
ARTICLES

REFRAMING FINANCIAL REGULATION

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* Associate Professor of Law, Cornell University Law School. I appreciate the thoughtful comments and contributions of Steven Davidoff, Tamar Frankel, Jeff Gordon, Michael Meurer, Curtis Milhaupt, Alex Raskolnikov, Fred Tung, and David Walker, and participants in conferences and presentations sponsored by the Association of American Law Schools, Section on Securities Regulation, the Institute for Monetary and Financial Stability at Goethe University Frankfurt, McGeorge School of Law, USC Gould School of Law, and Washington & Lee School of Law, as well as the valuable research assistance provided by Alysia Fancher, John Siemann, and Lauren Turner. Any errors or omissions are the author's alone.

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Financial regulation today is largely framed by traditional business categories. The financial markets, however, have begun to bypass those categories, principally over the last thirty years. Chief among the changes has been convergence in the products and services offered by traditional intermediaries and new market entrants, as well as a shift in capital-raising and risk-bearing from traditional intermediation to the capital markets. The result has been the reintroduction of old problems addressed by (but now beyond the reach of) current regulation, and the rise of new problems that reflect change in how capital and financial risk can now be managed and transferred.

In this Article, I begin to assess the current U.S. approach to financial regulation, in light of recent changes in the financial system, and offer a tentative way to address gaps in proposals for regulatory reform. Regulators must focus on the principal problems that financial regulation is intended to address – relating to financial stability and risk-taking – without regard to fixed categories, intermediaries, business models, or functions. Doing so, however, requires a prospective assessment of the markets, a different approach from the reactive process that characterizes much of financial regulation today.

INTRODUCTION

Financial regulation is often reactive. New regulation seals up leaks in the financial system – usually following a crisis, a shift in the markets, or other change that threatens financial stability.¹ The decision in 1933 to separate commercial and investment banking, for example, followed a transformative period of growth in the stock market and the broad dispersion of stock

¹ See Erik F. Gerding, *The Next Epidemic: Bubbles and the Growth and Decay of Securities Regulation*, 38 CONN. L. REV. 393, 418-24 (2006) (describing tendency of reactive regulation to follow financial crises); Jerry W. Markham, *Banking Regulation: Its History and Future*, 4 N.C. BANKING INST. 221, 221 (2000) (describing bank regulation as “a set of accumulated responses to a long history of financial crises, scandals, happenstance, personalities and compromises”); Heidi Mandanis Schooner, *Regulating Risk Not Function*, 66 U. CIN. L. REV. 441, 480-81 (1998) (“[O]ur regulatory structure has generally been reactive to market events, thus focusing on existing products and activities.”).

ownership.² Congress also began to divide the regulation of financial intermediaries into categories – as banks, thrifts, securities firms, insurance companies, and pension and investment advisors – largely based on the functions, products, and services they provided at the time.³ Relying on categories to frame U.S. financial regulation generally worked well over the next seventy-five years, with only minimal disruption until the credit slowdown in 2007.⁴

Intermediation, however, has continued to evolve, particularly beginning in the 1970s with the start of rapid change in the financial markets.⁵ Chief among the changes has been convergence in the products and services offered by traditional intermediaries and new market entrants, spurring new competition,

² See Banking Act of 1933 (Glass-Steagall Act), Pub. L. No. 73-65, §§ 16, 20, 21, 32, 73 Stat. 184-85, 188-89, 194. The barrier between banking and investment banking was largely repealed by the Financial Services Modernization Act of 1999, also known as the Gramm-Leach-Bliley Act, Pub. L. No. 106-102, 113 Stat. 1338 (codified at 15 U.S.C. §§ 6801-6809, 6821-6827 (2006)).

³ See *infra* notes 65-68 and accompanying text. The principal functions of financial intermediation are described *infra* at notes 21-51 and accompanying text. Types of financial intermediaries are described in Robert Charles Clark, *The Federal Income Taxation of Financial Intermediaries*, 84 YALE L.J. 1603, 1605-08 & nn.1-21 (1975) (classifying financial intermediaries as “first order financial intermediaries” that rely on capital from individual households and “second order financial intermediaries” that receive funds directly from other financial entities), and Howell E. Jackson, *Regulation in a Multisectoral Financial Services Industry: An Exploration Essay*, 77 WASH. U. L.Q. 319, 322-31 (1999) (presenting financial relations along a spectrum between privately negotiated arrangements and contingent-return intermediaries).

⁴ The savings and loan crisis of the 1980s and 1990s was a costly disruption, but confined to a specific sector of the financial system. See Gary Gorton, *Slapped in the Face by the Invisible Hand: Banking and the Panic of 2007* 2-3, 38 (May 9, 2009) (unpublished working paper), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1401882. Likewise, the 22.6% drop in the Dow Jones index on October 19, 1987 (known as “Black Monday”) – which exceeded the 12.8% decline at the start of the Great Depression – was largely limited to the stock market, and was touched off by program trading that caused the rapid sell-off of shares as stock prices tumbled. See Lewis D. Solomon & Howard B. Dicker, *The Crash of 1987: A Legal and Public Policy Analysis*, 57 FORDHAM L. REV. 191, 191, 222-28 (1988).

⁵ See *infra* notes 69-76 and accompanying text (illustrating the relaxation of the divide between investment and commercial banking that occurred in the 1970s due to increased competition, changes in regulations, and new products and other innovations); see also Ronald J. Gilson & Charles K. Whitehead, *Deconstructing Equity: Public Ownership, Agency Costs, and Complete Capital Markets*, 108 COLUM. L. REV. 231, 244-47 (2008); Merton H. Miller, *Financial Innovation: The Last Twenty Years and the Next*, 21 J. FIN. & QUANTITATIVE ANALYSIS 459, 459-60 (1986) (describing “revolutionary” changes in financial institutions and instruments in the prior twenty years); Peter Tufano, *Financial Innovation*, in 1A HANDBOOK OF THE ECONOMICS OF FINANCE 307, 311-12 (George M. Constantinides et al. eds., 2003) (discussing the “tremendous innovation” in financial products during the 1980s).

as well as a shift in capital-raising and risk-bearing from traditional intermediation to lower-cost alternatives, in many cases through the capital markets.

Banks, for example, began to face new competition from money market funds (“MMFs”)⁶ and finance companies that began to offer similar products and services, but at competitive prices, drawing away substantial numbers of depositors and borrowers from the banking industry.⁷ Growing competition and changes in regulation also prompted bank lenders to begin to transfer loan-related risk to third parties. Initially, banks sold all or portions of entire loans to other banks and investors, but over time, they also began to transfer only the credit risk of those loans, separating the banks’ role as working capital providers from their traditional function as credit risk managers.⁸ Increasingly, banks relied on new instruments – like credit default swaps (“CDSs”)⁹ – to outsource risk management to less-regulated entities, including hedge funds,¹⁰

⁶ MMFs are mutual funds whose portfolios are limited to short-term, highly liquid, and relatively low-risk debt instruments. *See infra* note 103 and accompanying text.

⁷ *See infra* note 73 and accompanying text.

⁸ *See* Charles K. Whitehead, *The Evolution of Debt: Covenants, the Credit Market, and Corporate Governance*, 34 J. CORP. L. 641, 657-59 (2009) (“[U]sing a credit default swap, a bank can buy or sell all or a portion of a borrower’s credit risk without transferring the loan or bond itself, enabling it to more efficiently manage and diversify exposure and expanding the universe of prospective investors beyond those with significant amounts of capital to lend.”).

⁹ A CDS is a type of derivative that permits a counterparty to a swap contract to buy or sell all or a portion of the credit risk tied to a loan or bond. The CDS customer pays the “writer” of the swap a periodic fee in exchange for a contingent payment in the event of a credit default. If a credit event occurs, typically involving default by the borrower, the CDS writer must pay the counterparty an amount sufficient to make it whole or purchase the referenced loan or bond at par. *See* William K. Sjostrom, Jr., *The AIG Bailout*, 66 WASH. & LEE L. REV. 943, 947-52 (2009). For more information on derivatives and CDSs, see generally MORTON GLANTZ, *MANAGING BANK RISK: AN INTRODUCTION TO BROAD-BASE CREDIT ENGINEERING* 531-49 (2003), and Blythe Masters & Kelly Bryson, *Credit Derivatives and Loan Portfolio Management*, in *HANDBOOK OF CREDIT DERIVATIVES* 43, 43-85 (Jack Clark Francis et al. eds., 1999). CDSs are, in substance, economically similar to term insurance policies written against the credit downgrade of the referenced borrower. *See* Stephen J. Lubben, *Credit Derivatives & the Future of Chapter 11*, 81 AM. BANKR. L.J. 405, 423-24 (2007); Frank Partnoy & David A. Skeel, Jr., *The Promise and Perils of Credit Derivatives*, 75 U. CIN. L. REV. 1019, 1050 (2007).

¹⁰ There is no standard definition of “hedge fund,” although a distinctive feature is an organizational structure that helps align shareholder and manager interests and the payment to managers of significant performance-related fees that aim to maximize the fund’s risk-adjusted returns. Those returns often rely on substantial borrowings, derivatives, and complex investment strategies. *See infra* note 170 and accompanying text; *see also* TECHNICAL COMM. OF THE INT’L ORG. SEC. COMM’NS, *HEDGE FUNDS OVERSIGHT: CONSULTATION REPORT* 6-9 (Mar. 2009), <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD288.pdf> [hereinafter *IOSCO, HEDGE FUNDS*]. Hedge funds and their advisors are

which could then invest in and manage the credit risk of a bank's loan portfolio without extending loans themselves.¹¹ Although hedge funds grew by 260% between 1999 and 2004 to become a one trillion dollar business, they were largely exempt from regulation under the federal securities and investment advisory laws.¹² In effect, through new capital markets products, banks and other intermediaries could transfer a core function of traditional intermediation from an industry subject to close, prudential supervision to one largely beyond regulatory oversight. Fueled by similar changes, the financial system transformed – from primarily relying on traditional intermediaries to becoming increasingly flexible as new instruments, new participants, and new markets began to manage and transfer capital and financial risk.

In this Article, I begin to assess the U.S. approach to financial regulation in light of recent changes in the financial system and offer a tentative way to address gaps in current proposals for regulatory reform. Today, the principal financial regulations (and associated cost) that apply to a particular entity largely depend upon whether the entity is a bank, insurance company, or securities firm – definitions that, in many cases, were formed according to business models that existed in the 1930s.¹³ The financial markets, however, are well on the way to bypassing those categories. The result has been the reemergence of old problems addressed by (but now beyond the reach of) current regulation, and the introduction of new problems that reflect change in how capital and financial risk can now be managed and transferred.

Capital regulation, for example, helps contain the financial risks borne by banks, securities firms, and insurance companies.¹⁴ Bank requirements have historically been more costly, reflecting the relative ability of securities firms and insurance companies to bear risk. Banks, however, were not disadvantaged so long as they only competed with other banks. Problems arose when banks and securities firms began to compete directly by offering

subject to minimal regulation – often defined by reference to the federal securities laws from which they are exempt. See Steven M. Davidoff, *Black Market Capital*, 2008 COLUM. BUS. L. REV. 172, 201-16; Troy A. Paredes, *On the Decision to Regulate Hedge Funds: The SEC's Regulatory Philosophy, Style, and Mission*, 2006 U. ILL. L. REV. 975, 979-83. In addition, the hedge fund industry, traditionally under the oversight of the Securities and Exchange Commission (the "SEC"), has largely fallen outside the scope of systemic risk regulation, which has principally been a function of the Federal Reserve and the Treasury Department. See John C. Coffee, Jr. & Hillary A. Sale, *Redesigning the SEC: Does the Treasury Have a Better Idea?*, 95 VA. L. REV. 707, 775-79 (2007); Paredes, *supra*, at 1000.

¹¹ See *infra* notes 29-32, 125-34 and accompanying text.

¹² See Registration Under the Advisers Act of Certain Hedge Fund Advisers, Investment Advisers Act Release No. IA-2333, 69 Fed. Reg. 72,054, 72,055-56 (Dec. 10, 2004); Paredes, *supra* note 10, at 999-1001.

¹³ As Jamie Dimon, the Chairman and CEO of J.P. Morgan Chase, has noted, "A lot of the rules and regulations [we have] are closer to the Civil War than they are to today." Paul Tharp, *Ben Sees Treasury as the Bank Cure*, N.Y. POST, July 9, 2008, at 31.

¹⁴ See *infra* notes 107-09 and accompanying text.

similar products and services, such as loan securitization. In order to remain competitive, banks were forced to move risky assets off their balance sheets – in many instances to special purpose vehicles (“SPVs”) that financed the purchase with commercial paper. Funding longer-term assets with short-term credit created many of the same problems that bank regulation has historically addressed. SPVs, however, fell outside direct regulatory oversight, resulting in an increase in the risks borne by the financial system without a corresponding increase in protections.¹⁵

Regulators, I argue, must begin to focus on the principal issues that regulation is intended to address – relating to market stability and risk-taking – without regard to fixed categories, intermediaries, business models, or functions. Stated differently, the financial markets have become more flexible, and so must the regulatory response. Yet, many proposals for reform continue to lag behind the market. For example, a centerpiece of the Obama Administration’s reforms is a proposal to create a “systemic risk” regulator that focuses, among others, on private equity and hedge funds that are “too big” or “too interconnected” to fail.¹⁶ That focus may help address some of the specific problems that sparked the current financial crisis. It fails, however, to address new problems prompted by change in the markets. Recall the ability of intermediaries, like banks and insurers, to outsource risk management to less-regulated entities, like hedge funds.¹⁷ That change reflects a shift away from traditional categories, as new participants – regardless of size or interconnectedness – take on functions historically managed by, and regulated within, banks and insurers. Financial risk may increasingly be bought and sold among capital markets participants, some of whom are not subject to the same levels of regulation as traditional intermediaries. What this suggests is that regulators must begin to address whether there are now market-based risks – beyond any single intermediary – that raise the same systemic concerns that underlie bank and insurance regulation,¹⁸ a prospective look that differs from

¹⁵ See *infra* notes 115-24 and accompanying text.

¹⁶ See U.S. DEP’T OF TREASURY, FINANCIAL REGULATORY REFORM, A NEW FOUNDATION: REBUILDING FINANCIAL SUPERVISION AND REGULATION 20-27, 37-38 (2009) [hereinafter TREASURY, FINANCIAL REGULATORY REFORM], available at http://www.financialstability.gov/docs/regs/FinalReport_web.pdf; see also CONG. OVERSIGHT PANEL, SPECIAL REPORT ON REGULATORY REFORM: MODERNIZING THE AMERICAN FINANCIAL REGULATORY SYSTEM: RECOMMENDATIONS FOR IMPROVING OVERSIGHT, PROTECTING CONSUMERS, AND ENSURING STABILITY 22-24, 29 (2009) [hereinafter COP, SPECIAL REPORT], available at <http://cop.senate.gov/documents/cop-012909-report-regulatoryreform.pdf>; THE GROUP OF THIRTY, FINANCIAL REFORM: A FRAMEWORK FOR FINANCIAL STABILITY 8-10 (2009), available at <http://www.group30.org/pubs/recommendations.pdf>.

¹⁷ See *supra* notes 8-11 and accompanying text.

¹⁸ One such concern, involving financial risk management, is described *infra* at notes 177-81 and accompanying text.

the reactive process that has characterized much of financial regulation to date.¹⁹

Let me note two caveats. First, it is difficult at this early stage to detail how a new regulatory structure should look. My goal in this Article is to begin to set the stage for a new approach to financial regulation, focusing on trends in the financial markets that have moved beyond existing regulation, and incorporating those trends into a tentative approach that is not limited by fixed categories. Specific proposals for reform will need to be weighed on a case-by-case basis. To be effective, however, they must include consideration of the new trends and problems in the financial system illustrated in this Article.

Second, my focus here is on the effect of changes in the financial markets on U.S. regulation. Not surprisingly, similar changes have occurred outside the United States, suggesting a transnational dimension in reframing financial regulation.²⁰ Differences in regulation can result in shifts in business and risk-bearing among regulatory regimes. Consequently, similar regulation needs to be considered irrespective of the jurisdiction in which a business is located – a vital step in the process, but requiring an analysis that is beyond the scope of this Article.

In the next Part, I describe the role of financial intermediaries in allocating and transferring capital and in managing risk-bearing. Intermediation itself creates risk, and so, in addition, I describe the role of financial regulation in filling gaps that imperfect markets are unable to effectively police. In Part II, I illustrate how change in the financial markets has affected capital-raising and risk-bearing, blurring the divide between traditional business models. The result has been a growing mismatch between regulation and intermediation. In Part III, I consider the evolving role of financial regulation and the need for

¹⁹ As Eddie George, the former Governor of the Bank of England, commented, “[T]here are many ways of skinning this particular cat In any event no structure can be set in stone – the markets continue to evolve and so too must the regulatory structure.” Edward George, *Some Thoughts on Financial Regulation*, 36 BANK ENG. Q. BULL. 213, 215 (1996).

²⁰ Non-U.S. banking crises rose in the 1970s in line with changes in financial intermediation. One study found that globally there were few banking crises between 1945 and 1971. See Michael Bordo et al., *Is the Crisis Problem Growing More Severe?*, 16 ECON. POL’Y 53, 57-58, 65 (2001). Between 1970 and 2007, however, forty-two systemic banking crises occurred in thirty-seven countries, even before the start of the current credit downturn. See Luc Laeven & Fabian Valencia, *Systemic Banking Crises: A New Database 3* (IMF Working Paper No. WP/08/224, Nov. 2008), available at <http://www.imf.org/external/pubs/ft/wp/2008/wp08224.pdf>. A number of factors contributed to the rise. Significant among them was growing competition among intermediaries as non-banks began to engage in banking activities, and the absence of a regulatory framework to manage the greater risk – in essence, the change in business model – assumed by banks in response. See *The Banking Crises of the 1980s and Early 1990s: Summary and Implications*, in 1 FED. DEPOSIT INSUR. CORP., AN EXAMINATION OF THE BANKING CRISES OF THE 1980S AND EARLY 1990S 3, 5, 35-38 (1997), available at http://www.fdic.gov/bank/historical/history/3_85.pdf.

new regulation to reflect change and convergence in the marketplace. I propose a supra-functional approach to financial regulation that takes into account the transfer of like functions across the financial markets, but considers them within the institutions (including the markets) where those functions now appear, and then apply it to a current proposal to regulate derivatives transactions.

I. FINANCIAL INTERMEDIATION

A. *Intermediation Benefits*

Financial intermediation helps bridge the gap between suppliers and consumers of capital, many of whom are located at a distance. In a frictionless world, the financial markets would allocate the kinds and amounts of capital that businesses require, without the assistance (or cost) of an intermediary.²¹ Transaction costs, however, create a role for financial intermediaries, which collect capital from diverse, often small, investors and transfer it to end-users at lower cost than investors could do themselves.²² By accumulating small-denomination deposits, for example, banks can economically extend larger-denomination loans, effectively lowering the costs which a depositor would incur if she tried to make the loans directly. In addition, banks act as “delegated monitors,” leveraging long-term relationships to lend capital based on information that is unavailable to depositors or only available at higher cost. The discipline that comes with monitoring may, in turn, improve a borrower’s financial condition and increase the value of the bank’s investment.²³

Intermediaries also transmit information to capital suppliers. Data about a firm’s business and prospects are increasingly reflected in its stock price, permitting a decentralized market to direct capital where it can be used most productively. Firms, as well, rely on changes in stock price to determine which projects to pursue and how to fund them.²⁴ More recently, with increased trading in private credit instruments, the feedback provided by

²¹ See Franco Modigliani & Merton H. Miller, *The Cost of Capital, Corporation Finance, and the Theory of Investment*, 3 AM. ECON. REV. 261, 261-71 (1958).

²² See Robert C. Merton, *Operation and Regulation in Financial Intermediation: A Functional Perspective*, in OPERATION AND REGULATION OF FINANCIAL MARKETS 17, 21-27 (Peter Englund ed., 1993).

²³ See Fischer Black, *Bank Funds Management in an Efficient Market*, 2 J. FIN. ECON. 323, 323-24 (1975); Douglas W. Diamond, *Financial Intermediation and Delegated Monitoring*, 51 REV. ECON. STUD. 393, 393-95 (1984); Eugene F. Fama, *What’s Different About Banks?*, 15 J. MONETARY ECON. 29, 35-39 (1985); Richard J. Herring & Anthony M. Santomero, *What Is Optimal Financial Regulation?* 13 (Wharton Fin. Inst. Ctr., Working Paper No. 00-34, May 1999), available at <http://fic.wharton.upenn.edu/fic/papers/00/0034.pdf>.

²⁴ See Jeffrey N. Gordon, *The Rise of Independent Directors in the United States, 1950-2005: Of Shareholder Value and Stock Market Prices*, 59 STAN. L. REV. 1465, 1561-63 (2007).

changes in credit pricing – with the cost of a new loan increasingly driven by pricing in the secondary market – has begun to provide the same kind of information as the public equity markets.²⁵

In addition, intermediaries help smooth the transfer of capital. Retail suppliers typically prefer to access their money quickly, favoring short-term investments, like bank deposits, that can be turned into cash on demand. By contrast, borrowers require a source of longer-term capital; term loan maturities, for example, average sixty-nine months.²⁶ What has made banks special is their ability to balance these two competing needs – managing a loan portfolio against the obligation to make depositors whole, using loan proceeds to repay depositors, and smoothing any shortfall with liquid reserves. A key to the juggling act is the bank's ability to realize on its investments gradually, without being forced – by sudden and widespread withdrawals – to liquidate assets quickly and at fire sale prices.²⁷

Risk management is also an important function of intermediation. Insurance policies, for example, provide customers with a means to transfer the financial risk of future loss to insurers. The insurers, in turn, cap some portion of that risk through deductibles, limits, and other policy features, and then manage or disperse the remaining risk across a large pool of policyholders.²⁸ More recently, intermediaries have begun to take a more active role in managing and transferring financial risk from originators prepared to pay to transfer risk, to others (including intermediaries) prepared to manage that risk.²⁹ A bank, for example, has traditionally managed the risks of its loan portfolio more effectively than its depositors could. The principal risk, that a borrower will default on its loan, is addressed through portfolio diversification, as well as relationships that help the bank to monitor and enforce loan covenants. As portfolio risk management improved, bank lenders sought to transfer risk to firms that were better able to manage it, starting with loan syndication and then moving to lower-cost alternatives, such as loan trading and derivatives.³⁰ Today, lenders can separate their role as working capital providers from their

²⁵ See Whitehead, *supra* note 8, at 668-70.

²⁶ See Philip E. Strahan, Borrower Risk and the Price and Nonprice Terms of Bank Loans tbl.1 (Fed. Reserve Bank of N.Y., Staff Report No. 90, Oct. 1999), available at http://www.newyorkfed.org/research/staff_reports/sr90.pdf.

²⁷ See Herring & Santomero, *supra* note 23, at 13-14.

²⁸ See Jackson, *supra* note 3, at 330-31. Today, insurers are also able to hedge risk by issuing securities whose value is tied to losses on outstanding policies or by swapping some portion of that risk with others in order to diversify their aggregate exposure. See Ernst Rauch, *Effects of Climate Change on the Insurance Industry*, 26A STAN. ENV'T L. L.J. 239, 249 (2007); Robert J. Rhee, *Terrorism Risk in a Post-9/11 Economy: The Convergence of Capital Markets, Insurance, and Government Action*, 37 ARIZ. ST. L.J. 435, 500-05 (2005).

²⁹ See Franklin Allen & Douglas Gale, *Financial Markets, Intermediaries, and Intertemporal Smoothing*, 105 J. POL. ECON. 523, 525-26 (1997) (explaining how intertemporal hedging can be used to limit the impact of nondiversifiable risks).

³⁰ Whitehead, *supra* note 8, at 655-58.

traditional job as risk managers, in the process introducing a new category of market participants – increasingly, hedge funds – who are willing to invest in the credit of a referenced borrower without extending loans themselves.³¹ The result has been substantial growth in the private credit market.³²

B. *Intermediation Costs*

Intermediation also creates risk. By their nature, financial intermediaries are more likely than other businesses to expose customers to fraud, self-dealing, and other misconduct.³³ Retail consumers, for example, often find the task of evaluating financial assets or services to be formidable. In many cases, such as pension funds, this is because the benefits are unlikely to accrue until far in the future. If performance fails to be as promised, it may be difficult to determine how much of the shortfall was caused by a change in market conditions and how much was due to incompetence or dishonesty.³⁴ Consequently, a principal

³¹ See *infra* notes 126-27 and accompanying text; see also Robert C. Merton, *Financial Innovation and Economic Performance*, J. APPLIED CORP. FIN., Winter 1992, at 12, 12 (observing that working capital, used to finance firm projects, can be separated from risk capital that bears those projects' risks).

³² See Franklin Allen & Anthony M. Santomero, *The Theory of Financial Intermediation*, 21 J. BANKING & FIN. 1461, 1466-74, 1482 (1996); Whitehead, *supra* note 8, at 657 n.115. By 2008, for example, an estimated sixty-two trillion dollars in notional amount of CDSs were traded. See Gretchen Morgenson, *First Comes the Swap. Then It's the Knives*, N.Y. TIMES, June 1, 2008, at BU. This was up from \$632 billion in 2001. See David Mengle, *Credit Derivatives: An Overview*, ECON. REV., 4th Q. 2007, at 1, 7, http://www.frbatlanta.org/filelegacydocs/erq407_mengle.pdf.

³³ See Robert Charles Clark, *The Soundness of Financial Intermediaries*, 86 YALE L.J. 1, 12-13 (1976). Financial holdings are particularly susceptible to self-dealing compared to less liquid assets, providing one basis for a higher standard of conduct for the directors and officers of financial intermediaries. See, e.g., *Gerdes v. Reynolds*, 28 N.Y.S.2d 622, 653 (Sup. Ct. 1941) (finding former directors of an investment firm liable for breach of fiduciary duty for selling control to a purchaser notwithstanding red flags that indicated the purchaser would liquidate and misappropriate the firm's holdings). Regulators also use licensing to screen directors, managers, and employees. The failure, for example, of an insurer or its agent to satisfy applicable standards of conduct can result in the revocation of its license by the state insurance commissioner. See 7 ERIC MILL HOLMES, APPLEMAN ON INSURANCE §§ 49.7, 49.9 (2d ed. 2009); see also, e.g., N.Y. INS. LAW §§ 1102, 1104, 2601 (McKinney 2006) (vesting power in the Superintendent to suspend or revoke an insurance provider's license for misconduct). Customer suitability requirements serve a similar function for securities firms. See Lewis D. Lowenfels & Alan R. Bromberg, *Suitability in Securities Transactions*, 54 BUS. LAW. 1557, 1557 (1999). The Basel (Basle) Committee on Banking Supervision (a global forum of senior bank regulators) also lists the vetting of directors and senior managers to assess personal integrity as a best practice. See BASLE COMM. ON BANKING SUPERVISION, CORE PRINCIPLES FOR EFFECTIVE BANKING SUPERVISION 17-18 (1997), available at <http://www.bis.org/publ/bcbs30a.pdf>.

³⁴ Products may also be too complex for investors to determine the cause of loss. Notwithstanding substantial public outcry, prosecutors have had difficulty in deciding

aim of financial regulation is to protect investors who may not, on their own, be able to protect themselves – including through standards of conduct and increased disclosure to customers. Mutual funds, for example, are subject to special regulations that restrict potential conflicts of interest,³⁵ partly the reason for the substantial decline in fraud that had permeated the mutual fund industry.³⁶

In addition, financial intermediaries must address the standard agency cost rivalry that arises between shareholders and creditors. A shareholder's liability is capped at the amount she invested, whereas her return, tied to the intermediary's profits, is potentially unlimited. The intermediary's principal liabilities are comprised of the products it sells – for example, deposits by banks and policies by insurance companies. Repayment amounts are fixed at a pre-agreed rate or formula so long as the intermediary does not default. The result is a split in incentives, with shareholders preferring a riskier investment strategy in order to maximize the potential for profits, and creditors interested in simply receiving their pre-agreed return.³⁷

Intermediaries, of course, manage risk in the ordinary course.³⁸ Managing credit risk, for example, lies at the heart of a bank's function as an intermediary between suppliers and consumers of capital.³⁹ Risk management also helps to reduce the earnings volatility many banks face as they have moved away from traditional lending revenues to less reliable, fee-based

whether losses from mortgage and other instruments tied to the 2007 credit crisis were the result of criminal misbehavior or simply bad business judgment. *See* Andrew J. Ceresney et al., *Regulatory Investigations and the Credit Crisis: The Search for Villains*, 46 AM. CRIM. L. REV. 225, 227-28 (2009).

³⁵ Section 17(a) of the Investment Company Act of 1940 prohibits affiliates from buying or selling securities to or from a mutual fund or borrowing money from the fund, 15 U.S.C. § 80a-17(a) (2006), and section 17(d) prohibits mutual funds from acting jointly with affiliates in transacting business with a third party in contravention of SEC rules, *id.* § 80a-17(d). The SEC subsequently issued Rule 17d-1, 17 C.F.R. § 270.17d-1 (2009), which has been expansively construed to limit a mutual fund's transactions with affiliates, absent an SEC exemption, *see* Joseph W. Bartlett & Stephen P. Dowd, *Section 17 of the Investment Company Act – An Example of Regulation by Exemption*, 8 DEL. J. CORP. L. 449, 452-58, 472-75 (1984), without regard to whether or not the mutual fund profits, *see, e.g., In re Imperial Fin. Serv., Inc.*, 42 S.E.C. 717, 727 (1965).

³⁶ *See* Harold Marsh, Jr., *Are Directors Trustees?: Conflicts of Interest and Corporate Morality*, 22 BUS. LAW. 35, 73 (1966).

³⁷ *See* Michael Jensen & William Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Capital Structure*, 3 J. FIN. ECON. 305, 334-39 (1976); Whitehead, *supra* note 8, at 641-42.

³⁸ *See supra* notes 28-32 and accompanying text.

³⁹ *See supra* notes 22-23 and accompanying text; *see also* Bert Scholtens & Dick van Wensveen, *A Critique on the Theory of Financial Intermediation*, 24 J. BANKING & FIN. 1243, 1247-48 (2000) (asserting that managing risk has always been “the bread and butter of financial intermediaries”).

earnings tied to new products and services.⁴⁰ Customers (as creditors), nevertheless, may worry that managers will favor shareholder over customer interests,⁴¹ absent a government guarantee of the customers' money⁴² or limit on management discretion.⁴³ Managers could invest in riskier assets, for example, in an effort to enhance total returns, but resulting in a greater likelihood of default to depositors or policyholders.⁴⁴

How, then, to minimize the risk of loss to creditors? An intermediary's customers could, in theory, amend their contracts to reflect the risks of their investment. Insurance premiums, for example, could be reduced to reflect the likelihood that an insurer will be unable to pay its policyholders. Most customers, however, face an informational barrier – not having sufficient information on which to assess the risk of nonpayment and the reduction in premium. In addition, simply reducing a premium is unlikely to make up for the losses a customer would suffer in the event an insurer defaults.⁴⁵

Customers could also rely on covenants and monitoring to control an intermediary's risks directly.⁴⁶ The sheer number of customers, however, makes it prohibitive to negotiate covenants with each of them or coordinate

⁴⁰ See Robert DeYoung & Karin P. Roland, *Product Mix and Earnings Volatility at Commercial Banks: Evidence from a Degree of Leverage Model*, J. FIN. INTERMEDIATION, Jan. 2001, at 54, 81-82. Intermediaries also benefit from risk management in the same way as other firms. Firms with convex tax schedules, for example, have been found to hedge more, suggesting that hedging may reduce pre-tax earnings variability and enhance post-tax value. See Deana R. Nance, Clifford W. Smith, Jr. & Charles W. Smithson, *On the Determinants of Corporate Hedging*, 48 J. FIN. 267, 280 (1993); Clifford W. Smith & René Stulz, *The Determinants of Firms' Hedging Policies*, 20 J. FIN. & QUANTITATIVE ANALYSIS 391, 392 (1985). In addition, hedging can reduce the risk premium that firms must pay employees whose wealth is substantially invested in their employer (through stock awards, options, and bonuses). See Lisa K. Meulbroek, *The Efficiency of Equity-Linked Compensation: Understanding the Full Cost of Awarding Executive Stock Options*, FIN. MGMT., Summer 2001, at 5, 35; Smith & Stulz, *supra*, at 399-402. An intermediary's managers can also benefit from hedging to the extent it reduces profit variability and, in their superiors' eyes, evidences stronger management performance. See Peter M. DeMarzo & Darrell Duffie, *Corporate Incentives for Hedging and Hedge Accounting*, 8 REV. FIN. STUD. 743, 746 (1995). Finally, an intermediary's expertise in risk management can provide an additional source of revenue for services it provides to institutional customers. See Allen & Santomero, *supra* note 32, at 1465.

⁴¹ See Allen N. Berger et al., *The Role of Capital in Financial Institutions*, 19 J. BANKING & FIN. 393, 398-99 (1995).

⁴² A brief description of government guarantees appears *infra* at notes 52-54 and accompanying text and in Appendix A.

⁴³ Regulatory restrictions on management discretion are described *infra* at notes 58-64 and accompanying text, and in Appendix B.

⁴⁴ See Mark J. Flannery, *Debt Maturity and the Deadweight Cost of Leverage: Optimally Financing Banking Firms*, 84 AM. ECON. REV. 320, 325-26 (1994).

⁴⁵ See Merton, *supra* note 22, at 43.

⁴⁶ See Whitehead, *supra* note 8, at 641-42.

their enforcement. Monitoring, as well, is costly or difficult to undertake. Banks, for example, conceal borrower information from the public, rather than risk its release to competitors. Most depositors, therefore, have only limited data on which to assess the assets in which a bank has invested and, in turn, the credit quality of the bank itself. The problem is compounded in the case of insurance companies. Insurance policies typically have long maturities. Consequently, information obtained today is less likely to be meaningful when a policy becomes due. Even if that information is available, banks, insurers, and other intermediaries can quickly change their risk levels, reflecting the relative liquidity, compared to most businesses, of the assets they hold.⁴⁷

Intermediation risk could also be hedged away by transferring some portion of the risk to others.⁴⁸ A depositor, for example, could short her bank's stock – selling stock she does not own but can borrow from a custodian, with a view to later buying back the stock in order to repay what she borrowed. In the interim, she would profit if the stock price declined (by selling high and buying back low), potentially offsetting any losses on her deposit if the bank made poor portfolio choices.⁴⁹ For the strategy to be effective, however, she would need to be as capable of assessing the bank's portfolio risk as the bank's own managers – a complex process based on information she probably would not have.

The combined effect of customer uncertainty and informational gaps contributes substantially to systemic risk – broadly defined, the risk that the default or failure of one intermediary will impact the viability of others, damaging their ability to collect and allocate capital and harming the wider economy.⁵⁰ With banks, for example, the feature that makes them special – the ability to finance illiquid, longer-term loans with liquid, short-term deposits – may trigger a run if one or more of them is rumored to be unstable. Investors then face a collective action problem. If none of them withdraws, the bank may continue to go about business as usual. Panicked depositors, however, without the ability to gauge a bank's health, may rush to withdraw money from a stable bank rather than risk being last in line if it fails. The subsequent liquidity shock – as the bank is forced to sell assets, quickly and at depressed prices, in order to repay depositors – may cause the rumor of failure to become a self-fulfilling prophecy. Concerns over the health of one bank may, in turn,

⁴⁷ See Clark, *supra* note 33, at 14-18.

⁴⁸ See Franklin Allen & Douglas Gale, *Systemic Risk and Regulation*, in *THE RISKS OF FINANCIAL INSTITUTIONS* 341, 346-56 (Mark Carey & René M. Stulz eds., 2006).

⁴⁹ See Frank H. Easterbrook, *Derivative Securities and Corporate Governance*, 69 U. CHI. L. REV. 733, 736-37 (2002).

⁵⁰ There is a substantial amount of scholarship on the causes and effects of systemic risk. I will not repeat that literature here, but simply highlight some key aspects that financial regulation is intended to address. For a catalogue of approaches to defining “systemic risk,” see Steven L. Schwarcz, *Systemic Risk*, 97 GEO. L.J. 193, 196-204 (2008), and Paredes, *supra* note 10, at 983.

be projected on to others, with the customers' inability to differentiate among banks setting off a cascade of failures across the industry.⁵¹

C. *Regulation of Financial Intermediaries*

Market remedies – like covenants, monitoring, and hedging – are of only limited effect in minimizing the likelihood of customer runs.⁵² In response, government-directed insurance helps address customer concerns over cash and assets held by intermediaries. Up to specified levels, customers can be assured of being made whole irrespective of the intermediary's financial health or the reason for a default. For banks, for example, Federal Deposit Insurance Corporation ("FDIC") insurance protects depositors against losses up to \$250,000.⁵³ Customers of insurance companies, securities firms, thrifts, and pension funds also benefit from government-directed insurance programs.⁵⁴ Insurance, however, creates a risk of moral hazard. An intermediary may

⁵¹ See Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POL. ECON. 401, 401-04 (1983); Herring & Santomero, *supra* note 23, at 8-9, 14-17, 18-19. Customers could single out individual firms by relying on less costly means, such as reputation, to bridge the information gap. A good reputation, however, takes time to establish and, in any event, may not be reliable if the benefits of default are sufficiently high. See William W. Bratton, Jr., *Corporate Debt Relationships: Legal Theory in a Time of Restructuring*, 1989 DUKE L.J. 92, 139-42 (remarking on "the limited force of reputation").

⁵² There is a substantial amount of scholarship on financial regulation that I do not repeat here. A comprehensive overview of approaches to U.S. financial regulation appears in Jackson, *supra* note 3, at 339-63.

⁵³ Banks can also access Federal Reserve funds to cover shortfalls in liquidity temporarily in the event of substantial withdrawals. See Mark E. Van Der Weide & Satish M. Kini, *Subordinated Debt: A Capital Markets Approach to Bank Regulation*, 41 B.C. L. REV. 195, 204-05 (2000). More recently, in light of the credit crisis, the nation's largest securities firms (including Goldman Sachs and Morgan Stanley) elected to become bank holding companies subject to federal bank regulation. Among other benefits, those firms can now access funding that has historically been made available by the Federal Reserve to banks. See Patrice Hill, *Treasury to Try to Keep Owners in Their Homes; Goldman, Morgan Cleared to Acquire Banks*, WASH. TIMES, Sept. 22, 2008, at A1.

⁵⁴ Brief descriptions of the FDIC and other government-directed insurance providers appear in Appendix A. The importance of government insurance was powerfully illustrated following a run on MMFs in fall 2008. See *infra* notes 101-05 and accompanying text. The Treasury Department responded to widespread customer redemptions by creating a temporary program to guarantee MMF account balances – economically, not unlike bank insurance – which quickly broke the run. See Joe Adler, *Bailout Bill's FDIC Hike Temporary – For Now; Many View Increase in Coverage as Likely to Be Made Permanent*, AM. BANKER, Oct. 2, 2008, at 1; Steven Sloan, *Money Market Funds Get Third Boost from Fed*, AM. BANKER, Oct. 22, 2008, at 4. The guarantee, which protected balances as of September 19, 2008, expired on September 19, 2009. See Press Release, U.S. Dep't of Treasury, Treasury Announces Expiration of Guarantee Program for Money Market Funds (Sept. 29, 2009), <http://www.ustreas.gov/press/releases/tg293.htm>.

assume more risk if insurance or other protection minimizes any resulting loss.⁵⁵

Perhaps more significantly, intermediaries are likely to assume greater risk than is socially optimal. For example, the costs of a bank run, resulting from the bank's decision to assume a risky loan portfolio, can be substantial. In addition to harming the bank, its shareholders, and its customers, other banks may also experience a decline in business, or even a run, as concerns over financial instability spread across the market. Borrowers, as a result, may not be able to obtain funding at the same cost, restricting their ability to invest in new, value-enhancing projects and causing a slowdown in the general economy.⁵⁶ The costs of incurring risk, consequently, extend well beyond those who make the decision to do so – a negative externality that is unlikely to be fully considered (or priced) by a bank's managers, shareholders, or customers when deciding what risk levels are optimal.⁵⁷

Financial regulation, therefore, restricts the amounts and types of risk-bearing that an intermediary can assume,⁵⁸ directly through requirements that circumscribe the riskiness of an intermediary's portfolio assets⁵⁹ and its capital structure,⁶⁰ and indirectly through rules regarding the intermediary's net worth, capital, or surplus that effectively cap its risk-taking activities.⁶¹ Those

⁵⁵ See Diamond & Dybvig, *supra* note 51, at 417; Richard S. Grossman, *Deposit Insurance, Regulation, and Moral Hazard in the Thrift Industry: Evidence from the 1930's*, 82 AM. ECON. REV. 800, 802-03 (1992); Patricia A. McCoy, *The Moral Hazard Implications of Deposit Insurance: Theory and Evidence*, in 5 CURRENT DEVELOPMENTS IN MONETARY AND FINANCIAL LAW 417, 423-25 (Int'l Monetary Fund Legal Dep't ed., 2008); Franklin Allen & Douglas Gale, *Capital Adequacy Regulation: In Search of a Rationale* 4-6 (Wharton Fin. Inst. Ctr., Working Paper No. 03-07, Sept. 2002), available at <http://fic.wharton.penn.edu/ic/papers/03/0307.pdf>.

⁵⁶ For a description of the economic impact of a systemic shock, see Ben S. Bernanke, *Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression*, 73 AM. ECON. REV. 257, 264-65 (1983); Charles W. Calomiris, *Is Deposit Insurance Necessary? A Historical Perspective*, 50 J. ECON. HIST. 283, 284 (1990).

⁵⁷ See *infra* notes 151-54 and accompanying text (describing one particular example, the AIG failure).

⁵⁸ See Clark, *supra* note 33, at 15-18, 23-24; Jackson, *supra* note 3, at 352-59; Jonathan R. Macey & Geoffrey P. Miller, *Bank Failures, Risk Monitoring, and the Market for Bank Control*, 88 COLUM. L. REV. 1153, 1155, 1165 (1988). Financial regulation can also further social objectives by channeling funds to preferred projects or limiting concentrations of economic power. See Herring & Santomero, *supra* note 23, at 10-11. Those motivations, while important to an assessment of financial regulation, are beyond the scope of this Article.

⁵⁹ See *infra* Appendix B for examples of regulations governing a financial intermediary's investment portfolio.

⁶⁰ See *infra* Appendix B for examples of limitations on the types, amounts, and valuation of equity and debt instruments that can be issued by financial intermediaries.

⁶¹ See Charles K. Whitehead, *What's Your Sign? – International Norms, Signals, and Compliance*, 27 MICH. J. INT'L L. 695, 720-25 (2006) (citing the Basel Accord of 1988 as an

regulations also lower systemic risk by reducing the likelihood of disruption in the intermediation process itself.⁶² Insurance companies, for example, are required to meet minimum capital standards in order to protect policyholders against insolvency, but also to safeguard against the systemic consequences of default by a large insurer.⁶³ Together, these regulations moderate the amount of risk that an intermediary can incur by restricting both the asset and liability sides of its balance sheet.⁶⁴

In the next Part, I illustrate how the financial markets have changed over the last thirty years, in particular with respect to the introduction of new instruments, new participants, and new markets to manage and transfer capital. Those developments have enhanced the efficiency of our financial markets, but have also created new risks. I then turn to the impact of those changes on the role of financial regulation.

II. CHANGING MARKETS AND REGULATION

A. *Changing Financial Markets*

Our present system of financial regulation was born of the Great Depression – during the 1930s, for banks, securities firms, and thrifts, and during the 1940s, for investment advisors and mutual funds. Federal regulation divided intermediaries into separate categories, based on the businesses they conducted at the time, largely in order to address perceived abuses leading up to the economic collapse of the late 1920s.⁶⁵ The Glass-Steagall Act,⁶⁶ for example,

example of indirect regulation of financial intermediaries' risk-taking activities). Examples of regulations covering net worth, capital (including risk-based capital), and surplus are included *infra* in Appendix B. A discussion of differences in regulatory capital requirements among financial intermediaries is also set out *infra* at notes 107-09 and accompanying text.

⁶² See Herring & Santomero, *supra* note 23, at 13-14, 17-18 (discussing justifications for capital requirements and other protections to prevent systemic failure in the banking industry).

⁶³ See Robert W. Klein, *The Insurance Industry and Its Regulation: An Overview*, in THE FUTURE OF INSURANCE REGULATION IN THE UNITED STATES 13, 38-40 (Martin F. Grace & Robert W. Klein eds., 2008); see also Brady Dennis, *AIG Warned of 'Catastrophic' Failure; Company Told U.S. Its Collapse Would Cause Worldwide 'Chain Reaction,'* WASH. POST, Mar. 10, 2009, at D1.

⁶⁴ See Clark, *supra* note 33, at 47.

⁶⁵ Allen & Gale, *supra* note 55, at 3; see also Gary Gorton, *Bank Regulation When "Banks" and "Banking" Are Not the Same*, 10 OXFORD REV. ECON. POL'Y 106, 107 (1994) (describing historical definition of banks); Roberta S. Karmel, *Regulatory Implications of Individual Management of Pension Fund: The Challenge to Financial Regulators Posed by Social Security Privatization*, 64 BROOK. L. REV. 1043, 1056-58 (1998) (describing definitional distinctions that control regulatory oversight); Heidi Mandanis Schooner & Michael Taylor, *United Kingdom and United States Responses to the Regulatory Challenges*

created a clear regulatory divide between commercial and investment banking.⁶⁷ Twenty years later, the Bank Holding Company Act extended that separation by walling off banks from the underwriting of insurance products.⁶⁸

Those differences began to blur in the 1970s, in part due to increasing competition,⁶⁹ new products and other innovation,⁷⁰ and changes in financial regulation.⁷¹ For banks, as an example, the introduction of new regulatory capital requirements made it more expensive to continue the lending business as they had before, causing them to expand into new business lines such as the development of structured finance and other, new instruments.⁷² New technologies and new competitors, like MMFs and finance companies, also made the banks' traditional business model less profitable.⁷³

of Modern Financial Markets, 38 TEX. INT'L L.J. 317, 328-29 (2003) (observing that U.S. regulation is largely tied to business model rather than function).

⁶⁶ Banking Act of 1933 (Glass-Steagall Act), Pub. L. No. 73-65, 48 Stat. 162 (codified as amended in scattered sections of 12 U.S.C.).

⁶⁷ See James R. Smoot, *Bank Operating Subsidiaries: Free at Last or More of Same?*, 46 DEPAUL L. REV. 651, 655-56 (1997).

⁶⁸ Bank Holding Company Act of 1956, Pub. L. No. 84-511, 70 Stat. 133 (codified as amended at 12 U.S.C. §§ 1841-1850 (2006)).

⁶⁹ See LOWELL L. BRYAN, *BREAKING UP THE BANK: RETHINKING AN INDUSTRY UNDER SIEGE* 22-28 (1988); KERRY COOPER & DONALD R. FRASER, *BANKING DEREGULATION AND THE NEW COMPETITION IN FINANCIAL SERVICES* 2-17 (1984); Franklin Allen & Anthony M. Santomero, *What Do Financial Intermediaries Do?*, 25 J. BANKING & FIN. 271, 274-82 (2001); Michael C. Keeley, *Deposit Insurance, Risk, and Market Power in Banking*, 80 AM. ECON. REV. 1183, 1184-86 (1990); Alan E. Sorcher & Satish M. Kini, *Does the Term "Bank Broker-Dealer" Still Have Meaning?*, 6 N.C. BANKING INST. 227, 232-34 (2002).

⁷⁰ See Allen N. Berger, Anil K. Kashyap & Joseph M. Scalise, *The Transformation of the U.S. Banking Industry: What a Long, Strange Trip It's Been*, 1995 BROOKINGS PAPERS ON ECON. ACTIVITY 55, 68-70.

⁷¹ See COOPER & FRASER, *supra* note 69, at 195-217; ROBERT E. LITAN, *WHAT SHOULD BANKS DO?* 33-59 (1987); Berger, Kashyap & Scalise, *supra* note 70, at 127.

⁷² See Smoot, *supra* note 67, at 654-60; Whitehead, *supra* note 61, at 721-25.

⁷³ Finance companies lend to business and retail borrowers, relying on MMFs for funding through the sale to them of short-term commercial paper. See Jane W. D'Arista & Tom Schlesinger, *The Parallel Banking System* 3-4, 7-14 (Econ. Pol'y Inst., Briefing Paper No. 37, 1993), available at http://epi.3cdn.net/60831aa1353ed4610d_nbm6i6tar.pdf. MMFs, in turn, offer investors the convenience of a bank account, including checking services, toll-free telephone numbers, record-keeping, and wire transfers, but with nominally higher returns than bank deposits. See FRANKLIN R. EDWARDS, *THE NEW FINANCE: REGULATION & FINANCIAL STABILITY* 73-74 (1996). Unlike bank deposits, MMF accounts are normally not protected by federal government insurance, *see id.*, although the Treasury Department created a temporary program to guarantee MMF account balances following the run on MMFs in fall 2008, *see supra* note 54. Investors instead rely on regulations that limit portfolio assets to high quality securities and, in the past, the implicit assurance that an MMF's managers would prevent the fund's assets from falling below par, one dollar per share. See *infra* notes 101-02 and accompanying text. Together, MMFs and finance

In addition, the end of Bretton Woods and the start of the OPEC oil embargo in 1973 subjected peacetime businesses to new exchange rate and energy cost volatility. Business managers began to search for cost-effective means to manage their risk.⁷⁴ Financial market participants saw an opportunity to profit from the creation and trading of new financial instruments that responded to the new demands.⁷⁵ In many cases, they adopted technologies similar to those used by (but no longer limited to) insurers and banks – namely, the pooling and transferring of financial risk from corporate counterparties to those who, through diversification or otherwise, could manage that risk at lower cost.⁷⁶ The result was the introduction of new products and services, often replicating those of traditional intermediaries, but offered by new participants or through the capital markets.

Take, for example, the chief operating officer (“COO”) of a manufacturer (“Seller”) who intends to increase her sales to an existing, large customer (“Buyer”). More sales will result in a substantial boost in profits, but, at the same time, will increase Seller’s exposure to the risk that Buyer will fail to make its payments when due. In the 1970s, before the recent changes in the financial markets, the COO could have considered the following in order to offset that risk:

- As a preliminary matter, she might have simply decided to self-insure against the increased risk of default (a bad debt reserve) – setting aside capital against that possibility, which could be less expensive than market insurance, but might not protect Seller against unexpected loss.
- Alternatively, the COO could ask Buyer to arrange with its bank to post a letter of credit in Seller’s favor, in effect substituting the bank’s creditworthiness for Buyer’s as an independent assurance that payment would be made.
- The COO could also sell its accounts receivable to a factor, which typically would purchase them at a discount, taking on the risk of

companies began to mirror the traditional balance struck by banks, resulting in a substantial shift in liquid household assets from the banking sector to the capital markets. See EDWARDS, *supra*, at 73-74; D’Arista & Schlesinger, *supra*, at 3-4, 7-14.

⁷⁴ See Gilson & Whitehead, *supra* note 5, at 244-45.

⁷⁵ See FRANKLIN ALLEN & DOUGLAS GALE, FINANCIAL INNOVATION AND RISK SHARING 38 (1994); Allen & Santomero, *supra* note 32, at 1479-80; Gilson & Whitehead, *supra* note 5, at 245-47; James C. Van Horne, *Of Financial Innovations and Excesses*, 40 J. FIN. 621, 621-22 (1985).

⁷⁶ See Allen & Santomero, *supra* note 32, at 1479-80; Van Horne, *supra* note 75, at 621-22.

Buyer's default, but benefiting from any gain if Buyer paid more than the discounted price.⁷⁷

- Finally, the COO could buy a commercial credit insurance policy that would be payable upon Buyer's default. The insurer, as part of the underwriting process, would actively monitor Buyer's credit quality and adjust the amount of coverage depending on changes in Buyer's financial position.⁷⁸

Today, faced with the same problem, the COO would have available to her an even greater menu of new products and strategies from which to select⁷⁹:

- In addition to the traditional options, she could decide, in the first instance, to securitize the Buyer receivables – transferring them to a trust or other entity and then selling interests in the pool to the public. As with factoring, interest holders would take on both the risks and benefits of Buyer's credit quality.⁸⁰
- Alternatively, the COO could decide to short sell Buyer's stock,⁸¹ with any profit potentially offsetting a portion of the losses Seller incurs if Buyer's credit declines. Changes in stock price, however, might not completely correlate with Seller's losses, resulting in a mismatch (referred to as "basis risk") between the hedge and Seller's exposure.
- The COO could also enter into a CDS with a hedge fund or other counterparty, with the value of the CDS tied to an outstanding Buyer loan or bond. Seller could economically short Buyer's credit risk by structuring the swap so that its value increased in the event Buyer defaulted on a referenced obligation. Payments received under the CDS could offset any losses that Seller incurred, subject again to basis

⁷⁷ See James J. White, *Death and Resurrection of Secured Credit*, 12 AM. BANKR. INST. L. REV. 139, 153 (2004).

⁷⁸ See *AON Trade Credit, Inc. v. Quintec, S.A.*, 981 So. 2d 475, 478 (Fla. Dist. Ct. App. 2008) (describing of a commercial credit insurance policy); Roberto Ceniceros, *Credit Crunch Fuels Rush for Coverage; Trade Credit Insurers See Rise in Demand as Bankruptcies Grow*, BUS. INS., Apr. 13, 2009, at 1, 1, 20.

⁷⁹ For a detailed discussion of new capital markets instruments that permit the transfer of traditional insurance risk to investors, see J. David Cummins & Mary A. Weiss, *Convergence of Insurance and Financial Markets: Hybrid and Securitized Risk-Transfer Solutions*, 76 J. RISK & INS. 493, 515-27 (2009).

⁸⁰ See White, *supra* note 77, at 153-55.

⁸¹ The process of short selling is summarized *supra* at notes 48-49 and accompanying text.

risk in the event of a mismatch between the CDS and the amounts owed by Buyer to Seller.⁸²

- Finally, Seller could issue credit-linked notes (“CLNs”) in the capital markets whose value at maturity is tied to Buyer’s credit. If that credit declines, then an amount less than par would be paid to the CLN investors. In return for that risk, investors would receive a coupon that was somewhat higher than the market standard. Economically, the CLNs would be equivalent to the sale by Seller of ordinary fixed-rate notes against its purchase from the note holders of a CDS whose value is referenced to Buyer.⁸³

These examples illustrate two significant trends in the financial markets. First, they highlight a move from regulated (e.g., banks and insurance companies) to less-regulated intermediaries (e.g., securities firms and hedge funds), as well as from traditional products and services (e.g., letters of credit and insurance), to lower-cost alternatives, in many cases through the capital markets (e.g., securitization and CDSs). Consequently, traditional intermediaries have experienced a decline in market share – with banks, most notably, losing ground to less-regulated businesses, and the securities markets becoming a lower-cost source of capital and risk-bearing.⁸⁴ Second, they illustrate that market participants – irrespective of category – can achieve similar results today using a variety of products and services, many of which did not exist thirty years ago.⁸⁵ Thus, Seller could manage his exposure to Buyer through one or more of a bank, insurance company, securities firm, or hedge fund, with economically similar outcomes in each case.

How do these changes affect financial regulation? Today, each intermediary and product – framed by traditional categories – is subject to different regulations and regulators, depending on the category in which it falls. The result has been a patchwork of laws, even as similar problems have sprung up across the financial markets. Many of the new risks also fail to fit neatly into a traditional category, creating a gap between financial regulation and today’s markets. I discuss those concerns below.

⁸² See *supra* note 9 and accompanying text.

⁸³ See Jonathan Batten & Warren Hogan, *A Perspective on Credit Derivatives*, 11 INT’L REV. FIN. ANALYSIS 251, 255-57 (2002).

⁸⁴ See Allen & Santomero, *supra* note 32, at 1466-74; Herring & Santomero, *supra* note 23, at 27-41.

⁸⁵ See Gorton, *supra* note 65, at 116-18; Jonathan R. Macey, *Derivative Instruments: Lessons for the Regulatory State*, 21 J. CORP. L. 69, 78 (1995); Merton, *supra* note 22, at 33-41.

B. *Financial Markets – Evolution and Regulation*

Beginning in the 1950s, financial regulation began to evolve in response to changes in the financial markets, in particular as concerns arose that traditional intermediaries had become less competitive.⁸⁶ Regulators, for example, began to loosen their interpretations of the Glass-Steagall Act and the Banking Holding Company Act, largely in response to the banks' growing interest in offering new products and services.⁸⁷ Additional regulatory changes reflected new market participants and products, in some cases spurred by pressure from banks wishing to stay competitive,⁸⁸ and in others, prompted by the desire to accommodate new financial practices.⁸⁹

Traditional categories, nevertheless, continue to frame how intermediaries are regulated, even though the convergence in products and services has resulted in similar problems appearing across the financial markets. The resulting problems are illustrated below. The first example, regarding bank runs by investors in non-banks, illustrates how issues addressed by existing regulation have begun to appear in new settings that fall outside the traditional categories. The second example, on the impact of capital requirements on banking competitiveness, outlines the emergence of new problems affecting traditional intermediaries, in many cases prompted by existing regulation. The third example describes the outsourcing of risk management by traditional intermediaries, evidencing the rise of new, unregulated risks among new market participants. I end with a discussion of AIG Financial Products ("AIGFP"), which provides an extreme example of the divide that has grown between the financial markets and financial regulation.

1. Bank and Non-Bank Runs

Within the standard framing, banks rely on short-term credit (deposits) to invest in a portfolio of longer-term assets (loans), capitalizing on special relationships to invest in private borrowers. Bank runs occur when there has been a loss of customer confidence; depositors, facing a collective action problem, rush to withdraw money because they believe, whether well-founded or not, that the bank has become unstable and wish to avoid being last-in-line to collect their money.⁹⁰ Banks, in turn, face a liquidity problem, since

⁸⁶ See Allen & Santomero, *supra* note 32, at 1464-74; Herring & Santomero, *supra* note 23, at 29-35.

⁸⁷ See Thomas G. Fischer et al., *The Securities Activities of Commercial Banks: A Legal and Economic Analysis*, 51 TENN. L. REV. 467, 474-502 (1984); Sorcher & Kini, *supra* note 69, at 233-34.

⁸⁸ See Coffee & Sale, *supra* note 10, at 737-38, 749.

⁸⁹ See Donald C. Langevoort, *Statutory Obsolescence and the Judicial Process: The Revisionist Role of the Courts in Federal Banking Regulation*, 85 MICH. L. REV. 672, 728-33 (1987).

⁹⁰ See Douglas W. Diamond & Philip H. Dybvig, *Banking Theory, Deposit Insurance, and Bank Regulation*, 59 J. BUS. 55, 63-64 (1986). Although uncommon today, the United

deposits are typically invested in assets that cannot be sold quickly enough to repay large numbers of depositors.⁹¹

Bear Stearns's meltdown in spring 2008 was also a bank run – but one involving a securities firm, not a bank, borrowing through the capital markets from investors who were sophisticated institutions, rather than retail depositors.⁹² Like a bank, Bear Stearns relied on short-term credit to fund longer-term investments, including subprime assets, a common practice across Wall Street.⁹³ Creditors relied on collateral (including subprime assets) to protect against a decline in Bear Stearns's credit quality.⁹⁴ Beginning in 2007,

States has had bank runs in the past, the basis for the scene in Frank Capra's 1946 film, *It's a Wonderful Life* (Liberty Films 1946), when Bedford Falls township flocked to the struggling Bailey Brothers Building and Loan to get its money back.

⁹¹ Although less common, traditional insurance and securities firms also face a risk of customer runs – by policyholders, in the case of insurance companies and by accountholders, in the case of securities firms. See Lissa L. Broome & Jerry W. Markham, *Banking and Insurance: Before and After the Gramm-Leach-Bliley Act*, 25 J. CORP. L. 723, 731-32 (2000) (describing insurance company runs); Thomas W. Joo, *Who Watches the Watchers? The Securities Investor Protection Act, Investor Confidence, and the Subsidization of Failure*, 72 S. CAL. L. REV. 1071, 1110-12 (1999) (noting fear of securities brokerage runs in light of experience during Great Depression with bank runs).

⁹² See Landon Thomas, Jr., *Run on Big Wall St. Bank Spurs U.S.-Backed Rescue*, N.Y. TIMES, Mar. 15, 2008, at A1; Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Speech at the Fed. Reserve Bank of Kans. City's Ann. Econ. Symp.: Reducing Systemic Risk (Aug. 22, 2008), available at <http://www.federalreserve.gov/newsevents/speech/bernanke20080822a.htm>; see also Gorton, *supra* note 4, at 31-38. Bear Stearns was not the first example of a bank run on a securities firm. Drexel Burnham, a prominent investment bank, declared bankruptcy in 1990 after the collapse of the secondary market for high-yield bonds. See Franklin Allen & Richard Herring, *Banking Regulation Versus Securities Market Regulation* 28-34 (Wharton Fin. Inst. Ctr., Working Paper No. 01-29, Jul. 2001), available at <http://knowledge.wharton.upenn.edu/papers/1174.pdf>. Securities that traded freely became illiquid after Drexel Burnham pleaded guilty to six felony charges, Michael Milken – the senior Drexel Burnham executive who had launched the high-yield bond market – was indicted for racketeering and conspiracy, and changes in regulations required thrifts to sell their holdings, resulting in a collapse in confidence in the value of high-yield instruments. *Id.* at 30-31. The effect, as in the case of Bear Stearns, was an increased cost of borrowing that forced Drexel Burnham into bankruptcy. *Id.* at 31-33.

⁹³ See Letter from Christopher Cox, Chairman, Sec. Exch. Comm'n, to Dr. Nout Wellink, Chairman, Basel Comm. on Banking Supervision 3 (Mar. 20, 2008) [hereinafter Cox Letter], available at http://www.sec.gov/news/press/2008/2008-48_letter.pdf; see also Markus K. Brunnermeier, *Deciphering the Liquidity and Credit Crunch 2007-2008*, 23 J. ECON. PERSPECTIVES 77, 80 (2009). Creditors rely on short maturities to police borrowers, in particular when monitoring is difficult and changes in risk-bearing are likely. See Berger et al., *supra* note 41, at 398-99; Strahan, *supra* note 26, at 20-21. Any increase in risk can simply be priced into a subsequent loan. See Flannery, *supra* note 44, at 321-22.

⁹⁴ See Gorton, *supra* note 4, at 10-13. The collateralized loans to Bear Stearns were made through sale and repurchase, also known as “repo,” transactions. In a typical trade, a securities dealer (the “repo seller”) sells securities to an investor (the “repo buyer”) for cash.

the value of those assets began to drop as investors came to believe that underwriting standards and loan quality had eroded. Only a few days earlier, research analysts had commented that Bear Stearns held enough liquid assets and sufficient borrowing capacity to stay in business for almost two years.⁹⁵ That liquidity suddenly dried up – in a classic bank run – as creditors became troubled over Bear Stearns’s exposure to credit derivatives and subprime loans.⁹⁶ As asset prices declined further, lenders were unwilling to roll-over or extend credit, or required Bear Stearns to post additional collateral – tantamount, in either case, to depositors withdrawing money from a bank. In order to repay its lenders, Bear Stearns was forced to sell less liquid assets at fire sale prices. The drop in value affected the price of similar assets held by others, transmitting Bear Stearns’s balance sheet problems across the market.⁹⁷

American International Group (“AIG”), a global financial services firm, faced a similar problem, analogous to a run on an insurance company. In an insurance run, customers redeem their policies over concern the insurer will not be able to meet its payment obligations if they become due. AIG’s crisis, which I describe in more detail below,⁹⁸ was sparked by trading in CDSs by a largely unregulated subsidiary, AIGFP. Briefly, AIGFP used CDSs to insure its customers against a decline in the value of “super senior” (high investment grade) bonds backed by subprime loans. AIGFP (and AIG, as guarantor) was required to post collateral as those values declined – with the substantial cost of doing so being the economic equivalent, as it was to Bear Stearns, of a customer run.⁹⁹ When subprime prices declined further, AIG was obligated to

Jeanne L. Schroeder, *A Repo Opera: How Criimi Mae Got Repos Backwards*, 76 AM. BANKR. L.J. 565, 570-72 (2002). The repo buyer’s object is not to invest in the securities; rather, he expects to receive a return from the repo seller for the use of his cash. *Id.* Accordingly, as part of the trade, the repo seller also agrees with the repo buyer to repurchase the same or equivalent securities at some future time, frequently overnight, at a repurchase price above the price at which the repo buyer first bought the securities. *Id.* Economically, the transaction is equivalent to a secured loan – with the repo buyer lending cash to the repo seller against the underlying securities as collateral. *See id.* Repo transactions take place through purchases and sales of securities in the capital markets. *See id.* For ease of reference, however, I sometimes refer to the Bear Stearns transactions by their economic equivalents, “loans” and “collateral.”

⁹⁵ See Cox Letter, *supra* note 93, at 3.

⁹⁶ See Bernanke, *supra* note 92.

⁹⁷ See Brunnermeier, *supra* note 93, at 82-84, 88; Gorton, *supra* note 4, at 4-5, 31-35; *see also* Tobias Adrian & Hyun Song Shin, *Liquidity and Financial Contagion*, FIN. STABILITY REV., Feb. 2008, at 1, 2-3, available at http://www.banque-france.fr/gb/publications/telechar/rsf/2008/etud1_0208.pdf.

⁹⁸ See *infra* Part II.B.4.

⁹⁹ See Gary Gorton, *The Panic of 2007*, at 65-66 (Yale Sch. of Mgmt. Int’l Cent. for Fin., Working Paper No. 08-24, 2008), available at <http://ssrn.com/abstract=1255362>.

post additional collateral, eventually requiring the federal government to bail out the firm when it became unable to meet further calls.¹⁰⁰

In fall 2008, when the share price of the Reserve Primary Fund, the nation's oldest MMF, fell below the presumptive minimum of one dollar per share – the first MMF in fourteen years to “break the buck”¹⁰¹ – the news sparked a market-wide run by investors, who withdrew a total of approximately \$480 billion in cash.¹⁰² MMFs are required under the federal securities laws to invest in short-term, liquid, high-quality debt instruments, such as Treasury bills and commercial paper – minimizing credit risk, while paying modestly better returns than bank accounts.¹⁰³ Breaking the buck was particularly worrisome, since investors understood that fund advisors would make up any shortfall in the fund, even though there was no express guarantee of share price.¹⁰⁴ Thus, the drop below one dollar per share raised the same concerns that spark a bank run – a loss of confidence over financial stability, fueled by uncertainty over the value of the MMFs' assets, causing widespread redemptions across the industry. MMFs were forced to liquidate their portfolios in order to pay investors, contributing to a run-up in the cost to borrowers of issuing commercial paper (which composed a substantial portion of MMF investments) and precipitating a general freeze on new issuance.¹⁰⁵

Each example essentially turns on the same problem – namely, the danger of a run due to uncertainty over financial stability. Yet, even though they raise the same concerns that current regulation is intended to address, new business practices continue to fall outside the scope of existing protections. Bear

¹⁰⁰ See Sjostrom, *supra* note 9, at 952-61.

¹⁰¹ See Christopher Condon, *Bernanke Proposes Less Restrictive Money-Fund Rules*, BLOOMBERG, Mar. 11, 2009, http://www.bloomberg.com/apps/news?pid=20601103&sid=aPlgaF0MfY_8&refer=news. A detailed description of what occurred at the Reserve Primary Fund, and the market and regulatory actions afterward, appears in INV. CO. INST., REPORT OF THE MONEY MARKET WORKING GROUP 31-39 (2009), available at http://www.ici.org/pdf/ppr_09_mmwg.pdf.

¹⁰² Neil Irwin, *Fed Prepared to Prop Up Money-Market Funds*, WASH. POST, Oct. 22, 2008, at D1; see also Daniel Gross, *The Anatomy of Fear*, NEWSWEEK, Oct. 20, 2008, at 31, 31-33; Anny Shin, *Funds Turn to Treasury Guaranty; Money-Market Managers Seek to Boost Confidence*, WASH. POST, Oct. 12, 2008, at F1.

¹⁰³ See 17 C.F.R. § 270.2a-7 (2009); INV. CO. INST., *supra* note 101, at 53-67. New rules regulating MMF portfolio composition were recently adopted by the SEC. See *infra* note 189.

¹⁰⁴ See Leslie Wayne, *Investors Lose Money in “Safe” Fund*, N.Y. TIMES, Sept. 28, 1994, at D1 (listing fifteen MMFs whose advisors covered for shortfalls, rather than allowing fund share prices to fall below one dollar).

¹⁰⁵ See Edmund L. Andrews & Michael M. Grynbaum, *Fed Weighs Bid to Spur Economy as Markets Plummet Worldwide*, N.Y. TIMES, Oct. 7, 2008, at A1; Joe Nocera, *36 Hours of Alarm and Action as Crisis Spiraled*, N.Y. TIMES, Oct. 2, 2008, at A1 (describing problems that could arise if MMFs abandon commercial paper); see also EDWARDS, *supra* note 73, at 76-91.

Stearns's reliance on short-term creditors, for example, created the possibility of a bank-like run; and the risks assumed by AIGFP's customers were similar to those normally borne by insurance policyholders. Bank regulations, however, do not extend to securities firms (like Bear Stearns) and their creditors; securities regulations that protect accountholders do not extend to other creditors (like Bear Stearns's lenders); and insurance regulations do not protect the swap counterparties of a non-insurance firm (like AIGFP and its customers). Absent a regulatory safety net, Bear Stearns's creditors and AIGFP's counterparties chose to rely on collateral to protect against the possibility of default. Collateral, however, was an imperfect solution. As collateral requirements rose, so did the costs – tantamount to a run on the firm. For Bear Stearns, the collateral costs were particularly problematic because they created a downward spiral: Bear Stearns was forced to sell subprime assets, which caused a drop in the assets' price (and collateral value) and required Bear Stearns to post additional collateral or sell more assets, beginning another iteration of the cycle.¹⁰⁶

2. Regulatory Capital and Shadow Banking

Regulatory capital requirements assist in managing risk-taking by intermediaries that invest or take custody of customer assets. For banks, regulatory capital cushions against the risk of loss from a portfolio of loans, protecting against the impact of a bank failure on depositors, the possibility of a bank run, and in light of banks' systemic importance, the resulting harm to the larger economy.¹⁰⁷ For insurance companies, capital requirements principally protect policyholders.¹⁰⁸ Insurers, in the ordinary course, expect to pay claims as they become due, and so they normally set aside funds against future obligations. Capital requirements help cushion against the possibility that actual claims will exceed the insurer's projections. Lastly, for securities firms, a primary concern has been the protection of account holders who have securities or assets on deposit. A securities firm's principal assets have traditionally been marketable securities, which can be sold quickly in order to meet creditors' demands. The net capital rules, consequently, are based on a

¹⁰⁶ See Gorton, *supra* note 4, at 33-35 (describing the escalating dynamics of the panic as it developed); see also Brunnermeier, *supra* note 93, at 92-94 (explaining spiral effects in more detail).

¹⁰⁷ See *infra* Appendix B for examples of bank capital requirements. See also Allen & Herring, *supra* note 92, at 4-7; THE JOINT FORUM, RISK MANAGEMENT PRACTICES AND REGULATORY CAPITAL: CROSS-SECTORAL COMPARISON 10-11, 31, 34-38 (2001), available at <http://www.bis.org/publ/joint04.pdf>; Stephen Morris & Hyun Song Shin, *Financial Regulation in a System Context*, BROOKINGS PAPERS ON ECON. ACTIVITY, Fall 2008, at 229, 230.

¹⁰⁸ See *infra* Appendix B for examples of insurance capital requirements. See also THE JOINT FORUM, *supra* note 107, at 12-13, 29-30, 41-46; Klein, *supra* note 63, at 23-24.

firm's adjusted liquidation value, requiring it to maintain an amount of liquid assets sufficient to satisfy its obligations to customers and others.¹⁰⁹

Regulators have long known that intermediaries transfer risk based on their relative cost of capital.¹¹⁰ Properly structured, capital requirements provided an incentive for intermediaries to transfer risk to lower-cost participants in order to optimize risk allocation.¹¹¹ Banks, for example, are subject to high capital costs and so, in order to minimize them, have transferred risky assets to non-bank intermediaries (in many cases, insurance companies) that are less susceptible to financial shocks and, therefore, subject to lower costs.¹¹²

Existing capital requirements, however, are an imperfect match to today's business practices. Problems arose as competition grew across industries. Over the last twenty years, for example, the asset-backed securities market has been fueled by the drive toward lower-cost financing.¹¹³ Banks were reported to move subprime assets off their balance sheets due to the greater capital costs to which they were subject compared to securities firms.¹¹⁴ Assets that were traditionally held by banks moved to a "shadow" banking system composed of structured investment vehicles and other financing conduits set up to minimize regulatory capital charges.¹¹⁵ Those vehicles raised funds primarily by selling short-term commercial paper and medium-term notes to MMFs and other investors. The proceeds of those sales were then used to purchase longer-term

¹⁰⁹ See *infra* Appendix B for a description of the net capital rules applicable to securities firms. See also THE JOINT FORUM, *supra* note 107, at 11-12, 30-31, 38-41; Allen & Herring, *supra* note 92, at 22-24.

¹¹⁰ See THE JOINT FORUM, *supra* note 107, at 46-57; Frank Partnoy, *Financial Derivatives and the Costs of Regulatory Arbitrage*, 22 J. CORP. L. 211, 227-35 (1997).

¹¹¹ See Günter Franke & Jan Pieter Krahnert, *Default Risk Sharing between Banks and Markets: The Contribution of Collateralized Debt Obligations*, in THE RISKS OF FINANCIAL INSTITUTIONS, *supra* note 48, at 603, 629; Wolf Wagner & Ian W. Marsh, *Credit Risk Transfer and Financial Sector Stability*, 2 J. FIN. STABILITY 173, 174-75 (2006).

¹¹² See Allen & Gale, *supra* note 48, at 346.

¹¹³ BRYAN, *supra* note 69, at 82-83.

¹¹⁴ Charles W. Calomiris, *The Subprime Turmoil: What's Old, What's New, and What's Next* 1, 47-48 (Oct. 2, 2008), available at http://www.williams.edu/Economics/seminars/Calomiris_10_02_08.pdf.

¹¹⁵ See Floyd Norris, *No Way to Make a Loan*, N.Y. TIMES, Oct. 19, 2007, at C1; Timothy F. Geithner, President and Chief Executive Officer, Fed. Reserve Bank of N.Y., Remarks at the Economic Club of New York: Reducing Systemic Risk in a Dynamic Financial System (June 9, 2008), available at <http://www.newyorkfed.org/newsevents/speeches/2008/tfg080609.html>; see also Aaron Unterman, *Innovative Destruction – Structured Finance and Credit Market Reform in the Bubble Era*, 5 HASTINGS BUS. L.J. 53, 58-60 (2009). As former Citigroup Chairman and CEO Charles Prince told Rep. Barney Frank, off-balance sheet financing was necessary because on-balance sheet financing "would have put Citigroup at a disadvantage with Wall Street investment banks that were more loosely regulated and were allowed to take far greater risks." Nelson D. Schwartz & Julie Creswell, *What Created This Monster?*, N.Y. TIMES, Mar. 23, 2008, at BU1, BU7.

mortgage loans (or, in some cases, mortgage-backed securities) – in effect, replicating the short-term/long-term financing relationship traditionally managed by commercial banks.¹¹⁶ Assets owned by the conduits were used to make payments on the outstanding securities, as well as provide collateral in the event of default.¹¹⁷ Unlike banks, however, the conduits lacked a safety net – they had no insurance and no minimum capital requirements – making them more vulnerable to bank-like runs when financing began to tighten. By 2007, the shadow banking system had total assets of roughly \$6.5 trillion – compared to \$4 trillion for the then five major securities firms and \$6 trillion for the top five U.S. bank holding companies.¹¹⁸

The difference in capital requirements had unintended consequences. By moving assets off their balance sheets, banks could underwrite riskier loans without incurring capital charges, potentially resulting in a decline in underwriting standards.¹¹⁹ Banks generally were aware of the greater risks that were being underwritten, but believed they needed to do so in order to stay competitive in the mortgage-backed securities business.¹²⁰ As concerns arose over loan quality, however, investors grew reluctant to roll-over or continue holding subprime mortgage-backed investments.¹²¹ In many instances, the sponsoring bank agreed to move the loans back onto its balance sheet¹²² or extended a credit line to the conduit and so continued to be exposed to a decline in the value of the subprime assets.¹²³ The result, in either case, was

¹¹⁶ See Standard & Poor's – Structured Investment Vehicle Criteria, <http://www.standardandpoors.com/prot/ratings/articles/en/us/?assetID=1245172969705> (subscription required).

¹¹⁷ See Brunnermeier, *supra* note 93, at 79-80.

¹¹⁸ Professor Gorton also describes the substantial rise in off-balance sheet financing. Gorton, *supra* note 4, at 25-29.

¹¹⁹ A portion of the decline may have been due to resulting agency problems – bank managers no longer had as significant an incentive to assess or monitor a borrower's credit quality and potentially had an incentive to transfer their riskiest assets to off-balance-sheet financing conduits. See Whitehead, *supra* note 8, at 646-47.

¹²⁰ As former Citigroup Chairman and CEO Charles Prince was famously quoted, "When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing." Michiyo Nakamoto & David Wighton, *Bullish Citigroup Is 'Still Dancing' to the Beat of the Buy-Out Boom*, FIN. TIMES, Jul. 10, 2007, at 1.

¹²¹ See Shannon D. Harrington & Elizabeth Hester, *Citigroup to Consolidate Seven SIVs on Balance Sheet*, BLOOMBERG, Dec. 13, 2007, <http://www.bloomberg.com/apps/news?pid=20601087&sid=amwIRXuKwRR8&refer=home>.

¹²² Mortgage assets were transferred back to the banks pursuant to pre-agreed guarantees, see Patricia A. McCoy, *Musings on the Seeming Inevitability of Global Convergence in Banking Law*, 7 CONN. INS. L.J. 433, 449-52 (2001); Nelson D. Schwartz & Eric Dash, *Where Was the Wise Man?*, N.Y. TIMES, Apr. 27, 2008, at BU1, or due to concerns over reputation, see Harrington & Hester, *supra* note 121.

¹²³ See Brunnermeier, *supra* note 93, at 80.

sudden write-offs by the sponsoring bank – to the surprise of regulators, customers, and shareholders – as mortgage values dropped.¹²⁴ Rather than managing risk, the capital requirements fueled bank incentives to increase the total risk borne by the financial markets beyond the sight of those with the most interest in monitoring it.

3. Outsourcing Risk Management

Beginning in the 1980s, bank lenders syndicated loans partly in order to help manage their credit risk exposure, spurring growth in the private credit market and secondary trading in loan assets.¹²⁵ Investors, however, were required to purchase interests in the loans themselves – committing working capital, as well as taking on the credit risk of the underlying borrowers, which limits the universe of prospective investors. CDSs provided an attractive alternative. Lenders can transfer all or a portion of a borrower's credit risk without requiring a working capital commitment,¹²⁶ thereby opening up the credit market to new participants – increasingly, hedge funds.¹²⁷ In effect, with

¹²⁴ See *Where Were the Watchdogs? Systemic Risk and the Breakdown of Financial Governance: Hearings Before the S. Comm. on Homeland Security & Governmental Affairs*, 111th Cong. 3 (2009) (prepared statement of Robert E. Litan, Vice President, Research & Policy, The Kauffman Foundation, and Senior Fellow, Economic Studies & Global Economics Programs, The Brookings Institution), available at http://hsgac.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=0e83ced9-46d5-4ef9-97b1-2fec22ec445f; see also Daniel Immergluck, *Private Risk, Public Risk: Public Policy, Market Development, and the Mortgage Crisis*, 36 FORDHAM URB. L.J. 447, 461-64 (2009).

¹²⁵ See Whitehead, *supra* note 8, at 656-57.

¹²⁶ See JOHN B. CAOUCETTE, EDWARD I. ALTMAN & PAUL NARAYANAN, MANAGING CREDIT RISK: THE NEXT GREAT FINANCIAL CHALLENGE 311-12 (1998); GLANTZ, *supra* note 9, at 532; Angus Duncan, *Loan-Only Credit Default Swaps: The March to Liquidity*, COM. LENDING REV., Sept.-Oct. 2006, at 15, 16-17; Bernadette Minton, René M. Stulz & Rohan Williamson, *How Much Do Banks Use Credit Derivatives to Reduce Risk?* 7 (Ohio State Univ. Fisher Coll. Bus., Working Paper No. 2006-03-001, June 2006), available at <http://ssrn.com/abstract=785364>; see also Hamish Risk, *Loan Credit-Default Swaps Surge as Hedge Funds Hunger for Yield*, BLOOMBERG, Aug. 22, 2006, http://www.bloomberg.com/apps/news?pid=20601087&sid=a4fg_8Gw37Fw&refer=home (“When investors can’t get the loans, they’re increasingly using credit-default swaps.”).

¹²⁷ See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-07-716, CREDIT DERIVATIVES: CONFIRMATION BACKLOGS INCREASED DEALERS' OPERATIONAL RISKS, BUT WERE SUCCESSFULLY ADDRESSED AFTER JOINT REGULATORY ACTION 6 n.8 (2007), available at <http://www.gao.gov/new.items/d07716.pdf> (citing British Bankers' Association report that “top five end-users of credit derivatives are banks and broker-dealers (44 percent), hedge funds (32 percent), insurers (17 percent), pension funds (4 percent), and mutual funds (3 percent)”); Daniel Fisher, *A Dangerous Game*, FORBES, Oct. 16, 2006, at 40, 40 (citing Greenwich Associates analysis that fifty-eight percent of CDSs are traded by hedge funds); Risk, *supra* note 126; Janet Morrissey, *Credit Default Swaps: The Next Crisis?*, TIME.COM, Mar. 17, 2008, <http://www.time.com/time/business/article/0,8599,1723152,00.html> (reporting that an original CDS can be traded fifteen to twenty times).

CDSs, banks can continue to hold and fund an asset – and maintain the client relationship¹²⁸ – while outsourcing the management of credit risk to someone else. Having transferred the credit risk, however, the originator has less incentive to monitor the borrower, and the new risk-bearers may not have the same access to borrower information. Risk management, in that case, may rely to a greater extent on pooling and diversification, including the trading of CDSs with other risk-holders. The result is that new market participants, in effect, can now act as extensions of the banking, insurance, and private credit markets – taking on a core function of intermediation, but without the regulation or informational access that has characterized it in the past.

Outsourcing often raises agency concerns.¹²⁹ Chief among them is the risk of opportunism – the possibility that the vendor will shirk on products or services it provides once the outsourcing relationship has been fixed. Firms can protect themselves through contractual devices that align the vendor's interests with their own or preserve their right of exit, as well as through close monitoring.

CDSs, however, pose their own unique problems. Unlike with most outsourcing, the risk originator may find it difficult to know who is ultimately performing the outsourced function – in this case, managing the transferred risk. In fact, due to the sale and resale of CDSs, the risk is most likely shared among a group of investors who offset each others' exposure and so make individual monitoring largely unfeasible.¹³⁰ Originators and managers, of course, share an interest in ensuring that the risk is properly managed. However, like banks, outside managers may incur risk levels that are greater than what is socially optimal. External costs – such as the effect on originators if the risk-holder goes bankrupt – may not be fully taken into account.¹³¹ For banks, prudential regulation helps manage the amount of risk incurred, and the

¹²⁸ The importance to a client relationship of holding a loan, even if the credit risk is transferred, was illustrated in the WorldCom securities litigation. There, J.P. Morgan sought to decrease its exposure to WorldCom by entering into CDSs without WorldCom becoming aware it had transferred the risk. *See In re WorldCom, Inc. Sec. Litig.*, 346 F. Supp. 2d 628, 651-52 (S.D.N.Y. 2004).

¹²⁹ *See* George S. Geis, *Business Outsourcing and the Agency Cost Problem*, 82 NOTRE DAME L. REV. 955, 977-82 (2007) (analyzing techniques to control agency costs in outsourcing).

¹³⁰ For example, at the time of its bankruptcy, there was approximately \$72 billion in notional amount of CDSs tied to Lehman Brothers, with estimates of up to \$400 billion in total notional amount linked to it. *See* Gordon Platt, *Credit Default Swaps Market Outstandings Shrink as Dealers Tear Up Offsetting Agreements*, GLOBAL FIN., Dec. 2008, at 68, 70. On a net basis, however, only \$5.2 billion ultimately traded hands. *Id.* Part of the difference reflected trading among market participants, with offsetting trades shrinking the amount of actual risk that the outstanding swaps covered. *Id.* at 68-71.

¹³¹ *See supra* notes 55-57 and accompanying text (discussing agency and externality problems); *infra* notes 151-54 and accompanying text (analyzing these problems with respect to the AIG bailout).

FDIC guarantee eases customer concerns over deposited assets. Many of the new risk-holders, however, are not subject to regulation that limits risk-taking, nor are their investors or counterparties protected by a government safety net. Absent that protection, and during times of financial distress, short-term creditors may refuse to roll-over their loans or require the posting of additional collateral (similar to what occurred to Bear Stearns), increasing the likelihood of a bank-like run.¹³² The resulting impact on the financial markets is difficult to gauge,¹³³ but – like the AIGFP story, below – a run on hedge funds may ripple through to intermediaries, such as banks and insurance companies, that have relied on CDSs to mitigate credit exposure.¹³⁴

4. AIG Financial Products

AIG provides a recent, and perhaps the most extreme, example of the divide that has grown between financial regulation and the financial markets. Before the U.S. government's bailout,¹³⁵ AIG was one of the world's largest financial holding companies, engaged in the insurance, financial services, and asset management businesses.¹³⁶ Most of AIG's profits were generated by its insurance subsidiaries, although operating income from its non-insurance

¹³² See Tomas Garbaravicius & Frank Dierick, *Hedge Funds and Their Implications for Financial Stability*, 34 EUR. CENT. BANK OCCASIONAL PAPER SERIES 1, 56-63 (2005), available at <http://www.ecb.int/pub/pdf/scpops/ecbocp34.pdf>.

¹³³ Although a broad cross-section of banks hold derivatives, the impact of a fall in the CDS market is likely to be concentrated among the five largest, which hold more than ninety percent of derivatives in the banking industry. See COMPTROLLER OF THE CURRENCY, ADMINISTRATOR OF NATIONAL BANKS, OCC'S QUARTERLY REPORT ON BANK TRADING AND DERIVATIVES ACTIVITIES, THIRD QUARTER 2008, at 1, 5-7 (2008), available at <http://www.occ.treas.gov/ftp/release/2008-152a.pdf>.

¹³⁴ Recent change in the financial markets may help limit the impact: initiation of the first central counterparty clearinghouse ("CCP") for CDSs in March 2009. See Gordon Platt, *ICE Begins Clearing Credit Default Swaps as Counterparty Risk Hits Record High*, GLOBAL FIN., Apr. 2009, at 64, 64. Each party transfers its CDS position to the CCP after a trade is agreed, potentially minimizing their counterparty credit exposure. See Darrell Duffie & Haoxiang Zhu, *Does a Central Clearing Counterparty Reduce Counterparty Risk?* 2-3 (Stan. Graduate Sch. Bus., Research Paper No. 2022, 2009), available at <http://www.stanford.edu/~duffie/DuffieZhu.pdf>. Of course, CDS trades that continue to be handled directly will still be subject to the risk of counterparty default. *Id.*

¹³⁵ To date, the U.S. government has invested over \$150 billion in AIG. See Liam Pleven et al., *U.S. Revamps Bailout of AIG*, WALL ST. J., Mar. 2, 2009, at A1.

¹³⁶ See American International Group, Inc., Annual Report (Form 10-K), at 3-13 (Feb. 28, 2008) [hereinafter AIG 2007 Annual Report]; see also *Examining What Went Wrong, Government Intervention, and Implications for Future Regulation: Hearing on American International Group Before the S. Comm. on Banking, Housing, and Urban Affairs*, 111th Cong. 3-5 (2009) [hereinafter Polakoff March 2009 Testimony] (prepared statement of Scott M. Polakoff, Senior Deputy Dir. & Chief Operating Officer, Office of Thrift Supervision), available at http://banking.senate.gov/public/_files/PolakoffTestimony3509.pdf.

businesses rose to over twenty-nine percent of AIG's bottom line in 2005.¹³⁷ A substantial portion of that income (roughly 17.5%), as well as approximately ten percent of AIG's total assets, were tied to AIGFP, a subsidiary that wrote derivatives for governments, corporations, and wealthy individuals.¹³⁸

AIGFP's original business plan was fairly straightforward – namely, to rely on AIG's sterling triple-A credit rating to write long-dated swap agreements against changes in the price of stocks, currencies, commodities, and other assets. Like AIG's insurers, AIGFP believed it was better able to manage risk than its customers were, using a sophisticated computer model to pool and, if necessary, offset the exposures it incurred.¹³⁹ What complicated the plan was AIGFP's decision in the late 1990s to enter the CDS market.¹⁴⁰ Financial firms were searching for instruments to help manage their credit exposure and minimize the cost of complying with regulatory capital requirements. CDSs provided a tool to hedge credit risk, with AIGFP obligated to make its customers whole in the case of a credit event – typically a payment default by an entity whose loans or bonds were referenced in the CDS.¹⁴¹

Beginning in 2003, AIGFP wrote close to eighty billion dollars in notional amount of CDSs whose value was tied to the super senior (high investment grade) tranches of collateralized debt obligations (“CDOs”) – structured instruments (typically bonds) backed by assets that included subprime mortgage securities.¹⁴² It exited that market two years later, in 2005, over concerns that CDOs had become too toxic. Underwriting standards had declined, its managers believed, resulting in a growing number of questionable subprime mortgages being included in those instruments.¹⁴³ Nevertheless, during those two years, AIGFP's customers grew to include hundreds of U.S.

¹³⁷ AIG 2007 Annual Report, *supra* note 136, at 4 (disclosing that in 2005 financial services operations accounted for \$4.424 billion of AIG's total operating income of \$15.213 billion).

¹³⁸ American International Group, Inc., Amended Annual Report (Form 10-K/A), at 13, 93 (June 19, 2006); Polakoff March 2009 Testimony, *supra* note 136, at 4-5.

¹³⁹ Robert O'Harrow, Jr. & Brady Dennis, *The Beautiful Machine*, WASH. POST, Dec. 29, 2008, at A1, A6-7.

¹⁴⁰ Brady Dennis & Robert O'Harrow, Jr., *A Crack in the System*, WASH. POST, Dec. 30, 2008, at A1, A8.

¹⁴¹ See Mingle, *supra* note 32, at 13; Minton, Stulz & Williamson, *supra* note 126, at 3-5. A description of CDSs is included *supra* at notes 9, 126-34 and accompanying text. See also Satyajit Das, *Credit Derivatives – Instruments*, in CREDIT DERIVATIVES: TRADING & MANAGEMENT OF CREDIT & DEFAULT RISK 7, 32-68 (Satyajit Das ed., 1998) (providing detailed example of CDSs); Robert F. Schwartz, *Risk Distribution in the Capital Markets: Credit Default Swaps, Insurance and a Theory of Demarcation*, 12 FORDHAM J. CORP. & FIN. L. 167, 175 (2007).

¹⁴² Polakoff March 2009 Testimony, *supra* note 136, at 5; Carol J. Loomis, *AIG: The Company that Came to Dinner*, FORTUNE, Jan. 19, 2009, at 70, 73.

¹⁴³ See Robert O'Harrow, Jr. & Brady Dennis, *Downgrades and Downfall*, WASH. POST, Dec. 31, 2008, at A1, A8.

and foreign financial firms, the majority of which relied on AIGFP to mitigate credit risk and minimize regulatory capital charges¹⁴⁴ – so much so that AIGFP’s risk-sharing arrangements reportedly tipped the U.S. government’s decision in favor of bailing out AIG in 2008.¹⁴⁵

AIGFP’s decision to enter the CDS market was based, in part, on computer simulations that indicated there was a 99.85% chance it would never be obligated to make a CDS payment.¹⁴⁶ In fact, very few of the CDOs on which its CDSs were written have stopped payment, requiring little (so far) to be paid out to AIGFP’s swap counterparties.¹⁴⁷ What the model failed to do was assess the impact of a downgrade in AIG’s credit rating, which was particularly important since AIG was a guarantor of AIGFP’s obligations.¹⁴⁸ As AIGFP’s swap contracts moved “in the money,” reflecting the drop in value of the underlying CDOs, AIG was forced – due to its credit downgrade – to

¹⁴⁴ AIG 2007 Annual Report, *supra* note 136, at 33 (indicating that \$379 billion of AIGFP’s \$527 billion in notional amount of super senior CDSs was written to financial institutions to facilitate regulatory capital relief); Matthew Karnitschnig et al., *U.S. to Take Over AIG in \$85 Billion Bailout; Central Banks Inject Cash as Credit Dries Up*, WALL ST. J., Sept. 17, 2008, at A1, A6 (describing a “domino effect” if AIGFP had defaulted on its swaps).

¹⁴⁵ See Gretchen Morgenson, *Behind Insurer’s Crisis, Blind Eye to a Web of Risk*, N.Y. TIMES, Sept. 28, 2008, at A1, A28; O’Harrow & Dennis, *supra* note 143, at A9; Joe Nocera, *Propping Up a House of Cards*, N.Y. TIMES, Feb. 28, 2009, at B1; Press Release, U.S. Dep’t of Treasury, U.S. Treasury and Federal Reserve Board Announce Participation in AIG Restructuring Plan (Mar. 2, 2009), available at <http://www.ustreas.gov/press/releases/tg44.htm> (remarking that AIG “is a significant counterparty to a number of major financial institutions”); see also Dennis, *supra* note 63, at D1 (describing an AIG presentation to the U.S. government indicating that an AIG bankruptcy could force European banks to raise ten billion dollars in capital and quoting the AIG officer as saying it “would cause turmoil in the U.S. economy and global markets”). The U.S. government’s decision to bail out AIG, and the terms of the bailout, are also described in Sjostrom, *supra* note 9, at 964-77.

¹⁴⁶ Dennis & O’Harrow, *supra* note 140, at A1.

¹⁴⁷ Roger Parloff, *Wall Street: It’s Payback Time*, FORTUNE, Jan. 19, 2009, at 57, 62; see also Brady Dennis, *A Meek Ending for Mighty Unit That Gutted AIG*, WASH. POST, Feb. 21, 2009, at A1, A7 (indicating that many of the CDOs written by AIGFP were written “appropriately”).

¹⁴⁸ O’Harrow & Dennis, *supra* note 143, at A8-A9; Parloff, *supra* note 147, at 62.

post billions of dollars in collateral against the unrealized paper losses,¹⁴⁹ weighing down its credit rating even further.¹⁵⁰

In theory, managing the risk of its CDS portfolio was best handled by AIG – since regulators, with limited access to information, were likely to be too intrusive, less reliable, and more costly.¹⁵¹ AIG had, in fact, implemented a series of centralized controls, including an enterprise risk management system that was intended to control the firm’s aggregate risk exposures.¹⁵² Permitting AIG to police risk, however, was an ill-informed choice because it neglected to take into account the limited information on which AIGFP priced its CDSs. As noted earlier, AIGFP had overlooked the impact of a credit downgrade by AIG. It also failed (in the same way banks and other intermediaries did) to consider the full cost – to the insurance industry, the financial markets, and the general economy – of the levels of risk it agreed to assume.¹⁵³ In addition, AIG’s risk managers may have underestimated the probability of occurrence of an infrequent economic shock, a phenomenon sometimes referred to as “disaster myopia,” or may have taken comfort in others’ decisions to discount the likelihood of such a shock ever occurring.¹⁵⁴

Like insurance, if a credit event was triggered, AIGFP was obligated to make the customer whole – although the means by which it did so, such as buying the impaired assets at par, differed from traditional insurance products.

¹⁴⁹ AIG 2007 Annual Report, *supra* note 136, at 33, 81; *see also* PAUL GORIS, THE LEGAL ASPECT OF SWAPS 130-37 (1994) (discussing the role of collateralization as a means to “reduce or eliminate a [CDS] party’s credit risk”); Gorton, *supra* note 4, at 11-12 (detailing that the posting of collateral is often required when the value of a CDS falls below an agreed threshold). More recently, during the second quarter of 2009, AIG began to recoup collateral as the value of its CDSs moved in its favor. *See* Liam Plevin, *In Reversal of Fortune, AIG Recoups Collateral*, WALL ST. J., Oct. 29, 2009, at C1.

¹⁵⁰ Morgenson, *supra* note 145, at 28 (describing this phenomenon as a “downward spiral”); Parloff, *supra* note 147, at 62.

¹⁵¹ *See* CHARLES GOODHART ET AL., FINANCIAL REGULATION: WHY, HOW AND WHERE NOW? 38-43 (1998).

¹⁵² *See* AIG 2007 Annual Report, *supra* note 136, at 112-18.

¹⁵³ *See* PRESIDENT’S WORKING GROUP ON FIN. MKTS., HEDGE FUNDS, LEVERAGE, AND THE LESSONS OF LONG-TERM CAPITAL MANAGEMENT 31 (1999) (asserting that individual firms limit risk taking to protect themselves, not system as a whole); Jackson, *supra* note 3, at 335-36; Sudeep Reddy & Michael R. Crittenden, *Fed’s Kohn Concedes Risk in AIG Rescue*, WALL ST. J., Mar. 6, 2009, at A3 (quoting Federal Reserve Vice Chairman Donald Kohn’s concern, regarding AIG, “I’m worried about the knock-on effects in the financial markets. Would other people be willing to do business with other U.S. financial institutions . . . if they thought, in a crisis like this, they might have to take some losses?”).

¹⁵⁴ *See* Richard Herring & Susan Wachter, *Bubbles in Real Estate Markets* 8 (Wharton Sch. Zell/Lurie Real Estate Ctr., Working Paper No. 402, 2002), *available at* <http://realestate.wharton.upenn.edu/newsletter/bubbles.pdf>; *see also* O. EMRE ERGUNGOR & JAMES B. THOMSON, SYSTEMIC BANKING CRISES 5 (2005), *available at* <http://www.clevelandfed.org/research/POLICYDIS/No9Jan05.pdf> (describing potential for herd behavior among banks).

Consequently, some states regulate CDSs as insurance contracts,¹⁵⁵ reflecting the economic similarity in payouts between CDSs and term insurance policies written against the credit downgrade of a referenced borrower.¹⁵⁶ In New York, however, most of AIGFP's swaps were expressly excluded from insurance regulation.¹⁵⁷ AIGFP, therefore, was able to escape the strict state-level control to which AIG's insurance businesses were subject.¹⁵⁸ Importantly, by not being answerable to AIG's insurance regulators, AIGFP ducked the reserve requirements that would have called for it to set aside capital against future liabilities.¹⁵⁹ The differences in regulation sparked a curious result: by dispensing with regulatory capital, AIGFP was able to offer CDSs at a lower cost than its competitors, furnishing it with an edge over others who were subject to those (or similar) requirements. AIGFP, in turn, targeted its products at those same regulated institutions, which purchased CDSs in order to reduce their own capital charges.

CDSs were also exempt from regulation under the Securities Act of 1933 and the Securities Exchange Act of 1934,¹⁶⁰ and were preempted from state gaming or bucketshop laws under the Commodity Exchange Act.¹⁶¹ By default, AIGFP's principal regulator became the Office of Thrift Supervision ("OTS"),¹⁶² notwithstanding concerns over the OTS's effectiveness as a regulator and its inability to oversee complex financial institutions like AIG.¹⁶³

¹⁵⁵ See Schwartz, *supra* note 141, at 173-74, 181-88.

¹⁵⁶ See *supra* note 9 and accompanying text; see also Phelim Boyle & Feidhlim Boyle, DERIVATIVES: THE TOOLS THAT CHANGED FINANCE 165-67 (2001); David Felsenthal & M. Sharmini Mahendran, *Credit Derivatives: Legal and Regulatory Issues*, in HANDBOOK OF CREDIT DERIVATIVES, *supra* note 9, at 277, 282-84. There are, of course, differences in the instruments as well such as the requirement that an insurance policyholder have an insurable interest, not a requirement in a CDS. See Partnoy & Skeel, *supra* note 9, at 1050.

¹⁵⁷ See N.Y. INS. LAW § 6901(j-1) (McKinney 2005).

¹⁵⁸ See *Hearing on the Causes and Effects of the AIG Bailout Before the H. Comm. on Oversight and Government Reform*, 110th Cong. 18-19, 81 (2008) [hereinafter *Oversight Comm. Hearing*] (statement of Eric R. Dinallo, Superintendent, New York State Ins. Dep't), available at <http://oversight.house.gov/images/stories/documents/20081010162126.pdf>; Schwartz, *supra* note 141, at 174.

¹⁵⁹ See *Oversight Comm. Hearing*, *supra* note 158, at 27-28 (testimony of Eric R. Dinallo) ("For a large, large, large percentage of credit default swaps, you're required to have absolutely no collateral or capital behind them.").

¹⁶⁰ See Partnoy & Skeel, *supra* note 9, at 1046-47.

¹⁶¹ See 7 U.S.C. § 16(e)(2) (2006). Swaps and other derivatives may also fall outside of state gambling laws where there is a related, underlying business activity. See *Korea Life Ins. Co. v. Morgan Guar. Trust Co. of N.Y.*, 269 F. Supp. 2d 424, 442 (S.D.N.Y. 2003) (interpreting New York Anti-Gambling Statute).

¹⁶² AIG selected OTS, as its regulator of choice, by acquiring a thrift bank (AIG Federal Savings Bank) in 1999. See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-09-216, FINANCIAL REGULATION: A FRAMEWORK FOR CRAFTING AND ASSESSING PROPOSALS TO MODERNIZE THE OUTDATED U.S. FINANCIAL REGULATORY SYSTEM 10 (2009), available at

How do we explain AIG? One response is that AIG illustrated the distortions that result when an entity is able to select its own regulator.¹⁶⁴ AIG's insurance subsidiaries were solvent and fully capitalized at the time the New York State Insurance Department authorized them to lend up to twenty billion dollars to their parent holding company.¹⁶⁵ Yet, no one regulator had a complete picture of the risks to which AIG was exposed – with oversight by insurance regulators being limited to traditional insurance providers, notwithstanding substantive similarities between term insurance and CDSs.

AIG's story, however, may be better understood as one aspect of change in the financial markets, without a corresponding shift in regulation. The basic goals of the markets have remained the same – namely, the efficient allocation, transfer, and deployment of capital resources and risk-bearing. Participants, however, moved from traditional sources of capital to new products and means of raising capital and managing risk. Mortgage loans, traditionally held by banks, could be funded through less costly financing conduits,¹⁶⁶ and CDSs

<http://www.gao.gov/new.items/d09216.pdf>. AIG was subject to OTS supervision as a unitary thrift holding company. See 12 U.S.C. § 1467a(a)(1)(D), (H) (2006).

¹⁶³ See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-07-154, FINANCIAL MARKET REGULATION: AGENCIES ENGAGED IN CONSOLIDATED SUPERVISION CAN STRENGTHEN PERFORMANCE MEASUREMENT AND COLLABORATION 54 (2007), available at <http://www.gao.gov/new.items/d07154.pdf>; Binyamin Appelbaum & Ellen Nakashima, *Banking Regulator Played Advocate Over Enforcer*, WASH. POST, Nov. 23, 2008, at A1. The OTS failed to review AIGFP's risk exposures until 2005-2006 – although, by that point, AIGFP had entered into most of the CDSs included in its swaps portfolio. Polakoff March 2009 Testimony, *supra* note 136, at 8-11. The OTS did uncover weaknesses in a number of AIG's and AIGFP's risk controls, *id.* at 11-12, but its staff appears to have been comforted – without independent verification – by determinations by AIGFP's managers that their derivatives business posed minimal liquidity and credit risk. See *id.* 18-19; Jeff Gerth, *Was AIG Watchdog Not Up to the Job?*, MSN MONEY, Nov. 10, 2008, <http://articles.moneycentral.msn.com/Investing/Extra/was-aig-watchdog-not-up-to-the-job.aspx>.

¹⁶⁴ AIG was not alone: other institutions, ranging from American Express to Morgan Stanley, also chose to be regulated by the OTS. See *Risk Management and Its Implications for Systemic Risk: Hearing Before the Subcomm. on Securities, Insurance and Investment of the S. Comm. on Banking, Housing and Urban Affairs*, 110th Cong. 3 (2008) (prepared statement of Scott M. Polakoff, Senior Deputy Dir. & Chief Operating Officer, Office of Thrift Supervision), available at http://banking.senate.gov/public/_files/POLAKOFF61908OTSTestimony61908.pdf. In addition, recent press reports indicate that at least thirty federally-chartered banks converted to state charters in order to avoid federal regulatory action. See Binyamin Appelbaum, *By Switching Their Charters, Banks Skirt Supervision*, WASH. POST, Jan. 22, 2009, at A1.

¹⁶⁵ See *Hearing on the Causes and Effects of the AIG Bailout Before the H. Comm. on Oversight and Gov't Reform*, 110th Cong. 2-4 (2008) (prepared statement of Eric R. Dinallo, Superintendent, New York State Ins. Dep't), available at <http://oversight.house.gov/images/stories/documents/20081007100906.pdf>.

¹⁶⁶ See *supra* notes 115-24 and accompanying text.

could offer regulated intermediaries a lower-cost means to manage and transfer credit risk.¹⁶⁷ Thus, AIGFP – like other intermediaries – may have simply capitalized on regulatory differences in order to assume risks from firms that sought to minimize regulatory cost. AIGFP’s business, however, was particularly troubling. The risks it managed included those traditionally borne by banks and insurers – directly affecting the risk-bearing of those intermediaries, but falling outside the scope of regulatory oversight. As such, AIGFP was able to take on the risks that banking and insurance regulations were intended to curb, but without being subject to any of the same (or similar) constraints.¹⁶⁸

III. ASSESSING FINANCIAL REGULATION

The current financial crisis has highlighted gaps in financial regulation, principally arising from changes in the markets over the last thirty years. As illustrated in the preceding Parts, chief among those changes has been convergence in the products and services offered by intermediaries and new market entrants, as well as a shift in capital-raising and risk-bearing from traditional intermediation to the capital markets. The result has been increasing competition among participants, resulting in the growth of a largely unregulated marketplace.

In this Part, I describe two significant shifts in the financial markets that must be considered when assessing the effectiveness of financial regulation. Those shifts reintroduced problems addressed by (but beyond the scope of) existing regulation, as well as created new problems that reflect the new means by which capital and risk can now be managed and transferred. I also highlight potential shortfalls in regulation – considered in light of current proposals for reform – that may arise if recent changes in the financial markets are not taken into account. Finally, I reject a function-only approach to financial regulation, proposed by some, in favor of a supra-functional approach that deconstructs the functions and problems regulated within traditional intermediaries, and then considers them within the institutions (including the markets) that more recently have taken them on.

The first trend is a shift in financial activity from regulated to less-regulated entities, illustrated in the table below. No doubt, some portion of the shift may simply reflect differences in regulatory cost – a regulatory arbitrage, as intermediaries or new market participants create new products and services in order to avoid the reach of regulation or to reduce their cost.¹⁶⁹ A traditional intermediary, for example, may be able to conduct the same business as AIGFP, but do so at higher cost simply due to more stringent regulatory

¹⁶⁷ See *supra* notes 125-34 and accompanying text.

¹⁶⁸ See Nocera, *supra* note 145, at B1; Craig Torres & Hugh Son, *Bernanke Says Insurer AIG Operated Like a Hedge Fund*, BLOOMBERG, Mar. 3, 2009, <http://www.bloomberg.com/apps/news?pid=20601087&sid=aHx9vZa0IJAo&refer=home>.

¹⁶⁹ See Partnoy, *supra* note 110, at 227-28.

requirements. Yet, arbitrage alone may not fully explain the shift. Many of the less-regulated firms are new market participants that, independent of regulatory differences, are more efficient in managing risk than traditional intermediaries. Hedge funds, for example, minimize agency costs through organizational structure, including performance-based fees that align manager and shareholder interests, which helps them compete effectively against traditional intermediaries.¹⁷⁰

Table. Shift in Financial Markets – Traditional, Recurring, and New Problems

<i>Traditional Financial Markets</i>		<i>New Financial Markets</i>
<i>Regulated Intermediaries</i> <i>Traditional Problem:</i> Incomplete Risk Assessment by Banks and Insurers	→	<i>Less-Regulated Entities</i> <i>Recurrence:</i> Incomplete Risk Assessment by Hedge Funds and Other New Entities <i>New Problem:</i> Dispersed/Outsourced Risk Management
<i>Traditional Intermediation</i> <i>Traditional Problem:</i> Tension between Policyholders and Shareholders	→	<i>Capital Markets</i> <i>Recurrence:</i> Tension between Short-term Creditors and Shareholders <i>New Problem:</i> Trading in Concert

Illustration of the shift in financial markets, with the recurrence of traditional problems and the rise of new problems reflecting change in market structure.

¹⁷⁰ Hedge funds are typically organized as limited partnerships and may include provisions that restrict management discretion or otherwise grant investors specific rights, including the regular distribution of free cash flow to a fund's investors. Advisors also often invest their own money in the funds they manage. See Larry E. Ribstein, *Partnership Governance of Large Firms*, 76 U. CHI. L. REV. 289, 301-02 (2009). In addition, a hedge fund advisor's poor performance may result in liquidation of the fund or difficulty in raising capital for successive funds. See Houman B. Shadab, *The Law and Economics of Hedge Funds: Financial Innovation and Investor Protection*, 6 BERKLEY BUS. L.J. (forthcoming 2010) (manuscript at 21), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1066808. Hedge fund advisors also typically charge performance fees for gains in fund performance, but are not required to rebate fees for losses. Public mutual fund advisors, by contrast, may only charge performance fees where gains and losses have a symmetric effect on compensation. See 15 U.S.C. § 80b-5(a)(1) (2006); 17 C.F.R. § 275.205-3 (2009); Davidoff, *supra* note 10, at 206-10; Robert C. Illig, *The Promise of Hedge Fund Governance: How Incentive Compensation Can Enhance Institutional Investor Monitoring*, 60 ALA. L. REV. 41, 70-77 (2008).

Like most market participants, new entrants suffer from an inability to completely assess and price socially optimal levels of risk, reflecting the negative effects of instability that extend well beyond the financial industry.¹⁷¹ Some amount of risk can be policed by the marketplace. Lenders, for example, can require additional collateral against a greater risk of default. Collateral, however, can be costly, and as was the case with Bear Stearns, may provide imperfect protection if it later declines in value.¹⁷² In addition, as AIGFP illustrated, a rapid increase in collateral levels can have the same destabilizing effect as a run on a bank or insurance company.¹⁷³ Consequently, existing regulations – such as restrictions on capital structure and portfolio riskiness – help manage risk-taking by traditional intermediaries, like banks and insurance companies. New market participants, however, remain subject to looser restrictions or none at all.

Likewise, the shift to less-regulated entities has introduced new risks to the financial markets.¹⁷⁴ The growth of CDSs has resulted in the transfer of risk, and the outsourcing of risk management, from traditional intermediaries to new market participants. Current financial regulation helps police the amount of risk that a bank can incur, as well as how the bank manages that risk. When outsourced to an unregulated third party, the bank must rely on its own protections to ensure the third party properly manages that risk. Doing so, however, has become increasingly difficult as the CDS market has become more liquid. An originator may not be aware of which entities have taken on its risk and, consequently, may not be able to monitor their activities. Greater transparency and the use of collateral can help minimize risk-taking, but such measures are likely to be less effective than the direct regulatory oversight to which the originating intermediary is already subject. The result is the growing possibility that traditional intermediaries may become subject to disruption in the derivatives market generally. As illustrated by AIGFP, an industry-wide run (or other disruption) affecting new participants, like hedge funds, is likely to ripple through to those intermediaries that have increasingly relied on them to outsource risk.

We see a similar trend in the shift from traditional intermediation to the capital markets. Like the shift to less-regulated entities, some portion may simply reflect regulatory arbitrage as market participants look to minimize regulatory cost. The capital markets, however, permit efficient risk-sharing among investors, who can transfer risk to those entities that are better able to

¹⁷¹ See *supra* notes 56-57 and accompanying text.

¹⁷² See *supra* notes 92-97 and accompanying text.

¹⁷³ See *supra* notes 99-100, 142-50 and accompanying text.

¹⁷⁴ For a discussion of how risk transfer to less-regulated entities increases the likelihood of systemic failures, see *supra* Part II.B.3.

manage it at lower cost, and so may provide a less expensive alternative to traditional intermediaries.¹⁷⁵

With this shift, however, new capital markets participants may now become subject to risks that mirror those historically faced by intermediaries. Bank runs involving non-banks, for example, may become more common as these participants continue to fund longer-term assets with short-term borrowings. Like a bank's depositors, lenders may be concerned about the level of risk a participant incurs, relying on collateral to protect against the possibility of default. If questions arise about its credit quality, as with Bear Stearns, the participant's lenders may refuse to roll over existing loans or demand additional collateral – the economic equivalent, through the capital markets, of a bank run, but without the same regulatory protections.¹⁷⁶

The shift toward the capital markets has also introduced new, market-based risks that fall outside the scope of both current regulations and proposed regulations that focus on firms that are “too big” or “too interconnected” to fail.¹⁷⁷ Financial risk management, for example, has grown over the last two decades, driven in part by the widespread adoption of “value-at-risk” (“VaR”) measures to assess portfolio riskiness. VaR assesses the probability that the market value of an asset or a portfolio of assets is likely to decrease over a period of time under usual conditions.¹⁷⁸ When first developed, VaR was a specialized tool known only to a closed universe of risk managers. VaR, however, quickly became a recognized standard – best practices among portfolio managers and banks, and an accepted form of SEC disclosure¹⁷⁹ – and, in the process, may itself have contributed to an increase in systemic risk. By standardizing how the risk parameters of a trader's portfolio are measured, different traders may now respond to the same event in a similar way – relying on VaR-based calculations to adjust their risk by selling assets, resulting in a

¹⁷⁵ See Peter A. Diamond, *The Role of a Stock Market in a General Equilibrium Model with Technological Uncertainty*, 57 AM. ECON. REV. 759, 770 (1967); Gilson & Whitehead, *supra* note 5, at 243-47.

¹⁷⁶ See *supra* notes 92-97 and accompanying text.

¹⁷⁷ See *supra* note 16 and accompanying text.

¹⁷⁸ See Olivier Scaillet, *The Origin and Development of Value-at-Risk*, in MODERN RISK MANAGEMENT 151-58 (Sarah Jenkins & Tamsin Kennedy eds., 2003). By way of illustration, suppose that a portfolio's “one-day VaR at the ninety-nine percent confidence level” is \$300,000. That would mean that, under normal conditions, there is a ninety-nine percent probability that the portfolio manager will not lose more than \$300,000 by holding the portfolio for a day.

¹⁷⁹ Regulation S-K, 17 C.F.R. § 229.305(a)(1)(iii)(A) (2009) (describing SEC value-at-risk disclosure procedures); THE GROUP OF THIRTY, DERIVATIVES: PRACTICES AND PRINCIPLES 10-11 (1993) (indicating that for portfolio managers, “[m]arket risk is best measured as ‘value at risk’”); Whitehead, *supra* note 61, at 723 n.146 (citing Basel Comm. on Banking Supervision, Amendment to the Capital Accord to Incorporate Market Risks (Apr. 1998), <http://www.bis.org/publ/bcbasc222.pdf>) (describing value-at-risk bank regulation).

reduction in the price of those assets, causing further sales, and so forth – in effect, acting in concert, even if not in coordination.¹⁸⁰ Thus, for AIGFP, the drop in CDO prices was likely sparked by similarly situated investors who decided to unwind their positions at the same time, and then looked to sell even further as market prices continued to decline.¹⁸¹ As similar risks become dispersed across the marketplace, a focus only on entities that are “too big” or “too interconnected” will fail to address the systemic problems that arise from market-wide decisions that stem from a drop in price. The same collective action problems that historically sparked bank runs may now transfer to the risk markets – prompting the need for systemic regulation that focuses on the capital markets generally rather than on particular entities.

Both of the trends described in this Part argue for financial regulation that is more flexible – addressing “old” risks that arise in new situations, and “new” risks that arise as financial instruments, participants, and markets continue to evolve. Proposals to simply freeze the division among financial intermediaries¹⁸² are likely to miss new risks, as evidenced by the fundamental changes in the financial markets that took place during the twenty years leading up to repeal of the Glass-Steagall Act. Partly in response, politicians, regulators, and academics – most notably, Nobel laureate Robert Merton – have advocated a functional approach to regulation, in which equivalent functions are regulated in the same way, irrespective of the institutions

¹⁸⁰ See Avinash Persaud, *Sending the Herd Off the Cliff Edge: The Disturbing Interaction Between Herding and Market-Sensitive Risk Management Practices*, J. RISK FIN., Fall 2000, at 59, 59-65 (“[I]n a world of ‘herding,’ tighter market-sensitive risk management regulations and improved transparency can, perversely, turn events from bad to worse, creating volatility, reducing diversification and triggering contagion.”); Tobias Adrian & Markus K. Brunnermeier, *CoVaR 1-4*, 25 (Fed. Reserve Bank of N.Y., Staff Report No. 348, 2009), available at http://www.newyorkfed.org/research/staff_reports/sr348.pdf (proposing a system to avoid the systemic risk created when multiple trading institutions act like “identical clones” because they all used VaR). Note, however, that Philippe Jorion has preliminarily concluded, based on an analysis of the relationship between VaR and trading by banks, that VaR systems have not contributed to volatility. Philippe Jorion, *Bank Trading Risk and Systemic Risk*, in THE RISKS OF FINANCIAL INSTITUTIONS, *supra* note 48, at 29, 56.

¹⁸¹ See Stephen Morris & Hyun Song Shin, *Risk Management with Interdependent Choice*, OXFORD REV. ECON POL’Y, Spring 1999, at 52, 52-53, 59-60. An earlier example was the feedback loop created by portfolio insurance, which involved the programmed computer trading of common stock when prices fell to pre-specified levels. When the stock fell to a trigger price, institutional investors each separately sold their shares, causing further declines in price and further sales, which fueled the Black Monday crash of 1987. See *supra* note 4; see also Lawrence A. Cunningham, *Behavioral Finance and Investor Governance*, 59 WASH & LEE L. REV. 767, 784-85 (2002).

¹⁸² See, e.g., Matthew Benjamin & Christine Harper, *Glass-Steagall’s Specter Returns to Haunt Wall Street*, BLOOMBERG, Mar. 10, 2009, http://www.bloomberg.com/apps/news?pid=20601087&sid=ad_KRWtBPsJw&refer=home.

performing them.¹⁸³ Institutions may change over time, they argue, but core functions will stay the same.

There is certainly an appeal to regulating like functions in a similar way. Among other benefits, doing so would ensure that financial supervision is comparable across the financial markets and that customers would receive equivalent protection, irrespective of the industry through which they invest. A function-only approach, however, is incomplete precisely because it fails to take account of differences in the institutions performing them. Different structures, and varying agency and other costs, may make differences in regulation appropriate, even if the functions are similar.¹⁸⁴

Recall, for example, the recent experience with MMFs. MMFs and finance companies are critical to the U.S. payments system, channeling funds to lenders from a wide variety of investors, primarily through the commercial paper market. In combination, MMFs and finance companies perform essentially the same function as banks, collecting capital and lending it to institutional and retail borrowers. They also face similar problems, but without being subject to similar regulation. Hence, in light of their aggregate size,¹⁸⁵ the recent investor run, and the U.S. guarantee of fund accounts,¹⁸⁶ regulators, commentators, and others have called for MMFs to be regulated like banks.¹⁸⁷ Differences in institutional structure, however, suggest that banks and MMFs should be regulated differently. MMFs, unlike banks, are limited to a single class of investors, and so do not face the depositor-shareholder agency conflict to which banks are subject. Bank regulation that helps balance that conflict – for example, capital requirements that manage a bank’s risk-taking – are largely inapplicable. MMF managers also have different incentive structures, which reward investment returns and an increase in total assets under

¹⁸³ See, e.g., Robert C. Merton & Zvi Bodie, *Design of Financial Systems: Towards a Synthesis of Function and Structure*, J. INVESTMENT MGMT., 1st Q. 2005, at 6, 13; Robert C. Merton, *Financial Innovation and the Management and Regulation of Financial Institutions*, 19 J. BANKING & FIN. 461, 466-70 (1995) (proposing that traditional institutional categories have “become almost arbitrary,” as the same functions can be performed by various institutions); Merton, *supra* note 22, at 21-27.

¹⁸⁴ See COP, SPECIAL REPORT, *supra* note 16, at 29 (“Functional regulation can mean applying the same principles and not necessarily producing identical regulatory outcomes.”).

¹⁸⁵ Aggregate MMF assets are now about four trillion dollars. Svea Herbst-Bayliss, *U.S. Money Market Funds Expected to Face New Rules*, REUTERS, Mar. 18, 2009, <http://www.reuters.com/article/Americas/RegulatoryNews/idUSN1834332120090318>.

¹⁸⁶ See *supra* notes 101-05 and accompanying text.

¹⁸⁷ GROUP OF THIRTY, *supra* note 16, at 9 (“Money market mutual funds wishing to continue to offer bank-like services . . . should be required to reorganize as special-purpose banks, with appropriate prudential regulation and supervision . . .”). As Paul Volcker, former Federal Reserve Chairman and head of President Obama’s Economic Recovery Advisory Board, has argued, “If [MMFs] are going to talk like a bank and squawk like a bank, they ought to be regulated like a bank.” Shefali Anand, *Money-Fund Bailout Has Been Winner*, WALL ST. J., Feb. 17, 2009, at C1.

management, and therefore different agency costs from traditional bank managers, whose salaries are largely fixed.¹⁸⁸ Finally, an MMF's investors receive returns based on the total performance of the fund, whereas a depositor's returns are largely fixed, irrespective of portfolio composition. Thus, rather than bank regulation, direct limits on an MMF's investments are more likely to address the portfolio risks to which an MMF's investors are subject.¹⁸⁹

What this suggests is that focusing only on *function* is unlikely to lead to optimal regulation. Likewise, as we have seen, an approach based on *categories* or *intermediaries* – the institutions through which capital and risk are transferred – is unlikely to be flexible enough to take account of change in the financial markets. Instead, financial regulation must focus, without being limited by function, categories, or intermediaries, on those similar *problems* that have arisen across the financial markets, considered in light of the gaps in regulation the current crisis has exposed – a supra-functional approach that takes into account the transfer of like functions across the financial markets, but considers them within the institutions (including the markets) where those functions now appear. To do so effectively requires a prospective look at the problems that are likely to arise in response to change in the financial system – a different method from the reactive approach taken to date.

Let us consider an example based on a current proposal. Suppose the federal government imposes a tax (or other cost) on derivative and other complex transactions – including CDSs – entered into by banks and insurance companies.¹⁹⁰ Such a tax would, in principle, be similar to the premiums that traditional intermediaries must pay for government insurance – in effect, reacting to the current crisis by imposing a fee against future bailouts if substantial losses are incurred. Its purpose would be to increase the cost of derivatives transactions, and so limit their use by banks and other traditional intermediaries.

By focusing only on banks and insurance companies, the proposal fails to consider the potential impact of the risk management function that new market participants now conduct. Most likely, under such a regime, intermediaries that continued to use CDSs to outsource risk would do so only when the cost of

¹⁸⁸ See Raghuram G. Rajan, *Has Financial Development Made the World Riskier?* 2, 18-20 (Nat'l Bureau Econ. Research, Working Paper No. 11728, 2005), available at <http://www.nber.org/papers/w11728.pdf>.

¹⁸⁹ As this Article was going to press, the SEC adopted new money market fund regulations – consistent with the approach recommended here – that, among other things, would improve portfolio liquidity, reduce the weighted average maturity of assets, and increase credit quality in order to reduce the likelihood of future runs on MMFs. See Press Release, SEC Approves Money Market Fund Reforms to Better Protect Investors (Jan. 27, 2010), available at <http://www.sec.gov/news/press/2010/2010-14.htm>.

¹⁹⁰ The Obama Administration has, in fact, proposed such a tax. Damian Paletta, *Obama Proposes New Transaction Fees for Financial Firms' Riskiest Investments*, WALL ST. J., Jul. 23, 2009, at A2.

retaining that risk (for example, the risk-based capital charge) was greater than the cost – now increased by the new tax – of transferring it to a less-regulated entity. The result would likely be a concentration of the most toxic risk – where the cost of retaining it was the greatest – in the least regulated industry. If that risk could be walled off, then moving it from banks, insurance companies, and other intermediaries could be worthwhile. However, as AIGFP’s experience has shown, market participants are unlikely on their own to manage risk at socially optimal levels (particularly where, as here, the government has implicitly agreed to bail out the risk originators), leaving traditional intermediaries exposed to later problems if there is disruption (like a bank run or other shortfall in funding) among the new risk managers.

A function-only approach also has shortfalls. Applying bank regulation to a transferred bank function, like risk management, will not properly take account of the new institutions and markets that now perform that function. Like MMFs, for example, hedge funds and other new market participants have different agency costs than banks and other traditional intermediaries, in many cases, managing those costs more effectively. Regulation that responds to a bank’s agency problems may not be appropriate for the new risk managers. Moreover, bank regulation would fail to address new risks arising from the outsourced function, such as the potential impact on traditional intermediaries of runs in the capital markets as risk management is dispersed across a wide group of new participants.

An alternative, suprafunctional approach would start by breaking down the functions performed by traditional intermediaries and, in light of the problems associated with each, imposing new regulations to address those problems that take into account the institutions and markets now performing them. For example, firms that engage in a credit risk business – through trading in CDSs and other, related instruments – could become subject to a heightened level of regulation, reflecting the same concerns that historically prompted the regulation of banks and insurance companies. Rather than simply transposing existing regulation, however, a suprafunctional approach would take into account the new entities performing the traditional function and adjust accordingly. Portfolio limits, rather than capital charges, might be more applicable to hedge funds.

Likewise, reflecting the dispersion of risk across the market, the new regulation would be applicable to any entity that entered the credit risk business, not simply firms that are “too big” or “too interconnected” to fail. In return, those entities would be the only ones permitted to engage in that business – in effect, giving them a franchise whose value offsets the added cost of further regulation. The end result would be to extend existing concepts applicable to banks and insurance companies to new entities in the capital markets that assume functions traditionally managed within a regulated intermediary.

CONCLUSION

This Article has focused on the effectiveness of current U.S. financial regulation in light of changes in the financial system, principally over the last thirty years, including the creation of new products and services, functional convergence across intermediaries, and the shift in capital-raising and risk-bearing from traditional intermediaries to the capital markets. Those changes suggest the need for a new approach to financial regulation that takes account of similar problems that have arisen across the financial markets irrespective of function, category, or intermediary.

The trick, of course, is to identify those like functions that are increasingly performed outside traditional intermediaries (and existing regulation). Using traditional business models as a starting point, we can begin to see how similar functions – as well as similar issues – have arisen across the financial markets. At the same time, changes in the financial system have forced intermediaries to move into new business lines. Starting again with the traditional models, we can begin to outline those areas that affect intermediaries, but are beyond the scope of current regulation, and respond accordingly. What is critical is that, in formulating new regulation, we recognize that the financial system will continue to evolve, requiring a fresh (and ongoing) look at today's participants – both old and new. Failing to do so risks the creation of new regulation that suffers from the same deficiencies as the current framework.

APPENDIX A – GOVERNMENT-DIRECTED INSURANCE

Set out below are brief descriptions of the principal government-directed insurance programs and providers.

A. *Banks*

The FDIC supervises troubled depository institutions and has the power to declare an institution in default,¹⁹¹ at which time the FDIC can act as a conservator or receiver of the bank.¹⁹²

As an insurer, the FDIC must either pay a depositor's insured claims or make available to her a transferred deposit, in an equal amount, in another insured institution in the same community.¹⁹³ The FDIC assesses an insurance premium on depository institutions, calculated based on such factors as the amount of insured deposits and the institution's riskiness.¹⁹⁴ The FDIC's funding is almost exclusively through the premiums it assesses, set at levels to ensure that the Deposit Insurance Fund (which provides coverage for bank deposits) maintains a funding level of at least 1.15% (but no more than 1.50%) of total insured deposits.¹⁹⁵

The limit on coverage was temporarily increased from \$100,000 to \$250,000 per depositor through December 31, 2013.¹⁹⁶

B. *Insurance Companies*

Insurance guaranty associations operate on a state-by-state basis, and typically work closely with insurance receivers appointed by state insurance commissioners, subject to court approval. In most states, the relevant statute is based on a model act developed by the National Association of Insurance Commissioners, and often divided between property/casualty and life insurance carriers. For example, in New York, property/casualty claims that remain unpaid due to insolvency of the insurer are covered by the Property/Casualty Insurance Security Fund,¹⁹⁷ and policyholders of insolvent

¹⁹¹ 12 U.S.C. § 1821(c) (2006).

¹⁹² *Id.* § 1821(c), (e).

¹⁹³ *Id.* § 1821(f).

¹⁹⁴ *Id.* § 1817(b).

¹⁹⁵ *Id.*

¹⁹⁶ 12 U.S.C.A. § 5241 (West 2009); *Congress Extends \$250,000 Insurance Coverage Through 2013*, FDIC CONSUMER NEWS (Fed. Deposit Ins. Corp., Washington, D.C.), Spring, 2009, at 6 available at <http://www.fdic.gov/consumers/consumer/news/cnspr09/coverage.html>. The increase in FDIC coverage was originally part of the so-called Bailout Bill, but was due to expire at the end of 2009. Emergency Economic Stabilization Act of 2008, Pub. L. No. 110-343, § 136, 122 Stat. 3799 (amended 2009).

¹⁹⁷ N.Y. INS. LAW § 7603 (McKinney 2009).

life insurers are protected by the Life Insurance Company Guarantee Corporation.¹⁹⁸

C. *Securities Firms*

Cash and securities deposited by a customer with a securities firm are segregated from the firm's own property.¹⁹⁹

Congress also created the Securities Investor Protection Corporation ("SIPC"), as part of the Securities Investor Protection Act of 1970,²⁰⁰ to liquidate a securities firm in financial difficulty and insure customers against the loss of cash or securities on deposit when a securities firm fails.²⁰¹ The SIPC is authorized to pay up to \$500,000 per customer, including a maximum of \$100,000 for cash claims.²⁰²

D. *Thriffs*

The Federal Savings and Loan Insurance Corporation administered deposit insurance for U.S. savings and loan institutions before being abolished in 1989. The responsibility then passed to the FDIC.²⁰³

E. *Pension Funds*

If a defined benefit plan terminates with insufficient assets to satisfy its pension obligations, the Pension Benefit Guaranty Corporation ("PBGC") takes over the plan's assets and liabilities as trustee, using plan assets to cover what it can, and then paying any remaining nonforfeitable entitlements up to statutory limits.²⁰⁴

¹⁹⁸ *Id.* § 7706.

¹⁹⁹ 17 C.F.R. § 240.15c3-3 (2009).

²⁰⁰ Pub. L. No. 91-598, § 3, 84 Stat. 1637 (codified as amended at 15 U.S.C. § 78ccc (2006)).

²⁰¹ See Daniel J. Morse, *When a Securities Brokerage Firm Goes Broke: A Primer on the Securities Investment Protection Act of 1970*, AM. BANKR. INST. J., Feb. 2006, at 34, 34.

²⁰² 15 U.S.C. § 78fff-3(a).

²⁰³ Financial Institutions Reform, Recovery, and Enforcement Act of 1989, Pub. L. No. 101-73, 103 Stat. 183 (codified in scattered sections of 12, 18, and 31 U.S.C.).

²⁰⁴ 29 U.S.C. §§ 1301-68; see also *Pension Ben. Guar. Corp. v. LTV Corp.*, 496 U.S. 633, 637 (1990) ("When a plan covered under Title IV terminates with insufficient assets to satisfy its pension obligations to the employees, the PBGC becomes trustee of the plan, taking over the plan's assets and liabilities.").

APPENDIX B – SELECTED REGULATIONS

In his thoughtful 1976 article,²⁰⁵ Dean Clark offered examples of how financial intermediaries are regulated. My purpose here is to provide an updated, but abbreviated, list of examples to illustrate the continued regulatory oversight.

A. *Portfolio Regulation*

1. Commercial Banks

National Banks. Pursuant to 12 U.S.C. § 24 (Seventh), the standards by which national banks can purchase, sell, deal in, underwrite, and hold securities are prescribed in 12 C.F.R. §§ 1.1-1.8.²⁰⁶ National banks are also restricted from engaging in merchant banking activities, typically involving the purchase of an equity stake in a portfolio company for investment.²⁰⁷ Bank holding companies can acquire up to five percent of the voting shares of a portfolio company whose business is not closely related to banking.²⁰⁸

State Member Banks. Restrictions that apply to national member banks under 12 U.S.C. § 24 (Seventh), and 12 C.F.R. §§ 1.1-1.8 also apply to state banks that are members of the Federal Reserve System.²⁰⁹

Other State Banks. Under state law, a bank's real estate holdings may be limited to the bank's offices and require the sale of all other acquired real estate.²¹⁰ State regulations may also prescribe the valuation of bank assets.²¹¹

2. Life Insurance Companies

Insurance companies are largely regulated at the state level. These provisions restrict the investment of liability reserves to specific types of assets, require annual valuation of reserve liabilities, and set minimum paid-in-capital requirements.²¹²

²⁰⁵ Clark, *supra* note 33, at 4-10.

²⁰⁶ See also 12 U.S.C. §§ 29, 371 (2006) (restricting banks' ability to hold real property and extend real estate loans); *id.* § 84 (establishing caps on extending credit to a single borrower).

²⁰⁷ *Id.* § 24 (Seventh).

²⁰⁸ *Id.* § 1843(c)(6).

²⁰⁹ 12 U.S.C. § 335 (2006); 12 C.F.R. § 1.1(c) (2009).

²¹⁰ See, e.g., CAL. FIN. CODE §§ 750, 751 (West 1999); N.Y. BANKING LAW § 98 (McKinney 2009).

²¹¹ See, e.g., N.Y. BANKING LAW § 104.

²¹² For examples of minimum investment requirements, asset restrictions, and valuation rules for investments, stocks, and bonds, see N.Y. INS. LAW §§ 1405, 1414, 4202, 4217 (McKinney 2009).

B. *Investment Companies*

Mutual fund portfolio regulation consists of two types. In general, the emphasis is on ensuring that a fund's shareholders know the risks associated with their investment.²¹³ MMFs, however, are subject to special requirements regarding the quality of their investment portfolios.²¹⁴

C. *Capital Instruments*

1. Commercial Banks

Some of the historical limitations on commercial banks have been modified or repealed, most notably the phase-out of Regulation Q, which placed a ceiling on bank deposits. Sudden increases in interest rates in the late 1970s resulted in small investors moving their funds to intermediaries that were not subject to the same restrictions, prompting Congress to repeal the interest rate cap.²¹⁵

State Member Banks. The payment of interest on demand deposits continues to be prohibited, except as permitted by 12 U.S.C. § 371a. Limitations on bankers' acceptances appear in 12 U.S.C. § 372.

Other State Banks. The payment of interest on demand deposits in insured banks is prohibited.²¹⁶ Capital adequacy, under state law, may also be tied to a bank's liabilities (including capital notes or debentures and any contingent liabilities).²¹⁷

2. Life Insurance Companies

Life insurers typically borrow funds in the ordinary course of business, but repayment may be restricted by statute to the insurer's surplus funds.²¹⁸ In addition, state regulation may limit the aggregate amount of indebtedness that a life insurer can issue.²¹⁹ Other regulations limit the provisions of a life insurance contract.²²⁰

²¹³ See, e.g., 15 U.S.C. §§ 80a-8(b)(1), 80a-12(a), 80a-13 (2006) (requiring a recital of the fund's policies and prohibiting practices outside those recitals, such as borrowing money, underwriting securities, or concentrating investments in an industry); 17 C.F.R. § 210.6-03 (2009) (detailing the rules for the filing of financial statements).

²¹⁴ See *supra* notes 6, 103.

²¹⁵ R. Alton Gilbert, *Requiem for Regulation Q: What It Did and Why It Passed Away*, FED. RES. BANK OF ST. LOUIS REV., Feb. 1986, at 22, 30-34.

²¹⁶ 12 U.S.C. § 1828(g); 12 C.F.R. § 329 (2008).

²¹⁷ See, e.g., CAL. FIN. CODE § 660 (West 1999).

²¹⁸ See, e.g., N.Y. INS. LAW § 1307 (McKinney 2009).

²¹⁹ See, e.g., *id.* § 1323.

²²⁰ See, e.g., *id.* §§ 3201-3237.

3. Investment Companies

The Investment Company Act of 1940 includes specific capital structure limitations for registered open-end and closed-end mutual funds.²²¹

C. *Net Worth, Capital, or Surplus*

1. Commercial Banks

National Banks. A minimum capitalization of four million dollars is required to establish a national bank.²²² Furthermore, national banks are prohibited from withdrawing or reducing their “legal” capital.²²³ National banks must also be members of the Federal Reserve System.²²⁴

National banks are also subject to risk-based capital requirements that vary the amount of capital that a bank must maintain relative to the risk it bears – in effect, requiring a bank with a riskier portfolio to set aside a larger capital cushion.²²⁵ The Basel Committee on Banking Supervision has announced changes in how banks will determine their minimum capital set-aside requirements. Included in those changes will be a leverage ratio that acts as a “backstop” to the minimum capital requirements, a regulation intended to promote the build-up of capital buffers by banks which can be drawn upon in times of financial stress, and strengthen the quality of capital that banks hold in their reserves. The details of the changes are expected to be worked out by the end of 2010.²²⁶

State Member Banks. The Board of Governors of the Federal Reserve System sets capital and surplus requirements for state banks that apply for membership in the System. Once admitted, member banks may not reduce capital stock without the Board’s approval.²²⁷ The Board is also permitted, within statutory limits, to set reserve requirements as a percentage of deposits.²²⁸ State member banks are also subject to risk-based capital requirements.²²⁹

Other State Banks. Individual states establish the minimum capital requirements for banks chartered under their laws.²³⁰ The states also provide

²²¹ 15 U.S.C. § 80a-18 (2006).

²²² 12 U.S.C. § 281 (2006).

²²³ *Id.* §§ 56, 59.

²²⁴ 15 U.S.C. §§ 142, 282.

²²⁵ See 12 C.F.R. pt. 3 apps. A, B (2009); *id.* pt. 225 app. A (establishing a “risk based capital measure” applicable to bank holding companies).

²²⁶ See Press Release, Bank for Int’l Settlements, Basel II Capital Framework Enhancements Announced by the Basel Committee (July 13, 2009), *available at* <http://www.bis.org/press/p090713.htm>.

²²⁷ 12 U.S.C. § 329; Regulation H, 12 C.F.R. pt. 208.

²²⁸ 12 U.S.C. § 461(b); Regulation D, 12 C.F.R. pt. 204.

²²⁹ See 12 C.F.R. pt. 208 app. A.

²³⁰ See, e.g., N.Y. BANKING LAW § 4001 (McKinney 2009).

remedies for capital impairment and regulate capital reduction.²³¹ In addition, state law is responsible for establishing minimum reserve requirements.²³²

2. Life Insurance Companies

Insurers may be subject to minimum capital requirements.²³³ Insurers may also be subject to regulations on how to calculate their financial condition,²³⁴ as well as to risk-based and minimum capital requirements.²³⁵

3. Investment Companies

In general, the required minimum net worth for an investment company is \$100,000.²³⁶

4. Securities Firms

Rule 15c3-1 under the Securities Exchange Act of 1934 requires a securities firm to maintain sufficient liquid assets in order to satisfy its obligations to customers and others.²³⁷ A firm's requirements are based on a ratio of liabilities to net capital,²³⁸ as well as minimum requirements based on the type of business the firm conducts.²³⁹ Recall, as well, that securities firms are required pursuant to Rule 15c3-3 to maintain customer assets in a "segregated" account.²⁴⁰

²³¹ See, e.g., CAL. FIN. CODE §§ 660, 661 (West 1999); N.Y. BANKING LAW § 114.

²³² See, e.g., N.Y. BANKING LAW §§ 14, 107.

²³³ See, e.g., N.Y. INS. LAW § 4202 (McKinney 2009) (requiring paid-in capital of at least two million dollars and paid-in initial surplus equal to greater of four million dollars or two-hundred percent of its capital).

²³⁴ See *id.* § 1301.

²³⁵ See *id.* § 1322.

²³⁶ 15 U.S.C. § 80a-14 (2006); 17 C.F.R. §§ 270.14a-1, 14a-2 (2009).

²³⁷ 17 C.F.R. § 240.15c3-1.

²³⁸ *Id.* § 240.15c3-1(a).

²³⁹ *Id.* § 240.15c3-1(a)(2).

²⁴⁰ *Id.* § 240.15c3-3; see also LOUIS LOSS & JOEL SELIGMAN, FUNDAMENTALS OF SECURITIES REGULATION 853-56 (4th ed. 2004).