Risky Business: The Credit Crisis and Failure

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RISKY BUSINESS: THE CREDIT CRISIS AND FAILURE (PART I)

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INTRODUCTION

The credit crisis represents a watershed event for global financial markets and has been linked to significant declines in real economy performance on a level of magnitude not experienced since World War II. Recognition of the crisis in 2008 has been followed in 2009 and 2010 by a plethora of competing proposals in response to the credit crisis. The result has been a cacophony of visions, voices, and approaches. The sheer noise that has ensued threatens to drown out the fundamental core questions that should be asked about the credit crisis. Among the most important are questions about the relationships between risk, regulation, and failure.


The credit crisis can be viewed as a type of financial market network failure. The credit crisis underscores the complex and linked nature of contemporary financial markets, as well as the inherent difficulties regulators and industry participants face in managing complex and interconnected risks. The credit crisis also demonstrates that neither industry participants nor regulators fully apprehended underlying financial market risks. In recent years, financial products and financial markets have become increasingly complex and global. Although public commentary and policy discussions in the credit crisis aftermath focused on the implications of financial services firms that are “too big to fail,” existing commentary devotes less attention to the network-like characteristics of financial markets and the implications of complex networks for financial markets. The impact of financial market networks is heightened by the pervasive cultures of trading and risk-taking that now characterize many market segments. The risk-taking associated with financial market trading activities is perhaps best illustrated by cases of individual traders who took on risky trading positions that significantly compromised or, in the case of Baring Brothers, destroyed the firms on whose account they trade.

Over-the-counter (OTC) derivatives illustrate both financial innovation and the links that connect financial market participants, such as traders. Derivatives have been a key aspect of financial innovation; they have

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5 In January 2010, for example, President Obama proposed yet another Wall Street reform plan that would limit the size and activities of the kinds of institutions that in the past were considered “too big to fail.” Press Release, White House, Office of Press Sec’y, President Obama Calls for New Restrictions on Size and Scope of Fin. Insts. to Rein in Excesses and Protect Taxpayers (Jan. 21, 2010), http://www.whitehouse.gov/the-press-office/president-obama-calls-new-restrictions-size-and-scope-
financial-institutions-rein-e[link].

6 Arewa, Trading Places, supra note 4, at 7, 18–23.

7 Id.

8 See Ian Greener, Nick Leeson and the Collapse of Barings Bank: Socio-Technical Networks and the ‘Rogue Trader’, 13 ORG. 421 (2006) (discussing Nick Leeson and how his unauthorized and risky trades led to the collapse of his employer Barings Brothers in 1995); see also Kimberly D. Krawiec, The Return of the Rogue, 51 ARIZ. L. REV. 127 (2009) (discussing instances of rogue traders and the losses such traders generated for their firms) [link].


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“enabled a far greater degree of linkage across markets than at any other time.”

Private legal rules, often specified in form documents, are typically incorporated into OTC derivatives contracts. OTC derivatives are traded through private contracts between parties based on form agreements that permit customization for particular transactional terms. In contrast, exchange-traded derivatives, such as futures and options on futures, are traded and cleared through standardized contracts and bought and sold in organized derivatives exchanges. OTC derivatives markets exemplify the complexity and trading in financial markets. OTC derivatives are now key building blocks in global financial markets, with a gross market value of $25 trillion and notional value of $605 trillion in June 2009.

Not surprisingly, the character and complexity of financial markets were major factors in the industry and regulatory failures that preceded the credit crisis. In the aftermath of the credit crisis, however, failure is often discussed in connection with the financial services companies that many blame for the crisis. Although blame can and certainly should fall on professional financial market participants, other failures, including those by regulators, have also played a significant role in the credit crisis. Further, U.S. financial market regulation frameworks have not kept pace with financial innovation. As a result, regulators often are unable to provide adequate risk oversight for the complex trading and other activities that increasingly characterize financial markets.

13 Garry J. Schinasi, R. Sean Craig, Burkhard Drees & Charles Kramer, Modern Banking and OTC Derivatives Markets: The Transformation of Global Finance and its Implications for Systemic Risk 3, 6 (Int’l Monetary Fund Occasional Paper 203, 2000) (noting that the dynamics of modern finance are much more complex than those of traditional banking deposit markets and that “[b]ecause each derivatives portfolio is composed of positions in a wide variety of markets, the network of credit exposures is inherently complex and difficult to manage”).
14 BANK FOR INT’L SETTLEMENTS (BIS), BIS QUARTERLY REVIEW: INTERNATIONAL BANKING AND FINANCIAL MARKET DEVELOPMENTS 22 (Dec. 2009), http://www.bis.org/publ/qtrpdf/r_qt0912.htm. Notional amounts reflect the principal value of the underlying assets on which the derivative is based, represent a measure of market size, and serve as a reference point for determining contractual payments. BIS, OTC DERIVATIVES MARKET ACTIVITY IN THE FIRST HALF OF 2008 at 4 (Nov. 2008), http://www.bis.org/publ/otec_hy0811.pdf [hereinafter BIS, OTC DERIVATIVES MARKET]. Notional amounts, however, are not typically exchanged. U.S. GOV’T ACCOUNTABILITY OFFICE, FINANCIAL DERIVATIVES—ACTIONS NEEDED TO PROTECT THE FINANCIAL SYSTEM 28 n.7 (1994), and do not represent a true measure of risk. Instead, the gross market value of derivatives, which measures the cost of replacing all existing contracts, is a better measure of market risk. BIS, OTC DERIVATIVES MARKET at 4–5.
Rhetorically bashing financial institutions has become commonplace among the media, public officials, regulatory agencies and the general public. A focus on blaming financial institutions, however, deflects attention from other failures that contributed to the credit crisis. Further, few discussions focus to a sufficient extent on dealing with the industry and regulatory failures that led to the credit crisis. The credit crisis aftermath could be seen as actually rewarding those most responsible for the failure to manage or regulate risky financial market business activities. Through programs such as the Troubled Asset Relief Program (TARP) and the Public-Private Investment Program (PPIP), which are government initiatives to address problems resulting from the presence of “illiquid and troubled assets on financial institutions’ balance sheets,” industry participants received government bailouts that permitted them to avoid assuming the full risk of their activities. The bailouts have thus rewarded risk management failures by averting firm failure, which presents the same significant moral hazard implications that spawned the current financial crisis in the first place.

15 David Reilly, Banker Bashing Gives Cover to Far Bigger Culprits, BLOOMBERG.COM, Feb. 6, 2009, http://www.bloomberg.com/apps/news?pid=20601039&refer=columnist_reilly&sid=akQHGe4jT8fs (Banker bashing “satisfies the populist need for an identifiable villain in the financial crisis[,] . . . provides an outlet for our collective anger[,] . . . [and] absolves us from thinking about just how we—the credit-card-loving, mortgage-craving, debt-addicted consumers of America—helped foment the meltdown.”) [link].


19 Douglas et al., supra not 18 at 181.

20 See Jonathan Macey, Obama and the ‘Fat Cat Bankers’, WSJ.COM, Jan. 12, 2010, http://online.wsj.com/article/SB10001424052748704081704574652622742100550.html (“But we must get out of the business of guaranteeing against failure. The bankers and the shareholders who enjoy the rewards of risk-taking should be made to act like real capitalists: They should be required to assume the risks that go along with the banks’ business activities.”) [link].

21 See Karl S. Okamoto, After the Bailout: Regulating Systemic Moral Hazard, 57 UCLA L. REV. 183 (2009) (attributing the credit crisis to systemic moral hazards in risk-taking) [link].
Bailouts reflect recognition of the networked nature of financial markets today and the potential systemic impact of firm failures. Because failure is an important market mechanism, however, preventing failed firms from actually failing serves to obscure the fact that failure may be both necessary and desirable. Further, although deregulation played a role in the credit crisis, lax regulation and regulatory failure also contributed to the credit crisis. As is the case with failed industry participants, regulators may also be rewarded for their failures by being given greater regulatory responsibility. Financial market reform proposals would benefit from taking better account of the implications of the widespread failures of varied market participants and regulators and focusing to a greater extent on regulatory effectiveness as both a goal and a metric by which to measure regulatory success.

This Essay analyzes the institutional and legal implications of cultures of trading. It discusses the implications of cultures of trading and considers regulatory reforms that such cultures of trading make necessary. This Essay also recommends adoption of regulatory approaches that focus on prevention of future failures rather than approaches geared toward preventing past failures. An approach that intends to avert future failures should include a number of elements designed to ameliorate risk. A key element in such an approach would entail development of mechanisms that force market participants to bear the risks of their activities. Potential approaches could involve varied means, such as insurance, industry bailout pools, and improved industry risk management. These internal industry regulatory initiatives should be part of an overall regulatory approach that focuses on developing financial market firewalls to contain the impact of participant failures. Averting future major financial market failures will also require fundamentally rethinking U.S. regulatory approaches and implementing regulatory principles that guide regulatory enactment and reform. These regulatory principles should focus on creating financial market regulatory


24 Patricia A. McCoy, Andrey D. Pavlov & Susan M. Wachter, Systemic Risk Through Securitization: The Result of Deregulation and Regulatory Failure, 41 Conn. L. Rev. 1327 (2009) (detailing the chronology of deregulation and subsequent failure to enforce existing regulations that led to the credit crisis) link. Id. at 1366 (“In sum, deregulation and federal regulators’ subsequent failure to exercise their traditional oversight powers laid the foundation for the underpricing of risk and the erosion in lending standards.”).


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frameworks that are efficient, effective, flexible, transparent and neutral. Ensuring better education of market participants, regulators, and most importantly investors, should also be a core goal of financial market regulation. Finally, the global and complex nature of financial markets requires regulation based to the greatest extent possible on actual market dynamics, which entails better collection and analysis of relevant data that can then be used by participants and regulators to avoid future financial market meltdowns.

I. INDUSTRY RISK MANAGEMENT FAILURES

A. The Credit Crisis and Downside Risks of Financial Market Innovation

In the second half of 2008, credit markets became increasingly illiquid, with the U.S. emerging as the epicenter of a global financial contagion that was precipitated by the unraveling of U.S. housing markets.26 Financial institutions throughout the world had exposure to U.S. housing markets,27 in part through credit derivatives such as collateralized debt obligations (CDOs).28 Other market participants, including monoline bond insurers and insurance companies such as American International Group, Inc. (AIG), retained significant exposure to CDOs by virtue of another type of credit derivative, credit default swaps (CDSs).29 Companies used CDSs to insure payment streams for CDOs and other financial instruments.30 Securitization has contributed to trends in general financial markets towards cultures of trading by enabling transformation of assets that were previously not traded and remained on individual companies’ balance sheets into financial instruments with, in many cases, liquid trading markets.31

27 JOAO GARCIA & SERGE GOOSSENS, THE ART OF CREDIT DERIVATIVES: DEMYSTIFYING THE BLACK SWAN 183 (2010) (“the credit crunch was ignited by the subprime mortgage-backed securities in the portfolios of financial institutions”).
28 See generally Frank Partnoy & David A. Skeel, Jr., The Promise and Perils of Credit Derivatives, 75 U. CIN. L. REV. 1019, 1020–21 (2007) (describing credit derivatives and CDOs and noting their “increasingly important and controversial” role in financial markets).
29 Arvind Rajan, A Primer on Credit Default Swaps, in THE STRUCTURED CREDIT HANDBOOK 17, 17 (Arvind Rajan, Glen McDermott & Ratul Roy eds., 2007) (“A credit default swap . . . is a contract in which the buyer of default protection pays a fee, typically quarterly or semiannually, to the seller of default protection on a reference entity, in exchange for a payment in case of a defined credit event such as a default.”) (footnote omitted) link
31 See Arewa, Trading Places, supra note 4 at 11–13.
By creating liquid secondary trading markets for assets such as home mortgages that in the past remained on individual financial institution balance sheets, credit derivatives have enabled the spread of credit risk to a broad range of investors throughout the world. Investors purchasing credit derivatives, including a wide range of global financial institutions, relied to a significant extent on existing relationships with financial institutions that structure, market, and sell such derivatives. These investors also relied on privately generated ratings issued by gatekeepers such as credit rating agencies, which play a crucial verification and certification function in fixed income markets. Many structured finance instruments were actually far riskier than their ratings might have suggested. As a result, flaws in credit rating agency assessments of structured finance instruments often are considered a principal underlying cause of the credit crisis.

As the credit crisis unfolded, uncertainty about the valuation of credit derivatives and other assets on financial institutions’ balance sheets contributed to a liquidity crunch that exacerbated the impact of the crisis. This liquidity crunch significantly constrained secondary markets for structured finance securities in ways that many market participants and regulators failed to anticipate.

The credit crisis highlights pervasive failures in industry and regulatory risk management. Information and communications technologies, finance theory, and financial engineering facilitated development of derivatives markets and played a role in the risk management of complex financial instruments. However, rather than spreading risk prior to the credit crisis, financial market innovations tended to hide risk by complicating it. The seeming ability to quantify and price risk underscores a conceptual shift in attitudes about risk, which may have contributed to the credit crisis. The rise of so-called “quants” on Wall Street led to the era of complex financial products, complex trading strategies and automated trading, and intricate fi-

32 Garcia & Goossens, supra note 27 at 183 (discussing the systemic risk implications of investors’ substituting a single name bond for a securitization note, which substitutes idiosyncratic with systemic risk).


34 Patterson, supra note 26 at 140, 166, 204.


ancial market networks that characterized financial markets at the time of the credit crisis.\textsuperscript{38}

The activities of quants are exemplified by the rise and fall of Long-Term Capital Management (LTCM), a hedge fund that nearly failed in 1998.\textsuperscript{39} LTCM opened for business in February 1994 after raising $1.25 billion from a broad range of investors.\textsuperscript{40} LTCM, whose principals included prominent traders and two Nobel Prize winners,\textsuperscript{41} employed a dozen or so trading strategies, some of which involved convergence trades and dynamic hedging.\textsuperscript{42} LTCM’s trades involved complex strategies and trades that numbered in the thousands.\textsuperscript{43} At one point, LTCM was reported to have over 60,000 trades on its books.\textsuperscript{44} LTCM’s reputation enabled it to get credit on easy terms and facilitate its development of connections with other traders and financial institutions, many of whom were eager to make trades with LTCM.\textsuperscript{45}

LTCM’s Treasury arbitrage trade was one of its simpler trading strategies.\textsuperscript{46} This trade, in one instance, took advantage of market discounting of thirty-year U.S. Treasury bonds, which created an unexpectedly wide spread in yields.\textsuperscript{47} In 1994, betting that this spread would narrow, LTCM bought $1 billion in bonds that its models suggested were undervalued by the market (the cheaper Treasury bonds), and sold short $1 billion in bonds that its models suggested were overvalued by the market (the more expensive Treasury bonds).\textsuperscript{48}

\begin{footnotesize}
\textsuperscript{38} See generally Patterson, supra note \textsuperscript{26} at 87, 93, 99, 106, 114, 115, 128, 138, 151, 155, 194.
\textsuperscript{39} President’s Working Group on Fin. Mkts., Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management 12–14 (Apr. 1999) [hereinafter PWG] (describing LTCM’s near failure) [link].
\textsuperscript{40} Roger Lowenstein, When Genius Failed: The Rise and Fall of Long-Term Capital Management 39 (2000).
\textsuperscript{41} Id. at 116–17 (noting that 1997 Nobel Laureate in Economics winners Robert C. Merton and Myron Scholes were among the principals at LTCM); PWG, supra note \textsuperscript{39} at 10 (“LTCM’s principals included individuals with substantial reputations in the financial markets and especially in the economic theory of financial markets.”).
\textsuperscript{42} See generally Edward Chancellor, Devil Take the Hindmost: A History of Financial Speculation 339 (2000) (noting that convergence trading is “a backward-looking type of speculation based on an extrapolation of historic price patterns”); PWG, supra note \textsuperscript{39} at 10 & nn.13, 14 (noting that “LTCM sought to profit from a variety of trading strategies, including convergence trades and dynamic hedging,” and describing convergence trading (relative value arbitrage) as “the practice of taking offsetting positions in two related securities in the hopes that the price gap between the two securities will move in a favorable direction” and dynamic hedging as “the practice of managing nonlinear price risk exposure (i.e., from options) through active rebalancing of underlying positions, rather than by arranging offsetting hedges directly”).
\textsuperscript{43} PWG, supra note 39, at 46.
\textsuperscript{44} Id. at 11.
\textsuperscript{45} Lowenstein, supra note \textsuperscript{40} at 46–47.
\textsuperscript{46} Id. at 45.
\textsuperscript{47} Id. at 43 (“In 1994, Long-Term noticed that this spread was unusually wide. The February 1993 issue was trading at a yield of 7.36 percent. The bond issued six months later, in August, was yielding only 7.24 percent, or 12 basis points, less.”).
\end{footnotesize}
sive Treasury bonds).\textsuperscript{48} To pay for the cheaper bonds, LTCM borrowed money from several Wall Street banks and borrowed the more expensive bonds that it sold short.\textsuperscript{49} LTCM also loaned the bonds that it bought to other Wall Street firms, who wired cash to LTCM as collateral for the loaned bonds.\textsuperscript{50} This series of transactions enabled LTCM to make the $2 billion Treasury arbitrage trades without using any of its own cash. Maintaining the trade would cost LTCM a few basis points per month if rates moved as contemplated by LTCM, but could potentially cost far more if rates moved in an unanticipated manner.\textsuperscript{51}

The Federal Reserve Bank of New York orchestrated the rescue of LTCM by a private bailout and recapitalization in the aftermath of bond market volatility surrounding the 1998 Russian debt default, due to fears about the potential market impact of an LTCM collapse.\textsuperscript{52} A clear harbinger of the later credit crisis, LTCM had leverage of greater than 100-to-1 just prior to its almost $4 billion bailout.\textsuperscript{53} Internal risk management models at LTCM were insufficient in the face of adverse market conditions in 1998. With more capital, however, LTCM might have withstood the adverse market conditions.

As was the case with LTCM in 1998, internal risk management at many financial market firms was not well-positioned to cope with the market volatility that came with the credit crisis.\textsuperscript{54} The ability of many firms to

\textsuperscript{48} Id. at 44; Richard A. Brealey, Stewart C. Myers & Franklin Allen, Principles of Corporate Finance 369 (9th ed. 2008) (noting that a person selling short holds the view that a stock price will decline). Short selling is typically accomplished as follows: the person selling short borrows shares from an investor, sells the shares, waits for the price to decline so that the stock can be repurchased at a price lower than the original sale price, and returns the borrowed shares to the initial lending investor.

\textsuperscript{49} Lowenstein, supra note 40 at 44-45.

\textsuperscript{50} Id. at 45.

\textsuperscript{51} Id. (noting that LTCM also substantially reduced or refused to take haircuts or post collateral on the bonds it borrowed).

\textsuperscript{52} See id. at 207–208 (noting that new equity of $3.6 billion was contributed in exchange for 90 percent equity in LTCM); PWG, supra note 39 at 12 (“The LTCM Fund’s size and leverage, as well as the trading strategies that it utilized, made it vulnerable to the extraordinary financial market conditions that emerged following Russia’s devaluation of the rouble and declaration of a debt moratorium on August 17 of last year. Russia’s actions sparked a ‘flight to quality’ in which investors avoided risk and sought out liquidity.”); Joseph G. Haubrich, Some Lessons on the Rescue of Long-Term Capital Management (Fed. Reserve Bank of Cleveland Discussion Paper No. 19, 2007) (describing the full history and details of LTCM’s rescue by the Federal Reserve Bank).

\textsuperscript{53} Lowenstein, supra note 40 at 191.

\textsuperscript{54} See, e.g., CEO Pay and the Mortgage Crisis: Hearing Before the H. Comm. on Oversight and Government Reform, 110th Cong. 166 (2008) (testimony of Charles Prince, former Chairman and CEO, Citigroup) (“Last fall, it became apparent that the risk models which Citigroup, the various rating agencies, and the rest of the financial community used to assess certain mortgage-backed securities were wrong.”); see generally James Surowiecki, That Uncertain Feeling, NEWYORKER.COM, Sept. 1, 2008, http://www.newyorker.com/talk/financial/2008/09/01/080901ta_talk_surowiecki (discussing market volatility in 2008, noting that “[p]recipitous falls in the market have frequently been followed immediately by sharp rallies, and vice versa.”)
successfully endure such volatility has been hindered by a number of factors, including inadequate risk management, high leverage, and compensation structures that may have encouraged speculation and incentivized risky trading. Further, misuses of mathematical models also contributed to the credit crisis.\footnote{See Felix Salmon, \textit{Recipe for Disaster: The Formula That Killed Wall Street}, \textit{WIRED} MAG., Feb. 23, 2009, http://www.wired.com/techbiz/it/magazine/17-03/wp_quant [link].} The Gaussian copula function, which was developed by David X. Li,\footnote{See David X. Li, \textit{On Default Correlation: A Copula Function}, \textit{9 J. FIXED INCOME} 43 (2000).} a Wall Street math wizard, was widely used by various financial market participants, gatekeepers, and regulators to model complex financial market risks.\footnote{Li’s formula can be formalized as follows: $\Pr[T_A<1, T_B<1] = \Phi_2(\Phi'(F_A(1)), \Phi'(F_B(1)), Y)$. Salmon, \textit{supra} note \pageref{fn:li}.} Li, who has an M.A. in the actuarial sciences and a Ph.D. in statistics, reflects a typical trajectory in the “quant” era, during which Wall Street firms hired Ph.D.s in math and physics to create, price, and arbitrage increasingly complex securities.\footnote{Id.; \textit{Patterson}, \textit{supra} note \pageref{fn:patterson} at 2–13.} The Li formula addresses the problem of modeling default correlation, which is an important factor in pricing complex securities and assessing risk.\footnote{Salmon, \textit{supra} note \pageref{fn:li}.} The importance of modeling default correlation is obvious, for example, in the case of LTCM’s treatment of sovereign bonds. An investor who is investing in Russian and Mexican bonds needs to understand the extent to which a Russian default might be correlated with a Mexican default.\footnote{See Sam Jones, \textit{The Formula that Felled Wall Street}, \textit{FINANCIAL TIMES.COM}, Apr. 24, 2009, http://www.ft.com/cms/s/0/912d85e8-2d75-11de-9eba-00144feabdc0.html [link].} LTCM failed in part because its models, which were based on 100 years of historical data, assumed no correlation between a Russian and Mexican default.\footnote{Id.} \textit{Contrary to LTCM’s models, in 1998 a Russian and Mexican default were correlated, and because both markets included many of the same investors, the Russian default led many investors to sell their Mexican bonds as they attempted to lower the risk levels in their portfolios.} The Russian devaluation and default on certain borrowings ultimately contributed to the collapse of LTCM.\footnote{Id.} The Russian devaluation and default on certain borrowings ultimately contributed to the collapse of LTCM.\footnote{Id.}

Li’s Gaussian copula model was innovative in that it allowed modeling of CDO default correlation without the need for historical CDO data.\footnote{\textit{INTERNATIONAL MONETARY FUND, WORLD ECONOMIC OUTLOOK AND INTERNATIONAL CAPITAL MARKETS: INTERIM ASSESSMENT} 35–36 (1998), http://www.imf.org/external/pubs/ft/weo/weo1298/pdf/file3.pdf (noting that “the devaluation and unilateral debt restructuring by Russia sparked a period of turmoil in mature markets that is virtually without precedent in the absence of a major inflationary or economic shock”) [link]. Lowenstein, \textit{supra} note \pageref{fn:lowenstein} at 135–149.} In-
stead, Li’s model used historic CDS spreads to model default correlation.65 A CDS price increase thus would be reflected as an increase in default risk in Li’s formula.66 Li’s formula and variants based on it were widely adopted by industry participants and credit rating agencies, were used to price billions of dollars of CDOs, and contributed to increases in CDO and CDS activity.67 Reliance upon and widespread use of Li’s formula contributed to the credit crisis in part because those making asset allocation decisions on Wall Street were not quants and did not really understand the formula’s limitations and weaknesses.68 Further, mathematical models that could render some measurable (even if incorrect) output also may have lent “credibility and false precision to the dismal reality of risk management.”69

Use of derivatives may also have changed the ways investment professionals frame risk. Wall Street firms that created CDOs and other complex derivatives may have lessened due diligence and risk assessment of their creations because they assumed that a liquid market would exist.70 Risk assessments were shaped by incomplete market assumptions.71 Therefore, significant gaps existed in widely used industry risk management models,72 particularly with respect to liquidity risk, which was underpriced.73 Gaps in risk models and risk management reflected an incomplete understanding of financial networks and the full implications of trading credit derivatives and other complex structured products.74

65 Id.
66 See id.
67 See id.
68 See id. (“[T]he managers empowered to apply the brakes didn’t understand the arguments between various arms of the quant universe.”).
70 See EL-ERIAN, supra note 10 at 144.
71 See id. at 145.
72 See Jones, supra note 60; Salmon, supra note 55. Economist Intelligence Unit, The Bigger Picture: Enterprise Risk Management in Financial Services Organisations 5 (Sept. 2008), http://www.sas.com/resources/whitepaper/wp_5612.pdf (reporting that financial services professionals surveyed “believe that the losses stemming from the credit crisis were largely as a result of failures to address risk management issues”) [link], cf. CRMPG III, supra note 4 at 10–12 (identifying more ideal risk monitoring protocols).
73 SECs. EXCH. COMM’N, OFFICE OF INSPECTOR GEN., SEC’s OVERSIGHT OF BEAR STEARNS AND RELATED ENTITIES: THE CONSOLIDATED SUPERVISED ENTITY PROGRAM, REPORT NO. 446-A, at 7 (Sept. 25, 2008) [hereinafter, SEC INSPECTOR GENERAL REPORT A] [link], A Personal View of the Crisis: Confessions of a Risk Manager, ECONOMIST, Aug. 9, 2008, at 72 [hereinafter Confessions] (“Liquidity risk was in effect not priced well enough; the market always allowed for it, but at only very small margins prior to the credit crisis… . The gap in our risk management only opened up gradually over the years with the growth of traded credit products such as CDO tranches and other asset-backed securities. These sat uncomfortably between market and credit risk.”) [link]
The speed of credit crisis contagion also took many by surprise.\textsuperscript{75} Further, the credit crisis unfolded along with changes to accounting rules for derivatives that require fair value (i.e., mark-to-market) reporting in company financial statements, which likely increased financial statement volatility.\textsuperscript{76} Financial statement volatility may result from fair value accounting because assets and liabilities may need to be reported based on some measure of market value rather than historical cost measures.\textsuperscript{77}

Derivatives are an important part of hedging activities and proprietary and client trading operations for a wide variety of market actors, particularly investment and commercial banks and hedge funds. On Wall Street, for example, “trading firms routinely borrow as much as 50 times the cash in their accounts to trade complex financial instruments such as derivatives.”\textsuperscript{78} The extensive leverage used in derivatives trading, however, may magnify risk.\textsuperscript{79} In the credit crisis, leverage was an important factor in financial institution instability because many financial institutions were engaged in high-risk trading activities, did not have sufficient capital to withstand a market decline, and found it difficult to raise additional capital due to liquidity constraints in a frozen credit market.\textsuperscript{80}

The Counterparty Risk Management Policy Group III (CRMPG) is a group of industry participants tasked with providing a private sector response to the credit crisis.\textsuperscript{81} The CRMPG has identified four forces that often are common denominators in financial contagion: credit concentrations, maturity mismatches, excessive leverage on balance sheets or embedded in individual classes of financial instruments, and the illusion of market liquid-

\textsuperscript{75} CRMPG III, \textit{supra} note 4 at 4 (noting that the patterns, speed, and reach of the credit crisis contagion are “different in degree, if not kind, from . . . earlier periods of financial instability”).


\textsuperscript{77} Guillaume Plantin, Haresh Sapra & Hyun Song Shin, \textit{Fair Value Reporting Standards and Market Volatility, in Derivatives Accounting and Risk Management: Key Concepts and the Impact of IAS 39}, at 145, 150–51 (Hyun Song Shin ed., 2004) (noting that some financial statement volatility may reflect fundamentals that otherwise reflect economic reality, while some resulting volatility may be artificial and pernicious).


\textsuperscript{79} DAS, \textit{supra} note 69 at 31–32 (“Derivatives give you more leverage than anything else.”).

\textsuperscript{80} See Markus K. Brunnermeier, \textit{Deciphering the Liquidity and Credit Crunch 2007–2008}, 23 J. Econ. Perspectives 77 (2009) (describing the liquidity squeeze that came with the credit crisis) [\textcolor{magenta}{link}].

\textsuperscript{81} CRMPG III, \textit{supra} note 4 at vii–x, 1.

http://www.law.northwestern.edu/lawreview/coloquy/2010/14/
ity. These factors all played a role in the credit crisis and contributed to its spread through the same networks that connected market participants during more favorable market conditions. The credit crisis thus illuminates important perils of networked financial markets and some downside risks of financial innovation.

B. Industry Inoculation: Financial Market Loss Prevention and Risk Spreading

Because many financial market firms were heavily leveraged with insufficient capital, the consequences of failed risk management did not remain internalized within these firms. Rather, the costs of failed risk management have been externalized and borne by the general public. As many commentators have noted, this suggests the need for additional regulation to internalize these externalities, in part by imposing serious consequences for failure.

The Goldman Sachs “Abacus” transactions illustrate how trading activities may exacerbate systemic risk. On April 16, 2010, the SEC brought fraud charges against Goldman Sachs in connection with Abacus 2007-AC1 synthetic CDOs that Goldman marketed and structured. In contrast to cash CDOs, which contain portfolios of assets, synthetic CDOs reference an underlying portfolio of CDSs that may relate to the same types of assets that might be included in a cash CDO. Synthetic CDOs are far faster and easier to assemble than cash CDOs, and have contributed to growth in credit derivatives markets. Abacus 2007-AC1 was a $2 billion notional value synthetic CDO that referenced a portfolio of Residential Mortgage Backed Securities (RMBS). Investors in the Abacus synthetic CDO included ABN Amro, which was later acquired by a group of banks that included the Royal Bank of Scotland (RBS). RBS ultimately paid Goldman more than $840 million to terminate ABN Amro’s Abacus position and is now gov-

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82 Id. at 6, 12.
84 See, e.g., Glaeser, supra note 25 (“The current crisis has revealed as utter fiction the idea that banks can fail without imposing costs on the rest of us. Since bank failures impose costs on everyone else, the banking system needs more regulations to internalize those externalities.”).
86 See Arewa, supra note 4 at 11–12.
88 Complaint, SEC v. Goldman Sachs, supra note 85 at 18–19.
ernment-controlled. Similarly, German bank IKB Deutsche Industriebank AG purchased $150 million of Abacus synthetic CDOs in April 2007 and lost most of its investment within months of its purchase. It nearly failed in 2007 before a rescue from its main shareholder, state-owned KfW Bankengruppe. Synthetic CDOs magnified risk because they enabled market participants to place bets on the residential housing market that were far larger than the original market itself. By the end of 2006, although only $1.2 billion in subprime mortgages were outstanding, more than $5 trillion in investments had been created based on risky subprime loans. AIG, which received over $120 billion in bailouts from the U.S. government, insured $6 billion in Goldman-arranged Abacus deals. A number of Abacus investors, including AIG, IKB, and RBS, were recipients of government bailouts. The systemic impact of these types of trading activities and the potential for negative societal externalities are significant concerns in the aftermath of the credit crisis.

Regulation and internal risk management should share the goal of containing negative externalities that may flow from trading and other financial market activities. In addition to regulatory changes, credit crisis policy responses should strongly encourage financial market participants to manage risk collectively through mechanisms such as insurance and industry bailout pools that may help to spread risks of financial market activities among market participants. Models from other arenas could provide a starting point for shaping financial market participants’ efforts to develop mechanisms to prevent the externalization of their losses to broader society. Such models could be developed in conjunction with regulatory mechanisms intended to manage risk. Although implementing industry-sponsored models is likely to be complex and challenging, the potential avenue for ameliorat-

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90 Complaint, SEC v. Goldman Sachs, supra note 85, at 15–18.


ing the impact of future market crises that such models offer makes those efforts worthwhile. In addition to potentially mitigating systemic risk, or risks to the financial system as a whole, these models could also force private market discipline by creating regulatory frameworks that permit even large or highly-networked market players to fail. This likely will provide better incentives for more comprehensive internal industry risk management.

Additional forms of market insurance might supplement existing financial market insurance programs available through the Federal Deposit Insurance Corporation (FDIC), which insures bank deposits, and the Securities Investor Protection Corporation (SIPC), which insures broker-dealer accounts. In financial markets more generally, varied insurance mechanisms could be used to ameliorate risk in capital market contexts. Just as the availability of insurance for investors reflects regulatory concern for retail market participants, industry insurance schemes would reflect acknowledgment that even sophisticated market participants may need to insure against risks of the sort that led to the credit crisis. Large law firms in the United States offer a potential model for self-insurance, even though it is not likely to be completely transferable to the capital market context. The Attorneys’ Liability Assurance Society (ALAS) was founded in 1979. ALAS membership includes 236 firms and 60,000 lawyers in forty-five states and the District of Columbia, with total assets of over $1.9 billion. Membership in ALAS is subject to careful ALAS underwriting, which includes “on-site underwriting reviews and significant scrutiny” prior to acceptance. ALAS also makes recommendations concerning law firm structure and procedures.

Insurance will not, by itself, solve potential problems related to risk, but could spread risk and supplement risk firewalls in the event of broad, systemic problems or network failure. Insurance mechanisms may help to implement the private market discipline that remains the core goal of U.S. financial market regulatory frameworks. Regulators thus could either en-
courage or require use of more industry insurance mechanisms in financial markets.

Establishing clearinghouses similar to those in the commodities arena might be another avenue for monitoring and reducing risk. Clearinghouses have been suggested for CDS markets. Industry-sponsored bailout pools may be another industry-based mechanism for promoting the internalization of risk by financial market participants. Payments into the bailout fund could follow an agreed-upon formula that might reflect an incremental fee attached to certain types of financial market activities or could involve compensation holdbacks from employee bonuses. Regulators could monitor the composition of any payouts from such private bailout funds. The goal of industry-sponsored bailouts would be to establish firewalls around troubled or failed participating financial institutions and to execute any necessary financial rescues using funds from financial market participants rather than the general public. Further, schemes organized by financial services market participants that are subject to external regulatory oversight and monitoring are likely to be far more effective than direct external regulation, particularly with respect to management of complex risks.

C. Risky Business and Regulatory Mismatch: Internal Risk Management and Fragmented External Regulation

Risk management in financial markets may be hindered by the current design of U.S. financial market regulatory architecture. Indeed, in 2008 the U.S. Treasury Department characterized the structure of U.S. financial market regulation as “largely incompatible with [capital] market developments.” The financial services industry has seen a significant convergence of the banking, securities, and insurance market segments in

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103 See, e.g., id. (“The magnitude of this [“Superfund”] tax would be determined by the amount of liquidity risk posed by the portfolio choices of the hedge fund.”) (footnotes omitted).

104 See, e.g., id. (hypothesizing that the “Superfund” could be used to purchase distressed financial assets).

105 Rafael La Porta, Florencio Lopez-De-Silanes & Andrei Shleifer, What Works in Securities Laws?, 61 J. FIN. 1, 27–28 (2006) (finding in empirical study that securities laws are most important in facilitating private contracting, and that common law securities laws more effectively spur such contracting, standardized disclosure, and private dispute resolution than public securities laws and their regulatory enforcers do).

106 TREASURY BLUEPRINT, supra note 2 at 27.
recent years. Unfortunately, regulatory architecture in the United States has not adapted to reflect changing industry configurations. Rather, U.S. regulatory architecture has remained complex and fragmented in the face of industry “consolidation,” “conglomeration,” and “convergence.”

Regulatory fragmentation makes collaboration among various regulators difficult. In the futures and securities arena, for example, prior to the credit crisis, multiple regulatory authorities were responsible for regulating different aspects of financial markets. These authorities included the Securities and Exchange Commission (SEC), which had jurisdiction over securities, and the Commodity Futures Trading Commission (CFTC), which had jurisdiction over futures. The SEC and the CFTC split regulatory jurisdiction over derivatives. Over-the-counter (OTC) derivatives were largely unregulated due to the provisions of the Commodity Futures Modernization Act (CFMA). Regulatory treatment of OTC derivatives is, however, likely to change, and a number of post-credit crisis legislative and policy proposals would impose greater regulation on OTC derivatives markets.

Although some market participants such as broker-dealers are more heavily regulated, other significant market actors, such as hedge funds, are typically structured to take advantage of regulatory exemptions, causing

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108 See COMM. ON CAPITAL MKTS. REGULATION, THE GLOBAL FINANCIAL CRISIS: A PLAN FOR REGULATORY REFORM v (2009) (“The U.S. financial regulatory framework can be summed up in four words: highly fragmented and ineffective.”) [link]. See also GAO, FINANCIAL REGULATION: INDUSTRY TRENDS CONTINUE TO CHALLENGE THE FEDERAL REGULATORY STRUCTURE 18 (2007) [hereinafter GAO, FINANCIAL REGULATION] (pointing out that industry participants offering similar services and engaging in equally risky activities may be subject to different rules and oversight by different regulatory bodies) [link].

109 GAO, FINANCIAL REGULATION, supra note 108 at 18.


111 GAO, CFTC AND SEC: ISSUES RELATED TO THE SHAD-JOHNSON JURISDICTIONAL ACCORD 5–6 (2000) [link].

112 See id. (describing SEC and CFTC shared jurisdiction and jurisdictional disputes over security futures).


114 See supra note 2 and accompanying text.

115 See, e.g., TREASURY BLUEPRINT, supra note 2 at 120 (noting that broker-dealers and their salespeople “are subject to a broad range of SEC and FINRA regulatory requirements, including standards of operational conduct and financial capability, training, experience, and competence in their line of business”); ANGELA A. HUNG ET AL., INVESTOR AND INDUSTRY PERSPECTIVES ON INVESTMENT ADVISERS AND BROKER-DEALERS 12–17 (2008) (describing Investment Advisers Act regulations applicable to “financial planners, money managers, and investment consultants”) [link].
them to be lightly regulated under separate regimes from multiple federal regulators.116 A number of self-regulatory organizations (SROs), including the stock exchanges and the Financial Industry Regulatory Authority, also have regulated in the securities and futures arenas, subject in turn to additional regulatory oversight.117 The large number of financial market regulators and regulatory regimes in the United States underscores that more regulation does not necessarily lead to better regulation. Rather, this regulatory landscape has led to significant regulatory fragmentation and has also contributed to regulatory gaps and failures that diminish the effectiveness of regulatory frameworks. Furthermore, existing regulatory overlaps are highly inefficient.

While the SEC/CFTC regulatory split reflects the historical origins of futures in the agricultural sector and stock markets in the financial sector,118 the split makes little sense in a world of hybrid financial instruments and increasingly converged and networked securities and commodities markets.119 Prior to the credit crisis, banking regulation was similarly fragmented, distributed among multiple state regulators and five federal banking regulators.120 Insurance regulation remained the responsibility of the states, and therefore similarly lacked cohesion.121 “Regulators have attempted with varying success to alleviate the problems of regulatory frag-

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116 See Arewa, supra note 4 at 30–32 (describing how hedge funds may be subject to SEC, CFTC and Federal Energy Regulatory Commission oversight, and may be required to become members of the National Futures Association, a futures industry self-regulatory organization (SRO)).

117 See GAO, SECURITIES AND EXCHANGE COMMISSION: OPPORTUNITIES EXIST TO IMPROVE OVERSIGHT OF SELF-REGULATORY ORGANIZATIONS 1 (2007) [link] G30, supra note 110 at 213 (discussing the role of SROs, in the U.S. securities and futures industry regulations, of establishing and enforcing rules governing member conduct and trading, monitoring trading activity to prevent market manipulation, and examining members for financial strength).

118 See TREASURY BLUEPRINT, supra note 2 at 45 (explaining that the Department of Agriculture initially had federal jurisdiction over futures markets and that congressional CFTC oversight remains vested in the Senate and House Agricultural Committees); WILLIAM G. FERRIS, THE GRAIN TRADERS: THE HISTORY OF THE CHICAGO BOARD OF TRADE (1988) (discussing the origins of the Chicago Board of Trade).

119 See TREASURY BLUEPRINT, supra note 2 at 11 (“The realities of the current marketplace have significantly diminished, if not entirely eliminated, the original reason for the regulatory bifurcation between the futures and securities markets.”); see also Letter from Marc E. Lackritz, President & CEO, Sec. Indus. & Fin. Mkts. Ass’n, to Jeffrey Stoltzfus, Senior Advisor, Office of the Assistant Sec’y for Fin. Insts., U.S. Dep’t of Treasury, & Mario Ugoletti, Dir., Office of Fin. Insts. Policy, U.S. Dep’t of Treasury (Nov. 21, 2007), at 9–11, available at http://www.sifma.org/regulatory/comment_letters/58152600.pdf (recommending consolidation of the SEC and CFTC) [link].

120 See TREASURY BLUEPRINT, supra note 2 at 32–42 (describing the history of banking regulation and the entities historically responsible for banking industry oversight).

mentation through interagency cooperation,” but fragmentation still exists within individual regulatory bodies.122

In contrast to the United States, where regulatory frameworks reflect early twentieth century designs, other countries have modernized their financial services regulatory frameworks. In the United Kingdom, for example, a single primary regulator oversees financial markets, while a separate regulator ensures financial stability.123 When Australia recently modernized its financial services regulatory structure, it adopted a Twin Peaks regulation-by-objective model,124 and now has two primary financial market regulators, a separate system stability regulator, and another regulator that focuses on nonfinancial market conduct and consumer protection.125 U.S. financial market oversight is based on functional regulators whose operational spheres track industry institutional structures of prior eras,126 which leads to ineffective and inefficient regulatory frameworks. Fixing financial market regulatory shortcomings will require legislation that transforms financial industry oversight in fundamental ways.

The potential complexity of regulatory requirements has significant implications for financial services firms, which may need to deal with multiple regulators and requirements. Further, existing U.S. financial market regulatory structures are not well suited to the pervasive trading activities that currently characterize financial markets and do not effectively regulate such activities. In this trading-centered universe, the activities of individual market players are not easily located within the existing scope of regulatory enforcement. AIG, for example, “a heavily regulated insurance company at both the federal and state level, has subsidiaries that have been major issuers of [CDS]” contracts.127 The CDS is a “major OTC derivatives insurance

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122 Arewa, supra note 4 at 30.
123 G30, supra note 110 at 175–182.
124 Twin Peaks is a relatively new regulatory approach to financial market regulation adopted by Australia and the Netherlands that is similar to the integrated approach exemplified by the U.K. Financial Services Authority. Arewa, supra note 4 at 14. The integrated approach involves consolidation of financial market regulation under a single financial market regulator. Id. To avoid potential conflicts in the integrated approach between prudential or safety and soundness regulation and conduct of business/consumer protection, the Twin Peaks approach separates prudential safety and soundness regulation from conduct of business regulation/consumer protection and has separate regulators for each regulatory objective. Id. at 14, 37–38.
125 G30, supra note 110 at 188–196.
126 TREASURY BLUEPRINT, supra note 2 at 139 (characterizing the U.S. regulatory system as an institutionally based functional system); GAO, supra note 111 at 9 (“[F]inancial products or activities generally are regulated according to their function, no matter who offers the product or participates in the activity. Broker-dealer activities, for instance, are generally subject to SEC’s jurisdiction, whether the broker-dealer is a subsidiary of a bank holding company subject to Federal Reserve supervision or a subsidiary of an investment bank.”).
127 Arewa, supra note 4 at 31–32; see Am. Int’l Group, Inc., Annual Report (Form 10-K), at 11 (Feb. 28, 2008) (noting that AIG subsidiary AIGFP is a principal in a broad range of financial transactions, including CDS transactions) [link]
product that is a significant force in financial markets."128 Although AIG is an insurance company whose main insurance subsidiaries are regulated by the states in which they do business,129 prior to the credit crisis, AIG’s holding company and subsidiaries were also subject to prudential federal banking oversight by the Office of Thrift Supervision (OTS) because AIG has a federal savings bank subsidiary.130 The extensive and layered regulation of AIG “failed to avert its near collapse and need for a government bailout and takeover.”131 The regulation of AIG illustrates core features of the U.S. financial regulation frameworks that typically determine regulatory oversight by a combination of functional and institutional factors. Under this typical regulatory framework, regulatory classifications are sometimes given more importance than the nature of the activities occurring within a firm.

The flurry of reform proposals following the credit crisis reflects widespread recognition that the existing financial market regulatory architecture is not a good fit for current financial market system dynamics. However, the enactment of yet more regulation is unlikely to do much to prevent the next crisis. Financial market regulatory frameworks should continually be evaluated to ensure that they are both effective and efficient. Moreover, the inefficient and patchwork U.S. system is costly for regulated entities. The fact that the current crisis unfolded within entities that are subject to significant regulation does not bode well for the ability of existing frameworks and regulators to identify and create firewalls around sectors or entities that threaten market integrity. The fragmented nature of financial markets regulation makes an accurate assessment of systemic risk difficult, because each separate regulator lacks a comprehensive vision of the system as a whole.

128 Arewa, supra note 4 at 32.
129 Id. at 32; see AIG Report, supra note 127 at 13.
130 AIG Report, supra note 127 at 13 (noting in 2007 that AIG is subject to OTS regulation, examination, supervision and reporting requirements, and that since its subsidiaries are subject to OTS enforcement authority, OTS can restrict or prohibit activities that are “determined to be a serious risk to the financial safety, soundness or stability of AIG’s subsidiary savings association”); Posting of Justin Fox to Curious Capitalist Blog, The Government’s AIG Dilemma, http://curiouscapitalist.blogs.time.com/2008/11/10/the-governments-aig-dilemma (Nov. 10, 2008, 13:19 EST) (noting that OTS examiners regularly reviewed the accounts of AIG Financial Products and that AIG was subject to closer federal scrutiny than Bear Stearns or Lehman Brothers) link.
Further, regulatory coordination with respect to systemic risk management may be hindered by existing regulatory turf battles.\footnote{See, e.g., Arewa, \textit{supra note} 4 at 28–29 (noting the regulatory turf battle between the SEC and the CFTC over securities and futures regulation).}
RISKY BUSINESS: THE CREDIT CRISIS AND FAILURE (PART II)

Olufunmilayo B. Arewa

I. REGULATORY FAILURES AND REGULATORY REFORM

The credit crisis underscores the need for reform of regulatory and industry approaches to risk. Reframing risk should entail greater limitations on leverage and more comprehensive internal company risk management, with both external regulatory monitoring and more robust internal efforts. As a number of post-credit crisis compensation proposals have recommended, companies should also be encouraged to follow best practices with respect to compensation and bonuses based on performance.\(^1\) Best practices should involve greater consideration of the ways in which compensation rewards take account of risks, particularly for traders whose activities entail significant risk exposure.\(^2\) Such best practices in compensation might include, for example, creating a clawback or tail for compensation that matches the time horizon of receipt of compensation to the time horizon of trading activities for which an employee is compensated. Regulated companies in the financial services industry should also be required to disclose their internal risk management strategies in detail, as well as the alignment

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\(^{2}\) Davies, *supra* note 1 at 22 ("Remuneration policy has an important part to play in a firm’s overall management of risk. It can contribute to, or make more difficult, the reconciliation of the firm’s own risk/return trade-off with those of its employees. As such it is of increasing interest and concern to supervisors and regulators.").
between compensation and risk, in order to comply with mandatory disclosures in risk disclosure discussions. All regulated and unregulated firms should also be required to immediately report all material incidents that reflect a failure of risk controls or risk management to a market stability regulator. External regulation can be used to promote development of internal risk management in the financial industry. The credit crisis, however, raises serious questions about the effectiveness of existing financial market regulatory approaches.

A. Shaky Foundations: Regulatory Failures and the Credit Crisis

Current U.S. regulatory approaches result in costly and sometimes overlapping regulatory structures, particularly because new regulatory structures may be imposed on top of existing ones with insufficient attention to efficiency or effectiveness. The United States has multiple federal, state, and industry regulatory bodies whereas Britain has one, and regulatory costs in the United States have been estimated to be fifteen times those in Britain.³ Although U.S. regulators have been fairly successful at some aspects of domestic coordination,⁴ including through the President’s Working Group,⁵ the credit crisis highlights the limits of fragmented U.S. regulatory frameworks in regulating systemic risk.

The credit crisis thus raises significant concerns about the appropriate design of regulatory institutions.⁶ The credit crisis has triggered a plethora of proposals for greater regulation of the financial services industry in the U.S. and elsewhere.⁷ However, we should resist efforts that merely seek to impose more regulation. Varied and numerous layers of existing regula-

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⁴ GROUP OF THIRTY (G30), THE STRUCTURE OF FINANCIAL SUPERVISION: APPROACHES AND CHALLENGES IN A GLOBAL MARKETPLACE 222–23 (2008) [hereinafter G30].
⁵ Id. at 223 (noting that the President’s Working Group includes the Secretary of the Treasury, the Chairman of the Board of the Federal Reserve, the SEC and the CFTC, and was established to provide a “major crisis-coordinating mechanism”).
⁶ See, e.g., Posting of Edward L. Glaeser, A Failure of Regulation, Not Capitalism, N.Y. TIMES ECONOMIX BLOG, http://economix.blogs.nytimes.com/2009/06/09/a-failure-of-regulation-not-capitalism, June 9, 2009 (“Regulatory institutions need to be designed in ways that are stronger and less prone to being co-opted by the industry that they are meant to regulate. Our financial markets cannot operate without strong public protection of property rights, and there are times when such protection requires restricting the actions of private entities, at least when they are publicly insured.”) [link].
tions in the United States did not avert the current crisis. Adding yet more layers is unlikely to reduce risk. The addition of the Sarbanes-Oxley Act of 2002 to the regulatory mix, for example, likely harmed U.S. global competitiveness by imposing onerous duties on public companies that did little to avert the credit crisis.\(^8\) Financial markets have long existed in the shadow of self-regulation by industry participants, private regulation through gatekeepers such as rating agencies, and government regulation. In the aftermath of the credit market crisis, we should direct significant attention to determining how and why these existing regulatory frameworks failed.

Assessing past regulatory failures may facilitate the promulgation of better regulation that is both flexible and effective, as opposed to simply more regulation. Regulatory approaches should also focus to a greater extent on the implications of market activities and trading practices for systemic risk, with the goal of developing regulatory structures that create incentives for individual market participants and firms to better manage their own risk. Regulatory structures should also enable regulators to monitor the appropriateness of market participants’ treatment of risk, as reflected in their activities.

In addition, regulatory structures should allow for effective monitoring and evaluation of the performance and effectiveness of regulators, including determining whether industry capture exists in a particular regulatory arena. New regulatory structures need to be global in scope, through both cooperation among national regulators and the creation of global institutional struc-

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8 The Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745 (codified in scattered sections of 15 U.S.C. and 18 U.S.C.) [link], which “introduced a series of corporate governance initiatives into the federal securities laws”, Roberta Romano, The Sarbanes-Oxley Act and the Making of Quack Corporate Governance, 114 YALE L.J. 1521, 1523 (2005) [link] was a regulatory response to specific events, particularly corporate fraud, at companies such as Enron and WorldCom that occurred during the late 1990s. Id. at 1523–1526. Sarbanes-Oxley has been criticized for the costs it imposed, see COMM. ON CAPITAL MKTS. REGULATION, THE COMPETITIVE POSITION OF THE U.S. PUBLIC EQUITY MARKET 1–5 (2007) (discussing the “significant deterioration” in the competitiveness of the U.S. public equity market in recent years) [link]. CTR. FOR CAPITAL MKTS. COMPETITIVENESS, STRENGTHENING U.S. CAPITAL MARKETS: A CHALLENGE FOR ALL AMERICANS 20–21 (2008) [hereinafter CAPITAL MKTS. COMPETITIVENESS] (discussing the cost burdens of Section 404 of Sarbanes-Oxley) [link], and has led some foreign companies with U.S. stock listings to delist from U.S. markets. See Loredana Ureche-Rangau & Andrea Carugati, Foreign Delisting and Domestic Stock Value: Multiple Frameworks, Different Views?, in 4 ENTERPRISE APPLICATIONS AND SERVICES IN THE FINANCE INDUSTRY 112, 113 (Daniel J. Veit et al. eds., 2008) (evaluating assertions that Sarbanes-Oxley has led to foreign companies delisting from U.S. markets). Some assert that Sarbanes-Oxley has harmed the global competitiveness of U.S. capital markets. See CAPITAL MKTS. COMPETITIVENESS, supra, at 21; SUSTAINING NEW YORK’S AND THE U.S.’ GLOBAL FINANCIAL SERVICES LEADERSHIP, Jan. 2007, at 86–87, http://www.nyc.gov/html/om/pdf/ny_report_final.pdf (“The United States is also perceived as being at a disadvantage when it comes to the individual and collective impact of its financial regulation. By far the most often mentioned regulation in interviews was the Sarbanes-Oxley Act (SOX), which was also heavily criticized on the surveys.”). [link]
tures where appropriate. New regulatory structures should reflect the recognition that no magic bullet can address the regulatory and industry failings that led to the credit crisis. Rather, new regulations must create a regulatory architecture that is able to respond in different ways to varied sources of potential future risk in financial markets.

Indeed, regulatory failures contributed significantly to the credit crisis. The SEC’s regulation of investment banks under its voluntary Consolidated Supervised Entities (CSE) framework provides one example of regulatory failure. The SEC adopted this now-suspended program in 2004 to provide consolidated SEC supervision of investment bank holding companies, consistent with Federal Reserve oversight of bank holding companies. The voluntary CSE program permitted a holding company to measure group-wide capital adequacy in accordance with the Basel II Accord, which created international standards for determining financial industry capital requirements. CSE participants consented to a number of regulatory measures. They permitted the SEC to examine books and records of the principal holding company, consented to reporting requirements, made reports of entities in the group available for SEC regulatory examination that were not subject to SEC examination, and provided the SEC with information concerning credit and risk exposures and analyses of liquidity risk. The CSE program was intended to enable firms with “strong internal risk management” to use alternative methods to calculate net capital adequacy. It permitted use of the same mathematical methods for managing business risk and for calculating net determinate regulatory capital requirements. These alternative capital calculations were less stringent than the SEC’s traditional net capital rule and led to significant increases in leverage for CSE


11 Id.


15 Id. at 34,428; see id. at 34,429–34,430 (“[W]e are adopting rule amendments that provide broker-dealers with a voluntary, alternative method of computing net capital that permits very highly capitalized broker-dealers to use their internal mathematical models for net capital purposes, subject to specified conditions.”).

16 Id. at 34,428.
program participants. Given that industry risk models have proved inadequate in the face of the credit crisis, it is not surprising that capital calculations based on these same risk models have also proved inadequate. The CSE program was not effective in meeting its stated goals of monitoring risk and operational weaknesses. In fact, CSE program participants included Lehman Brothers, Bear Stearns, Merrill Lynch, Morgan Stanley, and Goldman Sachs, many of which have been focal points in the credit crisis. SEC Inspector General reports reveal inattention to questions of systemic risk, coordination problems within the SEC, and enforcement failings that contributed to the CSE program’s regulatory failures.

Additionally, the role of the SEC and other financial market regulators in the failure of Lehman Brothers, particularly with respect to Lehman’s accounting treatment of its repurchase (repo) transactions, raises questions


18 See, e.g., CEO Pay and the Mortgage Crisis: Hearing Before the H. Comm. on Oversight and Government Reform, 110th Cong. 166 (2008) (testimony of Charles Prince, former Chairman and CEO, Citigroup) (“Last fall, it became apparent that the risk models which Citigroup, the various rating agencies, and the rest of the financial community used to assess certain mortgage-backed securities were wrong.”); John Cassidy, What’s Wrong with Risk Models?, NEW YORKER RATIONAL IRRATIONALITY BLOG, Apr. 27, 2010, http://www.newyorker.com/online/blogs/johncassidy/2010/04/whats-wrong-with-risk-models.html (“The risk models that were commonly used on Wall Street failed abysmally. Not only did they fail to protect their users from a bad outcome, they made such an outcome far more likely. In short, the risk models added to systemic risk.”) [link].

19 See Coffee, Jr. & Sale, supra note 17 at 735–36 (pointing out that all five investment banking firms that entered the CSE program, and therefore used capital calculations based on industry risk model calculations, either failed or were gravely imperiled).


22 See id. at 41–46.

23 See id. at 17–27, 30–34 (discussing the SEC’s failure to address Bear Stearns’s high concentration of mortgage securities, its inadequate process for addressing risky behavior by CSE participant firms, and its inadequate risk tolerance testing among its CSE staff); SEC, OFFICE OF INSPECTOR GEN., SEC’S OVERSIGHT OF BEAR STEARNS AND RELATED ENTITIES: BROKER-DEALER RISK ASSESSMENT PROGRAM, REPORT NO. 446-B, at 12–14 (Sept. 25, 2008) (describing the SEC’s failure to enforce CSE rules regarding document retention and filings) [link].
about regulator competence and responsiveness.\textsuperscript{24} Repo transactions are collateralized loans involving a sale of a security for cash in which the seller commits to buy back the security at a specified price on a designated future date.\textsuperscript{25} Repos are an important source of short-term financing for many market participants.\textsuperscript{26} According to a report by the Examiner appointed in the Lehman Brothers bankruptcy case, Lehman’s use of a particular accounting treatment for its repo transactions (Repo 105 treatment) essentially enabled Lehman Brothers to shift assets off its balance sheet at the end of each quarter in exchange for cash, making it appear as if Lehman had sold the assets when it in fact had not.\textsuperscript{27} Repo 105 treatment thus made Lehman’s balance sheet appear to be healthier and less leveraged than was actually the case.\textsuperscript{28} The assets were returned to Lehman’s balance sheet just days after issuing the financial reports reflecting the Repo 105 transactions.\textsuperscript{29} Lehman Brothers did not disclose Repo 105 treatment in its finan-

\textsuperscript{24} See Report of Anton R. Valukas, Examiner, Vol. 4, at 1482, In re Lehman Bros. Holdings Inc., Ch. 11 Case No. 08-13555 (Mar. 11, 2010) [hereinafter Valukas Report 4], available at http://lehmanreport.jenner.com/VOLUME%204.pdf (“[W]hen the Examiner questioned Lehman executives and others witnesses about Lehman’s financial health and reporting, a recurrent theme in their responses was that Lehman gave full and complete financial information to Government agencies, and that the Government never raised significant objections or directed that Lehman take any corrective action.”) [internal footnote omitted]


\textsuperscript{27} Valukas Report 1, supra note \textsuperscript{24} at 6–7.

\textsuperscript{28} See id.; see also Report of Anton R. Valukas, Examiner, Vol. 3, at 739, In re Lehman Bros. Holdings Inc., Ch. 11 Case No. 08-13555 (March 11, 2010) [hereinafter Valukas Report 3], available at http://lehmanreport.jenner.com/VOLUME%203.pdf (“Lehman temporarily reduced its net balance sheet at quarter-end through its Repo 105 practice by approximately $38.6 billion in fourth quarter 2007, $49.1 billion in first quarter 2008, and $50.38 billion in second quarter 2008.”) [internal footnote omitted] (noting that “Lehman used the borrowed funds from Repo 105 transactions to pay down short-term liabilities such as ordinary repo transactions[.] . . . By doing so, Lehman reduced its total assets, thereby reducing its leverage ratios.”).

\textsuperscript{29} Valukas Report 3, supra note \textsuperscript{28} at 734; Andrew Ross Sorkin, At Lehman, Watchdogs Saw It All, NYTIMES.COM, Mar. 15, 2010, http://www.nytimes.com/2010/03/16/business/16sorkin.html [internal footnote omitted]
cial statement filings.\textsuperscript{30} Ernst & Young, which audited Lehman’s books, did not question the use or nondisclosure of the Repo 105 transactions.\textsuperscript{31} Similarly, neither the SEC nor the Federal Reserve Bank of New York, both of which had been onsite at Lehman after the near collapse of Bear Stearns in March 2008, identified any problems with the Repo 105 transactions.\textsuperscript{32} Lehman Brothers declared bankruptcy on September 15, 2008 in the largest bankruptcy filing ever.\textsuperscript{33}

While regulatory failures in the credit crisis have been widespread and certainly are not limited to the SEC, the entities for which the SEC had oversight responsibilities under the voluntary CSE program have comprised a key epicenter in the credit crisis. This may be one reason why some proposed legislation, including the Wall Street Reform Act legislation, gives the Federal Reserve oversight responsibilities for securities holding companies without bank affiliates that had been supervised by the SEC under the CSE program.\textsuperscript{34}

The fate of Lehman Brothers and other CSE participants offers lessons about the consequences of regulatory failure. Cultures of trading facilitated by technological innovations and broad-reaching financial market networks, combined with pervasive use of OTC derivatives as essential links in such networks, call for a reevaluation of risk in financial markets.\textsuperscript{35} Considerations of risk must take into account a bottom-up assessment of how trading practices shape financial market networks and the implications of such practices for systemic risk. This means that systemic risk issues that in the past were primarily concerns for banking regulators are now relevant to a wider range of regulated and unregulated entities whose trading activities could spark a financial network system failure.\textsuperscript{36}

\textsuperscript{30} Valukas Report 1, \textit{supra note 24} at 8 n.27.
\textsuperscript{31} Id. at 8.
\textsuperscript{32} See Sorkin, \textit{supra note 29} explaining that multiple government regulators had a “parent over shoulder” view of Lehman’s practices and yet sounded no alarms while Lehman Brothers used the Repo 105 accounting treatment, either because they “did not appreciate what [they] saw” or because they “blessed the now-suspect accounting” despite knowledge of its risks; \textit{See also} Valukas Report 4, \textit{supra note 24} at 1497 (“Certain FRBNY on-site personnel expressed the view to the Examiner that the SEC on-site personnel did not have the background or expertise to adequately evaluate the data they were given.”) (footnote omitted).
\textsuperscript{33} Valukas Report 1, \textit{supra note 24} at 2.
\textsuperscript{34} See Wall Street Reform and Consumer Protection Act, H.R. 4173, 111th Cong. § 1961 (2009).
\textsuperscript{35} MOHAMED A. EL-ERIAN, WHEN MARKETS COLLIDE: INVESTMENT STRATEGIES FOR THE AGE OF GLOBAL ECONOMIC CHANGE 141 (2008) (noting that OTC derivatives have “enabled a far greater degree of linkage across markets than at any other time”).
\textsuperscript{36} See SEC, INSPECTOR GENERAL REPORT 446-A, \textit{supra note 10} at 46–47 (noting that certain unregulated firms may pose systemic risks); \textit{cf.} George G. Kaufman, \textit{Bank Failures, Systemic Risk, and Bank Regulation}, 16 CATO J. 17, 17 (1996) (writing in 1996 that “[b]ank (depository institutions) failures are widely perceived to have greater adverse effects on the economy and thus are considered more important than the failure of other types of business firms[,]” and that “[a]s a result, bank failures have been and continue to be a major public policy concern in all countries and a major reason that banks are regulated more rigorously than other firms.”) (footnotes omitted).
B. Regulatory Reform, Regulatory Principles, and Financial Firewalls

1. Regulating the Regulators: Establishing Regulatory Principles and Regulatory Goals

The credit crisis has revealed a number of important regulatory and regulator failures. Thus, effective financial market regulatory reform must include specific mechanisms to enable better evaluation of the performance of regulators. Establishment of specific principles that guide regulatory oversight could facilitate better evaluation of regulatory performance and better regulation. Such principles can also help in both determining what regulations should be enacted, whether within a principles- or rules-based regulatory framework and also in making continuing decisions about which regulations should be changed or eliminated. These fundamental financial regulation principles should include regulatory effectiveness and efficiency, regulatory responsiveness and flexibility, regulatory transparency and simplification, and regulatory neutrality.

The Bernard Madoff Ponzi scheme illustrates the importance of regulatory principles and regulatory responses to and recognition of financial market practices and trading strategies. Harry Markopolos, a former Madoff competitor, tried for nine years to persuade the SEC to examine Madoff’s operation, which Markopolos believed could only be the result of front-running (a less likely alternative) or some type of Ponzi scheme (a highly likely alternative): “[f]ar better that the SEC is proactive in shutting down a Ponzi Scheme of [Madoff’s] size rather than reactive.” Markopolos, a self-described derivatives expert, identified twenty-nine red flags in Madoff’s operation and in 2005, submitted a detailed seventeen-page memo with supporting documents that analyzed the Madoff Ponzi scheme to the SEC. Markopolos and others have suggested that Madoff’s stated trading and investment strategies would simply not have been possible with the amount of money Madoff managed, and they “raised red flags that should have been obvious to the banks and investment firms that promoted Mr. Madoff.”

Although the SEC Madoff Case Opening Memo notes that the SEC sought to ascertain whether Madoff was operating a Ponzi scheme, the SEC Division of Enforcement Case Closing Recommendation does not discuss any aspect of Markopolos’s detailed trading analysis. Instead, based

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38 Id.
40 SEC Div. of Enforcement, Case Opening Report, Case No.: NY-07563 (Jan. 24, 2006) [link].
41 SEC Div. of Enforcement, Case Closing Recommendation, Case No.: NY-07563 (Nov. 21, 2007) [link].

http://www.law.northwestern.edu/lawreview/coloquy/2010/15/
on voluntary document production and testimony by Madoff, the SEC Case Closing Recommendation concludes that the “staff found no evidence of fraud” but did find that Madoff needed to register under the Advisers Act.\textsuperscript{42} The SEC does not appear to have penetrated the true nature of Madoff’s operations.\textsuperscript{43} The SEC case memo notes that Madoff had misled the SEC examination staff and had “not fully disclose[d] to the examination staff either the nature of the trading conducted in the hedge fund accounts or the number of such accounts at [Madoff’s firm].”\textsuperscript{44} Despite Madoff’s deception, the SEC recommended “closing this investigation because both [Madoff and his largest client] voluntarily remedied the uncovered violations, and because these violations were not so serious as to warrant an enforcement action.”\textsuperscript{45} The regulatory treatment of the Madoff case demonstrates that effective, efficient, and responsive financial market regulation requires a delicate balance that involves industry expertise without industry cooption. The Madoff case also demonstrates the need for better regulatory understanding of the significance of trading and trading strategies in financial markets and the ways in which particular trading activities may be suggestive of fraud or pose a broader systemic risk.\textsuperscript{46} Much like the Madoff case, the SEC did not undertake any enforcement action against Robert Allen Stanford’s Ponzi scheme, despite the fact that the SEC Fort Worth office appears to have known since 1997 that Stanford was likely running a Ponzi scheme.\textsuperscript{47} Between 1997 and 2004, the Ponzi scheme grew from $250 million to $1.5 billion.\textsuperscript{48} During this time period, the Examination group in the Fort Worth office tried on multiple occasions but was unable to persuade the Enforcement group in the office to undertake a meaningful investigation of Stanford’s Ponzi scheme.\textsuperscript{49}

Efficiency and effectiveness, which draw attention to the efficacy, costs and benefits of regulation, are core regulatory goals that should be continually evaluated. The Madoff and Stanford cases raise clear questions about regulatory efficiency and effectiveness, because financial market regulation surely is intended to identify and prevent the operation of $50 bil-

\textsuperscript{42} Id.
\textsuperscript{43} Compare id. (SEC reporting no evidence of fraud) with Jeremy Strasburg, Madoff’s ‘Feeders’ Under Focus, WALL ST. J., Dec. 27, 2008 (discussing Madoff’s use of middlemen or feeders to perpetrate the Ponzi scheme).
\textsuperscript{44} SEC DIV. OF ENFORCEMENT, supra \textsuperscript{40}
\textsuperscript{45} Id.; see also Gregory Zuckerman & Kara Scanell, Madoff Misled SEC in ‘06, Got Off, WSJ.COM (Dec. 18, 2008).
\textsuperscript{46} See Jeffrey Goldfarb & Martin Hutchinson, Rebuilding the S.E.C., N.Y. TIMES (Jan. 5, 2009), http://www.nytimes.com/2009/01/06/business/06views.html?_r=1 (discussing the need for the SEC to develop more effective accounting tools) [link].
\textsuperscript{48} Id. at 118–19.
\textsuperscript{49} Id.
lion Ponzi schemes. The fact that the SEC did not discover the true nature of Madoff’s operations, despite the detailed Markopolos memo and suspicious actions by Madoff, is an indictment of SEC effectiveness, if not efficiency. An approach that emphasizes regulatory efficiency would eschew regulations whose estimated benefits are less than their anticipated costs. Determinations of such costs and benefits should be an ongoing task involving elimination of inefficient or ineffective regulators and regulation based on cogent, objective, and verifiable grounds. A regulatory culling process should be a prominent feature of the regulatory modification process so as to most efficiently deploy scarce regulatory resources. Because of significant resource and other funding limitations, regulators such as the SEC may be resource poor.\(^5^0\) Better strategic targeting of regulatory resources may help alleviate regulatory resource limitations. Assessment of regulatory effectiveness and efficiency also requires development of better ongoing metrics of regulatory performance, including data about regulatory processes and outcomes. Establishing ways to measure and monitor regulatory effectiveness and efficiency should facilitate better regulatory processes. The reality of competitive global financial markets also requires that the effectiveness and efficiency of U.S. regulators be assessed from a comparative perspective that recognizes the global nature of financial market activities.\(^5^1\)

Regulatory responsiveness measures how regulators respond to external events and changing business contexts. Although some have criticized U.S. regulatory responses to the credit crisis for being too slow,\(^5^2\) as the SEC exemplifies, U.S. regulators have been more responsive than was the case prior to the credit crisis.\(^5^3\) Further, regulatory supervision of financial firms prior to the credit crisis reflected significant gaps and weaknesses.\(^5^4\) For example, the seeming lack of a strong SEC response to the multi-billion Madoff and Stanford Ponzi schemes over multiple years reflects weaknesses in supervision and has led to significant criticism of the SEC on grounds of effectiveness and responsiveness and an investigation by the SEC Inspector General.\(^5^5\)


\(^{51}\) See G30, supra note 2.


\(^{54}\) TREAS. DEP’T, FINANCIAL REGULATORY REFORM—A NEW FOUNDATION: REBUILDING FINANCIAL SUPERVISION AND REGULATION 2 (2009) [link].

The Madoff and Stanford Ponzi schemes and the Lehman Brothers failure highlight the need for regulatory flexibility, particularly in light of the financial and technological innovations and the complexity that have become characteristic of global financial markets. Regulatory flexibility, which is tied to regulatory responsiveness, evaluates the extent to which regulators can be adaptable when responding to changing market conditions. The complexity and pace of innovation of financial markets necessitates greater regulatory flexibility. A need also exists for regulatory structures in which the shape, needs, and integrity of the market are key determinants of regulatory approaches, rather than preexisting regulatory structures that may not be consistent with financial market developments.

Regulatory transparency requires public dissemination of relevant regulatory information, which, in turn, can bolster the credibility and accountability of regulators. Significant questions about regulatory accountability and transparency have accompanied the credit crisis, both with respect to the activities of regulators before and during the crisis, as well as with respect to uses of bailout funds. Transparency may also enhance regulatory coordination both within and among regulatory agencies. Transparency can enable those other than regulators to better understand the regulatory processes and outcomes. Existing regulatory frameworks are somewhat transparent. Significant information is broadly available, for example, about at least some regulatory outcomes through regulatory guidance and administrative decisions. As continuing revelations about SEC investigation of the Madoff and Stanford Ponzi schemes suggest, though, less is known about regulatory processes, which is of particular concern in the aftermath of the credit crisis. The SEC’s censoring of its Inspector General’s report on the CSE program is similarly of concern from a transparency perspective. Although regulatory processes may need to remain confidential in some instances, performance reviews of public and non-public regulatory actions should be a continuing aspect of management and evaluation of both regulator performance and regulatory frameworks.

The current U.S. architecture of multiple, and at times overlapping, regulators makes evaluation of regulatory processes difficult. Where possible, regulatory reform should focus on implementing regulatory simplification and neutrality. Simplification is unlikely to be a panacea, but it may help make regulatory frameworks and processes more transparent, less cost-


57 Mark Pittman, Elliot Blair Smith & Jesse Westbrook, Cox’s SEC Censors Report on Bear Stearns Collapse, BLOOMBERG.COM, Oct. 7, 2008, http://www.bloomberg.com/apps/news?pid=20601109&sid=av2fpp3blAgY (noting that the redacted version deleted 136 references, many detailing SEC meetings, memos, or comments and that a full version of the CSE report was made available by Senator Grassley on his website) [link].
ly, and more effective. Regulatory neutrality would help ensure outcomes for regulated entities that do not depend on the identity of their regulatory agency or connections with the regulators responsible for regulatory oversight. The presence of multiple overlapping regulators encourages regulatory arbitrage and is regulator-driven, in that existing regulatory structures may be the most important determinants of regulatory treatment, rather than the activities being regulated. A system based on specific principles is an important first step in creating regulatory frameworks that can better manage systemic risk. Fundamental defining regulatory principles, which are largely missing from the Treasury Blueprint, but are present to some extent in the Obama administration’s 2009 Reform Proposal, should also be important factors in the ongoing evaluation of financial market regulatory frameworks and financial market regulators.

2. Risk Barriers: Creating Financial Firewalls to Internalize Risk

The burden of monitoring financial markets, however, cannot rest solely in the hands of regulators. Regulatory approaches in the future should attempt to regulate activities that might lead to systemic failures by facilitating the creation of firewalls around failing entities to limit the systemic effects of their failures. Insurance, for example, could be one source of firewall protections. These financial firewalls would be analogous to computer firewalls or quarantines in the context of a medical epidemic. A regulatory approach that seeks to create firewalls requires flexible and efficient regulatory frameworks that focus on oversight of the incentives within regulated firms such that firms internalize the risks of their operations. This necessitates an approach that incorporates understanding by both regulators and firms of the role of trading and other activities as potential sources of risk.

In the aftermath of the credit crisis, regulators have attempted to some extent to focus on trading activities. In 2008, the SEC and other securities regulators around the world focused on one specific trading activity, short selling, as the culprit in recent market volatility and declines, and banned or significantly restricted such short selling activities. The effectiveness of

58 Coffee, Jr. & Sale, supra note 12 at 726 (noting that existing U.S. regulatory frameworks invite regulatory arbitrage).


60 See LINDA BRIESEMEISTER, PATRICK LINCOLN & PHILLIP PORRAS, EPIDEMIC PROFILES AND DEFENSE OF SCALE-FREE NETWORKS 67 (2003) (discussing the ways to protect computer networks against infection).

61 COUNTERPARTY RISK MANAGEMENT POLICY GROUP III (CRMPG III), CONTAINING SYSTEMIC RISK: THE ROAD TO REFORM 7 (2008) (discussing the need for private initiatives to complement official oversight and encourage industry-wide mechanisms to help mitigate systemic risk) [link].

the short selling ban has been hotly debated. SEC elimination of the uptick rule, which required that short sales of listed securities occur at “a price above their last different sale price,” has also been a subject of contention since the SEC abolished the rule in 2007 and adopted an alternative uptick rule in 2010. In the credit crisis aftermath, significant attention has been given to changing trading practices facilitated by technological and financial market innovations. As a result, increased regulatory scrutiny is now being given to the implications of practices such as flash trading and high frequency trading, as well as short selling and securities lending. Attention to such practices highlights the need for collection and analysis of data about the trading activities of a broad range of currently regulated and unregulated market participants. Acquisition of such data can help regulators and market participants better manage risks and create necessary firewalls.


64 Memorandum from Wachtell, Lipton, Rosen & Katz, It’s Time for the SEC to Constrain Abusive Short Selling (July 1, 2008) (link).


66 Amendments to Regulation SHO, 17 C.F.R. § 242 (2010) (establishing an alternative uptick rule combined with a circuit breaker that partially restores the previous uptick rule and that is intended to restrict short selling when the price of a stock has dropped more than 10% in one day) (link).

67 Concept Release on Equity Market Structure, 75 Fed. Reg. 3594, 3594 (Jan. 21, 2010) (addressing the changing structure of equity markets, noting that “[a] primary driver and enabler of this transformation of equity trading has been the continual evolution of technologies for generating, routing, and executing orders”) (link).

68 Id. at 3606 (noting that high frequency trading is “typically used to refer to professional traders acting in a proprietary capacity that engage in strategies that generate a large number of trades on a daily basis” and whose characteristics may include use of “extraordinarily high speed and sophisticated computer programs,” and short time frames for establishing and liquidating positions); Jenny Anderson, U.S. Proposes Ban on ‘Flash’ Trading on Wall Street, NYTIMES.COM, Sept. 17, 2009, http://www.nytimes.com/2009/09/18/business/18regulate.html?_r=1 (link) (discussing a proposed SEC ban on flash trading, associated with high frequency trading, which gives certain traders advance knowledge of stock orders) (link).

69 See, e.g., Testimony Concerning Dark Pools, Flash Orders, High Frequency Trading, and Other Market Structure Issues: Before the S. Banking Subcomm. on Securities, Insurance, and Investment, 111th Cong. (2009) (statement of James A. Brigariliano, Co-Acting Dir., Div. of Trading and Mkts., SEC) (“[T]he Commission is undertaking a broad review of equity market structure to assess its performance in recent years and determine whether market structure rules have kept pace with, among other things, changes in trading technology and practices. This review will address the advantages and disadvantages of matters including high frequency trading, sponsored access, and dark forms of liquidity.”) (link).

C. U.S. Regulatory Reform Proposals: New Foundations or Superficial Renovations?

The credit crisis reflects a failure of U.S. regulatory frameworks in achieving financial market regulatory goals of financial institution safety and soundness and mitigation of systemic risk. Regulatory architecture and regulatory and industry practices are key reasons for these failures. Fragmented U.S. regulatory frameworks also have significant implications for financial market regulatory goals of market fairness and efficiency, as well as investor and consumer protection. A variety of potential financial market regulatory blueprints exist, including four basic approaches: the Institutional, the Functional, the Integrated and the Twin Peaks. U.S. financial market regulatory structures include both Functional and Institutional aspects with an added layer of complexity in the form of a number of agencies and actors at the state level. In many instances, the business conducted determines oversight—the SEC has regulatory oversight for broker-dealers, even those that are subsidiaries of banks subject to Federal Reserve oversight. The Federal Reserve and the Department of Treasury share responsibility for management of system stability.

A number of recent reform proposals have sought to address and ameliorate gaps in financial market regulation. For example, both the Bush and the Obama administrations released financial market reform proposals that recommended the creation of new regulatory bodies and the consolidation of existing regulators. The Obama administration proposal would involve the creation of several regulatory bodies, including the Financial Services Oversight Council of financial regulators, the Office of National Insurance, the National Bank Supervisor (NBS), and the Consumer Financial Protection Agency (CFPA). The CFPA is intended to give consumer protection a “seat at the table” in the financial regulatory system. In March 2010, Senator Dodd introduced another financial market reform proposal that would establish a Bureau of Consumer Financial Protection. As is the

70 See G30, supra note 4 at 8–9 (identifying four approaches to financial market regulation).
71 See id. at 11.
72 Id. at 8–10.
73 Id. at 10–11; TREAS. DEP’T, BLUEPRINT FOR A MODERNIZED FINANCIAL REGULATORY STRUCTURE 139 (2008) (characterizing the U.S. regulatory system as an institutionally based functional system)
74 U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-08-32, FINANCIAL REGULATION: INDUSTRY TRENDS CONTINUE TO CHALLENGE THE FEDERAL REGULATORY STRUCTURE 9 (2007)
75 Id. at 11.
77 TREAS. DEP’T., supra note 54 at 10–18.
78 Id. at 56.
case with recent legislative proposals, the Obama administration proposal also advocates for additional regulation of OTC derivatives. 80

Both proposals include mergers of existing regulators. The Treasury Blueprint suggests that the SEC and CFTC should be merged, while the Obama administration proposal would keep the SEC and CFTC separate, with some unspecified future harmonization of futures and securities regulation. 81 The Obama administration proposal would move prudential supervision and regulation of federally chartered depository institutions from the OCC and OTS to the new NBS. 82 Proposed new regulatory functions and entities under existing proposals might, in the end, substantially diminish any efficiency gains made from the elimination of duplicative and overlapping regulatory bodies under both proposals. Neither administration proposal discusses dynamic aspects of proposed reforms to a significant extent, which makes the likelihood of implementing the existing proposals difficult to assess, particularly given public choice dynamics and the political realities of financial market regulation in the U.S. 83 More than 1,700 pages long, the Wall Street Reform and Consumer Protection Act of 2009 84 incorporates some of the Obama administration proposals, including the creation of the Financial Services Oversight Council and the CFPA. 85 This legislation also proposes making the OTS a division of the OCC and imposes additional regulation on certain OTC derivative transactions. 86

Existing regulatory reform proposals do not appear to sufficiently consider why proposed changes in regulatory structures and approaches would result in more effective or efficient regulation. Further, the overhang of existing regulation and general lack of attention to regulatory simplification does not appear to have been a prominent objective in any of these proposals, although the Treasury Blueprint’s optimal regulatory structure does contemplate significant redesign of U.S. financial market regulation based on the Australian Twin Peaks model. 87 Similarly, the flexibility and responsiveness of any reformed regulatory structures would depend on dynamic elements related to how the structure is implemented and how regulators actually operate within the reformed regulatory structures.

Existing reform proposals have significant hallmark design elements of U.S. financial market regulation. In particular, all follow patterns of placing new regulatory obligations and bodies on top of existing ones, which is unlikely to ameliorate the problem of regulatory fragmentation. The Ob-

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80 TREA S. DEP’T., supra note 54, 46–49.
81 Id. at 49–51.
82 Id. at 32.
83 See John Shu, Treasury’s Blueprint: Regulatory Efficiency or More Red Tape, 9 ENGAGE 68, 70 (2008) (describing the difficulties in implementing the Bush proposal) [link].
84 H.R. 4173, supra note 34.
85 Id. §§ 1001, 4101.
86 Id. §§ 1204, 3101.
87 TREA S. DEP’T, supra note 73 at 143 (2008).
ama administration-proposed CFPA, for example, would protect consumers in financial products and services markets, except for investment products and services already regulated by the SEC or CFTC. This means that the CFPA, as contemplated under the Obama proposal, would at the outset reflect the same type of regulatory fragmentation that was a factor in the credit crisis. Existing regulatory reform would benefit from greater attention to the dynamics of regulatory frameworks that may have a significant impact on regulatory effectiveness, efficiency, responsiveness, flexibility, simplification, and neutrality. In contrast to the treatment of regulatory fragmentation, existing reform proposals are more comprehensive in their understanding of the importance of the system-wide management of systemic risk.

D. Mapping Networks and Network Risk: The Need for Better Financial Market Data

Despite some criticism of failures in Federal Reserve regulatory oversight prior to the credit crisis, a number of existing proposals would give the Federal Reserve responsibility as a systemic risk regulator. In this role, the Fed would have access to information about the financial system more generally. In addition to giving the Fed power to regulate OTC derivatives, the Obama administration proposal would impose record-keeping and reporting requirements on OTC derivative transactions. The nature of information collected by the Federal Reserve, other relevant regulators, or third parties is an important element of systemic risk management. The Wall Street Reform Act would have the Federal Reserve act as an agent for the Financial Services Oversight Council with respect to identification and monitoring of systemic risk and would impose public reporting of aggregate swap data.

The credit crisis highlights the importance of collection, harvest, and analysis of financial market data. Such data would enable better qualitative and quantitative understanding of financial network system dynamics, which should begin with consideration of trading practices, incentives and risks for varied market participants, financial instruments, and trading strat-

88 Treas. Dep’t., supra note 54 at 55–56; Wall Street Reform and Consumer Protection Act of 2009 §1101(c) [link]
90 Treas. Dep’t., supra note 73 at 15–16; Treas. Dep’t., supra note 44, at 51–54.
91 Treas. Dep’t., supra note 54 at 43, 46–47.
92 H.R. 4173, supra note 34, §§ 1100, 3104.
egies. The short selling ban reflects acknowledgment of the potential importance of trading activities in relation to market declines and even systemic risk. Even if effective, however, the short selling ban is no substitute for collection of comprehensive data about trading activities. Collection of such data would lend additional transparency from a regulatory perspective to a broad range of trading practices and enable a better assessment of the implications of such practices for financial market networks and systemic risk.

As the credit crisis highlights, financial market contagion can easily spread from one financial sector to seemingly unrelated sectors. The types of risks posed by financial system networks can be conceptualized as risks that may require disclosure at the wholesale level. Existing securities regulation disclosure is largely retail in orientation. Retail disclosure, however, is unlikely to provide sufficient information about systemic risk, in large part because it largely reflects an assessment of risk on a company-by-company basis and is oriented toward the needs of the average retail investor. The complexity of financial market networks requires an understanding of aggregate risk that is best assembled through specific wholesale disclosure of trading activities of both regulated and unregulated entities. Assurances might need to be made concerning confidentiality of proprietary trading information for entities that submit information.

Analyses of the spread of viruses in the computer network context suggest that the nature of the network should be a key question in determining vaccination strategies to address network infection. In the financial market context, mapping pervasive networks may be a critical tool in understanding and managing network risk. As a 1999 President’s Working Group report on OTC derivatives notes, access of regulators to information about the activities of unregulated affiliates of regulated entities “constituted a gap in the system of financial market oversight that should be filled by providing the relevant agencies with enhanced authority to obtain addi-


95 See Justin Balthorp et al., Technological Networks and the Spread of Computer Viruses, 304 SCI

tional risk assessment information.”97 The credit crisis suggests that a similar gap may even exist with respect to risk assessment information of regulated entities.98 Oversight of the trading and other activities of a broad range of regulated and unregulated market participants will require the collection of significant data from both regulated and unregulated market players. Such wholesale data could be used in confidence by regulators or trusted third parties in connection with the identification, evaluation, and management of activities that may pose a systemic risk.

The activities of hedge funds exemplify the need for additional market intelligence about trading activities. As economists Khandani and Lo note, hedge funds, in part by virtue of the liquidity and credit they receive through their prime broker relationships, have become “active providers of liquidity and credit” and “impose externalities on the economy that are no longer negligible,” which has led to “hedge funds are becoming more like banks.”99 As a consequence, like the failure of banks, the failure of hedge funds and other market participants whose trading activities may not be regulated “could have disastrous consequences for the viability of the financial system if it occurs at the wrong time and in the wrong sector.”100 Requiring some level of wholesale risk disclosure for all market participants, regulated and unregulated, can bolster the private market discipline that remains the dominant ethos of U.S. securities regulation by focusing both industry participants and regulators on sources of risk and enabling them to assess and address risk in a dynamic, comprehensive, and cogent fashion.101

Getmansky, Lo and Mei suggest that regulators should collect the following information from hedge funds: monthly returns; leverage; assets under management; fees; instruments traded; and all brokerage, financing, and credit relationships.102 In addition, Getmansky, Lo and Mei recommend that regulators or designated entities should collect similar information, as well

99 Khandani & Lo, supra note 93 at 46–47.
100 Id. at 47.
101 Suggestions for Regulation of Hedge Funds Following the Fin. Crisis of 2008, Testimony Before the H. Comm. on Oversight and Gov’t Reform 7 (2008) (statement of David S. Ruder) (“New regulations are needed in order to protect hedge fund investors and in order to monitor hedge fund contributions to systemic risk.”) link.
102 Getmansky, Lo & Mei, supra note 94 at 2–3.
as information about the capital adequacy of these financial institutions, from prime brokers, banks, and other hedge-fund counterparties.\textsuperscript{103} Specific party and transactional data should be required from market participants both in traditional exchanges, which already provide significant amounts of information in blue sheets,\textsuperscript{104} and in dark pools of liquidity.\textsuperscript{105} Collection and analysis of a broad range of data can enable better management of financial network system dynamics and the systemic risk that can emerge from within such networks. The proposed SEC Large Trader Reporting System could enable collection of trading data from large market participants (traders trading 2 million shares or $20 million during any calendar day or 20 million shares or $200 million during any calendar month).\textsuperscript{106} The success of this initiative will depend to a significant degree on the SEC’s ability to effectively use and analyze any data collected.

Regulation of financial market systemic risk should incorporate the concept of a single Market Stability Regulator, which could function as conceived by the administration proposals, or as a neutral third party, a separate regulator with systemic risk responsibility, or some combination thereof. A Market Stability Regulator would collect data concerning past events to gain a better understanding of the forces that precipitated market crises in the past. A Market Stability Regulator would also have a prospective role in monitoring and measuring systemic risk, using quantitative and qualitative data and models that have incorporated learning from ongoing data collection. The goals of a Market Stability Regulator in managing risk should be to collect, analyze, and, when possible, publish aggregate data to facilitate the establishment of firewalls that can be used to both avert financial epidemics and prevent financial contagion from spreading. A Market Stability Regulator would thus need the ability to collect information from a broad range of market participants. Data collected by a Market Stability Regulator should be publicly reported to the greatest extent possible with appropriate redaction of nonpublic or proprietary information. A complex and interconnected financial system requires sophisticated data collection and analysis to ensure that analyses of network risk by regulators and firms

\textsuperscript{103} Id.

\textsuperscript{104} Nat’l Ass’n, of Sec. Dealers, \textit{New Requirements for Electronic Blue Sheets Submissions}, NASD Notice to Members 01-01, at 527 (Sept. 2001), http://www.complinet.com/file_store/pdf/rulebooks/nasd_0160.pdf (discussing information requirements for blue sheet submissions to the SEC for NASD members) \textsuperscript{[link]}

\textsuperscript{105} Dark pools are platforms that facilitate executions of orders or indications of interest without public display of such orders or the prices at which such orders are executed. \textit{See, e.g.,} Lehman Brothers, \textit{Shedding Light on Dark Pools} (Dec. 2007), http://thisnewyorklife.com/portfolio/dark_pools.htm \textsuperscript{[link]}

\textsuperscript{106} Large Trader Reporting System, 17 CFR §§ 240, 249 (2010) (“The proposed large trader reporting system is designed to facilitate the Commission’s ability to assess the impact of large trader activity on the securities markets, to reconstruct trading activity following periods of unusual market volatility, and to analyze significant market events for regulatory purposes.”) \textsuperscript{[link]}
reflects an understanding of the reality on the ground within financial market and regulatory contexts.
RISKY BUSINESS: THE CREDIT CRISIS AND FAILURE (PART III)

Olufunmilayo B. Arewa

I. CONSUMERS, INDUSTRY, AND REGULATORY COSTS

Collection and effective analysis of financial market data may help prevent future crises. The high human costs of market crises, which may significantly affect those least well positioned to bear such costs, make prevention of future crises a high priority. This is particularly true in light of the pervasive financial market networks that characterize contemporary financial markets. Further, through their influence on financial variables such as interest rates and currency prices, financial market networks reach deep into the homes and pocketbooks of a significant portion of the world’s population. The fallout from the subprime mortgage market collapse thus illustrates fundamental ways in which financial market participants and the broader global community are linked.

A. Costs of Ineffective Regulation

Individuals and businesses bear costs in connection with regulatory and industry failures that lead to market crisis. First, although federal financial regulators “are largely self-supporting through fee collections, assessments, or other funding sources,” individuals in their roles as consumers, taxpayers, workers, and investors pay the costs for ineffective yet costly U.S. regulatory frameworks, including significant levels of business financing of regulation. Second, although the costs of U.S. bailouts are projected to

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2 Id.
5 Id.; see also U.S. Gov’t Accountability Office, GAO-02-302, SEC Operations: Increased
be significantly less than the estimated $700 billion authorized under the Troubled Asset Relief Program (TARP), taxpayers bear much of the cost of financial industry bailouts. Third, taxpayers may suffer significant deleterious consequences from the impact of the credit crisis on the real economy, which is suggested by a broad range of economic data, such as unemployment and mortgage foreclosure statistics, personal bankruptcies, and more restricted access to credit. Although the costs for financial market players have been high, financial institutions’ losses have been subsidized by the U.S. government, and ultimately borne to some extent by U.S. taxpayers. Losses and costs from the credit crisis, including credit losses, U.S. stock market losses, lost production and costs associated with declining gross domestic product, have likely reached the trillions.

Given the enormous costs imposed by the credit crisis, regulatory reform efforts need strengthening, and reformers must fundamentally rethink the U.S. regulatory architecture. If the credit crisis does not lead to a fundamental redesign of U.S. financial market regulation, it is not clear what level of financial market catastrophe would be required to do so. With the exception of the Treasury Blueprint optimal regulatory structure, none of the existing reform proposals come close to fundamental redesign, which is troubling given the profound costs imposed by the credit crisis and ineffective yet costly U.S. regulatory frameworks. Further, ineffective regulation is doubly costly, because it may lull market participants, including investors, consumers, and professional market actors into thinking that the government is actually monitoring risk.

WORKLOAD CREATES CHALLENGES 29–30 (2002), http://www.gao.gov/new.items/d02302.pdf (noting that although federal bank regulation is self-funded, SEC collections are deposited with the U.S. Treasury in an account that provides for SEC appropriations and other uses and that SEC collections significantly exceed the amount of SEC appropriations) [link]. In 2003, SEC collections were projected to be $1.3 billion, while the President’s appropriation request for the SEC was $467 million. Id.

CONGRESSIONAL BUDGET OFFICE, REPORT ON THE TROUBLED ASSET RELIEF PROGRAM 2 n.6 (2010), available at http://www.cbo.gov/ftpdocs/112xx/doc11227/03-17-TARP.pdf (noting that the authority for the Troubled Asset Relief Program (TARP) was originally set at a maximum of $700 billion but was later reduced by about $1.3 billion) [link].

Id. at 1 (estimating that TARP will cost taxpayers $109 billion and noting that Office of Management and Budget cost estimates total $127 billion).

See COMM. ON CAPITAL MkTS. REGULATION, THE GLOBAL FINANCIAL CRISIS: A PLAN FOR REGULATORY REFORM 7–23 (2009), available at http://www.capmktsreg.org/pdfs/TGFC-CCMR_Report_(5-26-09).pdf (detailing the impacts of the financial crisis and noting that some aspects are difficult to quantify) [link].


COMM. ON CAPITAL MkTS. REGULATION, supra note 8 at 10–11.
B. Financial Literacy and Risk Penalties: Creating Incentives for Better Risk Management and Disclosure

In the absence of fundamental regulatory redesign, other useful actions might help better align internal industry and regulatory incentives, such as intensifying penalties for behaviors that create systemic risk, creating broader mechanisms for financial literacy and education about risk at all levels of activity, and developing better risk disclosure practices for market participants.

1. Meaningful Penalties: Sliding Scale Incentive Regulation

In addition to ensuring that private market discipline rests on incentives that encourage market participants to properly price risk, regulatory penalties should be reconsidered in light of existing incentives. Auction Rate Securities (ARS) markets illustrate the impact of incentives for financial market participants. ARS, which were first issued in 1984, are “long-term, variable-rate instruments that have their interest rates reset at periodic and frequent auctions.”11 The ARS market, which collapsed in February 2008, seemingly offered benefits to both issuers and investors.12 ARS enabled issuers to vary their credit spread over time by issuing long-term variable-rate debt without establishing either a fixed interest rate or a variable benchmark and credit spread for the life of the instrument at the time of issuance, as would be the case with traditional fixed-rate or variable-rate instruments.13 ARS were the subject of a 2006 SEC settlement in which firms settled for $13 million, without admitting or denying SEC charges.14 This settlement is negligible when compared to the amount of money that banks made from underwriting and managing ARS auctions. Given the revenue flows from the $330 billion that the ARS market reached before its collapse,15 and banks’ earnings of 1% for underwriting fees and twenty-five

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12 Id.
13 Id. at 4. A typical fixed rate debt instrument would have the fixed interest rate for the life of the instrument determined at the time of issuance and would not change with interest rate fluctuations. RICHARD A. BREALEY, STEWART C. MYERS & FRANKLIN ALLEN, PRINCIPLES OF CORPORATE FINANCE 398 (9th ed. 2008). In contrast, a variable rate debt instrument would generally have the method of interest rate calculation determined based on a variable benchmark interest rate and credit spread at the time of issuance (e.g., LIBOR (London Interbank Offered Rate) + 1%). Id. As a result, even though the effective interest rate would vary over the life of the variable interest rate debt instrument, the method of calculation and the credit spread above the benchmark rate of interest would be established at the time of issuance.
15 LEE, supra note 11, at 2.
basis points for each auction,\textsuperscript{16} it is likely that banks gained far in excess of the $13 million SEC settlement. For example, if the $330 billion in sales occurred in a single year, with auctions of all outstanding ARS taking place monthly, bank revenues from ARS underwriting fees in that year alone could exceed $3 billion.\textsuperscript{17}

Given the monetary incentives that existed in the ARS market, the 2006 settlement likely constituted a minor slap on the wrist. The ARS settlement occurred during a time of declining penalty collections by the SEC.\textsuperscript{18} In contrast, sliding scale penalties might provide a better mechanism for aligning incentives in some instances. Sliding scale regulation has been applied in the context of regulated industries such as telecommunications.\textsuperscript{19} In the financial market context, sliding scale penalties could be conceptualized as forced profit or revenue-sharing, with payments into a fund established by regulators for certain first or continuing regulatory violations. Assuming that the amount of the profit or revenue-sharing could be set at an appropriate level, the prospect of such profit or revenue penalties would likely facilitate internal firm risk management and shareholder monitoring to avoid the penalties. In the ARS case, even a penalty of as low as 10\% of profits accrued for using the practices that led to the SEC charges, or some percentage of firm profits during the periods in which violations occurred, might have had a greater impact on future behavior. Recognition of the importance of meaningful penalties was a factor in Judge Rakoff’s 2009 rejection of an SEC settlement with Bank of America in relation to its acquisition of Merrill Lynch, which reflects judicial concern about the nature, fairness, and amount of SEC settlements.\textsuperscript{20} Judge Rakoff described the proposed settlement as “neither fair, nor reasonable, nor adequate” and noted that the $33 million settlement was “a trivial penal-

\textsuperscript{16} See Lee, supra note 11 at 12 (noting that the underwriter typically receives a fee of 25 basis points); Administrative Complaint at 37-38, In the Matter of UBS Securities, Inc., No. 2008-0045 (Mass. Sec. Div. June 26, 2008), available at http://www.sec.state.ma.us/sect/scubs2/ubs2_complaint.pdf (stating that UBS’ underwriting fee is typically 1\%)\textsuperscript{17} For example, 1\% of $330 billion would garner $3.3 billion in annual underwriting fees.


ty for a false statement that materially infected a multi-billion dollar merger.\textsuperscript{21}

2. Risk Education and Financial Literacy

The credit crisis also demonstrates a significant need for better financial education with respect to risk, both for sophisticated market participants and regulators who need a more comprehensive understanding of complex financial products, trading strategies, and networks. Financial market regulation that is based on an assumption of private market discipline implicitly assumes that market participants have sufficient knowledge and education to enable them to effectuate the discipline that is part of the foundation on which market regulation rests. Although education can be a blunt tool, a pervasive lack of knowledge by multiple parties was no doubt a factor in the crisis. For example, the ARS market was developed by broker-dealers who were willfully ignorant about the products they sold. Interviews by Massachusetts officials of ARS financial advisors revealed knowledge based only on conversations with other advisors and mere anecdotal understanding of the products they were selling, much of which was incorrect.\textsuperscript{22} In many instances, ARS customers, including sophisticated purchasers such as Pulitzer Prize-winning financial writer James Stewart, lacked knowledge about the risks of what they were buying.\textsuperscript{23}

In addition to better professional education for market participants and regulators, greater consideration should be given to ways to make retail investor education more comprehensive and interactive. A televised public service announcement series that focuses on investment and financial market basics might assist retail investors in understanding financial market products and investment best practices. Further, current methods for determining retail investor qualifications may also be inadequate. In addition to the financial thresholds that exist for individual investors under Regulation D,\textsuperscript{24} greater consideration should be given to having standardized in-

\textsuperscript{21} Id. at 512.


\textsuperscript{24} Regulation D, 17 C.F.R. § 230.501(a) (2010), available at http://edocket.access.gpo.gov/cfr_2009/aprqr/pdf/17cfr230.501.pdf (defining an accredited individual investor to include banks and savings institutions as well as persons with an individual or joint net worth in excess of $1 million or person with an individual income in excess of $200,000 or joint income in excess of $300,000 in the two most recent years with a reasonable expectation of the same level of income in the current year) [link]. The Restoring American Financial Stability Act of 2010 Senate bill would significantly change the operation of Regulation D and permit the SEC to disqualify certain Regulation D offerings. See Restoring American Financial Stability Act of 2010, S. 3217, 111th Cong. § 926 (2010), available at http://banking.senate.gov/public/_files/ChairmansMark31510AYO10306_xmlFinancialReformLegislationOnBill.pdf [link].
vestor tests as a key aspect of private market discipline. True assessment of investor qualifications should go beyond the check-the-box approach of some investor qualification questionnaires. For example, this could involve developing interactive investor knowledge tests (IKTs), which could be geared to the specific nature of varied investment opportunities. The purpose of such tests would not be to require a particular score from a prospective investor alone or together with the investor’s representative, but to help ensure that potential investors and financial service providers are forced to focus on the types of financial instruments, trading strategies, and risks associated with potential investment opportunities.25 Such IKTs could be used for their informational value (rather than their raw score) to help increase investors’ awareness about what they should know, or at least investigate, prior to participating in a particular investment. A hedge fund, for example, could have a stated level of preferred IKT score for a particular investment opportunity. Investors below that level could participate, but they and hedge fund managers would be on notice that they might not understand the risks of the investment opportunity. IKTs could facilitate better incorporation of risk into decision-making by clarifying the nature of knowledge that might be desired for participation in particular investment opportunities.

Better risk education is an important factor in enhancing risk management. Some of the lack of attention to risk that led to the credit crisis is a consequence of incentive structures within the financial services industry. However, better risk education might encourage retail investors, sophisticated market participants, and regulators to more closely question transactions and investment opportunities, such as the Madoff Ponzi scheme, that seemingly offered a riskless premium return.26

3. Interactive Disclosure

In addition to regulatory penalty reform and greater focus on education, changes could also be made that promote greater disclosure surrounding financial markets, financial products, and risk. Regulated entity disclosure requirements should be supplemented to require additional disclosure concerning dynamic risk. Required risk disclosure under Regu-

25 See U.S. Gov’t Accountability Office, GAO-08-200, Hedge Funds: Regulators and Market Participants Are Taking Steps to Strengthen Market Discipline, but Continued Attention is Needed 29 (2008), http://www.gao.gov/new.items/d08200.pdf (noting that “[t]he ability of market discipline to control hedge funds’ risk is limited by some investors’ inability to understand and evaluate the information they receive . . . .”)

26 See Kara Scannell, SEC Had Chances for Years to Expose Madoff’s Alleged Ponzi Scheme, WSJ.com Dec. 15, 2008, http://online.wsj.com/article/SB122928886040304911.html?mod=articleoutset-box (“The revelations are the latest blow to the reputation of an agency that has been criticized for insufficient enforcement and the failure to better monitor the dangerous risk-taking on Wall Street that triggered this year’s financial crisis.”)
tion S-K,\textsuperscript{27} which contains many of the specific disclosure requirements to which reporting companies are subject, reflects a largely top-down perspective that focuses on aggregate risks to the reporting entity, which may not adequately aggregate risks embedded in networks of connectivity that may reach down to the level of individual traders.\textsuperscript{28} Mandatory disclosure about risk should be supplemented to include more bottom-up perspectives, including discussion of company risk management policies and training, as well as the specific ways in which all employee compensation, not just that of senior executives, aligns with the potential risks that employees may undertake. Such disclosure is particularly important for all employees that directly engage in capital market trading activities.

\textbf{C. Revolving Doors and Consequences for Failure}

In the final analysis, the credit crisis should provide lessons about the importance of appropriately addressing failure. Consumers have felt the consequences of the credit crisis. They were encouraged to invest in housing by government policies on interest rates and home-buying incentive programs. Creative industry packaging of mortgages, some of which were “built to self-destruct,”\textsuperscript{30} occurred alongside what some have characterized as significant declines in loan documentation standards and increases in subprime mortgage originations.\textsuperscript{31} Prior to the credit crisis, a wide range of homeowners, not just subprime borrowers, engaged in risky behavior that essentially took a directional bet on the continued increase of housing prices. Some borrowers had insufficient incentive to avoid high-risk mortgage loans that they might not be able to pay.\textsuperscript{32} In the credit crisis aftermath,

\begin{itemize}
    \item \textsuperscript{27} Regulation S-K, 17 C.F.R. § 229 (2009), available at http://www.access.gpo.gov/nara/cfr/waisidx_09/17cfr229_09.html [link]
    \item \textsuperscript{28} \textit{See} id. at § 229.305, available at http://edocket.access.gpo.gov/cfr_2009/aprqt/pdf/17cfr229.305.pdf (“In preparing the foreign currency value at risk disclosures, this registrant should report the aggregate potential loss from hypothetical changes in both the DM/FF exchange rate exposure and the FF/SUS exchange rate exposure.”) [link]
    \item \textit{See} Edmund L. Andrews, \textit{Greenspan Concedes Error on Regulation}, NYT\textit{COM}, Oct. 23, 2008, http://www.NYT\textit{COM}/2008/10/24/business/economy/24panel.html (“Mr. Greenspan’s critics say that he encouraged the bubble in housing prices by keeping interest rates too low for too long and that he failed to rein in the explosive growth of risky and often fraudulent mortgage lending.”) [link]; Jo Becker, Sheryl Gay Stolberg & Stephen Labaton, \textit{White House Philosophy Stoked Mortgage Bonfire}, NYT\textit{COM}, Dec. 20, 2008, http://www.NYT\textit{COM}/2008/12/21/business/21admin.html (“‘This administration made decisions that allowed the free market to operate as a barroom brawl instead of a prize fight,’ said L. William Seidman, who advised Republican presidents and led the savings and loan bailout in the 1990s. ‘To make the market work well, you have to have a lot of rules.’”) [link]
    \item \textit{Id.}
    \item Martin Feldstein, \textit{How to Help People Whose Home Values Are Underwater}, WSJ\textit{COM}, Nov. 18, 2008, http://online.WSJ\textit{COM/article/SB122697004441035727.html} [link]. Various government policies further encouraged consumer leveraging trends. The Bush administration initiated a program to encourage home ownership that permitted home purchases with no money down. Tax policies, includ-
\end{itemize}
consumers have been punished, in many instances far beyond the scope of any risk-taking activities they might have undertaken.\textsuperscript{33} Although consumers in the U.S. do have the option of walking away from their mortgages, doing so is financially costly and likely to negatively impact their credit.\textsuperscript{34}

In contrast to failures by consumers, failures by industry participants and regulators occur in an environment of revolving doors, where failure may be rewarded with a better position.\textsuperscript{35} Revolving doors enable industry participants to move from current failures to future prospects. For example, being involved in the failure of a hedge fund has not limited future career options in a number of high-profile cases.\textsuperscript{36} Although some firms such as Lehman Brothers were permitted to fail, many financial services institutions whose activities would otherwise have led to firm failure were saved by government intervention.\textsuperscript{37} Even though the systemic failure rationales for

\textsuperscript{33} See Clyde Ashley & Krystal D. Wilson, \textit{The Credit Crunch and the Impact on the US Economy and Global Markets: How Damaging Will It Be?} 16 Proceedings of AMER. SOC. BUSINESSES & BEHAVIORAL SCI. 3–5 (2009), http://www.asbbs.org/files/2009/PDF/A/AshleyC2.pdf (describing negative impact of credit crisis on consumers, including increasing mortgage defaults and foreclosures, which has put downward pressure on housing prices and decreasing levels of available credit) [\textsuperscript{link}].

\textsuperscript{34} Nick Timiraos, \textit{Some Buy a New Home to Bail on the Old}, WSL.COM., June 11, 2008, http://www.wsj.com/article/SB121314811278463077.html (“To be sure, walking away from a mortgage, even if legal, has plenty of drawbacks: Borrowers lose the ability to take out unsecured loans, since foreclosures can stay on a credit report for seven years. In some states, lenders can sue for assets, including a new house.”) [\textsuperscript{link}].

\textsuperscript{35} Michael Lewis & David Einhorn, \textit{The End of the Financial World as We Know It}, NYT.com, Jan. 3, 2009, http://www.NYT.com/2009/01/04/opinion/04lewis einhorn.html (describing the SEC as “plagued by wacky incentives” based on prospect of future employment on Wall Street) [\textsuperscript{link}].


http://www.law.northwestern.edu/lawreview/coloquy/2010/16/
such rescues may be cogent and reasoned, preventing firms from failing poses a significant problem for the future. Institutions that cannot fail are likely to continue to take outsized risks that generate significant private profits on the upside and large public losses on the downside. Failures by individual industry participants and firms may thus not be sufficiently penalized.

Although industry failures have and should be highlighted, greater attention also needs to be paid to government failures. Prevention of future crises will greatly depend on the extent to which both government and industry participants can be held accountable for failure.\(^{38}\) Although greater industry expertise and additional resources are needed at the SEC,\(^ {39}\) the revolving door between the SEC and Wall Street may have contributed to SEC regulatory failures.\(^ {40}\) Similarly, SEC staff supervision of the Madoff investigation may have been more concerned about damaging future career prospects than giving teeth to the SEC investigation.\(^ {41}\) Concerns about future career opportunities may also have been a factor in the SEC failure to pursue action against Ponzi operator Allen Stanford. The head of Enforcement in the SEC’s Forth Worth, Texas office did not undertake an enforcement action against Stanford—despite repeated examinations by SEC staff

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\(^{38}\) Congressional, for example, bears few consequences for legislation that produces failed and fragmented regulatory frameworks. Ironically, fear of failure at the SEC may have been a factor in the failure to pursue the Madoff investigation, while the desire to avoid a case that was not bullet-proof and bring a larger quantity of cases may have been a factor in the failure to pursue an enforcement action against the Stanford Ponzi Scheme. See Donald C. Langevoort, The SEC and the Madoff Scandal: Three Narratives in Search of a Story (Georgetown Law Faculty Working Paper No. 116, 2009), available at http://scholarship.law.georgetown.edu/fwpapers/116/ (describing how sensitivity to failure influences SEC investigations).


\(^{41}\) Lewis & Einhorn, supra note 35 (“If you work for the enforcement division of the S.E.C. you probably know in the back of your mind, and in the front too, that if you maintain good relations with Wall Street you might soon be paid huge sums of money to be employed by it.”).

http://www.law.northwestern.edu/lawreview/colloquy/2010/16/
that strongly suggested that Stanford was running a Ponzi scheme, later sought to represent Stanford, and for a short period actually did so.42 One recent empirical study suggests that biases in enforcement may reflect systematic SEC under-enforcement against large firms.43 This may be the product of regulatory capture, a potential risk with any regulatory framework. Regulatory principles that emphasize transparency may be one approach for dealing with regulatory capture. In 2007, the Senate Committees on Finance and the Judiciary conducted a joint investigation of the SEC over “allegations of lax enforcement, improper political influence, [and] whistleblower retaliation.”44 This investigation was a response to negative publicity following the SEC termination of an employee involved in a hedge fund investigation, in which assertions were made about improper political influence in SEC enforcement investigations.45 The joint congressional investigation also drew attention to the revolving door between the SEC and Wall Street that some assert improperly influences SEC investigations.46

Steps should be taken to prevent and reduce the extent to which revolving doors may intensify the likelihood of government or industry failure. A number of options might be available,47 including strict enforcement of


43 See The Firing of an SEC Attorney and the Investigation of Pequot Capital Management: Hearing Before the S. Finance and Judiciary Comm., 110th Cong. 37 (2007), available at http://permanent.access.gpo.gov/lps86499/Leg_110_080307_SEC[1].pdf [hereinafter Pequot Report] (“Evidence we reviewed suggests that the reluctance to question Mack represents a much more subtle and pervasive problem than an individual partisan political favor. SEC officials were overly deferential to Mack—not because of his politics—but because he was an ‘industry captain’ who could hire influential counsel to represent him.”)


45 Id. at 7.

46 Id. at 82–87 (discussing post-SEC employment of an Associate Director in the SEC Enforcement Decision, who joined the law firm that had contacted the SEC concerning questions relating to a firm client’s role in a transaction being investigated by the SEC, and focusing on whether this employee recused himself from the investigation in a timely manner after he began pursuing employment with the same law firm).

47 Existing conduct and conflict of interest rules already address questions relating to revolving doors. For example, SEC Regulation Concerning Conduct of Members and Employees and Former Members and Employees of the Commission Rule 8 “prohibits a former Commission employee from appearing before the Commission in a representative capacity in a particular matter in which he or she participated personally and substantially while an employee of the Commission.” SEC, supra note 42 at http://www.law.northwestern.edu/lawreview/colloquy/2010/16/
bans, mandatory time lags on future employment, or clear firewalls or recusal policies with respect to prior employment.\(^{48}\) Congressman Barney Frank’s response to a staffer who went to work for a financial services industry lobbyist may be an approach to consider.\(^{49}\) When a top staffer of the House Financial Services Committee went to work as a lobbyist for the owner of the largest credit default swap houses, Congressman Frank banned committee staff from talking to the former staffer about financial regulation or financial matters until Frank no longer chairs the Committee.\(^{50}\) In the end, such steps may be one important way to address the widespread industry and regulator shortcomings that led to the credit crisis.

II. CONCLUSION

The credit crisis is a watershed event that illustrates much about both the importance and limits of regulation. It demonstrates, for example, how national regulatory frameworks may be ineffective in increasingly globalized financial markets. The credit crisis underscores the need for regulatory reform that creates frameworks that fit the contexts of their application. Regulation also needs to address the persistent problem of failure and how to ensure that existing incentives do not reward failure by either regulators or industry participants. Regulation is also increasingly a factor in global competitiveness, as well as a mechanism that can instill confidence in financial market integrity. Confidence is a huge factor in the financial services industry.\(^{51}\) In addition to causing significant market volatility and instability, market crises may deleteriously impact market confidence. In an industry where physical assets are few and intangible assets are paramount, a failure in confidence may also cause financial markets to freeze. A crisis of confidence can be difficult to overcome.

Market crises often test confidence and may even trigger regulatory reactions that toughen the application of existing legal frameworks or lead to the adoption of new ones in response to a particular market crisis. The current market crisis unfolded in arenas with significant existing regulation. Existing reform legislation fails to take sufficient account of the implications of regulatory failures that contributed to the credit crisis. On May 20, 2010, the U.S. Senate passed the financial reform bill sponsored by Senator Chris Dodd.\(^{52}\) Although this new legislation purports to address the under-

\(^{10}\) (citing 17 C.F.R. § 200.735-8 (a)(1) (2010)).

\(^{48}\) *Pequot Report*, supra note \(^{43}\) at 7–8.


\(^{50}\) Id.


lying problems that led to the credit crisis, as has been the case historically in the United States, it targets the causes of the last crisis rather than achieving overarching reform of vulnerabilities and other problems in financial market regulatory frameworks more generally.\textsuperscript{53} More fundamental regulatory reforms are needed to address potential future market crises. Reactions to the current crisis should thus be initiated at the same time as an overall assessment of existing regulation prior to the adoption of any new regulatory requirements. Existing regulatory frameworks should be evaluated and new regulations adopted taking into account specific regulatory principles. Further, regulatory reforms in response to the current crisis should be shaped by acknowledgment of a fundamental shift in the nature of trading activities and financial market networks. Changing technology has shaped trading activities in a broad range of entities, both regulated and unregulated. The incentives that govern traders and other market participants in such trading contexts should be key considerations in proposed regulatory reforms. Such incentives can play a significant role in determining the extent to which financial market networks embody speculative risk-taking trading activities or reflect more cautious approaches to risk that truly incorporate private market discipline and minimize the potential for systemic market instability, network failure, and industry and government failure.

\textsuperscript{53} David M. Herszenhorn, \textit{Bill Passed in Senate Broadly Expands Oversight of Wall Street}, NYTIMES.COM, May 20, 2010, http://www.NYTimes.com/2010/05/21/business/21regulate.html (discussing the Senate bill, noting that some experts characterize the bill as targeting past problems and thus leaving the financial system vulnerable to a future collapse) [link].