Regulating Shadows: Financial Regulation and Responsibility Failure¹

Steven L. Schwarcz²

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 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 so radically transforming finance 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 is misleading, though: 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 action. That not only would more precisely describe the market failure but also would 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.

| I. INTRODUCTION | 2 |
|--|----|
| II. ANALYSIS | 6 |
| A. Traditional Regulatory Perspectives and Tools | 7 |
| B. The Disintermediated Financial System | 14 |

¹ Copyright ©2013 by Steven L. Schwarcz.

² 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 valuable comments and Feroz Ali Khader and Jonathan E. Cote for invaluable research assistance.

| C. Responsibility Failure and Externalities | 17 |
|---|----|
| III. APPLICATIONS | 32 |
| IV. CONCLUSIONS | 40 |

I. INTRODUCTION

The world's financial architecture is rapidly changing. A central feature of this change is disintermediation³—bypassing the need for bank intermediation between the sources of funds, essentially the capital and other financial markets,⁴ and firms that use funds to operate in (and thus contribute to) the real economy.⁵ By bypassing banks, firms are able to avoid the profit mark-up that banks charge on their loans.⁶

The amount of disintermediated credit already "rivals" the amount of bank-intermediated credit to households and businesses. The trajectory of disintermediation suggests that disintermediated credit will soon, if it does not already, exceed bank-intermediated credit: the gross amount of disintermediated credit was estimated to be

³ In the financial context of this article, all references to "disintermediation" mean financial disintermediation.

⁴ The term "capital markets" means any market where debt, equity, or other securities are or may be bought and sold. JOHN DOWNES & JORDAN GOODMAN, DICTIONARY OF FINANCE AND INVESTMENT TERMS 59 (3d ed. 1991).

⁵ 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, Boston University Review of Banking & Financial Law Inaugural Symposium; available at http://ssrn.com/abstract=1993185.

⁶ 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").

⁷ ZOLTAN POZSAR ET AL., FED. RESERVE BANK OF N.Y., STAFF REPORT NO. 458, *Abstract* to Shadow Banking (2010).

nearly \$20 trillion in March 2008. but was estimated at three times that level—\$60 trillion—in December 2011. A more recent estimate suggests an even higher number. 10

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. 11 Indeed, scholars often say that disintermediation has created a "shadow banking" system, ¹² but they don't even agree on what that term means. ¹³ Communication among scholars is critical, though, 14 because regulators and policymakers are informed by their research. 15

⁸ *Id.* at 4-5.

⁹ See Philip 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-shadowbanking-idUSLNE7BJ00T20111220 (indicating that shadow banking is a \$60 trillion industry).

¹⁰ Financial Stability Board, Global Shadow Banking Monitoring Report (Nov. 18, 2012) (estimating shadow banking's worldwide assets as \$67 trillion in 2011).

¹¹ Cf. U.S. Regulatory Fog, FIN. TIMES, June 15, 2012, at 8 (referring to the "persistence" of regulatory confusion"); Brian Reid, Time to Stamp out Confusion Around "Shadow Banking", INVESTMENT COMPANY INSTITUTE (arguing that miscommunication is causing regulators to misclassify money-market mutual funds as part of the shadow banking system), available at http://www.ici.org/pressroom/speeches/view 11 mmfs fsb (last visited Jan. 9, 2013); European Private Equity and Venture Capital Association, EVCA's Response to the Background Note of the Financial Stability Board on "Shadow Banking: Scoping the Issues" (May 23, 2011) (discussing how confusion about shadow banking could confuse regulatory approaches), available

at http://www.financialstabilityboard.org/press/c 110901e.pdf (last visited Jan. 11, 2013). ¹² This article does not use the term "shadow banking" with any pejorative implications. Cf. FINANCIAL STABILITY BOARD, STRENGTHENING THE OVERSIGHT AND REGULATION OF SHADOW BANKING: PROGRESS REPORT TO G20 MINISTERS AND GOVERNORS (Apr. 16, 2012), at 1 n. 2 (noting that "the 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. Alternative terms used by some authorities or market participants include 'market-based financing' or 'market-based credit intermediation.").

¹³ Even the scope of the term "shadow banking" is unsettled. *Regulating Shadow* Banking, supra note 5.

¹⁴ Communication should be feasible even among scholars in different fields because financial regulation has a common goal: optimizing financial markets to enable capital formation. Franklin Allen & Douglas Gale, Comparing Financial Systems 3-4 (2000) (describing the traditional purposes ascribed to financial markets); Jeffrey

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 bankintermediated financial system. By amplifying systemic risk, however, disintermediation has greatly increased the importance of what scholars long have viewed as a third marketfailure 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 regulation addressed bank externalities, it focused mostly on bank prudential regulation ¹⁶ and preventing bank runs. ¹⁷

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

Wurgler, Financial Markets and the Allocation of Capital, 58 J. Fin. Econ. 187 (2000) (observing that developed financial markets are associated with a better allocation of capital).

http://www.group30.org/images/PDF/The%20Structure%20of%20Financial%20Supervis ion.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).

Regulating Shadows.docx

¹⁵ 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) (in the context of financial disintermediation, arguing that "sloppy language leads to sloppy thinking" and 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 (2008) 49, available at

¹⁶ See infra note 48 and accompanying text (discussing prudential regulation).

¹⁷ See infra notes 52-56 and accompanying text (discussing bank runs).

shadow banks. ¹⁸ And those firms are not deposit-taking institutions, so bank runs cannot occur. ¹⁹ Furthermore, this article contends, viewing externalities as a distinct category of market failure is itself misleading. Externalities are fundamentally consequences, not causes, of failures. It thus is 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 failure remain relevant categories of market failures, disintermediation makes it much more likely that firms will engage in profitable but risky transactions, although doing so could externalize harm onto third parties. Externalization of harm is the fundamental source of systemic risk.

Part II.C of the article argues that although externalization of harm best fits into the existing market-failure category of "externalities," that is a misleading term for a

¹⁸ Recall that these firms include special-purpose entities, finance companies, hedge funds, money-market mutual funds, securities lenders, and investment banks. *See supra* note 5 and accompanying text.

¹⁹ But cf. infra note 127 (discuss how disintermediation has potentiated the equivalent of a bank run).

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 correcting market failures. The analysis therefore begins by examining traditional regulatory perspectives and tools, showing how they address financial market failures. The article demonstrates that those perspectives and tools primarily address two fundamental market failures—information failure and agency failure and to a more limited extent address what scholars long have viewed as a third market failure—externalities. The article and agency failure and to a more limited extent address and tools primarily address two fundamental market failures—externalities.

Disintermediation can amplify systemic risk, thereby increasing the potential magnitude of—and thus the need for scholars to address—externalities. However,

²⁰ See, e.g., DAVID GOWLAND, THE REGULATION OF FINANCIAL MARKETS IN THE 1990S 21 (1990). Welfare economists argue that regulation should also include the goal of maximizing social welfare. See, e.g., Charles Wolf, A Theory of Nonmarket Failure: Framework for Implementation Analysis, 22 J. L. & ECON. 107, 110–11 (1979). ²¹ See Part II.A, infra.

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).

²³ This article uses the commonplace definition of externalities as negative externalities: as uninternalized cost or harm that is imposed on third parties.

because "externalities" 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, the article argues, by speaking in terms of "responsibility failure" as a type of market failure that can cause externalities.

A. <u>Traditional Regulatory Perspectives and Tools</u>

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. ²⁴ Furthermore, economists study all forms of financial regulation. ²⁵ 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 such 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.

²⁴ See, e.g., Too Big to Fail - The Role for Bankruptcy and Antitrust Law in Financial Regulation Reform: 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); Emerging Issues in Insurance Regulation: Hearing Before the Subcomm. on Securities, Insurance, and Investment of the Senate Comm. on Banking, Housing, and Urban Affairs, Sept. 14, 2011 (written testimony of insurance-law scholar Daniel Schwarcz, Associate Professor, University of Minnesota School of Law) (testifying on the relationship between insurance and financial regulation).

²⁵ 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).

Securities law scholars traditionally analyze issues from the perspectives of asymmetric information and conflicts of interest. ²⁶ To reduce information asymmetry, they focus on increasing transparency between issuers of, and investors in, securities. ²⁷ They also focus on reducing conflicts of interest between principals (such as owners of a firm) and agents (such as managers hired to run the firm) to improve corporate governance. ²⁸

Securities law scholars use disclosure of information, by issuers of securities to investors in the securities, as the principal tool to increase transparency.²⁹ They also use the imposition of fiduciary duties (such as duties owed by brokers and advisers³⁰) and

²⁶ Association of American Law School (AALS), 2013 Annual Meeting, Global Engagement and the Legal Academy Final Program, at 12 (Dec. 10, 2012), *available at* 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 (2011) ("The risk 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.").

²⁷ *Cf.* Frank H. Easterbrook & Daniel R. Fischel, *Mandatory Disclosure and the Protection of Investors*, 70 VA. L. REV. 669 (1984) (arguing that disclosure is the principal justification for the federal securities laws).

²⁸ LOSS, SELIGMAN, & PAREDES, *supra* note 26, at 286. *Cf.* Complaint at 2, SEC v.

²⁸ Loss, Seligman, & Paredes, *supra* note 26, at 286. *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).

²⁹ Easterbrook & Fischel, *supra* note 27; Loss, Seligman, & Paredes, *supra* note 26, at 42.

³⁰ See, e.g., Arthur B. Laby, *Fiduciary Obligations of Broker-Dealers and Investment Advisers*, 55 VILL. L. REV. 701 (2010) (cautioning against the harmonization of fiduciary standard for broker-dealers and investment advisers without assessing their respective obligations).

improvements in corporate governance (such as aligning executive compensation with long-term interests of the firm³¹) 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, the second category, insofar as the conflicts are between principals and their agents—such as conflicts between owners and managers of a firm, ³² or intra-firm conflicts between middle managers and the senior managers to which they report. ³³ 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.³⁴ The study of economic efficiency focuses on market failures.³⁵ In the context of the financial system, law-and-economics scholars and

³¹ See, e.g., Lucian A. Bebchuk & Jesse M. Fried, Pay Without Performance: Overview of the Issues, 20 ACAD. MGMT. PERSP. 5 (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 (2004) (arguing that shifting from cash-based to equity-based executive compensation has enhanced the incentive for managers to manipulate earnings).
³² This is the classic corporate principal-agent conflict. See, e.g., Bebchuk & Fried supra

³² This is the classic corporate principal-agent conflict. *See, e.g.*, Bebchuk & Fried *supra* note 31.

³³ Steven L. Schwarcz, Conflicts and Financial Collapse: The Problem of Secondary-Management Agency Costs, 26 Yale J. on Reg. 457 (2009).

³⁴ The concept of economic efficiency, the allocation of resources in an economically efficient manner, forms the analytical framework of law-and-economics study. Jules L. Coleman, *Efficiency, Utility, and Wealth Maximization*, 8 HOFSTRA L. REV. 509, 512 (1979). *See also* Steven L. Schwarcz, *A Framework for Analyzing Financial Market Transformation*, forthcoming SEATTLE U. L. REV. (2012 symposium issue), available at http://ssrn.com/abstract=2041428.

³⁵ Alan Randall, *The Problem of Market Failure*, 23 NAT. RESOURCES J. 131, 131 (1983) (discussing economists' focus on market failures). *Cf.* PAUL A. SAMUELSON & WILLIAM D. NORDHAUS, ECONOMICS 756 (15th ed. 1995) (defining market failure as "an imperfection in a price system that prevents an efficient allocation of resources"); IVAN

economists identify asymmetric information, a form of information failure, as one of the main sources of market failure.³⁶

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 rational actors.³⁷ We have difficulty, for example, appreciating unlikely events that, if they occur, could have devastating consequences.³⁸ Thus, in both the Great Depression and the recent financial crisis, observers critically under-appreciated the systemic consequences of a precipitous drop—unprecedented in then-recent history—in collateral value.³⁹

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 underrelying on information. ⁴⁰ It can be viewed as the latter by confining information failure to facts (and thus, effectively, confining information failure to asymmetric information

PNG & DALE LEHMAN, MANAGERIAL ECONOMICS 414 (3d ed. 2007) (observing that government regulation enhances social welfare by correcting market failures).

OXFORDREFERENCE.COM, available at

http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t19.e1927 (last visited June 7, 2012). 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 Anal. & 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).

37 See, e.g., Steven L. Schwarcz, Controlling Financial Chaos: The Power and Limits of Law, 2012 Wis. L. Rev. 815, at 821-22 & 825).

³⁶ A DICTIONARY OF ECONOMICS, Definition of "Market Failure,"

³⁸ Iman Anabtawi & Steven L. Schwarcz, *Regulating Systemic Risk: Towards an Analytical Framework*, 86 NOTRE DAME L. REV. 1349, 1366-68 (2011).

³⁹ *Id.* at 1367-68 (observing the parallel between subprime margin loans as a causal element of the Great Depression (when the rising stock market collapsed, causing many of the loans to become undercollateralized) and subprime real-estate loans as a causal element of the recent financial crisis (when the rising housing market collapsed, causing many of the loans to become undercollateralized)).

⁴⁰ Cf. id. at 821 (acknowledging that "[e]ven in financial markets, humans have bounded rationality—a type of information failure").

problems). 41 Bounded rationality would then be a separate type of market failure because it can undermine comprehension even if parties have perfect factual information. 42

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, the article tentatively views bounded rationality as a subset of information failure, recognizing this means that inquiries about information failure should focus not merely on information asymmetry but also on behavioral psychology. So viewed (and 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 by economists.

Law-and-economics scholars also view externalities as another source of market failure. 43 Likewise, economic theory usually assumes that externalities are a category of fundamental market failure. 44 The failure is seen as the externalities undermining

4

⁴¹ See e-mail from John Komlos, Professor of Economics, University of Munich, & Visiting Professor of Economics, Duke University, to the author (Aug. 25, 2012) (proposing that information failure be confined to facts).

⁴² Cf. Controlling Financial Chaos, supra note 37, 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).

⁴³ 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") (emphasis in original); Brett Fischman, 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."); 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 "). ⁴⁴ See, e.g., Francis M. Bator, The Anatomy of Market Failure, 72 QUARTERLY J. ECON. 351, 363 (1958) (discussing the types of externalities that constitute forms of market failure); KARL E. CASE, ECONOMICS AND TAX POLICY 121 (1986) ("A third major market imperfection is the existence of external costs "); 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 329–335 (4th ed. 1960)).

economic efficiency by imposing costs of an activity onto third parties. ⁴⁵ Regulation could correct this failure, thereby increasing efficiency, by reallocating those costs onto the actor. ⁴⁶

3. Perspectives and Tools of Banking Law Scholars.

Banking law scholars traditionally analyze issues from the perspective of deposittaking banks. In that context, they focus on avoiding bank solvency crises and bank runs.⁴⁷ Their tools include the imposition of prudential rules on risk-taking by banks, limitations on bank capital ratios, and liquidity protection.⁴⁸ 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. ⁴⁹ Prudential regulation also seeks to prevent bank managers from taking risks that benefit them more than their banks, thereby helping to correct agency failure. ⁵⁰

⁵⁰ See, e.g., Wilmarth, Jr., supra note 48, at 264.

⁴⁵ Jonathan R. Macey, *Efficient Capital Markets, Corporate Disclosure, and Enron*, 89 CORNELL L. REV. 394, 411–12 (2004).

⁴⁶ 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).

⁴⁷ 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).

⁴⁸ See, e.g., 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 (2002) (discussing prudential rules to control risks); David Zaring, *A Lack of Resolution, 60* EMORY L.J. 97 (2010) (discussing leverage caps for banks); Arthur W. Leibold, Jr., *Primary and Secondary Liquidity, 26* BUS. LAW. 411 (1970) (discussing liquidity).

⁴⁹ See, e.g., Onnig H. Dombalagian, Regulating Informational Intermediation, 1 Bus. L. Brief (Am. U.) 59, 62–63 (2011–12) (noting Dodd-Frank's increased due diligence requirements for investors); The Monitor, Bank Regulation, 31 No. 1 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).

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. ⁵¹ Also, although economists often say that bank runs are caused by information failures, ⁵² the regulation most directly aimed at avoiding bank runs is intended to reduce externalities. In a bank run, some depositors panic, converging 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. ⁵³ If there is insufficient cash to pay all withdrawal-demands, the bank will default. ⁵⁴ That, in turn, can create externalities by causing other banks or their creditors to default. ⁵⁵ The standard regulatory solution, alleviating depositor panic by providing government deposit insurance, is intended to reduce the risk of those externalities. ⁵⁶

⁵¹ Cf. infra notes 171-173 and accompanying text (discussing the Dodd-Frank Act's capital and similar requirements); Marianne Ojo, Basel III--The Journey Culminating in the Present Framework (Part 1), 30 No. 9 Banking & Fin. Services 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")

primary objectives."). ⁵² *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; 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 53 and accompanying text.

⁵³ 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).

⁵⁴ R.W. HAFER, THE FEDERAL RESERVE SYSTEM 145 (2005) (observing that a bank's cash reserves are often less than five percent of its deposits).

⁵⁵ Chris Mundy, *The Nature of Systemic Risk: Trying to Achieve a Definition*, BALANCE SHEET, Oct. 24, 2004, at 29.

⁵⁶ See, e.g., Douglas W. Diamond & Philip H. Dybvig, *Banking Theory, Deposit Insurance, and Bank Regulation*, 59 J. Bus. 55 (1986) (analyzing optimal contracts that prevent bank runs and observing that government provision of deposit insurance can produce superior contracts). The direct effect of deposit insurance, protecting individual depositors, might be argued to be somewhat misguided because depositors are

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, and to a more limited extent are focused on correcting what is viewed as a third market failure, externalities. This article next argues that the disintermediated financial system makes the third market failure much more important. The article also contends that the third market failure should more accurately be characterized as a type of "responsibility failure" rather than as "externalities." 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. ⁵⁹ 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). ⁶⁰ It also encompasses financing and financial services provided by other financial intermediaries that operate

contracting creditors of the bank. The indirect effect, however, is to protect the bank itself from a run.

Although there are other traditional market-failure categories (*see* Zerbe Jr. & McCurdy, *supra* note 36, at 561 (describing these categories)), they do not appear to be relevant to financial regulation, much less to regulation of 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.

⁵⁸ 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).

⁵⁹ For a more complete discussion of shadow banking, *see Regulating Shadow Banking*, *supra* note 5; Tobias Adrian & Adam B. Ashcraft, *Shadow Banking Regulation*, FED. RESERVE BANK OF N.Y. STAFF REP. No. 559 (Apr. 2012); Erik F. Gerding, "The Shadow Banking System and Its Legal Origins," available at http://ssrn.com/abstract=1990816 (Jan. 24, 2012 draft).

⁶⁰ Regulating Shadow Banking, supra note 5, at 3.

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.⁶¹

The paramount concern posed by the disintermediated financial system is that it "can, if left unregulated, pose systemic risks to the financial system." This makes the problem of externalities critically important because systemic collapses are likely to cause catastrophic harm to innocent third parties. 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. 64 Disintermediation also intensifies information failure by increasing decentralization, which makes it more difficult for market participants to effectively process information. 65 These increased and intensified information failures make panics more likely: they allow risks to accumulate unnoticed and unchecked, causing market participants to panic when hidden risks suddenly become apparent. 66 Panics, in turn, often serve as a trigger that can commence a chain of systemic failures. 67

⁶¹ *Id.* at 3, 5, 6 & 14.

⁶² *Id.* at 4. *See also* Klara Bakk-Simon et al., *Shadow Banking in the Euro Area*, European Central Bank Occasional Paper No. 133, at 4 (Apr. 2012) (observing that disintermediation is "one of the main sources of financial stability concerns").

⁶³ 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").

⁶⁴ See, e.g., Steven L. Schwarcz, Disclosure's Failure in the Subprime Mortgage Crisis, 2008 UTAH. L. REV. 1109.

⁶⁵ Regulating Shadow Banking, supra note 5, at 13.

⁶⁶ *Id.* (discussing Dan Awrey's observations in *Complexity, Innovation and the Regulation of Modern Financial Markets*, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1916649).

⁶⁷ Systemic Risk, supra note 63, at 214.

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.⁶⁸ These shifts not only further increase the likelihood of panics, as explained above⁶⁹; they also increase the potential for systemic risk transmission by increasing the system-wide correlation among financial firms and markets.⁷⁰

Disintermediation also increases the potential for agency failure, especially the intra-firm conflicts between middle managers and the senior managers to which they report. 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 managers especially when senior managers rely on simplifying heuristics, such as value-at-risk (VaR) models, to assess risk on those products. This increased potential for agency failure can increase systemic risk.

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, ⁷⁵ disintermediation makes it much more likely that market participants will engage in profitable but risky transactions, although doing so could externalize harm onto third parties. Conceptually, this is the fundamental source of systemic risk:

⁶

⁶⁸ See, e.g., Jerry W. Markham & Daniel J. Harty, For Whom the Bell Tolls: The Demise of Exchange Trading Floors and the Rise of ECNs, 33 J. CORP. L. 865, 866 & 882-87 (2008) (describing the displacement of traditional exchange trading and arguing that the benefits of formal markets can include greater transparency).

⁶⁹ See supra notes 64-67 and accompanying text.

⁷⁰ Regulating Shadow Banking, supra note 5, at 15.

⁷¹ See supra note 33 and accompanying text (describing that agency failure).

⁷² Regulating Shadow Banking, supra note 5, at 20 (explaining why the complexity of shadow banking, combined with the technology that enables it, can exacerbate the intrafirm agency failure).

⁷³ Conflicts and Financial Collapse, supra note 33, at 463-64.

⁷⁴ Regulating Shadow Banking, supra note 5, at 17–18, 20.

⁷⁵ See infra Part II.B.3 (providing examples of how disintermediation increases the potential for externalities).

[S]ystemic 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.⁷⁶

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.⁷⁷ For several reasons, "responsibility failure" is a clearer and more precise term than "externalities" 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 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,

Financial Chaos, supra note 37, at 821 n. 22.

⁷⁶ Systemic Risk, supra note 63, at 193. See also id. at 206. 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 (as opposed to non-market participants) suffer from the actions of other market participants. Controlling

⁷⁷ 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).

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 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. ⁷⁸ 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.⁷⁹

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 references consequences. 80 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. 81 The cause of the market failure is not externalities per se, however; rather, it is the problem with the production of goods and

⁷⁸ See supra notes 75-76 and accompanying text.

⁷⁹ 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 Systemic Risk, supra note 76, at 206; see also Part II.B & II.C.3, infra. Characterizing responsibility failure as a market failure thus embraces the financial system itself as a "market." Cf. Systemic Risk, supra note 76, 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") (emphasis in original).

⁸⁰ See Part II.C.1, supra.

⁸¹ See, e.g., Bator, supra note 44, 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").

services that resulted 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. 82

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. For example, information failure can result in externalities to the extent information asymmetries cause "nonmonetary effects not taken into account in the decisionmaking process" This article has also provided examples from the disintermediated financial system of information failure causing externalities. To avoid this circularity, some economists have even questioned whether "externalities" should denote a separate market-failure category. So

⁸² 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),

available at http://www.thesunshinereport.net/marksunshine/?p=402 (arguing that although economic "theories about efficient markets and logical behavior are pretty good, the fundamental application of these theories stinks").

⁸³ Zerbe Jr. & McCurdy, *supra* note 36, at 561. Although there also is some overlap between the information failure and agency failure categories (*see supra* note 22, observing that information failure can contribute to an agency failure), that overlap concerns causes of failures. The overlap with externalities concerns cause and effect: that all causes of market failures can result in externalities. *Cf.* Andreas Papandreou, Externality and Institutions 167–69 (1994) ("If externality is simply another word for market failure, or institutional failure . . . the notion of externality becomes redundant.").

⁸⁴ Zerbe Jr. & McCurdy, *supra* note 36, at 561.

⁸⁵ See supra notes 62-70 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).

⁸⁶ See, e.g., PAPANDREOU, supra note 83, 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 36, 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).

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 firms' shareholders, ⁸⁷ 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. 88 This sharpened focus on causation is important because the traditional paradigm of market failure assumes away government action (or inaction) as a cause of failure.⁸⁹

The term "responsibility failure" thus can help (i) to describe the flaws of the disintermediated financial system more intuitively and precisely than the term "externalities"; (ii) 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 (iii) to sharpen the focus on who should be

⁸⁷ 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 (1994) (discussing the duty of managers to shareholders).

⁸⁸ Arguably, the government should be so viewed because it is the only entity that, under that scenario, can avert the systemic costs. Cf. PAPANDREOU, supra note 83, at 156–58 (arguing that the cause of inefficiency is the failure of institutions to "reshap[e] the boundaries of agents' actions").

⁸⁹ See Wolf, supra note 20, at 112. Cf. Zerbe Jr. & McCurdy, supra note 36, 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").

responsible for causing the externalities. Scholars—especially legal scholars, who strive to be precise with language 90—should want to use this more precise term. 91

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: conditions or circumstances that protect a party from the consequences of risky behavior (such as insurance or the granting of legal immunity), ⁹² thereby motivating the party to engage in such behavior. ⁹³ 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

⁹⁰ *Cf.* Jonathan C. Lipson, *Re: Defining Securitization*, 85 S. CAL. L. REV. 1229 (2012) (discussing why precise definitions of financial concepts—in this case, securitization—are important for legal regulation).

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, 969 (1997) (observing that "[f]ew economists realize or admit that market failures . . . are literally matters of definition"). Even scholars who prefer to continue viewing externalities traditionally, as a separate market-failure category, should heed this article's central point: that any study of disintermediation must inquire into the causes of those externalities.

⁹² BOUVIER LAW DICTIONARY (2011 Compact ed.) (Stephen Michael Sheppard, ed.) (defining moral hazard). Moral hazard, unlike responsibility failure generally, contemplates that the party engaging in risky behavior be specifically protected from its consequences.

⁹³ 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").

the reason why the firm can externalize the costs. ⁹⁴ 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. ⁹⁵ 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 below discusses two such examples: (i) 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 (ii) the limited liability of investors who manage a firm, making it more likely that they will cause the firm to take outsized risks, hoping for outsized gains.

- 3. Responsibility Failures in the Disintermediated Financial System.
- (i) 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 long-term projects. ⁹⁶ ABCP conduits ⁹⁷ and SIVs ⁹⁸ routinely issue short-

⁹⁴ See supra Part II.C.1. 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.

⁹⁵ See supra note 92 and accompanying text.

⁹⁶ See, e.g., Kyle Glazier, Bernanke: Financial Crisis Was a Structural Failure, BOND BUYER, Apr. 16, 2012, at 2 (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"); 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"). Cf. Morgan Ricks, Visiting Assistant Professor, Harvard Law School, Presentation at the Boston University Review of Banking and Financial Law Symposium on Shadow Banking (Feb. 24, 2012) (notes on file with author) (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 (June 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

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). ⁹⁹ Money-market mutual funds ¹⁰⁰ also provide short-term loans, essentially withdrawable on demand, to fund long-term projects. ¹⁰¹ And repo lending by securities lenders ¹⁰² is almost always short term. ¹⁰³ The driving force behind much of the short-term 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. ¹⁰⁴

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. ¹⁰⁵

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).

⁹⁷ See supra note 60 and accompanying text.

⁹⁸ See id.

⁹⁹ 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). ¹⁰⁰ *See supra* note 60 and accompanying text.

¹⁰¹ Bryan J. Noeth, et al., *Is Shadow Banking Really Banking?*, REGIONAL ECONOMIST, Oct. 2011 at 8-9.

¹⁰² See supra note 61 and accompanying text.

¹⁰³ *Cf. infra* notes 110-112 and accompanying text (discussing how short-term repolending increased systemic risk).

¹⁰⁴ 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. E-mail from Simon Gervais, Associate Professor of Finance, Fuqua School of Business, Duke University, to the author (Apr. 14, 2012).

¹⁰⁵ Cf. Part II.C.4 infra (explaining how bank runs, resulting from this short-term borrowing to make long-term loans, are related to responsibility failures).

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. ¹⁰⁶ If the firm becomes unable to roll over the debt, the firm may have to default, which could trigger a broader, systemic collapse. ¹⁰⁷ The result is a responsibility failure: a firm that profits by issuing short-term debt might intentionally want to take such a liquidity risk, even if it has perfect information about the risk, because much of the harm of a systemic collapse would be externalized. ¹⁰⁸

The reality can be catastrophic. Economists Gary Gorton and Andrew Metrick have argued, for example, that securities lenders engaging in short-term repo lending ¹⁰⁹ have vastly increased systemic risk. ¹¹⁰ 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. ¹¹¹ These demands forced repo-borrowers to sell assets to generate the additional collateral. ¹¹² These forced asset sales further depressed asset prices, creating a

¹⁰⁶ If investors in the 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.

¹⁰⁷ A Framework for Analyzing Financial Market Transformation, supra note 34, at 19-20. *Cf. supra* note 55 and accompanying text (discussing the systemic consequences of a bank being unable to pay its short-term obligations to depositors).

¹⁰⁸ *Cf. Systemic Risk*, supra note 76, at 206 (observing that a market participant may well decide to 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).

¹⁰⁹ See supra note 61 and accompanying text.

¹¹⁰ Gary Gorton & Andrew Metrick, *Regulating the Shadow Banking System*, at 1 (2010), available at SSRN: http://ssrn.com/abstract=1676947.

¹¹¹ *Id.* at 15. *Cf.* Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, 2012 J. FIN. ECON. 1, 23 (forthcoming 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).

¹¹² Gorton & Metrick, *supra* note 110, at 15.

shock that spread rapidly through the interconnected financial system. Similarly, 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." 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." 115

(ii) 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. ¹¹⁶ Limited liability means that investors in firms are not financially responsible for liabilities of their firms. ¹¹⁷ 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

¹¹³ *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 *Regulating Complexity in Financial Markets*, 87 WASH. U. L. REV. 211, 232-33 (2009/2010) (discussing information uncertainty through the example of mark-to-market accounting and margin calls by broker-dealers). *Cf.* Dan Awrey (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).

Daniel Covitz, Nellie Liang & Gustavo Suarez, *The Evolution of a Financial Crisis: Panic in the Asset-Backed Commercial Paper Market*, Fed. Reserve Bd. Finance and Discussion Series, #2009-36 (2009), at 16, *available at* http://www.federalreserve.gov/pubs/feds/2009/200936/200936pap.pdf.

Klara Bakk-Simon et al., *supra* note 62, at 24.

¹¹⁶ Cf. See 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 (September 2012), at 6, available at 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).

¹¹⁷ See, e.g., BLACK'S LAW DICTIONARY 426 (3d Pocket ed. 2006) (defining limited liability as the "liability of a company's owners for nothing more than the capital they have invested in the business").

their firms: even if a firm ultimately becomes liable for the externalized harm, the limited-liability investors will not become liable. 118

By facilitating decentralization, disintermediation makes this form of responsibility failure much more likely. The relatively small firms, including hedge funds, that operate in the disintermediated financial system are often managed directly by their *primary* investors. ¹¹⁹ Because such investor-managers typically divide up a significant share of the firm's profits, ¹²⁰ 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. ¹²¹ 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

¹¹⁸ 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 investors-managers and society.

¹¹⁹ See Richard H. 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); Stacy Preston Collins, Valuation of Hedge Fund Businesses, 21 J. Am. ACAD. MATRIM. LAW. 389, 397 (2008) (noting that hedge fund managers often have to commit a significant amount of their own capital).

¹²⁰ See, e.g., Economic Analysis of the Split of Profits Between Hedge Fund Investors and Hedge Fund Management by Merrill Lynch & Co. Inc., ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, at 6,

http://www.oecd.org/tax/taxadministration/18474849.pdf (last visited Jan. 6, 2013) (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, 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").

[&]quot;performance floor").

121 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).

options. Most bank profits ordinarily are paid to shareholders. ¹²² Furthermore, bank managers are often invested in maintaining their jobs. ¹²³ They therefore are much less motivated to take actions that risk 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. ¹²⁴ Although bank runs are triggered by an information failure, ¹²⁵ their root cause is that banks borrow short-term by taking deposits and use the proceeds to make long-term loans. ¹²⁶ That creates the potential for one of the types of responsibility failure associated with the disintermediated financial system. ¹²⁷ 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

1/

¹²² See, e.g., Nikola Spatafora, Global Financial Stability Report: Responding to the Financial Crisis and Measuring Systemic Risks, in THE GLOBAL FINANCIAL CRISIS: 2009, 1753 PLI/Corp 319, 379 (2009) (describing how Basel III might reduce long-term bank stock-dividend payout ratios from sixty percent, pre-crash, to forty percent); Robert Boldin & Keith Leggett, Bank Dividend Policy as a Signal of Bank Quality, 4 FINAN. SERVICES REV. 1, 1 (1995) (noting that industry-wide bank payout ratios on stock have reached eighty percent).

¹²³ 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 "managers' desire to keep their jobs, which depends on the firm's continuing financial viability").

¹²⁴ See supra note 47 and accompanying text.

¹²⁵ See supra notes 52-54 and accompanying text.

¹²⁶ See supra note 105 and accompanying text.

¹²⁷ See Part II.C.3(i), supra. Gorton and Metrick themselves recognize that the demands made on securities lenders engaging in repo lending (see supra notes 109-112 and accompanying text) approximated bank runs. Gorton & Metrick, supra note 110, at 15.

certain levels of financial responsibility. ¹²⁸ 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 ¹²⁹; and, at least in the United States, the claims of bank depositors are government insured, reducing the likelihood of bank runs. ¹³⁰

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 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. ¹³¹

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. ¹³² Information failure is caused by asymmetric information and lack of

¹²⁸ Systemic Risk, supra note 63, at 210.

¹²⁹ See supra note 61 and accompanying text.

¹³⁰ See supra note 56 and accompanying text.

¹³¹ See infra Part III.C.

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 individually can profit while externalizing some of the cost. *See Controlling Financial Chaos, supra* note 37 (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

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 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. ¹³³ First, as discussed, ¹³⁴ 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. ¹³⁵ Similarly, the fact that investors who manage firms in the

responsibility failure in this article correlates to incentive failure and the type of tragedy of the commons in that framework.

¹³³ 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 Keynote Address—Lawyers in the Shadows: The Transactional Lawyer in a World of Shadow Banking, forthcoming ___ ____ (2013).

¹³⁴ See supra notes 87-89 and accompanying text.

¹³⁵ Possible regulatory approaches might, for example, include the following: expanding oversight liability of directors who take inappropriate business risks (as advocated by Robert T. Miller in Oversight Liability for Risk-Management Failures at Financial Firms, 84 S. CAL. L. REV. 47, 53–54 (2010)); imposing liability on shareholders to increase self-monitoring and reduce moral hazard (as advocated by Peter Conti-Brown in Elective Shareholder Liability, 64 STAN. L. REV. 409, 414, 446 (2012)); de-limiting limited liability for investment firms, as advocated by Conti-Brown, id. (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 in 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,

disintermediated financial system take outsized risks because limited liability protects them from responsibility for losses ¹³⁶ does not necessarily mean that such investormanagers 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. ¹³⁷

Second, this article does not suggest that all potential externalities should necessarily be internalized. Law generally does not require that all externalities be internalized. 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. 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. 140

behavior of corporate officers"). There are, of course, counter-arguments to these types of regulatory approaches, such as the extent to which they might, for example, undermine the business judgment rule and the policies behind the rule (such as keeping courts from judging business decisions 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); 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).

¹³⁶ See supra Part II.C.3(ii) (discussing limited liability).

¹³⁷ Cf. infra note 156 and accompanying text (discussing how the Dodd-Frank Act addresses limited liability).

¹³⁸ 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). ¹³⁹ Systemic Risk, supra note 76, at 206.

¹⁴⁰ *Cf. supra* notes 112-113 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 (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 (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, ¹⁴¹ 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. ¹⁴² 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. Perhaps systemically important non-banks should have access, for example, to central bank liquidity. ¹⁴³

Government insurance of bank deposits ¹⁴⁴ 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 that insurance internalizes the cost. ¹⁴⁵ 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." ¹⁴⁶ It also could help to internalize the most harmful externalities of the disintermediated financial system. ¹⁴⁷

1

¹⁴¹ See Part II.C.4, supra.

¹⁴² Cf. infra notes 171-173 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).

¹⁴³ Cf. infra notes 158-162 and accompanying text (discussing the Dodd-Frank Act's limiting the power of the Federal Reserve to make emergency loans to individual or insolvent financial firms).

¹⁴⁴ See supra notes 58 & 130 and accompanying text.

In the United States, for example, the Federal Deposit Insurance Corporation assesses risk-based premiums on its member banks. FED. DEPOSIT INS. CORP., *Capital Groups and Supervisory Groups*, http://www.fdic.gov/deposit/insurance/risk/rrps_ovr.html. See also 12 C.F.R. pt. 327 (discussing FDIC assessments).

¹⁴⁶ Cf. Controlling Financial Chaos, supra note 37, at 831. See also id. at 829-33 (generally discussing how a privatized systemic risk fund could help stabilize systemically important firms and markets).

¹⁴⁷ *Id.* Although various other commentators have also proposed systemic risk taxes (*see, e.g.*, Viral Acharya, et al., *A Tax on Systemic Risk* 3–4 (Ctr. For Economic Policy

III. APPLICATIONS

This Part applies information failure, agency failure, and responsibility failure to regulatory provisions of the Dodd-Frank Act¹⁴⁸ 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. ¹⁴⁹

A. Requiring Sellers in Securitization Transactions to Retain Unhedged Risk

Securitization is a significant component of the disintermediated financial system. ¹⁵⁰ 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." ¹⁵¹ This requirement goes to correcting information failure. Congress believed that securitization's 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. ¹⁵² By retaining unhedged risk, the sellers' interests should become better aligned with the investors' interests, and thus investors should effectively benefit from the sellers' better information.

Research, Feb. 3, 2010), available at

http://www.cepr.org/meets/wkcn/1/1741/papers/Acharya.pdf), 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).

¹⁴⁸ Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203 (2010) (hereinafter, "Dodd-Frank Act").

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 Controlling Financial Chaos*, *supra* note 37.

¹⁵⁰ See supra notes 59-60 and accompanying text.

¹⁵¹ 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). ¹⁵² See RESTORING AMERICAN FINANCIAL STABILITY ACT OF 2010, S. REP. NO. 111-176, at 36 (2010).

Albeit indirectly, this requirement also goes to correcting responsibility failure by addressing the short-term funding of long-term projects. ¹⁵³ 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. ¹⁵⁴ 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 harm (i.e., externalities) that would result from an inability to roll over the 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 goes to correcting agency failure.

¹⁵³ See supra Part II.C.3(i). More direct ways of correcting responsibility failure resulting from short-term funding of long-term projects might include better standards on matchfunding coverage, better internal controls on collateral valuation and margining policies, and internalizing externalities (such as mandating privately funded systemic risk funds). The international Basel III capital accord takes a match-funding coverage approach, for example, introducing a liquidity coverage requirement that banks hold sufficient high-quality liquid assets to cover their total net cash outflows over 30 days and another requirement that banks maintain minimum yearly available amounts of stable funding. Jerome Walker, Rosali Pretorius, Michael Zolandz, & Gary Goldburg, Reconciling the Dodd-Frank and Basel Committee Capital Requirements, 129 BANKING L.J. 627, 631 (July/August 2012). See, e.g., A Framework for Analyzing Financial Market Transformation, supra note 34, at 22; see also supra note 146 and accompanying text.

¹⁵⁴ See supra notes 97-99 and accompanying text.

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—like employees, consumers, suppliers, and members of the general public—are usually more closely aligned. Moreover, requiring senior managers to be paid on a long-term basis should help, at least theoretically, to reduce the deleterious effects of limited liability 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, ¹⁵⁷ aligning managerial (agent) interests with shareholder (principal) interests can make managers more risk prone; and 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

¹⁵⁵ 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).

¹⁵⁶ See supra Part II.C.3(ii).

¹⁵⁷ Cf. Andrew C.W. Lund & Gregg D. Polsky, The Diminishing Returns of Incentive Pay in Executive Compensation Contracts, 87 NOTRE DAME L. REV. 677, 727 (2011) (observing, although questioning, the traditional belief that, absent incentive compensation, managers are less risk seeking than shareholders); 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. If a corporation does badly because a new investment project fails, a manager must rely primarily on other projects undertaken by the same corporation to balance against it. His salary and prospects and his value to a potential new employer would be hurt by poor firm performance.").

The Dodd-Frank Act's limitation on the power of the Federal Reserve to make emergency loans to individual or insolvent financial firms ¹⁵⁸ goes directly to responsibility failure. Politicians and regulators worry that the recent increase in size and concentration of financial firms ¹⁵⁹ tempts firms that believe they are too big to fail to engage in irresponsible behavior, such as making risky investments to try to gain profits, expecting to be bailed out (through emergency loans) if they misjudge the risk. 160 Dodd-Frank's limitation on emergency lending is intended to remove that temptation, motivating financial firms to operate responsibly. 161 Its goal is to make financial firms less likely to fail, and less likely to externalize costs onto taxpayers if they do fail. 162

Dodd-Frank's limitation on emergency lending can also be viewed as addressing moral hazard: by limiting emergency lending, that Act 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. 163

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

¹⁵⁸ Dodd-Frank Act, § 1101.

¹⁵⁹ This article does not purport to examine whether disintermediation has been, directly or indirectly, a cause of that increase in size and concentration.

¹⁶⁰ See, e.g., Lissa Lamkin Broome, Dodd-Frank Act: TARP Bailout Backlash and Too Big To Fail, 15 N.C. BANKING INST. 69 (2011) (discussing this argument). 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). ¹⁶¹ See id.

¹⁶² 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 Controlling Financial Chaos, supra note 37, at 831.

¹⁶³ See supra notes 94-95 and accompanying text.

limitation as a limitation on externalities, but speaking in terms of responsibility failure helps to focus attention on the actual underlying failure: that the very availability of governmental emergency lending can motivate firms to engage in irresponsible behavior. ¹⁶⁴

D. Improving Disclosure

Disintermediation can greatly increase complexity. ¹⁶⁵ That in turn can make financial transactions and products more difficult to disclose and understand. ¹⁶⁶ The Dodd-Frank Act addresses this by attempting to improve disclosure. ¹⁶⁷

In that attempt, the Act's primary goal is the standard one: reducing information asymmetries between issuers of, and investors in, securities. ¹⁶⁸ To a much lesser extent, through its "living will" requirement, the Act also addresses the bounded rationality aspects of information failure. ¹⁶⁹

Because improving disclosure goes only to information failure, it does not involve the other two fundamental market failures—responsibility failure and agency failure. ¹⁷⁰

E. Protecting Against Insolvency and Illiquidity

¹⁶⁴ See supra note 160 and accompanying text.

¹⁶⁵ Regulating Shadow Banking, supra note 5, at 17.

¹⁶⁶ See supra note 64 and accompanying text.

¹⁶⁷ 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).

¹⁶⁸ See supra note 27 and accompanying text.

¹⁶⁹ Compare infra note 175 and accompanying text with Part II.A.2, supra (arguing that information failure results from information asymmetry and bounded rationality).

¹⁷⁰ The "improving disclosure" example is thus neutral to the question of comparing responsibility failure and externalities as market-failure categories.

Dodd-Frank requires banks and, to the extent designated as "systemically important," other financial firms to be subject to a range of capital and similar requirements. ¹⁷¹ 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. ¹⁷² It also goes to correcting responsibility failure by mandating minimum levels of financial responsibility. ¹⁷³ 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

171 Dodd-Frank Act, §§ 115(b), 165(i). 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. *Id.*, § 165(j).

¹⁷² See Charles W. Calomiris & Richard J. Herring, Why and How to Design a Contingent Convertible Debt Requirement, NOMURA FOUNDATION, at 2–3 (April 2011), available at 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.").

¹⁷³ Cf. Part II.C.4, supra (discussing reducing the risk of responsibility failure by substantively regulating banks to minimize their risk of default).

"living will"—that sets forth how the firm would liquidate in an orderly manner to minimize any systemic impact. ¹⁷⁴ This goes to correcting all three types of market failures: the bounded rationality problem of information failure ¹⁷⁵ because it forces the firm's managers to think through and more clearly confront the reality of the firm's possible failure; 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 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, should be less likely to externalize systemic costs.

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. ¹⁷⁶ To the

¹⁷⁴ Dodd-Frank Act, § 165(d).

¹⁷⁵ Recall that information failure results from information asymmetry and bounded rationality. *See* Part II.A.2.

¹⁷⁶ See Dodd-Frank Act, § 619, § 13 (codifying steps to implement the Volcker Rule limiting 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. Prohibitions and Restrictions on Proprietary Trading and Certain Interests in, and Relationships with, Hedge Funds and Private Equity Funds, 76 Fed. Reg. 68,846 (proposed Nov. 7, 2011) (to be codified at 12 C.F.R. pts. 44, 248, 351; 17 C.F.R. pt. 255), available at http://fdic.gov/news/board/2011Octno6.pdf.

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, and thus less likely to fail (which could externalize systemic costs). 177

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

¹⁷⁷ 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 channelling savings to productive investments [i.e., making loans], and managing financial risk." INDEP. COMM'N ON BANKING, FINAL REPORT RECOMMENDATIONS 7 (2011). 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. *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 ringfencing 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? (Nov. 2011) at 29, IMF Working Paper No. 11/236, available at 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.

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 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. 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 risky behavior. 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.

1

¹⁷⁸ See supra notes 87-89 and accompanying text.

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).