¹⁴² The potential valuation haircut associated with the remaining \$300 billion in assets in the depths of the financial crisis is not clear, but under Dodd-Frank, the "fair value" of those assets would need to be at least \$205 billion to justify the funding commitment thought necessary in the fall of 2008.¹⁴³

Resolution authority and systemic crisis. Resolution authority works best if the reasons for the firm's failure are "idiosyncratic," meaning firm-specific. It may also work for a particular model of systemic distress: contagion from a single firm's failure that spreads because of counterparty risk and other linkages. In theory, if Lehman's dissolution had been orderly instead of abrupt, various other financial players would not have faced dire risk and uncertainty from the hanging contracts, defaulted obligations, and inaccessible funds that

140. Dodd-Frank Wall Street Reform and Consumer Protection Act § 210(n)(6).

141. See Am. Int'l Gp., Inc., Annual Report (Form 10-K), item 8 (Dec. 31, 2007) (signed Feb. 28, 2008) (Financial Statements and Supplementary Data).

142. See *id.* (showing calculations based on categorization of balance-sheet liabilities).

143. One response might be that an AIG recurrence could be "resolved" with much smaller cash outlays if the FDIC repudiates various credit default swap contracts or simply refuses to post the additional collateral required by CDS agreements, leaving the parties to file a claim in the receivership. Dodd-Frank Wall Street Reform and Consumer Protection Act § 210(c). Whether the FDIC wants to take such actions may depend on knock-on systemic effects on counterparties. Moreover, insofar as the counterparty is a clearinghouse (Dodd-Frank heavily promotes their use), the Act requires the FDIC to use its "best efforts" to avoid threatening the stability of these market-critical institutions. *Id.* § 210(c)(8)(G). Alternatively, the FDIC could liberally use its guarantee authority in place of cash outlays, except that such authority could not extend to obligations owed by AIG's foreign subsidiaries.

disrupted the relationships among the survivors. The FDIC's receivership power is aimed at reducing such contagion from a single firm's failure. Indeed, Dodd-Frank requires firms to construct "living wills" that provide a roadmap for their liquidation.¹⁴⁴

But the recent financial crisis powerfully demonstrated two things. First, financial regulators and firms are unlikely to have a perfect understanding of the global linkages and interdependencies that give rise to serious contagion effects. For example, in considering the consequences of a Lehman failure, U.S. regulators did not appreciate the U.K. broker-dealer resolution regime. The regulators may not know whether or not loss imposition will damage systemically important creditors. Consequently, the knock-on effects of even a well-handled resolution can be substantial. Second, many significant firms are exposed to the additional systemic risk of "similarity" (or "commonality"), which is not necessarily avoided by the adroit resolution of a particular troubled firm.¹⁴⁵ In the recent financial crisis, the securitized assets on the balance sheets of many large financial firms were abruptly revalued. Many firms were revealed to be insolvent or on the verge of insolvency and needed to be recapitalized. Firm-by-firm resolution, as Dodd-Frank envisions, would fail to abate such a crisis; it would produce a series of falling dominos.

Nationalization as Dodd-Frank's systemic support strategy. What are regulators' options under Dodd-Frank in the event of financial distress that severely affects not just one or two major firms, but many significant firms in the financial sector? Neither Dodd-Frank itself nor the relatively brief floor debates of the conference report articulate a strategy to address a financial crisis.¹⁴⁶ But a strategy emerges when the different pieces are put together. It is the nationalization of much of the financial sector. First, recall that the Orderly Liquidation Fund and the FDIC's guarantee authority in receivership are uncapped. Second, Dodd-Frank eliminates alternative sources of support to troubled financial firms that might otherwise be provided by the Fed or the FDIC, making receivership the exclusive firm-specific support mechanism in a financial emergency. This presumably reflects the drafters' desire to avoid bailouts and financial firms that are "too big to fail." Therefore, absent emergency congressional lawmaking, the price of financial assistance will be an FDIC receivership. This situation means that in a financial crisis, the only way that regulators will be able to provide widespread support to troubled firms in the financial sector will be by imposing receivership on the recipients. The outcome of multiple receiverships of large financial firms will be the nationalization of much of the financial sector. The term of FDIC receivership

144. *Id.* §§ 112(a)(2)(I), 115(b)(1)(D), 115(d)(1).

145. *See supra* Subsection I.A.2. For example, in the effort to emulate the most successful firms, other firms may follow similar business strategies, now revealed to contain critical weaknesses.

146. *See* 156 CONG. REC. S5869-5933 (daily ed. July 15, 2010); 156 CONG. REC. S5797-5845 (daily ed. July 14, 2010); 156 CONG. REC. H5212-5261 (daily ed. June 30, 2010).

or control of a bridge bank could be up to five years, which portends an extensive period of FDIC superintendence of the financial sector. All this may be an unwelcome surprise to those who applauded the *avoidance* of financial sector nationalization between the fall of 2008 and the spring of 2009, but it seems to be the inevitable consequence of Dodd-Frank.

This conclusion falls out in part because Dodd-Frank constrains alternative means of financial support from both the Fed and FDIC. First, the Fed's emergency lending authority under section 13(3) is limited in several ways. The Fed can no longer lend to a single firm. Rather, any lending must be pursuant to a "program or facility with broad-based eligibility,"¹⁴⁷ and the program cannot be tailored to target a specific firm; it shall instead be "designed to ensure that any emergency lending program or facility is for the purpose of providing liquidity to the financial system, and not to aid a failing financial company."¹⁴⁸ Moreover, there is renewed emphasis on assuring that a firm's collateral "is sufficient to protect taxpayers from losses."¹⁴⁹ The lending reserve bank must assign a "lendable value to all collateral" accepted into the program. As part of the effort to assure that no financial support is provided to a failing firm, the CEO of the would-be borrower must certify that the firm is not "insolvent."¹⁵⁰ In short, the Fed cannot lend except upon good collateral from a firm that is not otherwise failing.¹⁵¹

This new provision, of course, would rule out assistance to AIG, Bear Stearns, Lehman, Citigroup, and Bank of America, all candidates for Fed assistance in the fall of 2008, whether or not the collateral that supported their loans was good. Presumably, the FDIC's resolution authority is meant squarely to address such cases, but the emphasis on adequate collateral could well undermine the Fed's ability to create lending facilities that provide widespread support to the financial sector. For example, in November 2008, the Fed created the Term Asset Loan Facility ("TALF"). TALF provided five-year nonrecourse loans, collateralized by asset-backed securities rated at the highest investment grade by rating agencies. The goal was to restart the asset-based securitization market, a major source of financing for consumer credit and financial and nonfinancial businesses. During early 2009, the Fed expanded the pool of eligible collateral to include residential and commercial MBSs, as well as loans backed by leases or other loans related to various sorts of business

147. Dodd-Frank Wall Street Reform and Consumer Protection Act § 1101(a)(6).

148. *Id.*

149. *Id.*

150. *Id.* There is some wiggle room here since "insolvent" is narrowly defined to refer to a firm as to which a formal insolvency proceeding has begun.

151. The lending program must also be approved by the Secretary of the Treasury, *id.*, but this is not a change from the de facto practice that evolved in the fall of 2008.

expenditures.¹⁵² The Fed committed up to \$1 trillion to this program. The funds were lent on a nonrecourse basis precisely because of the valuation risk associated with such securities in the midst of the crisis. There was real risk that the collateral was insufficient. The Fed's risk was covered with a \$20 billion TARP allocation.¹⁵³

It would be a mistake to assume that Fed officials will necessarily strain to find authority to intervene in the next financial crisis. If one lesson learned from the Great Depression was the need for aggressive action by the Fed to sustain and expand liquidity—a lesson that influenced Fed behavior in 2008¹⁵⁴—the lesson learned this time around was that Fed officials and civil servants face the risk of highly critical second-guessing of their good-faith decisions.¹⁵⁵

In addition to constraining financial support from the Fed, Dodd-Frank restricts the FDIC loan guarantee authority except for firms that are in receivership. Previously, the FDIC had broad authority to provide assistance to depository institutions without imposing a receivership in the event that such

152. The program is described on the Federal Reserve Bank of New York's website. *Credit and Liquidity Programs and the Balance Sheet*, BD. OF GOVERNORS OF THE FED. RESERVE SYS., http://www.federalreserve.gov/monetarypolicy/bst_lendingother.htm (last visited Dec. 4, 2010).

153. See Brian Sack, Exec. V.P., Fed. Reserve Bank of N.Y., Remarks at the New York Association for Business Economics's Reflections on the TALF and the Federal Reserve's Role as Liquidity Provider (June 9, 2010) (transcript available at <http://www.newyorkfed.org/newsevents/speeches/2010/sac100609.html>).

Other Fed emergency programs designed to cushion the fallout from the Lehman bankruptcy would also be at risk under the Dodd-Frank limits. For example, the Commercial Paper Funding Facility, which in effect opened the Fed's discount window to issuers of commercial paper, substituted where firms were unable to post the collateral typically accepted by the Fed. Tobias Adrian, Karin Kimbough & Dina Marchioni, *The Federal Reserve's Commercial Paper Funding Facility*, FED. RES. BANK OF N.Y. ECON. POL. REV. 8-9 (2010), available at <http://www.newyorkfed.org/research/epr/forthcoming/1006adri.pdf> (forthcoming). Similarly, the Money Market Investor Funding Facility, which made the Fed the buyer of last resort of money market instruments held by a MMF, focused on the quality of the instruments purchased, not the solvency of the seller, and stretched customary standards. See *Money Market Investor Funding Facility: Frequently Asked Questions*, FED. RESERVE BANK OF N.Y., http://www.newyorkfed.org/markets/mmiff_fa.html (last updated June 25, 2009).

Despite the prior general notice in the program descriptions, the more detailed December 1, 2010 disclosures of liberalized collateral accepted by the Fed's liquidity programs attracted significant public attention. See, e.g., David Benoit, *Government Programs Accepted Low-Rated Assets*, WALL ST. J. ONLINE, Dec. 1, 2010, <http://online.wsj.com/article/SB10001424052748703865004575649153243730686.html>; Francesco Guerrera & Robin Harding, *Crisis-Hit Banks Flooded Fed with Junk*, FT.COM, Dec. 2, 2010, <http://www.ft.com/cms/s/0/fe8a477a-fe52-11df-abac-00144feab49a.html#axzz17vghWIP1>; Ben Protes, *How Banks Pawned Junk to the Fed*, N.Y. TIMES DEALBOOK BLOG (Dec. 2, 2010, 2:01 PM), <http://dealbook.nytimes.com/2010/12/02/how-banks-pawned-junk-to-the-fed/>.

154. See DAVID WESSEL, IN FED WE TRUST: BEN BERNANKE'S WAR ON THE GREAT PANIC 40-48 (2009) (describing widespread criticism of Fed's role in turning a "bad late-1920s recession into the Great Depression" and citing Bernanke's 2002 speech at an event honoring Milton Friedman: "Regarding the Great Depression. You're right, we did it. We're very sorry. But thanks to you, we won't do it again.").

155. See sources *supra* note 92. Many other aspects of the Treasury and Fed's efforts to stabilize the financial system have been criticized in reports and testimony of the Congressional Oversight Panel and the Special Inspector General for the Troubled Asset Relief Program.

“action or assistance would avoid or mitigate” “serious adverse effects on economic conditions or financial stability.”¹⁵⁶ The FDIC construed this authority liberally in its initiation of a broad-based debt guarantee program in November 2008.¹⁵⁷ One leg of the program guaranteed new issuances of senior unsecured debt by depository institutions and their holding companies or finance affiliates. Up to \$800 billion in guarantees were authorized, at least \$340 billion of which were drawn down.¹⁵⁸ The FDIC also guaranteed all noninsured bank deposits in noninterest-bearing accounts.¹⁵⁹ The authorization for this “Transaction Account Guarantee Program” was approximately \$900 billion, over \$700 billion of which was committed.¹⁶⁰ To get a sense of the scale of these programs, recall that the full TARP authorization was \$700 billion. The FDIC program, if relatively unheralded, was a major element of the financial sector stabilization program in the fall of 2008 and the spring of 2009.

Dodd-Frank eliminates the FDIC’s authority to issue debt guarantees, save two exceptions. First, the FDIC may issue guarantees in conjunction with a receivership.¹⁶¹ Second, the FDIC may issue guarantees as part of a widely available program that has received prior congressional approval.¹⁶² In other

156. 18 U.S.C. § 1823(c)(4)(G) (2006). FDIC declaration of the systemic emergency that triggered such authority required concurrence of the Secretary of the Treasury and the Board of Governors.

157. The “Temporary Liquidity Program” consisted of two elements: the Transaction Account Guarantee Program, through which the FDIC guaranteed all noninterest-bearing bank deposits, and the Debt Guarantee Program. See Temporary Liquidity Guarantee Program, 12 C.F.R. pt. 370 (2008).

158. See FED. DEPOSIT INS. CORP., *supra* note 132, at tbl.IV-C.

159. These were probably mostly corporate deposits, since the vestige of prior caps on the interest that banks can pay depositors (so-called “Regulation Q”) is the prohibition on paying interest on corporate demand deposits. See 12 U.S.C. § 371a (2006).

160. See FED. DEPOSIT INS. CORP., *supra* note 132, at tbl.III-C.

161. Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, § 1106(b), 124 Stat. 1376.

162. *Id.* §§ 1105, 1106(a). The guarantee program “may not include the provision of equity in any form.” *Id.* § 1105(a).

There is an interesting legislative story here. The House-passed version granted authority for such an FDIC program upon approval of a “Financial Services Oversight Council,” but such authority would sunset in 2013 unless the President made a “fast-track” request to Congress. H.R. 4173, 111th Cong. § 1109 (2009). (The House version would have required stock warrants from the benefited firms in compensation. *Id.* § 1110.) The Senate Finance Committee version of the bill, S. 3217, the more direct precursor to the Dodd-Frank provision, broadly authorized the FDIC to “guarantee obligations of solvent insured depository institutions” (and the relevant holding company and other affiliates) subject to a congressional joint resolution of *disapproval*. See S. 3217, 111th Cong. § 1155 (2010). As stated in the accompanying report: “The Secretary will determine a maximum amount of guarantees, and the President may request Congress to allow that amount. If the President does not submit the request, the guarantees will not be made. Congress has 5 days to disapprove the request” S. REP. NO. 111-176, at 183 (2010). Such a joint resolution is, like any other law, subject to the customary procedures of bicameralism and presentment, meaning subject to a presidential veto. So under the Senate Committee version, unless each chamber could produce a two-thirds majority against the FDIC’s program, it would go forward. See *INS v. Chadha*, 462 U.S. 919 (1983).

The final Senate bill reversed the order of FDIC and Congressional action. The FDIC (the President) must still make a request, but *issuance* of guarantees is subject to congressional authorization, meaning both chambers must approve or the guarantee request fails. See H.R. 4173, 111th Cong. § 1155(c)(1)-(2), (d). The final version of the legislation, Dodd-Frank, picks up the Senate-passed

words, to provide financial support to “solvent” financial firms in a time of “severe economic distress,” the FDIC must make its case to Congress.

Unlike in the case of TARP, the FDIC will not be able to claim that it lacks other means of supporting critical firms because receivership provides the alternative. “Receivership” is likely to seem more attractive to Congress than any program that could be labeled a “bailout.” As the request must formally come from the President,¹⁶³ the President will politically own the “bailout.”

Size matters too. In the fall of 2008, for example, the FDIC authorized loan guarantees of *\$1.7 trillion*, a commitment that might not sail through Congress. Moreover, the effort to persuade Congress to approve substantial guarantee authority may, like TARP, become an independent source of economic disruption, since such a high visibility political moment may drive negative economic expectations. Receivership of troubled financial firms is the path of least resistance; it avoids economic collapse at the least political cost. This dynamic is likely to produce the nationalization of a broad swath of financial firms that may otherwise fail to meet their funding and liquidity needs and become insolvent.¹⁶⁴

The consequences of the nationalization strategy. Dodd-Frank’s financial sector nationalization strategy will alter the behavior of firms and regulators in three periods: 1) the period of relative stability prior to financial distress, 2) the period of systemic financial instability itself, and 3) the post-nationalization recovery period. Prior to instability, the threat of nationalization may well reduce risk-taking by financial firms because of the desire of shareholders and creditors to avoid significant losses. This presumably will reduce the risk of

procedure. See H.R. 4173, 111th Cong. § 1105(c)(1)-(2), (d). Dodd-Frank prescribes a “fast track” procedure for the Senate consideration of the FDIC request, see Dodd-Frank Wall Street Reform and Consumer Protection Act § 1105(d), but should the Senate decide to vary those rules, the constitutional protection of each chamber’s prerogative to make its own rules would prevail, as the legislation acknowledges. *Id.* § 1105(d)(3)(D). There is no comparable fast track requirement for the House, since the parallel provision in the Senate Committee version, *id.* § 1155(d)(1), was deleted in the final Senate bill.

There is also an important technical question as to how far Dodd-Frank cuts back the FDIC’s current guarantee authority. The FDIC styled its Temporary Liquidity Program (“TLP”) as having two elements, the Transaction Account Guarantee Program and the Debt Guarantee Program. See sources cited *supra* note 132. Section 1106(a) withdraws the FDIC’s existing authority “to establish any widely available debt guarantee program for which § 1105 would provide authority.” Could it be claimed that § 1106(a) addressed only the “debt guarantee” element of the FDIC’s program, leaving it free to guarantee deposits? We think the answer is probably “no.” A deposit, even if in a noninterest-bearing transaction account, is a “debt,” and the TLP widely guaranteed such debts, in addition to other debt obligations. Moreover, § 1105, which authorizes “a widely available program to guarantee obligations of solvent depository institutions” certainly “would provide authority” for a “Transaction Account Guarantee Program.”

163. Dodd-Frank Wall Street Reform and Consumer Protection Act § 1105(c)-(d)(1).

164. The Fed is unlikely to be able to satisfy those requirements with a section 13(3) direct lending facility. Its lending will be constrained by the adequate collateralization requirements and the nontraded character of a significant portion of bank assets. For its guarantees in 2008, the FDIC charged a fee, but it did not require the pledge of collateral. Moreover, a direct Fed lending program that would provide a partial substitute would result in a potentially vast expansion of the Fed’s balance sheet and in effect, another form of nationalization.

financial crisis. However, if (when) miscalculations, mistakes in financial regulation, or exogenous events produce financial instability, the nationalization threat will increase the risk of financial crisis, a point we develop below.

The nationalization threat, if consummated, leaves the government owning and operating many firms in the financial sector for an undetermined period of time, as long as five years. Dodd-Frank stipulates that the “responsible” senior officers and directors of firms taken into receivership should be immediately removed, and it subjects all employee contracts to potential repudiation at any point in the receivership.¹⁶⁵ It also subjects the firm’s financial contracts to repudiation.¹⁶⁶ These actions will be applied across the several firms taken into receivership. In our view, the likely disruption from wide-ranging nationalization is a significant concern. The recent financial crisis saw too much risk-taking ex ante and too many bailouts ex post, meaning, in our terms, government assistance without sufficient compensation. But the interventions by the Fed, the FDIC, and TARP produced a relatively stable financial sector recovery. While not a cure for recession, financial sector recovery is a minimum condition for economic recovery. Dodd-Frank is loaded with regulatory empowerment to constrain excessive risk-taking by financial firms and to monitor and mitigate systemic risks before they become threatening. But as the FDIC itself has declared in its summary, “[n]o set of laws, no matter how enlightened, can forestall the emergence of some new financial crisis somewhere down the road. It is part of the nature of financial markets, observed throughout history.”¹⁶⁷ When Dodd-Frank’s “command and control” strategies fail, is financial sector nationalization really the best recovery strategy?

The nationalization strategy and the acceleration of financial crisis. A major downside of the nationalization strategy is that it is likely to accelerate the slide from financial instability to financial crisis and thus increase the incidence of financial crises. If nationalization is likely in periods of systemic emergency, potential capital suppliers will see their entire investment in the financial sector at risk, rather than just their investments in particular firms. The freeze-up of financial markets following Lehman’s failure offers insight into investors’ likely response to the threat of nationalization. Before the Lehman failure, investors seemed to believe that particular firms were “too big to fail,” or at least big enough that virtually all creditors, if not necessarily shareholders, would be protected from losses. This assumption was reasonable in light of the FDIC’s historical resolution strategy for systemically important banks and the

165. Dodd-Frank Wall Street Reform and Consumer Protection Act § 210(c)(1), (7)(C).

166. *Id.* § 210(c). The repudiation is subject to the obligee right to recover damages and protections of specific collateral arrangements in “qualified financial contracts.” *Id.* § 210(c)(3)(D), (c)(8).

167. See *FDIC’s Role and Authorities Under the New Financial Reform Law*, FED. DEPOSIT INS. CORP., <http://fdic.gov/regulations/reform/role.html> (last updated July 21, 2010).

recent merger, with Fed support, of Bear Stearns. Lehman was a shock to creditor expectations because of the exposure of unsecured creditors to very significant losses. The disorderly collapse of Lehman exacerbated systemic distress, but the financial crisis arose from a different concern: that all firms were at risk of insolvency and that many (or even all) of them could be permitted to fail with severe creditor losses. Capital suppliers went on strike. To mitigate the financial crisis, the government rushed to restore prior expectations through the rescue of AIG and later Citigroup, the FDIC guarantee of deposits and new debt, and the provision of capital support via TARP.

With this account in mind, consider two alternative resolution regimes. The first proceeds by receivership of failing firms but preserves a “systemic emergency” exception for financial sector support. The second is exclusively a receivership regime, much like Dodd-Frank. If a particular financial firm fails for idiosyncratic reasons (for example, a concentrated book of emerging market loans that goes sour), and the resolution process itself does not create systemic distress, a diversified capital supplier would maintain its financial sector investments and willingly supply new capital to the sector. This outcome holds under either resolution regime. But if a firm’s failure has sufficient systemic implications to produce financial instability, or if instability arises even without a firm’s failure, the outcomes under the two resolution regimes critically diverge.

Under the first regime, the investor is willing to supply new capital to the financial sector at a time of financial instability. If this “instability” does become a “systemic emergency,” the investor knows that even if one or more firms are placed in receivership and a substantial loss of capital ensues, the government will intervene to support the financial sector, meaning the many remaining important firms. A diversification strategy can thus succeed. The investor’s losses on new investments are bounded, and investors can limit losses by supplying debt rather than equity. Investors can also support the strongest firms in the sector and price capital in light of firm-specific risk. The availability of this new capital at a time of financial instability reduces the risk of a slide into a financial crisis.

Under the second regime, the one created by Dodd-Frank, financial instability renders the investor unwilling to supply new capital to the financial sector as either debt or equity because a transition from “instability” to “systemic emergency” would place the investor’s entire investment at risk.¹⁶⁸ The only potential government intervention, a receivership, would wipe out

168. This conclusion is implicitly conceded by the proponents of banking sector nationalization in the last financial crisis. *See, e.g.*, Matthew Richardson & Nouriel Roubini, *To Shore Up the Banks, Nationalize Them*, WASH. POST, Feb. 15, 2009, at B3. Their proposed strategy was to test firms for solvency, and then for the insolvent firms, to nationalize them simultaneously: “The government should start with the big banks that have outside debt, and it should determine which are solvent and which aren’t in one fell swoop, to avoid panic. Otherwise, bringing down one big bank will start an immediate run on the equity and long-term debt of the others.” *Id.*

equity and is likely to impose significant losses on unsecured creditors. The amount of these losses would be uncertain. A quick FDIC liquidation may result in firesale prices, meaning very large losses. A long receivership would tie up investors' funds and expose creditors to a recoupment, or "clawback," of payments made during the receivership if such payments are greater than the claims entitlement in the final resolution of the firm.¹⁶⁹ Under Dodd-Frank, the receivership risk will not be limited to a single firm or a small number of firms.

In other words, diversification strategies fail. The only way a capital supplier can protect itself against deep losses in the financial sector is not to invest at all.¹⁷⁰ But such behavior by capital suppliers will hasten the onset of financial crisis because troubled firms will be unable to attract the capital necessary to achieve stability. In other words, the Dodd-Frank strategy of financial sector nationalization is likely to accelerate the path from instability to a full-scale crisis. Indeed, the strategy is likely to increase the incidence of financial crises, as occasions of instability that otherwise would have been abated through private capital support will now slide into crisis.

This slide will be made more precipitous by prior legislation that stripped the Treasury's authority to use the Exchange Stabilization Fund to guarantee the obligations of MMFs.¹⁷¹ That strategy halted the run on MMFs following the Reserve Fund's "breaking the buck" upon Lehman's default. In the absence of a possible federal safety net, MMFs will act in highly self-protective ways when faced with financial instability. Fearing a run themselves, MMFs will withdraw from the wholesale short-term credit market, producing a run on the many financial firms that rely on repos, commercial paper, and other short-term credit. Receivership beckons.¹⁷²

The internationalization of financial crisis. Lehman's failure provides a lesson in the unanticipated internationalization of financial crises from the failure of a single U.S. firm. Multiple failures resolved via FDIC receivership could have even greater effects. The disjuncture between U.S. and U.K. bankruptcy regimes factored significantly in the systemic impact of Lehman's failure. An FDIC receivership via Dodd-Frank raises unresolved questions in the international setting. The FDIC can impose a receivership on subsidiaries

169. Dodd-Frank Wall Street Reform and Consumer Protection Act § 210(o)(1)(D).

170. Note that many unsecured creditors of financial firms are systemically important themselves, including money MMFs and insurers, and thus will be under pressure to avoid potential losses.

171. Emergency Economic Stabilization Act of 2008, Pub. L. No. 110-343, § 131(b), 122 Stat. 3765.

172. The FDIC could partially mitigate this risk by declaring in its Orderly Liquidation Regulations that short-term credit at financial firms will be more favorably treated than other unsecured debt. Of course, this comes perilously close to a guarantee of noninsured deposits and other short-term debt. The FDIC's proposed implementation of resolution authority under Dodd-Frank suggests it would treat short-term creditors (defined as securities that mature in 360 days or less) more favorably than long-term creditors. See Implementing Certain Orderly Liquidation Authority Provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act, 75 Fed. Reg. 64,173, 64,181 (proposed Oct. 12, 2010) (proposing 12 C.F.R. pt. 380.2).

that are “in default or in danger of default,”¹⁷³ but this authority does not seem to extend to foreign subsidiaries.¹⁷⁴ Moreover, U.S. law cannot preempt the local law or bankruptcy law of a foreign state in which a particular subsidiary has been organized. It may not be possible for the FDIC to mitigate international fallout by avoiding a bankruptcy of the foreign subsidiary. Dodd-Frank abrogates *ipse dixit*, or walkaway provisions, which give counterparties the right to terminate financial contracts immediately upon the initiation of insolvency or cognate proceedings (like a receivership) against the maker or guarantor, even if the contracts have not been otherwise breached.¹⁷⁵ Yet, if such contracts are entered into by a foreign subsidiary and include a foreign choice of law and forum provision, Dodd-Frank may be unable to prevent the assertion of contract rights that would make the foreign subsidiary effectively insolvent or otherwise unable to function.

The follow-on options are highly unattractive. For example, the FDIC could borrow money from the Treasury to pay off these claims, downstreaming payments through the U.S. parent. This option would entail a politically fraught decision that U.S. taxpayers should pay foreign counterparties in full. Alternatively, the FDIC could let the foreign subsidiary fall into bankruptcy, which would significantly exacerbate contagion effects that the FDIC receivership was intended to avoid. These troubles seem baked into the national resolution of firms with an international footprint. The strategy of Dodd-Frank is to tell the FDIC to coordinate “to the maximum extent possible” with foreign financial authorities¹⁷⁶ and to commission two studies on transnational coordination.¹⁷⁷

But the international impact of an FDIC receivership for a single failing financial firm will be magnified by a sequence of falling dominos, serial receiverships, and financial firm nationalizations. The shock, uncertainty, and disruption could easily trigger an international financial crisis. The actual scope is of course speculative, but the consequences for the international financial system may be severe. One goal of Dodd-Frank is to cast aside the belief that some U.S. firms are “too big to fail.” It takes no account of the fact that, in the international realm, there are some firms that are “too big to save,” meaning that the size of a financial firm relative to the economy of its national domicile deprives national regulators of the resources for an orderly liquidation, much less a rescue. Multiple FDIC receiverships of U.S. firms could destabilize such foreign firms. That Dodd-Frank allows regulators no discretion to manage such

173. Dodd-Frank Wall Street Reform and Consumer Protection Act § 210 (a)(1)(E)(i)(I).

174. The referenced subsidiaries must be organized under “Federal law or the laws of any State.” *Id.* § 210 (a)(1)(E)(i).

175. *Id.* § 210(c)(8)(F).

176. *Id.* § 210(a)(1)(N).

177. *Id.* § 202(f) (Comptroller General); *id.* § 217 (Federal and Administrative Office of the U.S. Courts).

concerns has earned its approach to widespread systemic distress an apt label: “the nuclear option.”

B. The Systemic Emergency Insurance Fund

The challenges of forestalling and addressing a financial sector crisis show why the Systemic Emergency Insurance Fund (“SEIF” or “Fund”) is necessary. Specific large-firm resolutions may exceed the FDIC’s resources under Dodd-Frank. The FDIC’s receivership may impose significant losses with systemic consequences because of unexpected impacts on systemically important actors like MMFs and insurers. In a systemic emergency, stabilization of the overall financial sector may be necessary. The mechanism available under Dodd-Frank, receiverships imposed on multiple major financial firms on a narrow timeframe, will be difficult to administer and will amount to government nationalization of a large portion of the financial sector with unpredictable consequences. Such a massive intervention is hardly the best way to avoid the breakout of financial sector distress into the real economy. Moreover, the threat of this strategy could accelerate the slide from financial sector instability to financial sector crisis. An alternative approach would require recourse to Congress for additional authority in the middle of a crisis. This strategy is also likely to result in the breakout of the financial crisis into the real economy.¹⁷⁸ Even worse, a legislative failure in the crucible of an emergency would be a major blow to public confidence and a genuine catastrophe for the real economy.

We propose creating standby emergency authority scaled to the size of the current U.S. economy: \$1 trillion, in 2010 dollars. As of the end of 2009, the U.S. GDP was approximately \$14 trillion,¹⁷⁹ total credit market debt was approximately \$53 trillion,¹⁸⁰ and total financial assets were approximately \$145 trillion.¹⁸¹ In the recent crisis, Congress granted \$700 billion of authority through TARP. All of it was taken down, and at the worst moments, it still seemed insufficient.¹⁸² The funding we propose for SEIF would amount to approximately 7% of GDP and 2% of the current credit market debt, perhaps

178. The evidence for this proposition in the fall of 2008 is assessed in Gordon & Muller, *supra* note 77.

179. NATIONAL ECONOMIC ACCOUNTS, BUREAU OF ECON. ANALYSIS, DEPT. OF COMMERCE, available at <http://www.bea.gov/national/index.htm#gdp> (last visited Dec. 4, 2010).

180. *Id.* at tbl.L.4.

181. *See supra* note 20, at tbl.L.5.

182. In addition to being calibrated for political feasibility and psychological effect, TARP’s \$700 billion was scaled to 5% of the \$14 trillion then-outstanding residential and commercial mortgages (5% approximating the relevant loss rate) and 6.3% of U.S. commercial bank assets (then \$11 trillion). David Lightman & Margaret Talev, *Original Treasury Bailout Plan Is Dead, But Revised Plan Emerging*, MCCLATCHY (Sept. 24, 2008), available at <http://www.mcclatchydc.com/2008/09/24/53018/original-treasury-bailout-plan.html>.

the best measure of financial sector size.¹⁸³ It is important that this standby authority be scaled to the growth of the U.S. economy, proxied for these purposes by growth of the total credit market debt.

Use of SEIF would be permitted only by a consensus determination by the Treasury, the Fed, and the FDIC that systemic financial distress exists, that it cannot be adequately addressed by the use of nonemergency authority (including the FDIC's receivership power), and that it threatens to severely disrupt the U.S. economy.¹⁸⁴ SEIF would be available for three purposes. First, it could provide support to the FDIC's resolution plans and other FDIC-permitted activity. Second, it could provide capital and other assistance to firms in the financial sector. And third, it could support emergency authority wielded by the Federal Reserve by, for example, backstopping liquidity or asset financing programs exemplified by the Fed's financing activity in the recent financial crisis and permitted by Dodd-Frank.

To make SEIF a credible emergency funding source and to make clear its function as an insurance fund as opposed to a taxpayer bailout, it should be partially pre-funded by an assessment on large financial firms, including private financial firms such as hedge funds and MMFs, who depend on the stability of the financial sector for their daily activity.¹⁸⁵ The analogy, of course, is to the Federal Deposit Insurance Fund, which aims to protect the banking system against systemic risk. Protecting depositors is mostly incidental to that objective. With the growth of nonbank financial intermediaries in the "shadow banking" system, we need to broaden the Deposit Insurance Fund concept.

A quarter of SEIF should be pre-funded—\$250 billion in 2010 dollars, indexed appropriately. The financial sector assessments should be set such that the fund will accumulate slowly over time. We would favor a 20-year

183. The approximately \$1 trillion Eurozone bailout amounts to 6.2% of Eurozone GDP (\$16.2 trillion). See CENTRAL INTELLIGENCE AGENCY, *WORLD FACTBOOK*, available at <https://www.cia.gov/library/publications/the-world-factbook/geos/ee.html> (last visited Dec. 4, 2010). It was scaled to roughly 22% of the combined GDPs of Portugal, Italy, Greece, and Spain, with \$146 billion committed to Greece alone—about 41% of its GDP. See Dan Bilefsky & Landon Thomas Jr., *Greece Takes Its Bailout, But Doubts for the Region Persist*, N.Y. TIMES, May 3, 2010, at B1.

In further comparison, the Swedish, Finnish, and Norwegian responses to the Nordic banking crises of the early 1990s were scaled to between 2% and 9% of GDP. Peter Englund, *The Swedish Banking Crisis*, 15 OXFORD REV. ECON. POL'Y 80, 94 (1999); Knut Sandal, *The Nordic Banking Crises in the Early 1990s—Resolution Methods and Fiscal Costs* 104 tbl.3, in THE NORWEGIAN BANKING CRISIS, NORGES BANKS SKRIFTSERIE (T.G. More, J.A. Solheim, & B. Vale eds., 2004), available at <http://www.norges-bank.no/upload/import/publikasjoner/skriftserie/33/chapter3.pdf>; Seppo Honkapohja, *The 1990's Financial Crises in Nordic Countries* 24 tbl.4.1 (Bank of Fin. Research, Discussion Paper No. 5/2009, 2009), available at <http://ssrn.com/abstract=1427260>.

184. Alternatively, such an emergency could be invoked by super-majority vote of the Financial Stability Oversight Council. We also favor reinstating the FDIC's loan guarantee authority upon the same regulatory approval triggers that pertain to SEIF, subject to the provision of a loan guarantee fee and the obtaining of warrants.

185. We are open to the suggestion that premiums should also come from other major credit-market participants like bond funds and insurance companies with asset levels above the threshold applied to hedge funds and MMFs.

accumulation period, which would balance the 75-year period since the last major systemic break, the Great Depression, against increased instability from globalizing finance. The assessments should be risk-adjusted, requiring regulators to determine which firm-specific factors add to the systemic risk load, including presumably both capital and liquidity.¹⁸⁶ The assessments should continue after the initial fund is accumulated, so that relative risk adjustments can be made; for example, a firm that lowers its risk may receive a refund of more than it pays in for a particular period.¹⁸⁷ Borrowing from the Treasury should support a SEIF drawdown of more than the accumulated fund. Any losses to the Treasury should be covered by an assessment on all parties who are liable for pre-funding assessments. Apart from removing the unfairness of a taxpayer bailout, this mutualization of losses in a systemic emergency will give financial sector participants an incentive to alert regulators to growing systemic risks.

In short, the mechanism we propose requires large financial firms to mutually self-insure against outbreaks of systemic distress and gives regulators the power to structure their interventions.

III. Responding to Objections

SEIF would empower regulators, especially the Treasury, to make large-scale emergency interventions to protect the financial system in times of financial distress without additional congressional authorization and without the need to nationalize the financial sector. Most objections about legitimacy and accountability can be addressed with an appropriate funding source, a cautious trigger mechanism, and ex post accountability mechanisms. SEIF is a complement to, not a substitute for, the stringent ex ante risk-regulation regime of Dodd-Frank. It is also consistent with taxes or other fees to compensate the government when the combination of receivership and assistance create unusual profit opportunities for the surviving firms. As noted above, we propose that financial firms, not taxpayers, fund (and pre-fund) the insurance facility, that its use be made subject to a “triple key” regulatory concurrence, and that its application be monitored via safeguards similar to those found in Dodd-Frank, which are triggered by the FDIC’s invocation of its emergency receivership powers. The relevant congressional committees will presumably

186. Dodd-Frank requires risk-based assessments on large financial companies (greater than \$50 billion in assets) pursuant to a risk matrix established by the regulators that takes account of “the risks presented by the financial company to the financial system and the extent to which the financial company has benefited, or likely would benefit, from the orderly liquidation of a financial company,” identifying various factors that should be included in the calculus. See Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, § 210(o)(4), 124 Stat. 1376, 1464. This provides a useful starting point for SEIF assessments. Scaling risk assessment to changing perceptions of systemic risk is particularly challenging.

187. The Fund should be invested in long-term Treasury securities, and accrued interest should be credited to the Fund.

undertake oversight hearings to dissect the cause of the systemic emergency and the Treasury's (and other regulators') use of SEIF and other emergency powers.

There are three sorts of objections to our proposal that we think require special attention: first, that SEIF protection of the financial system is likely to hold harmless the firms and even the well-compensated individuals whose actions may have precipitated the crisis, in effect, rewarding the undeserving; second, that the Fund's existence will exacerbate the "too big to fail" perception that results in poor financial discipline at such firms, a "micro moral hazard" problem; and third, that the Fund itself will encourage greater risk-taking by firms, investors, and regulators, increasing the risk of systemic distress, a "macro moral hazard" problem.

A. Rewarding the Undeserving?

The first objection, a kind of unjust enrichment claim against apparently undeserving beneficiaries, is a major source of the political backlash against the TARP program. Such a stance, grounded in an understandable desire to punish the relevant actors, falls short, however. Most of the punishment from unchecked economic distress will be absorbed not by Wall Street but by Main Street and the millions who lose their jobs. Even *with* TARP (and a major economic stimulus program), unemployment has almost reached 10%,¹⁸⁸ and seven million workers have lost jobs since September 2008.¹⁸⁹ Without the stabilization of the financial sector that TARP made possible, these losses would have been vastly greater.¹⁹⁰ To some extent, the visceral fairness objection should be mitigated by the use of an industry-supported (and partially pre-funded) "insurance fund" instead of a taxpayer supported program like TARP. For example, during the recent financial crisis, the FDIC resisted drawing on its line of credit at the Treasury to support its dwindling Deposit Insurance Fund precisely to avoid the unfavorable perception of taxpayer funding. Additionally, a Fund recipient should provide the Treasury with an equity kicker on its repayment and accept stringent executive compensation terms. There is also no principled objection to setting up an excise tax on the

188. *Employment Situation Summary*, BUREAU OF LABOR STATISTICS, available at <http://www.bls.gov/news.release/empstat.nr0.htm> (comparing January 2010 unemployment (9.7%) with December 2009) (last updated Feb. 5, 2010).

189. *Current Employment Statistics*, BUREAU OF LABOR STATISTICS, at tbl.B-1, available at <http://www.bls.gov/webapps/legacy/cesstab1.htm> (last updated Feb. 5, 2010) (check "Total nonfarm"/"Seasonally adjusted" and click "Retrieve data") (comparing employees on nonfarm payrolls as of September 2008 against December 2009, seasonally adjusted). An alternative measure is unemployment, which shows an increase of approximately 6 million over the period. See *Labor Force Statistics*, BUREAU OF LABOR STATISTICS, at tbl.A-10, available at <http://www.bls.gov/webapps/legacy/cpsatab10.htm> (last updated Feb. 5, 2010) (check "Total, 16 years and over"/"Number of unemployed persons" and click "Retrieve data") (comparing number of unemployed as of September 2008 against December 2009).

190. See Blinder & Zandi, *supra* note 3.

financial firm beneficiaries that have survived and prospered as a result of an intervention. But the key point cannot be lost: the alternative to an emergency intervention that may save some unworthy financial firms and individuals is a systemic break with potentially devastating spillover effects on the real economy and the lives of most citizens.

B. Increasing the “Too Big to Fail” Problem?

Another likely objection is that an emergency facility like SEIF will encourage the growth of firms that are “too big to fail.” This concern stems from the FDIC’s historical practice of trying to rescue rather than liquidate large banks that run into financial distress and the consequent protection of even noninsured depositors.¹⁹¹ This practice has several interrelated distortionary consequences. Firms that are “too big to fail” are not subject to normal financial discipline and may engage in excessive risk-taking—moral hazard at the firm level or “micro moral hazard.” Such firms have a cost-of-capital advantage over smaller firms that the FDIC routinely liquidates. Indeed, firms have incentives to grow, even beyond their effective management capacity, to obtain “too big to fail” protection. If all large firms are protected and are in competition, funds will disproportionately flow to the largest firms with higher risks and higher returns from banking activity. The consequence is greater risk throughout the financial sector.

The Dodd-Frank legislation seeks to break that linkage, and our proposal would advance this objective. Under Dodd-Frank, an FDIC receivership of a nonbank financial firm (including a bank holding company parent of an insured depository institution) would apply a liquidation model, not a rescue model, thus rejecting the “too big to fail” approach. Our proposal makes the liquidation threat more credible. Imposing a receivership on a large financial firm is destabilizing. As argued above, the specter of financial sector nationalization could well accelerate the course to financial crisis. SEIF’s availability should reduce regulators’ concern that imposing an FDIC receivership is itself too dangerous. Market actors will know that the Treasury has a backup should resolution of a systemically important firm cause unanticipated systemic distress. This should bound any adverse market response. The consequence is to facilitate the imposition of an FDIC receivership and to make it easier for the FDIC to follow through on threats to impose significant creditor losses. Thus, the availability of SEIF can help reduce micro-moral hazard.

C. Increasing Risk-Taking Generally?

The third objection is that the availability of a standby emergency facility will increase risk-taking by investors, firms, and regulators and thus increase

191. See *supra* notes 102-109 and accompanying text.

the frequency and severity of systemic distress. Investors (including creditors) will know that even if any particular financial firm fails and is liquidated through an FDIC receivership, other firms may be protected in a systemic emergency. Thus, diversification is the indicated investment strategy. But investors are still looking for the highest return. Firms could face shareholder pressure to adopt higher-risk/higher-return strategies in return for funds. Even if a firm is not “too big to fail,” a medium-sized firm (Bear Stearns or Lehman) or a small firm (Long Term Capital Management) can cause great financial system distress by failing. The further concern is that regulators, aware of their backup capacity to address a systemic emergency, may draw initial constraints less tightly or respond to increasing levels of systemic risk less vigorously.

These causal chains assume that investors would expect regulators facing systemic distress to turn to SEIF in a predictable way. One strong counter to this objection is the Fed’s invocation of its emergency authority under section 13(3) of the Federal Reserve Act, the basis for many of its actions during the recent financial crisis. Until 2008, this power had been unused for seventy years.¹⁹² Among other considerations, the Fed has been concerned that declaring a financial emergency would create one. It is hard to believe that financial firms modified their risk parameters in expectation that the Fed would bail out the world financial system in a pinch. Indeed, the history suggests that the Fed has, if anything, been too reluctant to use its emergency authority—or that at least Congress has (at least at times) thought so. In the stock market crash of 1987, several key Wall Street broker-dealers teetered on the brink of failure. The Fed supplied some liquidity support, but it did so only by lending to member banks for follow-on loans to the broker-dealers, an awkward arrangement. In the aftermath of this brush with major systemic distress, the 1991 amendments to FDICIA significantly expanded the Fed’s authority to lend to nonbank financial firms by expanding the range of eligible collateral.¹⁹³ The Senate committee report (and Senator Dodd’s separate remarks) in the wake of the 1987 crisis were clear about the desirability of Fed intervention to avoid financial market collapse.¹⁹⁴

192. See Gordon & Muller, *supra* note 77.

193. *Id.* at 33; see Federal Deposit Insurance Corporation Improvement Act of 1991, Pub. L. No. 102-242, § 473, 105 Stat. 2236, 2386.

194. S. REP. NO. 102-167 (1991); 137 CONG. REC. 36, 131-32 (statement of Sen. Christopher Dodd). The Committee Report states:

[The provision] therefore amends the Federal Reserve Act to allow stocks, bonds and other securities to be used for discount advances by borrowers other than member banks. This clarifies that access to liquidity in special circumstances can be made available directly to a securities dealer to help preserve market liquidity and avoid market disruption. The borrowers must still demonstrate their inability to obtain credit elsewhere and the instruments must still be secured to the satisfaction of the Federal Reserve Bank. With the increasing interdependence of our financial markets, it is essential that the Federal Reserve System have authority and flexibility to respond promptly and effectively in unusual and exigent circumstances that might disrupt the financial system and markets.

Moreover, it has become clear that invoking emergency authority to protect financial system actors who may have contributed to a crisis will be controversial. Using industry-funded insurance rather than taxpayer dollars will not remove the controversy, nor should it. Regulators will face close scrutiny from Congress and the media. The lesson learned in the recent crisis about political fallout will make regulators hesitant to use emergency power. This lesson also undercuts the claim that standby emergency authority will materially increase systemic risk. There is no doubt that specific firms, perhaps several firms, will face receivership in the next financial crisis.

But in any event, this general objection runs up against the inevitability of systemic distress. Dodd-Frank contains various measures to reduce systemic risk, including enhanced capital and liquidity requirements, increased supervisory oversight, structural changes to the industry, and ongoing systemic risk monitoring. The interaction of these legislative and regulatory efforts with dynamic global financial markets, over the span of decades, is impossible to foresee. The availability of standby emergency authority does not itself make firms “too big (or too connected) to fail.” Rather, it is a prudential measure against possibilities we may not project, notwithstanding efforts to avoid them, and it is no more causative of failure than a safety net under a tightrope walker. Indeed, by replenishing itself with assessments on all significant financial firms, SEIF amounts to a mutualization of risk that should encourage more cautious firms to press regulators to rein in firms and practices that pose systemic risks.¹⁹⁵

But suppose “macro” moral hazard will marginally increase the risk of a systemic crisis under SEIF. Suppose, for example, creditors supply credit to financial firms thinking that although a loan to any single firm may be lost, government intervention through SEIF will provide protection against severe losses from a generalized collapse. This action may marginally lower the cost of capital to risk-taking firms, but even this cloud has a silver lining. Creditors will be less likely to retreat at the hint of a crisis; financial firms may have a better chance of raising capital that will stabilize them and the financial system too. Is this a net negative? Standby authority to intervene in a systemic financial emergency may be seen as a kind of generalized government guarantee designed to avoid a run on the entire financial system. Government protection against the outbreak of a Hobbesian state of nature in the financial world is surely one useful way that government promotes the “common

195. It has become common for regulators to distinguish between “micro-prudential” supervision and “macro-prudential” supervision, reflecting the differences between firm-specific risks of failure and systemic risks. The regulators’ distinction helps to illustrate why the control of “micro” moral hazard, the “too big to fail” problem, does not protect against systemic breakdowns, in part because of a “macro” moral hazard problem that requires a different sort of regulatory oversight.

welfare” and fosters economic development.¹⁹⁶ SEIF is a particularly attractive vehicle to accomplish this objective.

Conclusion

The core argument for establishing SEIF is, in the end, simple. Despite regulators’ diligence and effectiveness at managing systemic risk, serious systemic crises in the financial sector are inevitable if unpredictable. Recognizing this does not take away from the urgency of present efforts to restructure the financial sector and its regulations. In this moment of financial regulatory reform, we need to preserve and improve regulators’ authority to intervene in an emergency. Even successful mid-crisis recourse to Congress increases instability, and a legislative breakdown could produce true catastrophe. The real economy and the lives of real people would bear the costs. Between financial sector nationalization and SEIF, we think industry-funded insurance is the better approach.

196. For a reconstruction of the alternative view, see J. Bradford DeLong, “*Liquidation*” *Cycles: Old-Fashioned Real Business Cycle Theory and the Great Depression* (Nat’l Bureau of Econ. Research, Working Paper No. w3456, 1990), available at <http://ssrn.com/abstract=226835>.