

Regulating Shadows: Financial Regulation and Responsibility Failure

Steven L. Schwarcz*

Abstract

In the modern financial architecture, financial services and products increasingly are provided outside of the traditional banking system—and thus without the need for bank intermediation between capital markets and the users of funds. Most corporate financing, for example, no longer is dependent on bank loans but is raised through special-purpose entities, money-market mutual funds, securities lenders, hedge funds, and investment banks. This shift, referred to as “disintermediation” and described as creating a “shadow banking” system, is transforming finance so radically that regulatory scholars need to rethink their assumptions. Two of the fundamental market failures underlying shadow banking—information failure and agency failure—were also prevalent in the bank-intermediated financial system. By amplifying systemic risk, however, disintermediation greatly increases the importance of what scholars long have viewed as a third market-failure category: externalities. Viewing externalities as a distinct category of market failure, though, is misleading. Externalities are fundamentally consequences, not causes, of failures, and all market failures can result in externalities. Focusing on externalities also obscures who should be responsible for causing the externalities. This Article argues that the third market-failure category should be reconceptualized as a “responsibility failure”: a firm’s ability to externalize a significant portion of the costs of taking a risky

* Stanley A. Star Professor of Law & Business, Duke University School of Law, and Founding Director, Duke Global Capital Markets Center; schwarcz@law.duke.edu. I thank Kenneth Anderson, John de Figueiredo, Melanie Fein, George Gopen, John Komlos, Jonathan Lipson, Gregg Polsky, Daniel Schwarcz, and participants in a faculty workshop at Duke Law School for their valuable comments and Feroz Ali Khader and Jonathan E. Cote for their invaluable research assistance.

action. This reconceptualization would not only more precisely describe the market failure but also help to illuminate that sometimes the government itself, not merely individual firms, should bear responsibility for causing externalities, and that exercising this responsibility may require the government to enact laws that require firms to internalize those costs.

Table of Contents

I. Introduction	1783
II. Analysis	1787
A. Traditional Regulatory Perspectives and Tools.....	1788
1. Perspectives and Tools of Securities Law Scholars.....	1789
2. Perspectives and Tools of Law-and-Economics Scholars and Economists.....	1791
3. Perspectives and Tools of Banking Law Scholars.....	1793
4. Summary.....	1795
B. The Disintermediated Financial System	1796
C. Responsibility Failure and Externalities.....	1799
1. Defining Responsibility Failure	1799
2. Comparing Responsibility Failure and Externalities	1800
3. Responsibility Failures in the Disintermediated Financial System.....	1804
a. Issuing Short-Term Debt to Fund Long-Term Projects	1804
b. The Limited Liability of Investors Who Manage Firms	1808
4. Responsibility Failure and Traditional Banking.....	1810
5. Summarizing How the Concept of Responsibility Failure Could Inform Financial Regulation	1811
III. Applications	1815
A. Requiring Sellers in Securitization Transactions to Retain Unhedged Risk	1815

B. Compensating Senior Managers on a More Long-Term Basis	1817
C. Too Big to Fail	1818
D. Improving Disclosure	1819
E. Protecting Against Insolvency and Illiquidity	1820
F. Living Wills	1821
G. The Volcker Rule	1822
IV. Conclusions	1823

I. Introduction

The world's financial architecture is rapidly changing. A central feature of this change is disintermediation¹—bypassing the need for bank intermediation between the sources of funds, essentially the capital and other financial markets,² and firms that use funds to operate in, and thus contribute to, the real economy.³ By bypassing banks, firms are able to avoid the profit mark-up that banks charge on their loans.⁴

The amount of disintermediated credit already “rivals” the amount of bank-intermediated credit to households and businesses.⁵ The trajectory of disintermediation suggests that

1. In the financial context of this Article, all references to “disintermediation” mean financial disintermediation.

2. The term “capital markets” means any market in which debt, equity, or other securities are, or may be, bought and sold. JOHN DOWNES & JORDAN ELLIOT GOODMAN, *DICTIONARY OF FINANCE AND INVESTMENT TERMS* 59 (3d ed. 1991).

3. The term “disintermediation” is, to some extent, a misnomer because there still may be non-bank intermediaries between financial markets and users of funds. Those non-bank intermediaries include special-purpose entities and other entities that operate without access to central bank liquidity or public sector credit guarantees, including finance companies, hedge funds, money-market mutual funds, securities lenders, and investment banks. See Steven L. Schwarcz, *Regulating Shadow Banking: Inaugural Address for the Inaugural Symposium of the Review of Banking & Financial Law*, 31 *B.U. REV. OF BANKING & FIN. LAW* 619, 620 (2012), available at <http://ssrn.com/abstract=1993185> (describing the function of non-banking financial institutions).

4. A bank, like any other business, needs to make a profit by buying low and selling high. It therefore lends money to borrowers at a mark-up over its cost of funds. Cf. Stephen Rousseas, *A Markup Theory of Bank Loan Rates*, 8 *J. POST KEYNESIAN ECON.* 135, 136 (1985) (“Banks, like non-bank firms, are in business to make a profit.”).

5. ZOLTAN POZSAR ET AL., *FED. RESERVE BANK OF N.Y., ABSTRACT, SHADOW*

disintermediated credit will soon, if it does not already, exceed bank-intermediated credit. The gross amount of disintermediated credit was estimated to be nearly \$20 trillion in March 2008,⁶ but was estimated at three times that level—\$60 trillion—in December 2011.⁷ A more recent estimate suggests an even higher number.⁸

Disintermediation is making it increasingly difficult for scholars, who are accustomed to speaking in terms of banks and bank lending, to agree on financial regulation.⁹ Indeed, scholars often say that disintermediation has created a “shadow banking” system,¹⁰ but they do not even agree on what that term means.¹¹

BANKING STAFF REPORT NO. 458 (2010), http://www.ny.frb.org/research/staff_reports/sr458.pdf (describing the “rapid growth” of market-based financial systems in the mid-1990s).

6. *Id.* at 8.

7. See Philipp Halstrick, *Tighter Bank Rules Give Fillip to Shadow Banks*, REUTERS (Dec. 20, 2011, 4:17 AM), <http://www.reuters.com/article/2011/12/20/uk-regulation-shadow-banking-idUSLNE7BJ00T20111220> (last visited June 10, 2013) (indicating that shadow banking is a \$60 trillion industry) (on file with the Washington and Lee Law Review).

8. See FIN. STABILITY BD., GLOBAL SHADOW BANKING MONITORING REPORT (2012), http://www.financialstabilityboard.org/publications/r_121118c.pdf (estimating shadow banking’s worldwide assets as \$67 trillion in 2011).

9. Cf. *U.S. Regulatory Fog*, FIN. TIMES, June 14, 2012, at 8 (referring to the “persistence of regulatory confusion”); Brian Reid, *Time to Stamp Out the Confusion Around “Shadow Banking,”* INV. CO. INST. (Dec. 8, 2011), http://www.ici.org/pressroom/speeches/view_11_mmfs_fsb (last visited June 11, 2013) (arguing that miscommunication is causing regulators to misclassify money-market mutual funds as part of the shadow banking system) (on file with the Washington and Lee Law Review); EUROPEAN PRIVATE EQUITY AND VENTURE CAPITAL ASSOC., EVCA’S RESPONSE TO THE BACKGROUND NOTE OF THE FINANCIAL STABILITY BOARD ON “SHADOW BANKING: SCOPING THE ISSUES,” (May 23, 2011), http://www.financialstabilityboard.org/press/c_110901e.pdf (last visited June 11, 2013) (discussing how confusion about shadow banking could confuse regulatory approaches).

10. This Article does not use the term “shadow banking” with any pejorative implications. Cf. FIN. STABILITY BD., STRENGTHENING THE OVERSIGHT AND REGULATION OF SHADOW BANKING: PROGRESS REPORT TO G20 MINISTERS AND GOVERNORS at 1 n.2 (Apr. 16, 2012) (“[T]he use of the term ‘shadow banking’ is not intended to cast a pejorative tone on this system of credit intermediation. The FSB has chosen to use the term ‘shadow banking’ as this is most commonly employed and, in particular, has been used in the earlier G20 communications.”).

11. Even the scope of the term “shadow banking” is unsettled. See

Communication among scholars is critical, though,¹² because regulators and policymakers are informed by their research.¹³

This Article argues that the primary cause of regulatory confusion is that disintermediation has increased the relative importance of one of the fundamental categories of financial market failure. Two types of market failures underlying shadow banking—information failure and agency failure—were also prevalent in the bank-intermediated financial system. By amplifying systemic risk, however, disintermediation has greatly increased the importance of what scholars long have viewed as a third market-failure category: externalities.

That change is critical from a regulatory standpoint. Although an important job of regulation is to help internalize externalities, financial regulation, which traditionally was concerned with banks, focused mostly on correcting information failure and agency failure. To the extent financial

Schwarcz, *Regulating Shadow Banking*, *supra* note 3, at 621 (detailing the debate of “whether ‘shadow banking’ should refer to the provision by shadow banks of *any* financial products and services or only to the provision by shadow banks of products and services ordinarily provided by traditional banks”).

12. Communication should be feasible even among scholars in different fields because financial regulation has a common goal: optimizing financial markets to enable capital formation. See FRANKLIN ALLEN & DOUGLAS GALE, *COMPARING FINANCIAL SYSTEMS* 34 (2000) (describing the traditional purposes ascribed to financial markets); Jeffrey Wurgler, *Financial Markets and the Allocation of Capital*, 58 J. FIN. ECON. 187, 188 (2000) (observing that developed financial markets are associated with a better allocation of capital).

13. Cf. Cynthia Crawford Lichtenstein, *Defining Our Terms Carefully and In Context: Thoughts on Reading (and in One Case, Rereading) Three Books*, 31 REV. BANKING & FIN. L. 695, 695 (2012) (arguing that “any rigorous discussion of the need for reform and/or more or less regulation of the mostly private institutions that carry out [disintermediated] financial transactions requires that we state clearly what we mean by the terms ‘bank,’ ‘shadow bank’ and ‘the shadow banking system’”); GROUP OF THIRTY, *THE STRUCTURE OF FINANCIAL SUPERVISION: APPROACHES AND CHALLENGES IN A GLOBAL MARKETPLACE* 49 (2008), <http://www.group30.org/images/PDF/The%20Structure%20of%20Financial%20Supervision.pdf> (identifying the importance of communication between regulators and noting that the President’s Working Group on Financial Markets facilitated ongoing and fluid communication among regulators providing the backdrop for U.S. financial supervisors to respond quickly and decisively to the financial crisis).

regulation addressed bank externalities, it focused mostly on bank prudential regulation¹⁴ and the prevention of bank runs.¹⁵

Disintermediation has made that focus inadequate. Prudential regulation does not apply, and as a practical matter cannot be applied, to all of the firms that operate as shadow banks.¹⁶ Additionally, those firms are not deposit-taking institutions, so bank runs cannot occur.¹⁷ Furthermore, as this Article contends, viewing externalities as a distinct category of market failure is itself misleading. Externalities are fundamentally consequences, not causes, of failures. It is thus counterintuitive to speak of externalities as a type of cause of a market failure. Moreover, even ignoring that conflation of cause and effect, externalities cannot constitute a unique category of market failure because all market failures can result in externalities.

Although those errors should be conceptually dispositive, an even worse problem results from viewing externalities as a distinct category of market failure: it obscures who should be responsible for causing the externalities. This Article will show—contrary to the traditional paradigm of market failure, which assumes away government action or inaction as a cause of failure—that sometimes it is government itself, not individual firms, that should bear responsibility for causing externalities. In those cases, good financial regulation requires laws that internalize the costs of those externalities.

This Article proceeds as follows. Part II.A examines how regulatory scholars traditionally view financial market failures, identifying three categories of failures: information failure, agency failure, and, to a more limited extent, externalities. Part II.B examines the disintermediated financial system and shadow banking. It shows that, although information failure and agency

14. See *infra* note 46 and accompanying text (discussing prudential regulation).

15. See *infra* notes 50–54 and accompanying text (discussing bank runs).

16. Recall that these firms include special-purpose entities, finance companies, hedge funds, money-market mutual funds, securities lenders, and investment banks. See *supra* note 3 and accompanying text (defining the scope of shadow banking).

17. *But cf. infra* note 123 (discussing how disintermediation has potentiated the equivalent of a bank run).

failure remain relevant categories of market failures, disintermediation makes it much more likely that firms will engage in profitable but risky transactions, though doing so could externalize harm onto third parties. Externalization of harm is the fundamental source of systemic risk.

Part II.C of this Article argues that, although externalization of harm best fits into the existing market-failure category of “externalities,” this is a misleading term for a market-failure category. Scholars studying financial disintermediation should focus more on the *cause* of those externalities, which can be explained as a type of responsibility failure in which a firm externalizes a significant portion of the costs of taking a risky action. Part II.C also examines some of the important responsibility failures in the disintermediated financial system, including the short-term funding of long-term projects and the limited liability of investors who manage firms. Additionally, Part II.C examines how the concept of responsibility failure could inform financial regulation. Finally, Part III of the Article applies the fundamental market-failure categories—information failure, agency failure, and responsibility failure—to analyze regulatory provisions of the Dodd–Frank Act that address financial disintermediation.

II. Analysis

The central purpose of regulation—at least of financial regulation—is to correct market failures.¹⁸ The analysis therefore begins by examining traditional regulatory perspectives and tools, showing how they address financial market failures.¹⁹ This

18. See, e.g., DAVID GOWLAND, THE REGULATION OF FINANCIAL MARKETS IN THE 1990S 21 (1990) (discussing the economic theory of market regulation). Welfare economists argue that regulation should also include the goal of maximizing social welfare. See, e.g., Charles Wolf, Jr., *A Theory of Nonmarket Failure: Framework for Implementation Analysis*, 22 J.L. & ECON. 107, 110–11 (1979) (“That the distributional results of well-functioning markets may not accord with society’s preferences is acknowledged, as is the plausible trade-off between efficiency and equity. In welfare economics the trade-off is usually dealt with by considering the relative efficiencies of various distributive measures . . .”).

19. *Infra* Part II.A.

Article demonstrates that those perspectives and tools primarily address two fundamental market failures—information failure and agency failure²⁰—and to a more limited extent address what scholars long have viewed as a third market failure—externalities.²¹

Disintermediation can amplify systemic risk, thereby increasing the potential magnitude of—and thus the need for scholars to address—externalities. Because “externalities,” however, refers only to a failure’s consequences, not its cause, it is a misleading term for a market failure. Scholars could communicate more precisely about the disintermediated financial system, this Article argues, by speaking in terms of “responsibility failure” as a type of market failure that can cause externalities.

A. Traditional Regulatory Perspectives and Tools

We can identify traditional regulatory perspectives and tools by observing the scholars most involved in studying financial regulation. Those scholars can be roughly divided into three groups: securities law scholars, law-and-economics scholars and economists, and banking law scholars. This division is not perfect because scholars often engage in overlapping interdisciplinary discourses. For example, law-and-economics scholars study securities law and banking law, and scholars in indirectly related areas of law, such as bankruptcy and insurance, study financial regulation.²² Furthermore, economists study all forms of financial

20. There is some inherent overlap in these categories. An information failure, for example, can contribute to an agency failure. *See, e.g.*, Richard J. Arnott & Joseph E. Stiglitz, *The Basic Analytics of Moral Hazard*, 90 SCANDINAVIAN J. ECON. 383, 384 (1988) (observing that an agent with more information about its actions may be motivated to act inappropriately vis-a-vis the principal).

21. This Article uses the commonplace definition of externalities as negative externalities: an uninternalized cost or harm that is imposed on third parties.

22. *See, e.g.*, *Emerging Issues in Insurance Regulation: Hearing Before the Subcomm. on Securities, Insurance, and Investment of the S. Comm. on Banking, Housing, and Urban Affairs*, 112th Cong. 44–47 (2011) (written testimony of insurance-law scholar Daniel Schwarcz, Associate Professor, University of Minnesota School of Law) (testifying on the relationship between

regulation.²³ Also, law and economics is, technically, a methodology, whereas securities law and banking law are subject areas. Nonetheless, as shown below, the division is useful because each group—securities law scholars, law-and-economics scholars and economists, and banking law scholars—has different perspectives and utilizes different tools.

1. Perspectives and Tools of Securities Law Scholars

Securities law scholars traditionally analyze issues from the perspectives of asymmetric information and conflicts of interest.²⁴ To reduce information asymmetry, they focus on increasing transparency between issuers of, and investors in, securities.²⁵ They also focus on reducing conflicts of interest between principals (such as owners of a firm) and agents (such as

insurance and financial regulation); *Too Big to Fail: The Role for Bankruptcy and Antitrust Law in Financial Regulation Reform (Part 1): Hearing Before the Subcomm. on Commercial & Admin. Law of the H. Comm. on the Judiciary*, 111th Cong. 4 (2009) (written testimony of bankruptcy-law scholar David A. Skeel, Jr., Professor, University of Pennsylvania Law School) (arguing against the special treatment of financial derivatives contracts under the Bankruptcy Code).

23. See Saule Omarova & Adam Feibelman, *Risks, Rules, and Institutions: A Process for Reforming Financial Regulation*, 39 U. MEM. L. REV. 881, 896 (2009) (discussing the Geneva Report, a report prepared by a group of economists proposing improvements to financial industry regulation).

24. ASS'N OF AM. LAW SCHS., 2013 ANNUAL MEETING, GLOBAL ENGAGEMENT AND THE LEGAL ACADEMY FINAL PROGRAM 12 (Dec. 10, 2012), <http://aals.org/am2013/FinalProgram2013.pdf>; see also 1 LOUIS LOSS, JOEL SELIGMAN & TROY PAREDES, *SECURITIES REGULATION* 42, 286 (4th ed. 2006) (discussing the central themes in securities law of reducing information asymmetry through disclosure and reducing the conflicting interests of corporate managers and outside shareholders); cf. Kristin N. Johnson, *Addressing Gaps in the Dodd–Frank Act: Directors' Risk Management Oversight Obligations*, 45 U. MICH. J.L. REFORM 55, 94 (2011) (“[R]isk management reforms in the Dodd–Frank Act attempt to address the conflicts of interest and incentives that create enterprise and systemic risks through conventional and more creative approaches to securities regulation. Several provisions of the Dodd–Frank Act emphasize the importance of disclosure as a method for reducing information asymmetries.”).

25. Cf. Frank H. Easterbrook & Daniel R. Fischel, *Mandatory Disclosure and the Protection of Investors*, 70 VA. L. REV. 669, 669–72 (1984) (arguing that disclosure is the principal justification for the federal securities laws).

managers hired to run the firm) in order to improve corporate governance.²⁶

Securities law scholars use disclosure of information, specifically by issuers of securities to investors in the securities, as the principal tool to increase transparency.²⁷ They also use the imposition of fiduciary duties (such as duties owed by brokers and advisers)²⁸ and improvements in corporate governance (such as aligning executive compensation with long-term interests of the firm)²⁹ as tools to reduce conflicts of interest.

These perspectives and tools effectively focus on correcting two categories of market failures: information failure and agency failure. Asymmetric information is a form of information failure, and disclosure is directed at correcting that failure. Conflicts of interest constitute agency failure insofar as the conflicts are between principals and their agents, such as conflicts between owners and managers of a firm,³⁰ or intra-firm conflicts between middle managers and the senior managers to whom they report.³¹

26. LOSS, SELIGMAN, & PAREDES, *supra* note 24, at 286 (describing the conflict of interest between corporate managers and outside shareholders); *cf.* Complaint at 2, SEC v. Goldman Sachs & Co., 790 F. Supp. 2d 147 (S.D.N.Y. 2011) (No. 10 Civ. 3229) (focusing on conflicts of interest for large financial conglomerates with different stakes in a transaction).

27. See LOSS, SELIGMAN, & PAREDES, *supra* note 24, at 42 (discussing the effects of disclosure in market regulation); Easterbrook & Fischel, *supra* note 25, at 670 (discussing the historic purposes of federal securities regulation).

28. See, e.g., Arthur B. Laby, *Fiduciary Obligations of Broker-Dealers and Investment Advisers*, 55 VILL. L. REV. 701, 703–04 (2010) (cautioning against the harmonization of fiduciary standard for broker-dealers and investment advisers without assessing their respective obligations).

29. See, e.g., Lucian A. Bebchuk & Jesse M. Fried, *Pay Without Performance: Overview of the Issues*, 20 ACAD. MGMT. PERSP. 5, 6 (2006) (providing proposals for making executive pay, and its relationship to performance, more transparent); *cf.* John C. Coffee, Jr., *Gatekeeper Failure and Reform: The Challenge of Fashioning Relevant Reforms*, 84 B.U. L. REV. 301, 304 (2004) (arguing that shifting from cash-based to equity-based executive compensation has enhanced the incentive for managers to manipulate earnings).

30. This is the classic corporate principal-agent conflict. See, e.g., Bebchuk & Fried *supra* note 29, at 9 (“The arm’s-length contracting view recognizes that managers are subject to an agency problem and do not automatically seek to maximize shareholder value.”).

31. See generally Steven L. Schwarcz, *Conflicts and Financial Collapse: The Problem of Secondary-Management Agency Costs*, 26 YALE J. ON REG. 457 (2009).

Securities law attempts to correct that second category of failure by imposing fiduciary duties and improving corporate governance.

2. Perspectives and Tools of Law-and-Economics Scholars and Economists

Law-and-economics scholars and economists traditionally analyze issues from the standpoint of economic efficiency.³² The study of economic efficiency focuses on market failures.³³ In the context of the financial system, law-and-economics scholars and economists identify asymmetric information, a form of information failure, as one of the main sources of market failure.³⁴

Law-and-economics scholars and economists also increasingly take into account behavioral psychology as a source of market failure, recognizing that humans are not wholly

32. The concept of economic efficiency, the allocation of resources in an economically efficient manner, forms the analytical framework of law-and-economics study. See Jules L. Coleman, *Efficiency, Utility, and Wealth Maximization*, 8 HOFSTRA L. REV. 509, 512 (1980) (describing economics as it relates to the theories of utilitarianism and efficiency); see also Steven L. Schwarcz, *Framing Address: A Framework for Analyzing Financial Market Transformation*, 36 SEATTLE U. L. REV. 299, 307–08 (2013) (discussing how market changes are affecting market efficiencies).

33. See Alan Randall, *The Problem of Market Failure*, 23 NAT. RESOURCES J. 131, 131 (1983) (discussing economists' focus on market failures); cf. IVAN PNG & DALE LEHMAN, *MANAGERIAL ECONOMICS* 414 (3d ed. 2007) (observing that government regulation enhances social welfare by correcting market failures); PAUL A. SAMUELSON & WILLIAM D. NORDHAUS, *ECONOMICS* 756 (15th ed. 1995) (defining market failure as “[a]n imperfection in a price system that prevents an efficient allocation of resources”).

34. A DICTIONARY OF ECONOMICS (4th ed. 2012), <http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t19.e1927> (last visited June 13, 2013) (defining “market failure” as “[a] situation in which a market does not operate efficiently. Factors that may cause market failure include the possession of market power by transactors, externalities, or information . . .”). Economists use market failure as an approach to understanding the issue of government intervention. An alternate economic approach, following Coase, relies on the concept of transaction costs. See Richard O. Zerbe Jr. & Howard E. McCurdy, *The Failure of Market Failure*, 18 J. POL’Y ANALYSIS & MGMT. 558, 562 (1999) (critiquing the evolution of the market failure concept as a diagnostic tool and arguing that externalities are best defined by transaction costs and not as market failures).

rational actors.³⁵ Humans have difficulty, for example, appreciating unlikely events that could have devastating consequences if they occur.³⁶ Thus, in both the Great Depression and the recent financial crisis, observers critically underappreciated the systemic consequences of a precipitous drop—unprecedented in then-recent history—in collateral value.³⁷

Such “bounded rationality” can be viewed either as a subset of information failure or as a separate type of market failure. It can be viewed as the former because bounded rationality results in information failure: people misinterpreting, over-relying, or under-relying on information.³⁸ It can be viewed as the latter by confining information failure to facts (and thus, effectively, confining information failure to asymmetric information problems).³⁹ Bounded rationality would then be a separate type of market failure because it can undermine comprehension even if parties have perfect factual information.⁴⁰

This Article does not purport to definitively resolve whether bounded rationality should be viewed as a subset of information failure or as a separate type of market failure. For simplicity, this Article tentatively views bounded rationality as a subset of information failure, recognizing that this means that inquiries about information failure should focus not merely on information asymmetry but also on behavioral psychology. So viewed (and

35. See, e.g., Steven L. Schwarcz, *Controlling Financial Chaos: The Power and Limits of Law*, 2012 WIS. L. REV. 815, at 821–22, 825 (2012) (discussing rationality failure in human beings).

36. See Iman Anabtawi & Steven L. Schwarcz, *Regulating Systemic Risk: Towards an Analytical Framework*, 86 NOTRE DAME L. REV. 1349, 1366–68 (2011) (explaining how complacency affects individuals’ behavior).

37. See *id.* at 1367–68 (observing the parallel between subprime margin loans as a causal element of the Great Depression and subprime real estate loans as a causal element of the recent financial crisis).

38. Cf. Schwarcz, *Controlling Financial Chaos*, *supra* note 35, at 821 (acknowledging that “[e]ven in financial markets, humans have bounded rationality—a type of information failure . . .”).

39. See E-mail from John Komlos, Professor of Econ., Univ. of Munich, & Visiting Professor of Econ., Duke Univ., to author (Aug. 25, 2012, 10:19 EST) (proposing that information failure be confined to facts) (on file with author).

40. Cf. Schwarcz, *Controlling Financial Chaos*, *supra* note 35, at 821 (arguing that even though it can be viewed as a type of information failure, bounded rationality may be “distinct and important enough to merit a separate category” as a market failure).

subject to that caveat about the scope of inquiry), information failure remains the main source of financial market failure as seen by law-and-economics scholars and economists.

Law-and-economics scholars also view externalities as another source of market failure.⁴¹ Likewise, economic theory usually assumes that externalities are a category of fundamental market failure.⁴² The failure is seen as the externalities undermining economic efficiency by imposing costs of an activity onto third parties.⁴³ Regulation could correct this failure, thereby increasing efficiency, by reallocating those costs onto the actor.⁴⁴

3. Perspectives and Tools of Banking Law Scholars

Banking law scholars traditionally analyze issues from the perspective of deposit-taking banks. In that context, they focus on avoiding bank solvency crises and bank runs.⁴⁵ Their tools

41. See, e.g., ROBERT COOTER & THOMAS ULEN, *LAW & ECONOMICS* 44 (4th ed. 2004) (observing that another “source of market failure is the presence of what economists call *externalities*”); Paul H. Brietzke, *Urban Development and Human Development*, 25 *IND. L. REV.* 741, 763 (1991) (“The Chicago School of law and economics recognizes market failures, including externalities . . .”); Brett Fischmann, *Spillovers Theory and Its Conceptual Boundaries*, 51 *WM. & MARY L. REV.* 801, 806 (2009) (“Externalities . . . are understood to be an important type of ‘market failure. . .’”); Antonio Vives, *Corporate Social Responsibility: The Role of Law and Markets and the Case of Developing Countries*, 83 *CHI.-KENT L. REV.* 199, 224 n.61 (2008) (“Economists normally identify four types of market failure [including] externalities . . .”).

42. See, e.g., KARL E. CASE, *ECONOMICS AND TAX POLICY* 121 (1986) (“A third major market imperfection is the existence of external costs . . .”); Francis M. Bator, *The Anatomy of Market Failure*, 72 *Q.J. ECON.* 351, 363 (1958) (discussing the types of externalities that constitute forms of market failure); Robert Cooter, *Normative Failure Theory of Law*, 82 *CORNELL L. REV.* 947, 957 (1997) (noting that “Pigou viewed externalities as a market failure” (citing ARTHUR C. PIGOU, *THE ECONOMICS OF WELFARE* 329–35 (4th ed. 1960))).

43. See Jonathan R. Macey, *Efficient Capital Markets, Corporate Disclosure, and Enron*, 89 *CORNELL L. REV.* 394, 411–12 (2004) (“Externalities are economic side effects, arising when contracting parties’ actions affect third parties, who cannot be charged or compensated for the benefits or costs they receive.”).

44. See Dana Clark & David Downes, *What Price Biodiversity? Economic Incentives and Biodiversity Conversion in the United States*, 11 *J. ENVTL. L. & LITIG.* 9, 35 (1996) (discussing “Pigouvian” taxes).

45. See, e.g., Helen A. Garten, *Banking on the Market: Relying on Depositors to Control Bank Risks*, 4 *YALE J. ON REG.* 129, 171 (1986) (discussing

include the imposition of prudential rules on risk-taking by banks, limitations on bank capital ratios, and liquidity protection.⁴⁶ As shown below, these perspectives and tools effectively focus on correcting information failure, agency failure, and externalities.

Prudential rules on risk-taking, for example, often require banks to engage in prudent due diligence when extending credit to borrowers, thereby helping to correct information failure.⁴⁷ Prudential regulation also seeks to prevent bank managers from taking risks that benefit them more than their banks, thereby helping to correct agency failure.⁴⁸

Furthermore, some banking regulation focuses on correcting externalities as a market failure. For example, limitations on capital ratios are intended to improve bank stability, thereby reducing the likelihood of a collapse that could harm third parties.⁴⁹ Also, although economists often say that bank runs are caused by information failures,⁵⁰ the regulation most directly

the rational behavior of bank depositors concerned about bank runs).

46. See, e.g., Arthur W. Leibold, Jr., *Primary and Secondary Liquidity*, 26 BUS. LAW. 411, 411–16 (1970) (discussing liquidity); Arthur E. Wilmarth, Jr., *The Transformation of the U.S. Financial Services Industry, 1975–2000: Competition, Consolidation, and Increased Risks*, 2002 U. ILL. L. REV. 215, 332 (2002) (discussing prudential rules to control risks); David Zaring, *A Lack of Resolution*, 60 EMORY L.J. 97, 108 (2010) (discussing leverage caps for banks).

47. See, e.g., Onnig H. Dombalagian, *Regulating Informational Intermediation*, 1 AM. U. BUS. L. REV. 59, 62–63 (2011–12) (noting Dodd-Frank's increased due diligence requirements for investors); The Monitor, *Bank Regulation*, 31 BANKING & FIN. SERVICES POL'Y REP. 20, 21 (2012) (discussing the Office of the Comptroller of the Currency's proposed bank guidance for meeting due diligence requirements).

48. See, e.g., Wilmarth, Jr., *supra* note 46, at 264 (comparing internal loan regulations in big banks to similar regulations in small banks).

49. Cf. Marianne Ojo, *Basel III—The Journey Culminating in the Present Framework (Part 1)*, 30 BANKING & FIN. SERVS. POL'Y REP. 13, 16 (2011) (“As was highlighted under the introductory section, the promotion of financial stability through more risk sensitive capital requirements, constitutes one of Basel II’s primary objectives.”); *infra* notes 167–69 and accompanying text (discussing the Dodd–Frank Act’s capital and similar requirements).

50. Cf. Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POL. ECON. 401, 404 (1983) (using the Diamond–Dybvig model to explain bank runs as a form of undesirable equilibrium triggered by expectations based on incomplete information, in which depositors (sometimes irrationally) expect the bank to fail, thereby causing its failure). Information failures arguably are only part of the cause of bank runs, however;

aimed at avoiding bank runs is intended to reduce externalities. In a bank run, some depositors panic and converge on the bank in a “grab race” to withdraw their monies first. Because banks keep only a small fraction of their deposits on hand as cash reserves, other depositors may have to join the run in order to avoid losing the grab race.⁵¹ If there is insufficient cash to pay all withdrawal-demands, the bank will default.⁵² That, in turn, can create externalities by causing other banks or their creditors to default.⁵³ The standard regulatory solution, alleviating depositor panic by providing government deposit insurance, is intended to reduce the risk of those externalities.⁵⁴

4. Summary

The traditional perspectives and tools of scholars studying financial regulation are focused primarily on correcting two market failures: information failure and agency failure. To a more limited extent these perspectives and tools are focused on correcting what is viewed as a third market failure: externalities.⁵⁵ This Article next argues that the disintermediated

even if an information failure initiates a run on a bank, depositors with perfect information face the collective action problem that they may have to join the run in order to avoid losing the grab race. *See infra* note 51 and accompanying text (discussing the causes of bank runs).

51. *See, e.g.*, Jonathan R. Macey & Geoffrey P. Miller, *Bank Failures, Risk Monitoring, and the Market for Bank Control*, 88 COLUM. L. REV. 1153, 1156 (1988) (linking bank runs and depositor collective action problems).

52. R.W. HAFER, *THE FEDERAL RESERVE SYSTEM: AN ENCYCLOPEDIA* 145 (2005) (observing that a bank’s cash reserves are often less than five percent of its deposits).

53. *See* Chris Mundy, *The Nature of Risk: The Nature of Systemic Risk—Trying to Achieve a Definition*, BALANCE SHEET, Jan. 2004, at 29 (referring to bank runs as the “classic systemic risk”).

54. *See, e.g.*, Douglas W. Diamond & Philip H. Dybvig, *Banking Theory, Deposit Insurance, and Bank Regulation*, 59 J. BUS. 55, 63–64 (1986) (analyzing optimal contracts that prevent bank runs and observing that government provision of deposit insurance can produce superior contracts). It might be argued that the direct effect of deposit insurance, protecting individual depositors, is somewhat misguided because depositors are contracting creditors of the bank. The indirect effect, however, is to protect the bank itself from a run.

55. Although there are other traditional market-failure categories, *see* Zerbe Jr. & McCurdy, *supra* note 34, at 561 (describing these categories), they do not appear to be relevant to financial regulation, much less to regulation of

financial system makes the third market failure much more important. This Article also contends that the third market failure should more accurately be characterized as a type of “responsibility failure”⁵⁶ rather than as an “externality.” To understand why, it is first necessary to understand the disintermediated financial system.

B. The Disintermediated Financial System

The disintermediated financial system, or shadow banking, encompasses financing and financial services provided through non-bank entities.⁵⁷ This includes structured finance and securitization, in which financing is indirectly raised by special-purpose entities (SPEs), including asset-backed commercial paper (ABCP) conduits and structured investment vehicles (commonly known as SIVs).⁵⁸ It also encompasses financing and financial services provided by other financial intermediaries that operate without access to central bank liquidity or public sector credit guarantees, such as finance companies, hedge funds, money-market mutual funds, securities lenders engaging in repo lending, and investment banks.⁵⁹

the disintermediated financial system. Market failures due to monopolies and other types of non-competitive markets are not generally relevant to the disintermediated financial system. Likewise, the public goods problem—a form of collective action problem describing the inability of markets to provide goods that, like clean air, are non-excludable and non-rivalrous, since some parties will want to free ride on public goods when such goods are (inevitably) purchased by others—does not appear to be relevant to the disintermediated financial system.

56. See *infra* Part II.C.1 (defining responsibility failure as a firm’s ability to externalize a significant portion of the costs of taking a risky action).

57. For a more complete discussion of shadow banking, see TOBIAS ADRIAN & ADAM B. ASHCRAFT, FED. RESERVE BANK N.Y., STAFF REP. NO. 559, SHADOW BANKING REGULATION (Apr. 2012); Erik F. Gerding, *The Shadow Banking System and Its Legal Origins*, (Aug. 23, 2011) (draft) available at <http://ssrn.com/abstract=1990816>; Schwarcz, *Regulating Shadow Banking*, *supra* note 3.

58. See Schwarcz, *Regulating Shadow Banking*, *supra* note 3, at 620–23 (discussing the scope of shadow banking).

59. See *id.* at 621, 623, 624, 632 (discussing the breadth of shadow banking).

The paramount concern posed by the disintermediated financial system is that it “can, if left unregulated, pose systemic risks to the financial system.”⁶⁰ This makes the problem of externalities critically important because systemic collapses are likely to cause catastrophic harm to innocent third parties.⁶¹ To understand why the disintermediated financial system poses systemic risks, first consider information failure and agency failure.

By increasing complexity, disintermediation increases information failure by making financial transactions and products more difficult to disclose and understand.⁶² Disintermediation also intensifies information failure by increasing decentralization, which makes it more difficult for market participants to effectively process information.⁶³ These increased and intensified information failures make panics more likely. Specifically, they allow risks to accumulate unnoticed and unchecked, causing market participants to panic when hidden risks suddenly become apparent.⁶⁴ Panics, in turn, often serve as a trigger that can commence a chain of systemic failures.⁶⁵

Disintermediation can also exacerbate information failure by shifting financing in two ways: from firms to markets, and from more formal markets to less formal markets.⁶⁶ These shifts not

60. *Id.* at 625; *see also* KLARA BAKK-SIMON ET AL., EUROPEAN CENT. BANK, OCCASIONAL PAPER NO. 133, SHADOW BANKING IN THE EURO AREA: AN OVERVIEW, at 4 (Apr. 2012) (observing that disintermediation is “one of the main sources of financial stability concerns”).

61. *See* Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 207, 235 (2008) (attempting to estimate the costs of a systemic failure of the financial system, which could go beyond direct economic costs and include indirect “social costs in the form of widespread poverty and unemployment”).

62. *See, e.g.*, Steven L. Schwarcz, *Disclosure’s Failure in the Subprime Mortgage Crisis*, 2008 UTAH. L. REV. 1109, 1113 (2008) (stating that the complexity of financial transactions causes insufficient disclosures and affects securities regulations).

63. *See* Schwarcz, *Regulating Shadow Banking*, *supra* note 3, at 627–31 (discussing the negative and positive effects of decentralization).

64. *See id.* at 628–29 (discussing Dan Awrey’s observations in *Complexity, Innovation and the Regulation of Modern Financial Markets*).

65. *See* Schwarcz, *Systemic Risk*, *supra* note 61, at 214 (discussing the effects of market panics).

66. *See, e.g.*, Jerry W. Markham & Daniel J. Harty, *For Whom the Bell Tolls: The Demise of Exchange Trading Floors and the Growth of ECNs*, 33 J. CORP. L. 865, 866, 882–87 (2008) (describing the displacement of traditional

only further increase the likelihood of panics, as explained above;⁶⁷ they also increase the potential for systemic risk transmission by increasing the system-wide correlation among financial firms and markets.⁶⁸

Disintermediation also increases the potential for agency failure, especially the intra-firm conflicts between middle managers and the senior managers to whom they report.⁶⁹ Middle managers will likely know more than senior managers about the complex and highly technical financial products that disintermediation makes available, making it harder for senior managers to monitor middle managers⁷⁰—especially when senior managers rely on simplifying heuristics, such as value-at-risk (VaR) models, to assess risk on those products.⁷¹ This increased potential for agency failure can increase systemic risk.⁷²

Neither information failure nor agency failure explain, however, an even more important reason why disintermediation poses systemic risks to the financial system. As explained below,⁷³ disintermediation makes it much more likely that market participants will engage in profitable but risky transactions, although doing so could externalize harm onto third

exchange trading and arguing that the benefits of formal markets can include greater transparency).

67. See *supra* notes 62–65 and accompanying text (explaining the events that frequently lead to market panic).

68. See Schwarcz, *Regulating Shadow Banking*, *supra* note 3, at 630–31 (“Because it uses financial markets to provide products and services and also increases interconnectedness, shadow banking might increase the system-wide correlation among financial firms and markets. To that extent, shadow banking could increase systemic risk transmission.”).

69. See *supra* note 31 and accompanying text (describing that agency failure).

70. See Schwarcz, *Regulating Shadow Banking*, *supra* note 3, at 635–36 (explaining why the complexity of shadow banking, combined with the technology that enables it, can exacerbate the intra-firm agency failure).

71. See Schwarcz, *Conflicts and Financial Collapse*, *supra* note 31, at 463–64 (discussing upper-level management’s reliance on middle-management’s technical expertise).

72. See Schwarcz, *Regulating Shadow Banking*, *supra* note 3, at 634 (“Although this intra-firm principal-agent failure is not unique to shadow banking, the complexity of shadow banking, combined with the very technology that enables shadow banking to thrive, can exacerbate the failure.”).

73. See *infra* Part II.B.3 (providing examples of how disintermediation increases the potential for externalities).

parties. Conceptually, this is the fundamental source of systemic risk. Namely, “systemic risk results from a type of tragedy of the commons in which market participants lack sufficient incentive, absent regulation, to limit risk-taking in order to reduce the systemic danger to others. Law, therefore, has a role in reducing systemic risk.”⁷⁴

Externalizing harm onto third parties best fits into the existing market-failure category of “externalities.” This Article next contends, however, that “externalities” is a misleading term for a market-failure category. Scholars studying financial disintermediation should focus more on the *cause* of those externalities, which can be explained as a type of responsibility failure in which a firm externalizes a significant portion of the costs of taking a risky action.

C. Responsibility Failure and Externalities

1. Defining Responsibility Failure

Linguistics teaches that language ideally should be intuitively clear and precise.⁷⁵ For several reasons, “responsibility failure” is a clearer and more precise term than “externalities” when used to discuss market failures in the disintermediated financial system.

As indicated, there are currently three terms that describe these market failures: (1) “information failure”; (2) “agency failure”; and (3) “externalities.” The first two work well because

74. Schwarcz, *Systemic Risk*, *supra* note 61, at 193; *see also id.* at 206 (“As a result, there is a type of tragedy of the commons, in which the benefits of exploiting finite capital resources accrue to individual market participants, each of whom is motivated to maximize use of the resource . . .”). The reference above to a “type” of tragedy of the commons reflects that the analogy is imperfect; there is, technically, “a tragedy of the commons only insofar as market participants suffer from the actions of other market participants,” as opposed to non-market participants. Schwarcz, *Controlling Financial Chaos*, *supra* note 35, at 821 n.22.

75. *Cf.* DAN SPERBER & DEIRDRE WILSON, INTRODUCTION: PRAGMATICS, IN MEANING AND RELEVANCE 1, 1–3 (2012) (summarizing two widely accepted “foundational ideas” in the study of language use: that it is important that a speaker’s meaning be recognized, and that, to promote “conversational rationality,” utterances should be informative, truthful, relevant, and clear).

they refer to the *causes* of their respective failures. Information failure is caused by information problems—usually the existence of an information asymmetry. Agency failure is caused by problems in a principal-agent relationship. In contrast, discussing externalities as a market failure is counterintuitive and imprecise because the term “externalities” conflates cause and effect, referring only to a failure’s consequences.

This Article proposes that, when discussing the *causes* of market failures in the disintermediated financial system (if not more broadly), we should substitute for “externalities” the term “responsibility failure.” The latter refers to responsibility for a firm’s ability to externalize a significant portion of the costs of taking a risky action—such externalization of costs being the most important reason why disintermediation poses systemic risks to the financial system.⁷⁶ Responsibility failure differs from information failure because it does not deal with problems of information, and it differs from agency failure because it addresses obligations to third parties outside of a principal-agent relationship. As explained below, responsibility failure is also different, as well as more precise as a type of market failure, than externalities.⁷⁷

2. Comparing Responsibility Failure and Externalities

The primary reason to denote “responsibility failure,” rather than “externalities,” as a type of market failure is that the former term, as discussed, references causation whereas the latter term

76. See *supra* notes 73–74 and accompanying text (detailing the risks associated with disintermediation).

77. Responsibility failure also goes beyond the failure of actual markets to internalize externalities because some of the externalities can be systemic, affecting the overall financial system. See Schwarcz, *Systemic Risk*, *supra* note 61, at 206 (discussing the motivation of market participants as it relates to systemic risk); see also *infra* Part II.B (discussing the disintermediated financial system); *infra* Part II.C.3 (reviewing responsibility failure in the disintermediated financial system). Characterizing responsibility failure as a market failure thus embraces the financial system itself as a “market.” Cf. Schwarcz, *Systemic Risk*, *supra* note 61, at 207 (observing that whereas “[t]raditional financial risk focuses on risks *within* the financial system, . . . systemic risk focuses on risks *to* the financial system”).

references consequences.⁷⁸ Scholars who speak of “externalities” as a distinct type of market failure are therefore using language imprecisely. Economists often recognize, for example, that a market failure has occurred if the production of goods or services results in externalities.⁷⁹ The cause of the market failure is not externalities per se, however; rather, it is the problem with the production of goods and services that results in the externalities. The externalities merely signal that a market failure has occurred. The language imprecision is not differentiating between the cause of the market failure and a signal (externalities) that the failure has occurred.⁸⁰

There are, however, additional serious problems with discussing externalities as a type of market failure. Externalities cannot be considered a truly distinct type of market failure because *all* types of market failures can result in externalities.⁸¹ For example, information failure can result in externalities to the extent information asymmetries cause “nonmonetary effects not taken into account in the decision-making process.”⁸² This Article has also provided examples from the disintermediated financial

78. See *supra* Part II.C.1 (defining responsibility failure).

79. See, e.g., Bator, *supra* note 42, at 351 (defining market failure as “the failure of a more or less idealized system of price-market institutions to sustain ‘desirable’ activities or to estop ‘undesirable’ activities”).

80. Cf. Mark Sunshine, *How Did Economists Blow It (Part 2)?—They Missed the Negative Externalities of America’s Limited Liability Society*, SUNSHINE REP. (Sep. 8, 2009), http://www.thesunshinereport.net/mark_sunshine/?p=402 (last visited June 17, 2013) (arguing that although economic “theories about efficient markets and logical behavior are pretty good, the fundamental application of these theories stinks”).

81. See Zerbe Jr. & McCurdy, *supra* note 34, at 561 (“Market failures are thought to occur when the market fails to produce public goods, or inadvertently produces externalities, or gives rise to natural monopolies, or disenfranchises parties through asymmetries, or creates undesirable income distributions. All of these forms are types of externalities . . .”). There is some overlap between the information failure and agency failure categories. See Arnott & Stiglitz, *supra* note 20, at 384 (observing that information failure can contribute to an agency failure). This overlap, however, concerns causes of failures. The overlap with externalities concerns cause and effect; namely, all causes of market failures can result in externalities. Cf. ANDREAS A. PAPANDREOU, EXTERNALITY AND INSTITUTIONS 167–69 (1994) (“[I]f externality is simply another word for market failure, or institutional failure, . . . the notion of externality becomes redundant.”).

82. Zerbe Jr. & McCurdy, *supra* note 34, at 561.

system of information failure causing externalities.⁸³ To avoid this circularity, some economists have even questioned whether “externalities” should denote a separate market-failure category.⁸⁴

Another problem with discussing externalities as a type of market failure is that shifting the attention to consequences can obscure what caused the externalities. Consider a firm that takes a risky action because it can externalize a significant portion of the costs. Focusing on externalities, one may well conclude that the firm itself should be considered solely responsible for causing the externalities. Focusing on responsibility failure, in contrast, would help shift attention back to causation, as illustrated by the following example.

Because the managers of most firms have obligations under existing law solely to the firm’s shareholders,⁸⁵ firms that engage in risky projects in order to increase opportunities for shareholders to profit may be acting responsibly as defined, indeed mandated, by law—even if the effect is to externalize costs. In those cases, the government could be viewed as causing the responsibility failure by failing to impose laws that limit the ability of firms to externalize those costs.⁸⁶ This sharpened focus on causation is important because the traditional paradigm of

83. See *supra* notes 60–68 and accompanying text (observing that disintermediation can exacerbate information failure, making it more likely that panics will trigger a chain of systemic failures and increasing the system-wide correlation among financial firms and markets, thereby increasing the potential for systemic risk transmission).

84. See, e.g., PAPANDEOU, *supra* note 81, at 99–100 (arguing that the “non-existence of markets” is the actual market failure referred to as “externalities” and that it is “not useful to treat externalities as a subset of market failure, nor for that matter as a cause of market failure”); Zerbe Jr. & McCurdy, *supra* note 34, at 562 (arguing that externalities should not be defined as market failures); *cf. id.* at 564 (arguing that “a close examination of the market failure concept gives rise to all sorts of definitional problems” related to externalities).

85. See, e.g., John R. Boatright, *Fiduciary Duties and the Shareholder-Management Relation: Or, What’s So Special About Shareholders?*, 4 BUS. ETHICS Q. 393, 393–94 (1994) (discussing the duty of managers to shareholders).

86. Arguably, the government should be so viewed because it is the only entity that, under that scenario, can avert the systemic costs. *Cf.* PAPANDEOU, *supra* note 81, at 156–58 (arguing that the cause of inefficiency is the failure of institutions to “reshap[e] the boundaries of agents’ actions”).

market failure assumes away government action (or inaction) as a cause of failure.⁸⁷

The term “responsibility failure” thus can help (1) to describe the flaws of the disintermediated financial system more intuitively and precisely than the term “externalities”; (2) to avoid the confusion that arises by discussing externalities, which conflates cause and effect and creates circularity with other market-failure categories, as a separate market-failure category; and (3) to sharpen the focus on who should be responsible for causing the externalities. Scholars—especially legal scholars, who strive to be precise with language⁸⁸—should want to use this more precise term.⁸⁹

Using this more precise term, “responsibility failure,” should not constitute a break from scholarly precedent. Specific causes of externalities are sometimes customarily known by terms that more precisely define those causes. The term “moral hazard,” for example, more precisely defines a specific cause of externalities as conditions or circumstances that protect a party from the consequences of risky behavior (such as insurance or the granting of legal immunity),⁹⁰ thereby motivating the party to engage in

87. See Wolf, *supra* note 18, at 112 (“Market failure provides the rationale for attempted nonmarket (that is, government) remedies.”); cf. Zerbe Jr. & McCurdy, *supra* note 34, at 571 (observing that certain “markets are inefficient not because of any inherent ‘failures,’ but because the government has neglected to provide the appropriate institutional framework”).

88. Cf. Jonathan C. Lipson, *Re: Defining Securitization*, 85 S. CAL. L. REV. 1229, 1256–71 (2012) (discussing why precise definitions of financial concepts—in this case, securitization—are important for legal regulation).

89. Ultimately, of course, what constitutes a market failure is largely a matter of definition. Cf. Paul H. Brietzke, *How and Why the Marketplace of Ideas Fails*, 31 VAL. U. L. REV. 951, 965 n.49 (1997) (observing that “[f]ew economists realize or admit that market failures . . . are literally matters of definition” (quoting Paul Brietzke, *Urban Development and Human Development*, 25 IND. L. REV. 741, 765 (1991))). Even scholars who prefer to continue viewing externalities traditionally, as a separate market-failure category, should heed this Article’s central point: any study of disintermediation must inquire into the causes of those externalities.

90. See BOUVIER LAW DICTIONARY 710 (compact ed. 2011) (defining moral hazard). Moral hazard, unlike responsibility failure generally, contemplates that the party engaging in risky behavior be specifically protected from its consequences.

such behavior.⁹¹ Responsibility failure, likewise, is a term that more precisely defines a specific cause of externalities.

There is, in fact, a relationship between the terms responsibility failure and moral hazard: the latter is a subset of the former. Responsibility failure denotes risky actions taken by a firm because it can externalize a significant portion of its costs, regardless of the reason why the firm can externalize the costs.⁹² Moral hazard, in contrast, is defined by very particular reasons why a party can externalize costs—conditions or circumstances, such as insurance or the granting of legal immunity, that protect the party from the consequences of its risky behavior.⁹³ Conceptually, therefore, moral hazard is a subset of responsibility failure.

Responsibility failure can also help to explain the nature and fragility of the disintermediated financial system. Part II.C.3 discusses two such examples: (1) a firm profiting by issuing short-term debt to fund long-term projects, thereby taking a liquidity risk, which could cause systemic and other consequences if the firm defaults on repaying its maturing short-term debt; and (2) the limited liability of investors who manage a firm, making it more likely that they will cause the firm to take outsized risks in order to try to make outsized gains.

3. Responsibility Failures in the Disintermediated Financial System

a. Issuing Short-Term Debt to Fund Long-Term Projects

A significant and widespread responsibility failure in the disintermediated financial system is the short-term funding of

91. See Charles G. Hallinan, *The “Fresh Start” Policy in Consumer Bankruptcy: A Historical Inventory and An Interpretive Theory*, 21 U. RICH. L. REV. 49, 84 (1986) (relying on the economic definition of moral hazard: debtors and creditors that are protected from the consequences of default “could be expected to increase both excessive borrowing and excessive resort to bankruptcy”).

92. See *supra* Part II.C.1 (explaining the reason that “responsibility failure” is a better term for describing market failure). Responsibility failure, for example, includes matters like short-term funding of long-term projects that are unrelated to moral hazard but nevertheless allow firms to externalize costs.

93. See *supra* note 90 and accompanying text (defining moral hazard).

long-term projects.⁹⁴ ABCP conduits⁹⁵ and SIVs⁹⁶ routinely issue short-term commercial paper, for example, to fund long-term projects (usually by funding long-term loans or investing in financial assets having long-term maturities).⁹⁷ Money-market mutual funds also provide short-term loans, essentially withdrawable on demand, to fund long-term projects.⁹⁸ Additionally, repo lending by securities lenders⁹⁹ is almost always short term.¹⁰⁰ The driving force behind much of the short-term

94. See, e.g., Viral V. Acharya & S. Viswanathan, *Leverage, Moral Hazard, and Liquidity*, 66 J. FIN. 99, 103 (2011) (observing that short-term funding of long-term projects “played an important role in the financial crisis of 2007 to 2009 and the period preceding it”); Kyle Glazier, *Bernanke: Financial Crisis Was a Structural Failure*, BOND BUYER, Apr. 13, 2012, at 2, <http://www.bondbuyer.com/news/bernanke-speech-financial-crisis-structural-failure-1038520-1.html?partner=sifma> (last visited June 17, 2013) (quoting Federal Reserve Board Chairman Ben Bernanke as saying that “a key vulnerability of the [disintermediated financial] system was the heavy reliance . . . on various forms of short-term wholesale funding”); cf. Schwarcz, *Regulating Shadow Banking*, *supra* note 3, at 625 n.30 (arguing “that the instability of short-term ‘money-like’ securities is the central problem for regulatory policy” in the disintermediated financial system); Martin H. Wolfson, *Minsky’s Theory of Financial Crisis in a Global Context*, 36 J. ECON. ISSUES 393, 394 (2002) (describing Minsky’s theory that market fragility grows as debt levels rise and that the proportion of debt will increase as firms use short-term debt to fund long-term financial assets). Economists sometimes refer to the short-term funding of long-term projects as a form of maturity transformation or as an asset-liability mismatch. See, e.g., Huberto M. Ennis & Todd Keister, *Bank Runs and Institutions: The Perils of Intervention*, 99 AM. ECON. REV. 1588, 1590 (2009) (“Money market funds and other arrangements perform maturity transformation by investing in long-term assets while offering investors the ability to withdraw funds on demand.”).

95. See *supra* note 58 and accompanying text (explaining the role of ABCP conduits in the financial system).

96. See *supra* note 58 and accompanying text (describing the role of SPEs in the financial system).

97. The business model of ABCP conduits and SIVs is very similar to that of banks in that they borrow short-term and lend long-term. See, e.g., *Structured Investment Vehicle Definition*, MONEYTERMS.CO.UK, <http://moneyterms.co.uk/siv/> (last visited Jan. 14, 2013) (discussing the business model of SIVs).

98. See Bryan J. Noeth, et al., *Is Shadow Banking Really Banking?*, 19 REGIONAL ECONOMIST 8, 9 (2011) (describing the use of money market mutual funds to “provide short term loans that are essentially withdrawable on demands”).

99. See *supra* note 59 and accompanying text (explaining that repo lending is a well known form of shadow banking).

100. Cf. *infra* notes 106–08 and accompanying text (discussing how short-term repo lending increased systemic risk).

funding of long-term projects is the reality that the interest rate on short-term debt is usually lower than that on long-term debt because, other things being equal, it is easier to assess an obligor's ability to repay in the short term than in the long term.¹⁰¹

Short-term funding of long-term projects can be efficient so long as the firm issuing the short-term debt will be able to “roll over” that debt (i.e., repay its maturing short-term debt from the proceeds of newly borrowed short-term debt), if needed. The traditional business of banking, for example, is to borrow on a short-term basis from depositors and use the proceeds to make long-term loans to bank customers.¹⁰²

The problem, however, is that a bank or any other firm issuing the short-term debt takes an inherent liquidity risk on whether it will be able to roll over that debt.¹⁰³ If the firm becomes unable to roll over the debt, the firm may have to default, which could trigger a broader, systemic collapse.¹⁰⁴ The result is a responsibility failure: a firm that profits by issuing short-term debt might intentionally want to take such a liquidity

101. Short-term interest rates may also be lower than long-term rates because the term structure of interest rates (also known as the yield curve) is usually increasing despite the fact that it represents the risk-free rate for various horizons. See E-mail from Simon Gervais, Associate Professor of Finance, Fuqua School of Business, Duke University, to author (Apr. 14, 2012, 08:51 EST) (on file with the Washington and Lee Law Review).

102. Cf. *infra* Part II.C.4 (explaining how bank runs, resulting from this short-term borrowing to make long-term loans, are related to responsibility failures).

103. If investors in short-term funding fully understand the rollover risk, they may demand that it be priced into the firm's cost—e.g., charging the firm an incrementally higher interest rate, or conditioning their funding on the firm purchasing a liquidity facility (which would facilitate the rollover if the firm is unable to do so). Because of asymmetric information between the firm and its investors, however, the investors may not fully understand that risk.

104. See Schwarcz, *A Framework for Analyzing Financial Market Transformation*, *supra* note 32, at 311 (stating that firms sometimes “prefer cheaper short-term funding even though that potentiates a liquidity discontinuity—that the firm will be unable to ‘roll over’ the short-term debt by borrowing new debt to repay the maturing debt”); cf. Mundy, *supra* note 53, at 29 (discussing the systemic consequences of a bank being unable to pay its short-term obligations to depositors); see also *supra* text accompanying note 53.

risk, even if it has perfect information about the risk, because much of the harm of a systemic collapse would be externalized.¹⁰⁵

The reality can be catastrophic. Economists Gary Gorton and Andrew Metrick have argued, for example, that securities lenders engaging in short-term repo lending have vastly increased systemic risk.¹⁰⁶ The “epicenter” of the recent financial crisis, they also contend, was the precipitous decline in value of mortgage-backed securities used as collateral for short-term repo loans which prompted repo lenders to demand additional collateral.¹⁰⁷ These demands forced repo-borrowers to sell assets to generate the additional collateral.¹⁰⁸ These forced asset sales further depressed asset prices, creating a shock that spread rapidly through the interconnected financial system.¹⁰⁹ Similarly,

105. Cf. Schwarcz, *Systemic Risk*, *supra* note 61, at 206 (observing that a market participant may engage in a profitable but risky transaction even though doing so could increase systemic risk, since much of the harm from a possible systemic collapse would be externalized onto other market participants as well as onto ordinary citizens impacted by an economic collapse).

106. See Gary Gorton & Andrew Metrick, *Regulating the Shadow Banking System*, at 1 (2010), <http://ssrn.com/abstract=1676947> (discussing sale and repurchase (repo) agreements in the context of the financial crisis of 2007–2009).

107. See *id.* at 15 (describing the “epicenter” of the financial crisis as the “sale and repurchase market, the market for asset-backed commercial paper, and MMMFs”); cf. Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, 104 J. FIN. ECON. 425, 431–36 (2012) (arguing that these demands were caused primarily by opacity about the exposure of different borrowers to the flagging real estate market and the value of borrowers’ collateral in the event of defaults).

108. See Gorton & Metrick, *supra* note 106, at 15 (“The panic occurred when depositors in repo banks feared that one or more banks might fail and they would have to sell the collateral in the market to recover their money.”).

109. See *id.* at 15–16 (observing that SIVs relied on short-term debt to finance purchases of asset-backed securities and that money-market mutual funds were forced to liquidate assets to repay panicked investors who redeemed their shares). I have made similar arguments in the article *Regulating Complexity in Financial Markets*. See Steven L. Schwarcz, *Regulating Complexity in Financial Markets*, 87 WASH. U. L. REV. 211, 232–33 (2009) (discussing information uncertainty through the example of mark-to-market accounting and margin calls by broker-dealers); cf. Dan Awrey, *Complexity, Innovation and the Regulation of Modern Financial Markets*, 2 HARV. BUS. L. REV. 401, 413–14 (2011), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1916649 (arguing that by increasing decentralization, disintermediation creates market fragmentation, interconnectedness, and opacity, making financial markets especially susceptible to endogenous shocks, such as panics).

Federal Reserve Board economists have claimed that the inability of many ABCP conduits to roll over their short-term commercial paper in the last five months of 2007 “played a central role in transforming concerns about the credit quality of mortgage-related assets into a global financial crisis.”¹¹⁰ The European Central Bank also has identified short-term funding of long-term projects as “a major amplification mechanism in situations of stress,” which can particularly “foster systemic risks . . . if [it] takes place outside the regulated [financial] system.”¹¹¹

b. The Limited Liability of Investors Who Manage Firms

The limited liability of investors who manage firms in the disintermediated financial system is another important source of responsibility failure that can lead to externalities.¹¹² Limited liability means that investors in firms are not financially responsible for liabilities of their firms.¹¹³ As a result, the interests of investors may conflict with the interests of their firms and, more importantly for externalities, with the interests of third parties harmed by their firms. Specifically, even if a firm ultimately becomes liable for the externalized harm, the limited-liability investors will not become liable.¹¹⁴

110. Daniel Covitz, Nellie Liang & Gustavo Suarez, *The Evolution of a Financial Crisis: Panic in the Asset-Backed Commercial Paper Market* 1 (Fed. Reserve Bd. Fin. and Discussion Series, Working Paper #2009-36, 2009), <http://www.federalreserve.gov/pubs/feds/2009/200936/200936pap.pdf>.

111. KLARA BAKK-SIMON ET AL., *supra* note 60, at 24.

112. Cf. Edouard Challe, Benoit Mojon & Xavier Ragot, *Equilibrium Risk Shifting and Interest Rate in an Opaque Financial System*, ECOLE POLYTECHNIQUE, CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIC, Sept. 2012, at 6, <http://hal.archives-ouvertes.fr/docs/00/72/89/28/PDF/2012-19.pdf> (noting that systemic risk arises partially because limited liability increases intermediaries' risk tolerance).

113. See, e.g., BLACK'S LAW DICTIONARY 997 (9th ed. 2009) (defining limited liability as the “[l]iability restricted by law or contract; esp., the liability of a company's owners for nothing more than the capital they have invested in the business”).

114. This is not an overlap with agency failure. Agency failure goes to a principal-agent relationship. Conflicts resulting from investor-manager limited liability do not involve principals and their agents; they go instead to a conflict between such investor-managers and society.

By facilitating decentralization, disintermediation makes this form of responsibility failure much more likely. The relatively small firms, including hedge funds, which operate in the disintermediated financial system are often managed directly by their *primary* investors.¹¹⁵ Because such investor-managers typically divide up a significant share of the firm's profits,¹¹⁶ they have strong incentives to take risks that could generate large profits. Some risks might even potentially generate such outsized profits that investor-managers would gain lifetime financial security.¹¹⁷ Yet, if a risky action exposes their firm to significant liability for externalized harm, investor-managers would not be liable if the firm cannot pay that liability.

This is radically unlike the management incentives in traditional banking, in which the senior managers tend to share only indirectly in profits, such as through stock options. Most bank profits ordinarily are paid to shareholders.¹¹⁸ Furthermore, bank managers are often invested in maintaining their jobs.¹¹⁹ They, therefore, are much less motivated to take actions that risk

115. See Stacy Preston Collins, *Valuation of Hedge Fund Businesses*, 21 J. AM. ACAD. MATRIMONIAL LAW. 389, 397 (2008), <http://www.aaml.org/sites/default/files/MAT208.pdf>. (noting that hedge fund managers often have to commit a significant amount of their own capital); Richard M. Hynes, *Securitization, Agency Costs, and the Subprime Crisis*, 4 VA. L. & BUS. REV. 231, 236 (2009) (noting that managers of small banks and thrifts can own a large share of their firms' equity).

116. See, e.g., ORG. FOR ECON. CO-OPERATION AND DEV., ECONOMIC ANALYSIS OF THE SPLIT OF PROFITS BETWEEN HEDGE FUND INVESTORS AND HEDGE FUND MANAGEMENT BY MERRILL LYNCH & CO. INC. 6, <http://www.oecd.org/tax/taxadministration/18474849.pdf> (noting that, during the period 1998 to 2002, hedge fund managers generally received around 20% of their funds' profits); see also Mercer Bullard, *Regulating Hedge Fund Managers: The Investment Company Act as a Regulatory Screen*, 13 STAN. J.L. BUS. & FIN. 286, 288 (2008) (noting that hedge fund managers often receive twenty percent of the funds' performance that exceeds a minimum "performance floor").

117. See Steven L. Schwarcz, *Understanding the Subprime Financial Crisis*, 60 S.C. L. REV. 549, 562–63 (2009) (discussing how "super-large compensation" can skew incentives).

118. See, e.g., Robert Boldin & Keith Leggett, *Bank Dividend Policy as a Signal of Bank Quality*, 4 FIN. SERVS. REV. 1, 1 (1995) (noting that industry-wide bank payout ratios on stock had reached eighty percent).

119. Cf. Claire A Hill, *Is Secured Debt Efficient?*, 80 TEX. L. REV. 1117, 1156 (2002) (describing how managers who do not own a substantial portion of the firm may be better agents for lenders' interests because of the "managers' desire to keep their jobs, which depends on the firm's continuing financial viability").

the firm, such as exposing the firm to significant liability for externalized harm. By shifting management incentives, however, disintermediation encourages responsibility failure and its resulting externalities.

The foregoing examples illustrate how the concept of responsibility failure can help to inform an understanding of the disintermediated financial system. Responsibility failure can also help to inform an understanding of traditional banking, as discussed below.

4. Responsibility Failure and Traditional Banking.

The principal concern in traditional banking is the threat of bank runs.¹²⁰ Although bank runs are triggered by an information failure,¹²¹ their root cause is that banks borrow short-term by taking deposits and use the proceeds to make long-term loans.¹²² That creates the potential for one of the types of responsibility failure associated with the disintermediated financial system.¹²³ Banks historically have presented much less of a risk of responsibility failure than non-banks, however, because banks, unlike (at least until recently) most non-banks, have long been substantively regulated to maintain certain levels of financial responsibility.¹²⁴ Moreover, government regulation has, for many years, mitigated the consequences of responsibility failure: banks generally have access to central bank liquidity, ensuring they can pay their debts,¹²⁵ and, at least in the United States, the claims of

120. See *supra* note 45 and accompanying text (explaining the basis for the concern surrounding bank runs).

121. See *supra* notes 50–52 and accompanying text (arguing that information failure is only part of the cause of bank runs).

122. See *supra* note 102 and accompanying text (detailing the relationship between responsibility failures and bank runs).

123. See *supra* Part II.C.3.a. Gorton and Metrick themselves recognize that the demands made on securities lenders engaging in repo lending (see *supra* notes 106–08 and accompanying text) approximated bank runs. See Gorton & Metrick, *supra* note 106, at 15 (stating that Gorton & Metrick argue that “the core problem in the financial crisis was a ‘run on repo’”).

124. See Schwarcz, *Systemic Risk*, *supra* note 61, at 210 (“Historically, regulation of systemic risk has focused largely on prevention of bank failure.”).

125. See *supra* note 59 and accompanying text (providing examples of intermediaries that operate without access to central bank liquidity).

bank depositors are government insured, reducing the likelihood of bank runs.¹²⁶

The very fact that bank responsibility failure and its consequences have been so limited helps to explain why scholars studying financial regulation do not normally focus on the concept of responsibility failure: they have not needed to do so. With disintermediation, however, all that has changed. Moreover, whether or not it is caused by disintermediation, the increasingly worrisome problem of large banks becoming “too big to fail” can also be explained as a form of responsibility failure.¹²⁷

5. Summarizing How the Concept of Responsibility Failure Could Inform Financial Regulation

The analysis so far has shown that three market failures—information failure, agency failure, and responsibility failure—underlie the disintermediated financial system.¹²⁸ Information failure is caused by asymmetric information and lack of transparency, as well as bounded rationality. Agency failure is caused by conflicts between principals and their agents. Responsibility failure is caused by a firm’s ability to externalize a significant portion of the costs of taking a risky action. Part III of

126. See *supra* note 54 and accompanying text (explaining the role of government deposit insurance and its effect on depositors).

127. See *infra* Part III.C (explaining the “too big to fail” rationale).

128. I derived these market failures by examining the tools and perspectives of scholars studying regulation of the financial system and then analyzing how disintermediation has changed the system. As a reality check, I thereafter compared how these market failures correlate with a separate conceptual framework that I independently derived to normatively analyze financial regulation. That conceptual framework is based on four market failures that could impair efficiency—information failure (due to complexity), rationality failure (due to human bounded rationality), principal–agent failure, and incentive failure—as well as a type of tragedy of the commons in which individual market actors have incentives to engage in systemically risky activities because they can profit individually while externalizing some of the cost. See generally Schwarcz, *Controlling Financial Chaos*, *supra* note 35 (explaining these market failures). The market failures discussed in this Article appear to correlate well to that conceptual framework. Information failure in this Article correlates to information failure and rationality failure in that framework; agency failure in this Article correlates to principal–agent failure in that framework; and responsibility failure in this Article correlates to incentive failure and the type of tragedy of the commons in that framework.

this Article next applies these market failures to the Dodd–Frank Act, showing how they can help to explain and analyze its provisions.

Before doing that, however, it may be helpful to summarize how the concept of responsibility failure can generally inform financial regulation.¹²⁹ First, as previously discussed,¹³⁰ the fact that a firm takes a risky action because it is able to externalize a significant portion of the costs does not necessarily mean that the firm itself should be considered the sole responsible party. By engaging in risky projects, firms may be acting as mandated by law on behalf of their shareholders, even if the effect is to externalize costs. The government should have a responsibility to consider changing the law, as may be appropriate, to limit the ability of firms to externalize those costs or to modify the governance standards.¹³¹ Similarly, the fact that investors who

129. In a recent speech at American University's Washington College of Law, I also discussed how the concept of responsibility failure could help to inform how transactional lawyers should address the potential systemic consequences of their client's actions. See generally Steven L. Schwarcz, *Lawyers in the Shadows: The Transactional Lawyer in a World of Shadow Banking*, 63 AM. U. L. REV. (forthcoming 2013).

130. See *supra* notes 85–87 and accompanying text (discussing the role that the government plays in incentivizing risky externalization of costs).

131. Possible regulatory approaches might, for example, include the following: expanding oversight liability of directors who take inappropriate business risks, see Robert T. Miller, *Oversight Liability for Risk-Management Failures at Financial Firms*, 84 S. CAL. L. REV. 47, 53–54 (2010) (suggesting implication of “oversight liability” when a board breaches its duty to monitor); imposing liability on shareholders to increase self-monitoring and reduce moral hazard, see Peter Conti-Brown, *Elective Shareholder Liability*, 64 STAN. L. REV. 409, 414, 446 (2012) (stating that “[e]lective shareholder liability resolves the impasse by allowing SIFIs to make . . . costs concrete”); delimiting limited liability for investment firms, as advocated by Conti-Brown, see *id.* at 459–60 (arguing that the successful operation of investment banks as partnerships until late in the 20th century suggests that limited liability may not be needed); and as further advocated by Patrick M. Wilson, see Patrick M. Wilson, *Protecting Investors from Their Investments: Encouraging States to Make Assets in Domestic Asset Protection Trusts Available to Creditors Who Have Successfully Pierced the Corporate Veil*, 44 NEW ENG. L. REV. 791, 795 (2010) (urging states with domestic asset protection trust laws for corporate officers to “allow access to those trust assets to satisfy victims’ judgments against corporate officers when said victims have successfully pierced the corporate veil and demonstrated the irresponsible, if not illegal, behavior of corporate officers”). There are, of course, counterarguments to these types of regulatory approaches, such as the extent to which they might undermine the business judgment rule and the policies behind the rule (such as keeping courts from judging business decisions

manage firms in the disintermediated financial system take outsized risks because limited liability protects them from responsibility for losses¹³² does not necessarily mean that such investor-managers should be considered the sole responsible parties. The government should also have a responsibility to consider modifying limited liability in order to produce more socially-optimal firm governance.¹³³

Second, this Article does not suggest that all potential externalities should necessarily be internalized. The law generally does not require that all externalities be internalized.¹³⁴ At the very least, though, government should consider requiring systemic externalities to be internalized because they are the externalities most likely to cause widespread and serious harm.¹³⁵ By cutting across markets, systemic externalities are also the externalities most likely to undermine the ability of multiple markets to maintain accurate and transparent pricing.¹³⁶

through hindsight-biased lenses, and allowing managers and directors to take the risks necessary for maximizing shareholder value). *See, e.g., In re Citigroup Inc. S'holder Derivative Litig.*, 964 A.2d 106, 123–24 (Del. Ch. 2009) (discussing plaintiff's attempt to hold directors personally liable for exposing plaintiff to risk in the subprime mortgage market); Wulf A. Kaal & Richard W. Painter, *Initial Reflections on an Evolving Standard: Constraints on Risk Taking by Directors and Officers in Germany and the United States*, 40 SETON HALL L. REV. 1433, 1440–41, 1449 & n.56 (2010) (exploring benefits of risk in investment).

132. *See supra* Part II.C.3.b (discussing limited liability).

133. *Cf. infra* note 152 and accompanying text (discussing how the Dodd–Frank Act addresses limited liability).

134. *See, e.g.,* MICHAEL J. TREBILCOCK, *THE LIMITS OF FREEDOM OF CONTRACT* 20 (1993) (asking what types of externalities the law should require to be internalized).

135. *See* Schwarcz, *Systemic Risk*, *supra* note 61, at 206 (discussing market participants' hesitance to internalize externalities themselves).

136. *Cf. supra* notes 108–09 and accompanying text (discussing the relationship between asset prices and systemic collapse in an interconnected financial system). Because efficiency is often viewed as meaning that prices fully reflect available information, *see, e.g.,* Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383, 384 (1970) (noting that an efficient market is one in which prices always “fully reflect” available information), pricing is sometimes seen as an important proxy for efficiency. *Cf. Michael J. Fishman & Kathleen M. Hagerty, Disclosure Decisions by Firms and the Competition for Price Efficiency*, 44 J. FIN. 633, 633 (1989) (noting that more efficient securities pricing can lead to more efficient investment decisions).

Third, because banks historically have presented much less of a risk of responsibility failure than non-banks, even though both engage in the short-term funding of long-term projects,¹³⁷ government should consider the extent to which banking-like regulation could reduce that risk for (at least) systemically important non-banks. For example, perhaps those non-banks should be required to maintain minimum levels of financial responsibility.¹³⁸ Similarly, because banking-like regulation has also mitigated the consequences of bank responsibility failure, government should consider the extent to which such regulation could mitigate the consequences of non-bank responsibility failure. For example, perhaps systemically important non-banks should have access to central bank liquidity.¹³⁹

Government insurance of bank deposits¹⁴⁰ might also help inform financial regulation of non-banks. Although non-banks do not take deposits, there may be a close regulatory correlation insofar as the obligation of banks to pay the government to provide the insurance internalizes the cost.¹⁴¹ A similar approach, such as requiring banks and systemically important non-banks to pay for a systemic risk protection fund, could address responsibility failure by motivating “those firms to monitor each other and help control each other’s risky behavior.”¹⁴² This

137. See *supra* Part II.C.4 (noting that banks have historically been regulated to maintain a certain level of financial responsibility).

138. Cf. *infra* notes 167–69 and accompanying text (discussing the Dodd–Frank Act’s requirement that systemically important non-banks be subject to a range of capital and other requirements).

139. Cf. *infra* notes 154–58 and accompanying text (discussing the Dodd–Frank Act’s limitation on the power of the Federal Reserve to make emergency loans to individual or insolvent financial firms).

140. See *supra* notes 56, 126 and accompanying text (noting that government insurance reduces the likelihood of bank runs in the United States).

141. In the United States, for example, the Federal Deposit Insurance Corporation assesses risk-based premiums on its member banks. See FED. DEPOSIT INS. CORP., CAPITAL GROUPS AND SUPERVISORY GROUPS, (July 13, 2007), http://www.fdic.gov/deposit/insurance/risk/rtps_ovr.html (last visited June 20, 2013); see also 12 C.F.R. pt. 327 (discussing FDIC assessments).

142. See Schwarcz, *Controlling Financial Chaos*, *supra* note 35, at 831; see also *id.* at 829–33 (generally discussing how a privatized systemic risk fund could help stabilize systemically important firms and markets).

approach could also help to internalize the most harmful externalities of the disintermediated financial system.¹⁴³

III. Applications

This Part applies information failure, agency failure, and responsibility failure to regulatory provisions of the Dodd–Frank Act¹⁴⁴ that address financial disintermediation. This application demonstrates how these market failures can be used to discuss, and even to explain and analyze, shadow banking and its regulation.¹⁴⁵

A. Requiring Sellers in Securitization Transactions to Retain Unhedged Risk

Securitization is a significant component of the disintermediated financial system.¹⁴⁶ The Dodd–Frank Act requires sellers of securitization products to retain a minimum unhedged position in each class of securities they sell—the so-called “skin in the game.”¹⁴⁷ This requirement goes to correcting information failure. Congress believed that securitization’s

143. See *id.* (discussing methods to stabilize the financial system). Although various other commentators have also proposed systemic risk taxes, see, e.g., VIRAL V. ACHARYA, ET AL., CTR. FOR ECON. POLY RESEARCH, A TAX ON SYSTEMIC RISK 3–4 (Feb. 3, 2010), <http://www.cepr.org/meets/wkcn/1/1741/papers/Acharya.pdf> (proposing a tax on institutions based on their likely contribution to systemic risk), valuing and administering the tax could be difficult. See, e.g., Douglas O. Edwards, *(Systemic) Risk and Taxation*, 31 VA. TAX REV. 331, 338 (2011) (noting possible adverse effects that might stem from Congress’s implementation of an “ill defined and poorly measured systemic risk tax.”).

144. Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd–Frank Act), Pub. L. No. 111-203 (2010).

145. Because this Article is primarily concerned with communication among scholars, it does not purport to critique the substantive merits of those regulatory provisions. For a critique of the substantive merits of certain of those regulatory provisions, see generally Schwarcz, *Controlling Financial Chaos*, *supra* note 35.

146. See *supra* notes 57–58 and accompanying text (providing a broader picture of the disintermediated financial system).

147. See Dodd–Frank Act § 941(b), § 15G (directing the SEC to require sponsors of asset-backed securities to retain at least five percent of the credit risk of the underlying assets).

originate-to-distribute model, under which the originators of loans and other financial assets being securitized sell those assets to special-purpose entities, creates information asymmetry between those originators and investors in the special-purpose entities.¹⁴⁸ By retaining unhedged risk, the sellers' interests should become better aligned with the investors' interests, and thus investors should effectively benefit from the sellers' access to better information.

This requirement also goes to correcting responsibility failure, albeit indirectly, by addressing the short-term funding of long-term projects.¹⁴⁹ Special-purpose entities that engage in securitization, such as ABCP conduits and SIVs, are significant issuers of short-term debt to fund long-term projects.¹⁵⁰ The retention of unhedged risk should help motivate sellers of financial assets to these entities to monitor that such entities are, and will continue to be, able to roll over their short-term debt.

This example also illustrates the utility of speaking in terms of responsibility failure, rather than externalities, as a type of market failure. Responsibility failure helps to focus attention on the importance of seller monitoring, which is intended to prevent

148. See S. REP. NO. 111-176, at 36 (2010) (stating that the “originate to distribute” model “led to significant deterioration in credit and loan underwriting standards, particularly in residential mortgages”).

149. See *supra* Part II.C.3.a (discussing fundamental problems with short-term debt and long-term funding). More direct ways of correcting responsibility failure resulting from short-term funding of long-term projects might include better standards on match-funding coverage, better internal controls on collateral valuation and margining policies, and internalization of externalities (such as mandating privately funded systemic risk funds). The international Basel III capital accord takes a match-funding coverage approach by introducing, for example, a liquidity coverage requirement that banks hold sufficient high-quality liquid assets to cover their total net cash outflows over thirty days and another requirement that banks maintain minimum yearly available amounts of stable funding. See Jerome Walker et al., *Reconciling the Dodd-Frank and Basel Committee Capital Requirements*, 129 *BANKING L.J.* 627, 631 (2012) (describing Basel III's introduction of a global liquidity standard and supervisory monitoring"); see also Schwarcz, *A Framework for Analyzing Financial Market Transformation*, *supra* note 32, at 313 (discussing the drawbacks of using short-term funding of long-term capital needs); *supra* note 142 and accompanying text (discussing how a privatized systemic risk protection fund could stabilize the market).

150. See *supra* notes 95–97 and accompanying text (explaining the business model of ABCP conduits and SIVs).

harm (i.e., externalities) that would result from an inability to roll over short-term debt. Speaking in terms of externalities as a type of market failure could obscure that focus because externalities are a consequence, not a cause, of the inability to roll over short-term debt.

B. Compensating Senior Managers on a More Long-Term Basis

The Dodd–Frank Act requires senior managers of systemically significant firms to be paid on a more long-term basis. To the extent this requirement more closely aligns managerial interests with the interests of owners (shareholders) of firms, it helps correct agency failure.

Requiring senior managers to be paid on a long-term basis should also help to correct responsibility failure by minimizing the incentive of managers to externalize costs onto society. In the long-term, the interests of managers and a firm’s broader stakeholders—such as employees, consumers, suppliers, and members of the general public—are usually more closely aligned.¹⁵¹ Moreover, requiring senior managers to be paid on a long-term basis should help, at least theoretically, to reduce the deleterious effects of limited liability¹⁵² by making it less likely that managers will take outsized risks with their firms that would limit their ability, if the firm fails, to receive the remainder of their compensation.

Focusing on information failure, agency failure, and responsibility failure as market-failure categories can also help to articulate and illuminate connections between regulatory goals. For example, because managers are generally more risk averse than shareholders,¹⁵³ aligning managerial (agent) interests with

151. Cf. John H. Matheson & Brent A. Olson, *Corporate Cooperation, Relationship Management, and the Trialogical Imperative for Corporate Law*, 78 MINN. L. REV. 1443, 1466–67 (1993) (discussing overlap in manager and stakeholder interests).

152. See *supra* Part II.C.3.b (explaining the responsibility failure created by limited liability of investors).

153. Cf. Henry T. C. Hu, *Risk, Time, and Fiduciary Principles in Corporate Investment*, 38 UCLA L. REV. 277, 320 (1990) (“The manager cannot take as cavalier an attitude toward the diversifiable risks of his corporation as the stockholder can.”); Andrew C.W. Lund & Gregg D. Polsky, *The Diminishing*

shareholder (principal) interests can make managers more risk prone. A firm that takes more risks is more likely to fail and trigger externalities. Thus, counter-intuitively, correcting agency failure can sometimes exacerbate responsibility failure.

C. Too Big to Fail

The Dodd–Frank Act’s limitation on the power of the Federal Reserve to make emergency loans to individual or insolvent financial firms¹⁵⁴ goes directly to responsibility failure. Politicians and regulators worry that the recent increase in size and concentration of financial firms¹⁵⁵ tempts firms that believe they are too big to fail to engage in irresponsible behavior, such as making risky investments in order to gain profits and expecting to be bailed out (through emergency loans) if they misjudge the risk.¹⁵⁶ Dodd–Frank’s limitation on emergency lending is intended to remove that temptation and motivate financial firms to operate responsibly.¹⁵⁷ Dodd–Frank’s goal is to make financial firms less likely to fail and less likely to externalize costs onto taxpayers if they do fail.¹⁵⁸

Returns of Incentive Pay in Executive Compensation Contracts, 87 NOTRE DAME L. REV. 677, 727 (2011) (observing and questioning the traditional belief that, absent incentive compensation, managers are less risk seeking than shareholders).

154. See Dodd–Frank Act § 1101 (providing the limitations placed on the Federal Reserve in making emergency loans).

155. This Article does not purport to examine whether disintermediation has been, directly or indirectly, a cause of that increase in size and concentration.

156. Cf. John C. Coffee, Jr., *Systemic Risk After Dodd-Frank: Contingent Capital and the Need for Regulatory Strategies Beyond Oversight*, 111 COLUM. L. REV. 795, 800 (2011) (observing that many economists believed that the market’s perception that some financial institutions were “too big to fail” resulted in an “unintended subsidy for these institutions because their creditors charged them less for capital” and this cheap capital resulted in an incentive to take on excessive leverage). See generally Lissa Lamkin Broome, *The Dodd–Frank Act: TARP Bailout Backlash and Too Big To Fail*, 15 N.C. BANKING INST. 69 (2011) (discussing this argument).

157. See Coffee, *supra* note 156, at 800 (“In the Dodd–Frank Act, Congress responded to this implicit subsidy by insisting that future public bailouts by the Federal Reserve of the FDIC were forbidden.”).

158. The unintended consequence of this limitation, however, may be to make financial firms more likely to fail and more likely to externalize costs onto taxpayers if they do fail. See Schwarcz, *Controlling Financial Chaos*, *supra* note

Dodd–Frank’s limitation on emergency lending can also be viewed as addressing moral hazard: by limiting emergency lending, Dodd–Frank removes a specific, although contingent, circumstance that might protect a large financial firm from the consequences of its behavior, thereby removing that incentive for the firm to engage in risky behavior. That perspective is consistent, however, with speaking in terms of responsibility failure because moral hazard is a subset of responsibility failure.¹⁵⁹

Finally, as in the previous examples, the limitation on emergency lending illustrates the utility of speaking in terms of responsibility failure, rather than externalities, as a type of market failure. One could discuss the emergency-lending limitation as a limitation on externalities, but speaking in terms of responsibility failure helps to focus attention on the actual underlying failure: the very availability of governmental emergency lending can motivate firms to engage in irresponsible behavior.¹⁶⁰

D. Improving Disclosure

Disintermediation can greatly increase complexity.¹⁶¹ That in turn can make financial transactions and products more difficult to disclose and understand.¹⁶² The Dodd–Frank Act addresses this by attempting to improve disclosure.¹⁶³

35, at 831 (“Perversely, the Dodd–Frank Act undercuts liquidity by sharply limiting the power of the Federal Reserve to make emergency loans to individual or insolvent financial firms.”).

159. See *supra* notes 92–93 and accompanying text (explaining the relationship between responsibility failure and moral hazard).

160. See *supra* note 156 and accompanying text (explaining the incentive to take on excessive leverage).

161. See Schwarcz, *Regulating Shadow Banking*, *supra* note 3, at 626–27 (discussing the fundamentals of decentralization).

162. See *supra* note 62 and accompanying text (discussing the relationship between complexity and insufficient disclosures).

163. See, e.g., Dodd–Frank Act § 1103 (requiring additional public disclosures); § 942(b) (requiring issuers of asset-backed securities to disclose information on the assets backing each tranche of securities); § 945 (requiring the SEC to issue rules requiring issuers of asset-backed securities to disclose the nature of the underlying assets).

In that attempt, the Dodd–Frank’s primary goal is the standard one: reducing information asymmetries between issuers of, and investors in, securities.¹⁶⁴ To a much lesser extent, through its “living will” requirement, Dodd–Frank also addresses the bounded rationality aspects of information failure.¹⁶⁵

Because improving disclosure goes only to information failure, it does not involve the other two fundamental market failures—responsibility failure and agency failure.¹⁶⁶

E. Protecting Against Insolvency and Illiquidity

Dodd–Frank requires banks and other financial firms, to the extent they are designated as “systemically important,” to be subject to a range of capital and similar requirements.¹⁶⁷ This indirectly, and imperfectly, goes to correcting agency failure insofar as it minimizes the impact on the firm of actions taken by managers that benefit them individually but increase risk for the firm itself.¹⁶⁸ It also goes to correcting responsibility failure by

164. See *supra* note 25 and accompanying text (discussing increasing transparency as a way of reducing information asymmetries).

165. Compare *infra* note 171 and accompanying text, with *supra* Part II.A.2 (arguing that information failure results from information asymmetry and bounded rationality).

166. The “improving disclosure” example is thus neutral to the question of comparing responsibility failure and externalities as market-failure categories.

167. See Dodd–Frank Act §§ 115(b), 165(i) (providing the “enhanced supervision and prudential standards for nonbank financial companies”). The Dodd–Frank Act directs the Federal Reserve, for example, to set “prudential” capital standards for certain large financial firms, including a maximum debt-to-equity ratio of 15:1. See *id.* § 165(j) (providing the leverage limitation).

168. See Charles W. Calomiris & Richard J. Herring, *Why and How to Design a Contingent Convertible Debt Requirement*, NOMURA FOUND., at 2–3 (Apr. 2011), http://www.nomurafoundation.or.jp/data/20111014_R_Herring-C_Calomiris_006.pdf (discussing how the combination of risk-taking fostered by incentive-based pay and low capital requirements helped foment the financial crisis); Peter Conti-Brown, *Elective Shareholder Liability*, 64 STAN. L. REV. 409, 452–53 (2012) (discussing Dodd–Frank’s “clawback” rule that allows the SEC to recover incentive-based pay from directors and officers so as to make them “face the cost of their risk-taking”); cf. Thomas F. Hellmann et al., *Liberalization, Moral Hazard in Banking, and Prudential Regulation: Are Capital Requirements Enough?*, 90 AM. ECON. REV. 147, 149 (2000) (“Capital requirements force banks to have more of their own capital at risk so that they internalize the inefficiency of gambling.”).

mandating minimum levels of financial responsibility.¹⁶⁹ The consequence is that systemically important firms should be less likely to fail and thus less likely to externalize systemic costs.

This example also helps illustrate the utility of speaking in terms of responsibility failure; it focuses attention squarely on the problem that some systemically important financial firms may be inadequately capitalized for their operations. Analytically, this is a more precise focus than “externalities” because undercapitalization does not necessarily mean that a firm will fail or that the failure will result in harm to third parties.

F. Living Wills

Addressing the possibility that even a large firm could end up failing, the Dodd–Frank Act requires systemically important firms to submit a resolution plan—a so-called “living will”—that sets forth how the firm would liquidate in an orderly manner to minimize any systemic impact.¹⁷⁰ This goes to correcting all three types of market failures. It addresses the bounded rationality problem of information failure¹⁷¹ because it forces the firm’s managers to think through and more clearly confront the reality of the firm’s possible failure; it addresses agency failure (and arguably also information failure) because it indirectly motivates the firm’s managers to consider how they can better govern the firm to avoid liquidation; and it addresses responsibility failure by motivating firms to operate responsibly without reliance on the corporate reorganization protections of bankruptcy law. The consequence is that systemically important firms should be less likely to fail, and, if they do fail, they should be less likely to externalize systemic costs.

169. *Cf. supra* Part II.C.4 (discussing reducing the risk of responsibility failure by substantively regulating banks to minimize their risk of default).

170. *See* Dodd–Frank Act § 165(d) (providing the specific information that firms must provide in their resolution plan).

171. Recall that information failure results from information asymmetry and bounded rationality. *See supra* note 34 and accompanying text (detailing the causes of information failure).

This example again helps illustrate the utility of speaking in terms of responsibility failure, rather than externalities, as a type of market failure. Responsibility failure focuses attention on the fact that the corporate reorganization provisions of bankruptcy law may protect firms, thereby motivating them to operate irresponsibly. Analytically, this is a more precise focus because the protection afforded by those provisions does not mean that a firm will in fact operate irresponsibly or that acting irresponsibly will necessarily result in harm to third parties.

G. The Volcker Rule

The Dodd–Frank Act also includes procedures for limiting a systemically important firm’s right to make risky investments—often referred to as the Volcker Rule.¹⁷² To the extent this limitation recognizes that even sophisticated financial firms sometimes might not fully understand a highly complex investment, it goes to correcting the asymmetric information problem of information failure. To the extent this limitation requires firms to restrict and be more prudent in their investments, it goes to correcting responsibility failure. The consequence of the limitation is that systemically important firms should be less likely to make risky investments that can cause them to fail. Thus they should be less likely to fail and externalize systemic costs.¹⁷³

172. See Dodd–Frank Act §§ 13, 619 (codifying steps to implement the Volcker Rule’s limitation of proprietary trading). Several federal agencies—the Federal Reserve Bank, the Federal Deposit Insurance Corporation (FDIC), and the Office of the Comptroller of the Currency—have proposed rules to implement this. See Prohibitions and Restrictions on Proprietary Trading and Certain Interests in, and Relationships with, Hedge Funds and Private Equity Funds, 76 Fed. Reg. 68,846 (Nov. 7, 2011) (to be codified at 12 C.F.R. pts. 44, 248, 351; 17 C.F.R. pt. 255), http://fdic.gov/news/board/2011Oct_no6.pdf (providing the proposed rulemaking to “implement Section 619 of the Dodd–Frank Wall Street Reform and Consumer Protection Act”).

173. It also may be useful to consider how focusing on information failure, agency failure, and responsibility failure as market-failure categories could help to explain and analyze the final report of the U.K. Independent Commission on Banking (often called the Vickers Report). The Vickers Report recommends so-called ring-fencing, which is intended to protect the “basic banking services of safeguarding retail deposits, operating secure payments systems, efficiently channeling savings to productive investments [i.e., making loans], and

This example, again, helps illustrate the utility of speaking in terms of responsibility failure, rather than externalities, as a type of market failure. Responsibility failure focuses attention squarely on the problem: even sophisticated financial firms can make imprudent investments. This invites an inquiry into how regulation should improve, and perhaps restrict, financial investing, especially for systemically important firms. But the fact that such firms can make imprudent investments does not mean that a firm will necessarily do so; nor does it necessarily mean that making imprudent investments will cause the firm to fail, or that the firm's failure will harm third parties. The problem, in other words, is connected only tenuously to the occurrence of externalities.

IV. Conclusions

By reducing the dominance of banks as financial intermediaries, disintermediation has so transformed the financial system that scholars—who are accustomed to speaking in terms of banks and bank lending—are finding it increasingly

managing financial risk.” INDEP. COMM’N ON BANKING, FINAL REPORT RECOMMENDATIONS 7 (2011) http://www.ecgi.org/documents/icb_final_report_12sep2011.pdf. The Vickers Report is at least partly responsive to disintermediation insofar as it tries to protect traditional bank intermediation from the risks of shadow banking. *See id.* at 45 (“Equally, the importance of [bank] intermediation means that it should not be combined with other risky activities which are not an inherent part of [such] intermediation.”). To the extent ring-fencing recognizes that even sophisticated banks might not fully understand a highly complex investment, it goes to correcting the asymmetric information problem of information failure. To the extent ring-fencing requires banks to restrict and be more prudent in their investments, it goes to correcting responsibility failure. The consequence is that banks should be less likely to fail, and thus the banking system—including its ability to safeguard retail deposits, operate secure payments systems, make loans, and manage financial risk—should be more likely to remain intact. The above characterization of ring-fencing is similar to that of the Volcker Rule, and indeed the Volcker Rule might be considered, conceptually, as a subset of ring-fencing. *Cf.* Julian T.S. Chow & Jay Surti, *Making Banks Safer: Can the Volcker and Vickers Do It?* 29 (International Monetary Fund, Working Paper No. 11/236 2011), <http://www.imf.org/external/pubs/ft/wp/2011/wp11236.pdf> (comparing the Volcker Rule to ring-fencing proposals). Ring-fencing is nonetheless different insofar as it could impose regulation that goes beyond investment limitations, potentially restricting other business decisions of banks and systemically important firms.

difficult to agree on financial regulation. Although regulation should continue to help correct information failure and agency failure, disintermediation amplifies systemic risk, thereby greatly increasing the relative importance of what scholars long have viewed as a third category of market failure: externalities.

In the traditional bank-intermediated financial system, viewing externalities as a market failure was non-controversial because prudential regulation and deposit insurance mitigated the externalities. The greater prominence of externalities in the disintermediated financial system, and the fact that prudential regulation and deposit insurance have little application to many so-called shadow banks that operate in that system, now make it essential to confront whether externalities should be viewed as a market failure.

This Article argues that viewing externalities as a market failure can cause significant regulatory confusion. Conceptually, it conflates cause and effect. Externalities are merely consequences, not causes, of failures. Moreover, externalities cannot be a distinct type of market failure because all types of market failures can result in externalities.

Perhaps more importantly, viewing externalities as a category of market failure obscures who should be responsible for causing the externalities. In some cases government itself, not individual firms, effectively causes the externalities by promulgating laws that enable, or even require, firms to engage in risky behavior—such as laws that require maximizing shareholder value and laws that limit investor liability, notwithstanding risk to third parties.

Viewing government as the responsible party challenges the traditional paradigm of market failure, which assumes away government action or inaction as a cause of failure.¹⁷⁴ That challenge is critical, though. For example, we tend not to focus on liability limitation at the firm level, simply accepting it as a fact of life; yet, as this Article has shown, limited liability can cause larger systemic consequences.

Any financial regulatory inquiry should include an examination of whether laws enable or require firms to engage in

174. See *supra* notes 85–87 and accompanying text (noting the government's failure to implement laws that limit the ability of firms to externalize costs).

risky behavior.¹⁷⁵ This does not necessarily mean that the government should change those laws or require those firms to internalize the costs of their behavior—that would be a political question. But that question at least should be asked.

175. Although this Article is concerned with financial regulation, particularly regulation of the disintermediated financial system, at least one prominent economist suggests that its “ideas could be applicable to a variety of different situations outside of finance.” E-mail from John de Figueiredo, Edward and Ellen Marie Schwarzman Professor of Law and Professor of Strategy and Business, Duke University, to the author (Aug. 25, 2012, 11:37 EST) (on file with author).