

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

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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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¹ See, e.g., Daniel Davies, *Remuneration and Risk*, 1997 FIN. STABILITY REV. 18, 19, available at [http://www.bankofengland.co.uk/publications/fsr/1997/art4\(Issue%202\).pdf](http://www.bankofengland.co.uk/publications/fsr/1997/art4(Issue%202).pdf) (“Thus a commission on trading profits will affect risk taking behaviour because its value almost entirely depends on the risks taken with the firm’s capital.”) (link); Raghuram Rajan, *Bankers’ Pay is Deeply Flawed*, FT.COM, Jan. 9, 2008, http://us.ft.com/ftgateway/superpage.ft?news_id=fto010920081142101282 (“The managers who blew a big hole in Morgan Stanley’s balance sheet probably earned enormous bonuses in the past[.] . . . If Morgan Stanley managed its compensation correctly those bonuses should be clawed back and should be enough to pay those who did well this year without increasing the bonus pool[.] . . . [U]nless we fix incentives in the financial system we will get more risk than we bargain for.”) (link).

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-

³ Charles E. Schumer & Michael R. Bloomberg, *To Save New York, Learn from London*, WSJ.COM, Nov. 1, 2006, <http://online.wsj.com/article/SB116234404428809623.html> (link).

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 Chairmen 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).

⁷ See, e.g., Brendan Nelson, *Regulation after the Credit Crunch: Backlash or Measured Response?*, KPMG FRONTIERS IN FINANCE, July 2008, at 4, available at <http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Frontiers-in-Finance/Documents/frontiers-in-finance-2008-Jul.pdf> ("The institutional and market failures of the past year have spurred legislators and regulators around the world into action.") (link); Barry Eichengreen & Richard Baldwin, *WHAT G20 LEADERS MUST DO TO STABILISE OUR ECONOMY AND FIX THE FINANCIAL SYSTEM* 1, 1 (Barry Eichengreen & Richard Baldwin eds., 2008) ("Everyone agrees on the need to strengthen supervision and regulation, but there is no agreement on how to go about this.") (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-

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 Urech-Rangau & Andrea Carugati, *Foreign Delisting and Domestic Stock Value: Multiple Frameworks, Divergent 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.⁹ 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.¹⁰ 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.¹¹ The voluntary CSE program permitted a holding company to measure group-wide capital adequacy in accordance with the Basel II Accord,¹² which created international standards for determining financial industry capital requirements.¹³ 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.¹⁴ The CSE program was intended to enable firms with "strong internal risk management" to use alternative methods to calculate net capital adequacy.¹⁵ It permitted use of the same mathematical methods for managing business risk and for calculating net determinate regulatory capital requirements.¹⁶ These alternative capital calculations were less stringent than the SEC's traditional net capital rule and led to significant increases in leverage for CSE

⁹ See Martin Wolf, *Why Agreeing a New Bretton Woods is Vital*, FT.COM, Nov. 4, 2008, <http://www.ft.com/cms/s/0/7cc47dfe-aa95-11dd-897c-000077b07658.html> (describing the need for a global solution to the current financial crisis and global prevention of future crises) (link).

¹⁰ See Press Release, Sec. & Exch. Comm'n (SEC), Chairman Cox Announces End of Consolidated Supervised Entities Program (Sept. 26, 2008) [hereinafter, SEC, End of CSE Program], <http://www.sec.gov/news/press/2008/2008-230.html> (describing the voluntary nature of the CSE program as "fundamentally flawed") (link).

¹¹ *Id.*

¹² Alternative Net Capital Requirements for Broker-Dealers That Are Part of Consolidated Supervised Entities, 69 FED. REG. 34,428, 34,444 (June 21, 2004) [hereinafter CSE Rule], www.sec.gov/rules/final/34-49830.pdf (link).

¹³ See BASEL COMM. ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS: A REVISED FRAMEWORK 1 (2006) (link); BASEL COMM. ON BANKING SUPERVISION, THE APPLICATION OF BASEL II TO TRADING ACTIVITIES AND THE TREATMENT OF DOUBLE DEFAULT EFFECTS 1 (2005).

¹⁴ CSE Rule, 69 Fed. Reg. at 34,429.

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.¹⁷ Given that industry risk models have proved inadequate in the face of the credit crisis,¹⁸ it is not surprising that capital calculations based on these same risk models have also proved inadequate.¹⁹ 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.²⁰ SEC Inspector General reports reveal inattention to questions of systemic risk,²¹ coordination problems within the SEC,²² and enforcement failings that contributed to the CSE program's regulatory failures.²³

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

¹⁷ John C. Coffee, Jr., *Analyzing the Credit Crisis: Was the SEC Missing in Action*, LAW.COM, Dec. 5, 2008, <http://www.law.com/jsp/cc/PubArticleCC.jsp?id=1202426495544> (link); John C. Coffee, Jr. & Hillary A. Sale, *Redesigning the SEC: Does the Treasury Have a Better Idea?*, 95 VA. L. REV. 707, 735–37 (2009) (link).

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).

²⁰ See Order Regarding Alternative Net Capital Computation for Bear, Stearns & Co. Inc., Exchange Act Release No. 34-52857, 86 SEC Docket 1954 (Nov. 30, 2005) (link); Order Regarding Alternative Net Capital Computation for Lehman Brothers Inc., Exchange Act Release No. 34-52753, 86 SEC Docket 1641 (Nov. 9, 2005) (link); Order Regarding Alternative Net Capital Computation for Morgan Stanley & Co., Exchange Act Release No. 34-52145, 85 SEC Docket 3318 (July 28, 2005) (link); Order Regarding Alternative Net Capital Computation for Goldman, Sachs, & Co., Exchange Act Release No. 34-51421, 85 SEC Docket 75 (Mar. 23, 2005) (link); Order Regarding Alternative Net Capital Computation for Merrill Lynch, Pierce, Fenner & Smith Incorporated, Exchange Act Release No. 34-50925, 84 SEC Docket 1974 (Dec. 23, 2004) (link).

²¹ See SEC, OFFICE OF INSPECTOR GEN., SEC’S OVERSIGHT OF BEAR STEARNS AND RELATED ENTITIES: THE CONSOLIDATED SUPERVISED ENTITY PROGRAM, REPORT NO. 446-A, at 46–51 (Sept. 25, 2008) [hereinafter SEC INSPECTOR GENERAL REPORT 446-A], <http://www.sec-oig.gov/Reports/AuditsInspections/2008/446-a.pdf> (link).

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.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.²⁵ Repos are an important source of short-term financing for many market participants.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.²⁷ Repo 105 treatment thus made Lehman's balance sheet appear to be healthier and less leveraged than was actually the case.²⁸ The assets were returned to Lehman's balance sheet just days after issuing the financial reports reflecting the Repo 105 transactions.²⁹ Lehman Brothers did not disclose Repo 105 treatment in its finan-

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 other 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.”) (link); see also Report of Anton R. Valukas, Examiner, Vol. 1, at 8, In re Lehman Bros. Holdings Inc., Ch. 11 Case No. 08-13555 (Mar. 11, 2010) [hereinafter Valukas Report 1], available at <http://lehmanreport.jenner.com/VOLUME%201.pdf> (“In mid-March 2008, after the Bear Stearns near collapse, teams of Government monitors from the [SEC] and the Federal Reserve Bank of New York . . . were dispatched to and took up residence at Lehman, to monitor Lehman’s financial condition with particular focus on liquidity.”) (internal footnote omitted) (link).

²⁵ Frank J. Fabozzi & Steven V. Mann, *Private Money Market Instruments*, in THE HANDBOOK OF FIXED INCOME SECURITIES 231, 243 (Frank J. Fabozzi ed., 6th ed., 2006) (describing repo transactions); Christian Ewerhart & Jens Tapking, *Repo Markets, Counterparty Risk, and the 2007/2008 Liquidity Crisis 1* (Swiss Fin. Inst. Research Paper Series No. 08-24, Working Paper No. 909, 2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1138609 (noting that in a typical repo “the lender of cash is compensated by an interest that is calculated from the nominal value of the transaction, the term, and the so-called repo rate.”) (link).

²⁶ See Michael Mackenzie, *Ultra-Low U.S. Rates Undermine Repo Market*, FT.COM, Dec. 16, 2008, <http://www.ft.com/cms/s/0/2da96724-cbb1-11dd-ba02-000077b07658.html> (noting that while “the government repurchase or repo market [has been] a foundation stone for the financial system and trading Treasury debt,” the occurrence of “[e]xtremely low short-term interest rates in the [United States] are sharply eroding [its] functioning.”) (link).

²⁷ Valukas Report 1, *supra* note 24, at 6–7.

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.”) (link); *id.* at 759 (“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.”).

²⁹ Valukas Report 3, *supra* note 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> (link).

cial statement filings.³⁰ Ernst & Young, which audited Lehman's books, did not question the use or nondisclosure of the Repo 105 transactions.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.³² Lehman Brothers declared bankruptcy on September 15, 2008 in the largest bankruptcy filing ever.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.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.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.³⁶

³⁰ Valukas Report 1, *supra* note 24, at 8 n.27.

³¹ *Id.* at 8.

³² See Sorokin, *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); see also Valukas Report 4, *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).

³³ Valukas Report 1, *supra* note 24, at 2.

³⁴ See Wall Street Reform and Consumer Protection Act, H.R. 4173, 111th Cong. § 1961 (2009).

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").

³⁶ See SEC, INSPECTOR GENERAL REPORT 446-A, *supra* note 10, at 46-47 (noting that certain unregulated firms may pose systemic risks); cf. George G. Kaufman, *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."³⁷ 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.³⁸ 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."³⁹

Although the SEC Madoff Case Opening Memo notes that the SEC sought to ascertain whether Madoff was operating a Ponzi scheme,⁴⁰ the SEC Division of Enforcement Case Closing Recommendation does not discuss any aspect of Markopolos's detailed trading analysis.⁴¹ Instead, based

³⁷ HARRY MARKOPOLOS, THE WORLD'S LARGEST HEDGE FUND IS A FRAUD: NOVEMBER 7, 2005 SUBMISSION TO THE SEC 1-2 (2005).

³⁸ *Id.*

³⁹ Tom Lauricella, Aaron Lucchetti & Amir Efrati, *Madoff Ran Vast Options Game*, WSJ.COM, Dec. 16, 2008; see also Markopolos, *supra* 37; Greg N. Gregoriou & Francois-Serge Lhabitant, *Madoff: A Riot of Red Flags*, 10-20 (2008), available at <http://ssrn.com/abstract=1335639> (link).

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).

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.⁴² The SEC does not appear to have penetrated the true nature of Madoff’s operations.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].”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.”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.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.⁴⁷ Between 1997 and 2004, the Ponzi scheme grew from \$250 million to \$1.5 billion.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.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-

⁴² *Id.*

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).

⁴⁴ SEC DIV. OF ENFORCEMENT, *supra* 40.

⁴⁵ *Id.*; see also Gregory Zuckerman & Kara Scanell, *Madoff Misled SEC in ‘06, Got Off*, WSJ.COM (Dec. 18, 2008).

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).

⁴⁷ SEC, OFFICE OF INSPECTOR GEN., Case No. OIG-526, INVESTIGATION OF THE SEC’S RESPONSE TO CONCERNS REGARDING ROBERT ALLEN STANFORD’S ALLEGED PONZI SCHEME 16, 29–103, 118–19 (2010), available at <http://www.sec.gov/news/studies/2010/oig-526.pdf> (link).

⁴⁸ *Id.* at 118–19.

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.⁵⁰ 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.⁵¹

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,⁵² as the SEC exemplifies, U.S. regulators have been more responsive than was the case prior to the credit crisis.⁵³ Further, regulatory supervision of financial firms prior to the credit crisis reflected significant gaps and weaknesses.⁵⁴ 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.⁵⁵

⁵⁰ See Donald C. Langevoort, *The SEC and the Madoff Scandal: Three Narratives in Search of a Story* 4–6 (Georgetown Law Faculty Working Paper No. 116, 2009), available at http://scholarship.law.georgetown.edu/fwps_papers/116/ (link).

⁵¹ See G30, *supra* note 4.

⁵² See Glen Somerville, *U.S. Wasn't Ready For Bank Crisis, Response Slow*, UK.REUTERS.COM, May 6, 2010, <http://uk.reuters.com/article/idUKTRE64545N20100506> (link).

⁵³ David Cho & Neil Irwin, *Credit Crisis Triggers Unprecedented U.S. Response*, WASHINGTONPOST.COM, Aug. 9, 2008, <http://www.washingtonpost.com/wp-dyn/content/story/2008/08/09/ST2008080900527.html> (link).

⁵⁴ TREAS. DEP'T, FINANCIAL REGULATORY REFORM—A NEW FOUNDATION: REBUILDING FINANCIAL SUPERVISION AND REGULATION 2 (2009) (link).

⁵⁵ See, e.g., *Assessing the Madoff Ponzi Scheme and the Need for Regulatory Reform: Hearing Before the H. Comm. on Financial Services*, 111th Cong. (2009); SEC OFFICE OF INVESTIGATIONS, INVESTIGATION OF FAILURE OF THE SEC TO UNCOVER BERNARD MADOFF'S PONZI SCHEME, REPORT

NORTHWESTERN UNIVERSITY LAW REVIEW COLLOQUY

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.⁵⁶ 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.⁵⁷ 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-

NO. OIG-509 (2009) (link); Kara Scannell, *SEC Had Chances for Years to Expose Madoff's Alleged Ponzi Scheme*, WSJ.COM (Dec. 15, 2008).

⁵⁶ CONG. OVERSIGHT PANEL, DEC. OVERSIGHT REPORT, *TAKING STOCK: WHAT HAS THE TROUBLED ASSET RELIEF PROGRAM ACHIEVED?* 95-96 (2009) (discussing TARP transparency and accountability problems) (link).

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.⁵⁸ 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.⁵⁹ 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.⁶⁰ 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.⁶¹

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.⁶² The effectiveness of

⁵⁸ Coffee, Jr. & Sale, *supra* note 17, at 726 (noting that existing U.S. regulatory frameworks invite regulatory arbitrage).

⁵⁹ Senator Barack Obama, *Renewing the American Economy*, Address at Cooper Union University (Mar. 27, 2008) ("Even the best government regulation cannot fully substitute for internal risk management.") USA TODAY, Mar. 27, 2008, <http://www.usatoday.com/news/memmmottpdf/obama-econ-speech-3-27-2008.pdf> (link).

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).

⁶² Taking Temporary Action to Respond to Market Developments, Securities Exchange Act Release No. 58166 (July 15, 2008) (link).

the short selling ban has been hotly debated.⁶³ SEC elimination of the uptick rule, which required that short sales of listed securities occur at “a price above their last different sale price,”⁶⁴ has also been a subject of contention since the SEC abolished the rule in 2007⁶⁵ and adopted an alternative uptick rule in 2010.⁶⁶ In the credit crisis aftermath, significant attention has been given to changing trading practices facilitated by technological and financial market innovations.⁶⁷ As a result, increased regulatory scrutiny is now being given to the implications of practices such as flash trading and high frequency trading,⁶⁸ as well as short selling and securities lending.⁶⁹ 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.

⁶³ Heidi N. Moore, *The Great Short-Selling Ban Debate*, WALL ST. J. DEAL JOURNAL BLOG, Aug. 13, 2008, <http://blogs.wsj.com/deals/2008/08/13/the-great-short-selling-ban-debate> (link); EKKEHART BOEHMER, CHARLES M. JONES & XIAOYAN ZHANG, SHACKLING SHORT SELLERS: THE 2008 SHORTING BAN 20–22 (2009), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1412844 (empirical study finding no evidence of a positive price impact from the short selling ban) (link).

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

⁶⁵ Regulation SHO and Rule 10a-1, 72 Fed. Reg. 36348 (July 3, 2007) (to be codified at 17 C.F.R. pts. 40, 42) (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 is 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 (discussing a proposed SEC ban on flash trading, associated with high frequency trading, which gives certain traders advance knowledge of stock orders) (link); Scott Patterson & Geoffrey Rogow, *What’s Behind High Frequency Trading*, WSJ.COM, Aug. 1, 2009, <http://online.wsj.com/article/SB124908601669298293.html> (“High-frequency trading now accounts for more than half of all stock-trading volume in the U.S.”) (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. Brigagliano, 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); Kara Scannell & Craig Karmin, *SEC Weighs New Rules for Lending of Securities*, WSJ.COM Sept. 29, 2009, <http://online.wsj.com/article/SB125415836962146789.html> (noting that securities lending is central to short selling) (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.⁷⁰ 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.⁷¹ A variety of potential financial market regulatory blueprints exist, including four basic approaches: the Institutional, the Functional, the Integrated and the Twin Peaks.⁷² 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.⁷³ 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.⁷⁴ The Federal Reserve and the Department of Treasury share responsibility for management of system stability.⁷⁵

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.⁷⁶ 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).⁷⁷ The CFPA is intended to give consumer protection a “seat at the table” in the financial regulatory system.⁷⁸ In March 2010, Senator Dodd introduced another financial market reform proposal that would establish a Bureau of Consumer Financial Protection.⁷⁹ 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) (link).

⁷⁴ U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-08-32, FINANCIAL REGULATION: INDUSTRY TRENDS CONTINUE TO CHALLENGE THE FEDERAL REGULATORY STRUCTURE 9 (2007) (link).

⁷⁵ *Id.* at 11.

⁷⁶ See TREAS. DEP’T., *supra* note 73, 78–81, 128, 132, 138, 146–180.

⁷⁷ TREAS. DEP’T., *supra* note 54, at 10–18.

⁷⁸ *Id.* at 56.

⁷⁹ Restoring American Financial Stability Act, S. 3217, 111th Cong. (2010) (link).

NORTHWESTERN UNIVERSITY LAW REVIEW COLLOQUY

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 2009⁸⁴ incorporates some of the Obama administration proposals, including the creation of the Financial Services Oversight Council and the CFPB.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-

⁸⁰ TREAS. 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 TREAS. DEPT., *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.⁸⁸ 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,⁸⁹ 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.⁹⁰ 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.⁹¹ 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.⁹²

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).

⁸⁹ See OFFICE OF INSPECTOR GEN., BD. OF GOVERNORS OF THE FED. RESERVE SYS., MATERIAL LOSS REVIEW OF RIVERSIDE BANK OF THE GULF COAST (2009) (reviewing the failure of a bank subject to Federal Reserve oversight) (link); Ben S. Bernanke, Chairman Fed. Reserve Bd., Monetary Policy and the Housing Bubble, Speech at the Annual Meeting of the Am. Econ. Ass'n (Jan. 3, 2010), <http://www.federalreserve.gov/newsevents/speech/bernanke20100103a.htm> (discussing claims that the Fed's monetary policy caused a housing bubble that led to the credit crisis and noting that the credit crisis reveals weaknesses in regulatory oversight and global financial regulation architecture) (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.⁹³ The types of risks posed by financial system networks can be conceptualized as risks that may require disclosure at the wholesale level.⁹⁴ 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.⁹⁵ In the financial market context, mapping pervasive networks may be a critical tool in understanding and managing network risk.⁹⁶ 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-

⁹³ Amir E. Khandani & Andrew W. Lo, *What Happened to the Quants in August 2007?* 45–46 (MIT Working Paper, 2007), <http://web.mit.edu/alo/www/Papers/august07.pdf> (noting that financial system contagion "can spill over so directly to a completely unrelated corner") (link).

⁹⁴ See Mila Getmansky, Andrew W. Lo & Shauna X. Mei, *Sifting Through the Wreckage: Lessons from Recent Hedge-Fund Liquidations* 30–31 (MIT Working Paper, 2004), <http://web.mit.edu/alo/www/Papers/fail5.pdf> (citing the type of data exchange between U.S. banks and the Comptroller of the Currency and describing the NTSB investigations of airplane crashes as a model for data exchange in the securities regulation context, particularly with respect to the hedge fund industry) (link).

⁹⁵ See Justin Balthorp et al., *Technological Networks and the Spread of Computer Viruses*, 304 *SCI.* 527, 527 (2004) (link).

⁹⁶ See Noshir S. Contractor, Daniel Zink & Michael Chan, *IKNOW: A Tool to Assist and Study the Creation, Maintenance, and Dissolution of Knowledge Networks*, in *COMMUNITY COMPUTING AND SUPPORT SYSTEMS* 201, 201–202, 205–206 (T. Ishida ed., 1998).

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

⁹⁷ PRESIDENT’S WORKING GROUP ON FIN. MKTS., OVER-THE-COUNTER DERIVATIVES MARKETS AND THE COMMODITY EXCHANGE ACT. 35 (1999) (link).

⁹⁸ *Assessing the Madoff Ponzi and the Need for Regulatory Reform: Hearing Before the H. Comm. on Fin. Servs.*, 111th Cong. 8 (2008) (statement of Tamar Frankel) (noting that regulators lack market information) (link). Prime brokers provide much of the services and *infrastructure* for hedge fund operations, including execution, custody, financing, and securities lending services. See PRESIDENT’S WORKING GRP. ON FIN. MKTS, HEDGE FUNDS, LEVERAGE, AND THE LESSONS OF LONG-TERM CAPITAL MANAGEMENT 2 (1999) (noting that hedge funds can enhance liquidity and efficiency but also have potential to disrupt the functioning of financial markets) (link); Philipp M. Hildebrand, *Hedge Funds and Prime Broker Dealers: Steps Towards A “Best Practice Proposal”*, 10 BANQUE DE FRANCE FIN. STABILITY REV. 67, 72 (Apr. 2007) (link).

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.

NORTHWESTERN UNIVERSITY LAW REVIEW COLLOQUY

as information about the capital adequacy of these financial institutions, from prime brokers, banks, and other hedge-fund counterparties.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,¹⁰⁴ and in dark pools of liquidity.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).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

¹⁰³ *Id.*

¹⁰⁴ Nat'l Ass'n, of Sec. Dealers, *New Requirements for Electronic Blue Sheets Submissions*, NASD NOTICE TO MEMBERS 01-60, 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) (link).

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. *See, e.g.*, Lehman Brothers, *Shedding Light on Dark Pools* (Dec. 2007), http://thisnewyorklife.com/portfolio/dark_pools.htm (link).

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.") (link).

reflects an understanding of the reality on the ground within financial market and regulatory contexts.