REFRAMING FINANCIAL REGULATION

By Charles K. Whitehead*
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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.

Consider the growth of the private credit markets. Risk management is a key function of intermediation and at the heart of financial regulation. Banks and insurance companies, however, can now rely on new capital markets instruments, including credit default swaps, to transfer risk to third parties – in effect, outsourcing risk management to new entrants, like hedge funds, which largely fall outside the current regulatory framework. Among old problems, hedge funds (like banks and other intermediaries) are likely to incur greater risk than is socially optimal, absent regulation or other restraint. New problems include the difficulty of managing risk among a diverse group of capital markets investors. Recent crises involving American International Group (AIG), Bear Stearns, and money market funds tell a similar story.

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.

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I. 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

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[1] *See* Erik F. Gerding, *The Next Epidemic: Bubbles and the Growth and Decay of Securities Regulation*, 38 CONN. L. REV. 39, 418-24 (2006) (describing tendency of reactive regulation to follow financial crises); Heidi Mandanis Schooner, *Regulating Risk Not Function*, 66 U. CIN. L. REV. 441, 480-81 (1998) (finding that "our regulatory structure has generally been reactive to market events, thus focusing on existing products and activities"); 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").

market and the broad dispersion of stock 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, 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]

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[2] *See* Banking Act of 1933 §§ 16, 20, 21, 32, codified at 12 U.S.C. §§ 24 (seventh), 377, 378(a), 78 (2006) (the Glass-Steagall Act). 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, 15 U.S.C. §§ 6801-09, 6821-27 (2006).

[3] *See infra* notes 64-66 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), and Howell E. Jackson, *Regulation in a Multisectored Financial Services Industry: An Exploration Essay*, 77 WASH. U. L. Q. 319, 322-31 (1999).

[4] The savings and loan crisis of the 1980s and 1990s was 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 (Yale Sch. of Mgmt., Working Paper, May 9, 2009), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1401882. Likewise, the 22.6 percent drop in the Dow Jones index on October 19, 1987 (known as "Black Monday") – which exceeded the 12.8 percent decline at the start of the Great Depression – was largely limited to the stock market, 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 67-73 and accompanying text; *see also* Peter Tufano, *Financial Innovation, in* 1A HANDBOOK OF THE ECONOMICS OF FINANCE 307, 311-12 (George M. Constantinides et al. eds., 2003); 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. & QUANT. ANAL. 459, 459-60 (1986).

[6] MMFs are mutual funds whose portfolios are limited to short-term, highly liquid, and relatively low-risk debt instruments. *See infra* note 98 and accompanying text.

[7] *See infra* note 71 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).

Increasingly, banks relied on new instruments – like credit default swaps ("CDSs")[9] – to outsource risk management to less regulated entities, including hedge funds,[10] 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 percent between 1999 and 2004 to become a $1 trillion 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 that, to a great extent, was 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.

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[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. (forthcoming 2009) (manuscript at 4-9, *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1346552); *see also* MORTON GLANTZ, MANAGING BANK RISK: AN INTRODUCTION TO BROAD-BASE CREDIT ENGINEERING 531-49 (2003); Blythe Masters & Kelly Bryson, *Credit Derivatives and Loan Portfolio Management, in* HANDBOOK OF CREDIT DERIVATIVES 43-85 (Jack Clark Francis et al. eds., 1999) [hereinafter HANDBOOK OF CREDIT DERIVATIVES]. 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* 30-32 (Seton Hall Pub. L. Res. Paper No. 906613, 2007), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=906613; 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 161 and accompanying text; *see also* Technical Comm. of the Int'l Org. Sec. Comm'n, Consultation Report, *Hedge Funds Oversight* 6-9 (Mar. 2009), *available at* http://www.iosco.org/library/pubdocs/pdf/IOSCOPD288.pdf [hereinafter IOSCO, *Hedge Funds*]. In addition, hedge funds and their advisors are subject to minimal regulation – often being 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, even though about seventy percent of hedge fund assets are managed by advisors that have voluntarily registered with the Securities and Exchange Commission (the "SEC"), *see After Dodging Many Bullets, Hedge Funds Are Back in Regulators' Sights*, KNOWLEDGE@WHARTON, Mar. 18, 2009, *at* http://knowledge.wharton.upenn.edu/article.cfm?articleid=2185. In addition, the hedge fund industry, traditionally under SEC oversight, 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?* 51-53 (Univ. Iowa Legal Stud. Res. Paper No. 08-51, Dec. 2008), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1309776; Paredes, *supra*, at 1000.

[11] *See infra* notes 29-32, 118-127 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.

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, whether an entity is a bank, insurance company, or securities firm – in many cases, defined by the business models grounded of the 1930s – dictates the principal financial regulations (and associated cost) to which the entity is subject.[13] The financial markets, however, are well on the way to bypassing those categories. The result has been the re-emergence 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 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 that financed the purchase with commercial paper. Funding longer-term assets with short-term credit created many of the same problems that have historically been addressed by banking regulation. 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 inter-connected" 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

[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 102-104 and accompanying text.

[15] *See infra* notes 108-117 and accompanying text.

[16] *See* Dep't of Treasury, *Financial Regulatory Reform, A New Foundation: Rebuilding Financial Supervision and Regulation* 20-27, 37-38 (Jun. 17, 2009), *available at* http://www.financialstability.gov/docs/regs/FinalReport_web.pdf [hereinafter Treasury, *Financial Regulatory Reform*]; *see also* Group of Thirty, *Financial Reform: A Framework for Financial Stability* 8-10 (Jan. 15, 2009), *available at* http://www.group30.org/pubs/recommendations.pdf [hereinafter Group of Thirty, *Financial Reform*]; Congressional Oversight Panel, *Special Report on Regulatory Reform* 22-24, 29 (Jan. 2009), *available at* http://cop.senate.gov/documents/cop-012909-report-regulatoryreform.pdf [hereinafter COP, *Special Report*].

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 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 a 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 whose analysis is beyond the scope of this Article.

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

[18] One such concern, involving financial risk management, is described *infra* at notes 167-171 and accompanying text.

[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 OF ENGLAND 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?*, 32 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* FEDERAL DEPOSIT INSUR. CORP., VOL. I: AN EXAMINATION OF THE BANKING CRISES OF THE 1980S AND EARLY 1990S 3, 5, 35-38 (Dec. 1997), *available at* http://www.fdic.gov/bank/historical/history/3_85.pdf.

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 III, 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 IV, I consider the evolving role of financial regulation and the need for new regulation to reflect change and convergence in the marketplace. I propose an 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. Part V concludes.

II. 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

[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. Center Working Paper 00-34, May 1999), *available at* http://fic.wharton.upenn.edu/fic/papers/00/0034.pdf.

them.[24] More recently, with increased trading in private credit instruments, the feedback provided by 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 the two – 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, which cap some portion of that risk through deductibles, limits, and other policy features, but which 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 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

[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).

[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* Table 1 (Fed. Reserve Bank of New York 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*, 26 STAN. ENVT'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).

[30] *See* Merton, *supra* note 22, at 23; Whitehead, *supra* note 8, at 655-58.

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, 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 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

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[31] *See infra* notes 119-120 and accompanying text; *see also* Robert C. Merton, *Financial Innovation and Economic Performance*, 4 J. APPLIED CORP. FIN. 12, 12 (1992) (noting 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 the end of 2007, for example, an estimated $62 trillion in notional amount of CDSs were traded, up from $632 billion in 2001. *See* David Mengle, *Credit Derivatives: An Overview* 11 (2007 Fin. Mkts. Conf., Fed. Reserve Bank of Atlanta, May 2007), *available at* http://www.frbatlanta.org/news/conferen/07fmc/07FMC_mengle_present.pdf; Gretchen Morgenson, *First Comes the Swap. Then It's the Knives*, N.Y. TIMES, June 1, 2008, at BU.

[33] *See* Robert Charles Clark, *The Soundness of Financial Intermediaries*, 86 YALE L.J. 1, 12 (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 (1941). 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* 7-49 APPLEMAN ON INSURANCE §§ 49.7, 49.9 (2009); *see also* N.Y. INS. LAW §§ 1102, 1104, 2601 (McKinney 2009). 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 Committee on Banking Supervision (a global forum of senior bank regulators) also lists as a best practice the vetting of directors and senior managers to assess personal integrity. *See* Basel Comm. on Banking Supervision, *Core Principles for Effective Banking Supervision* 17-18 (Sept. 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 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, *see* 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, *see* 15 U.S.C. § 80a-17(d) (2006). The SEC subsequently issued rule 17d-1, 17 C.F.R. § 270.17d-1 (2008), 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*

substantial decline in fraud that permeated the mutual fund industry before they were introduced.[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 more risky 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 banks to reduce earnings volatility – prompted by the banks' move away from traditional lending revenues to a greater reliance on less reliable, fee-based earnings tied to new products and services.[40] Customers (as creditors), nevertheless, may worry that managers will favor shareholder interests over their own,[41] absent a government guarantee of the customers'

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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 benefits, *see, e.g.*, In the Matter of Imperial Financial Services, Inc., 42 S.E.C. 717, 727 (1965).

[36] *See* Joel Seligman, *The New Corporate Law*, 59 BROOKLYN L. REV. 1, 37-38 (1993).

[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) (noting that managing risk has always been "the bread and butter of financial intermediaries").

[40] *See* Robert DeYoung & Karin P. Roland, *Product Mix and Earnings Volatility at Commercial Banks: Evidence from a Degree of Leverage Model*, FED. RESERVE BANK OF CHICAGO PROCEEDINGS 449-45 (May 1999). 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).

money[42] 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 directly control an intermediary's risks.[46] The sheer number of customers, however, makes it prohibitive to negotiate covenants with each of them or coordinate 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; 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.

[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 58-63 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.

[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 [hereinafter RISKS OF FINANCIAL INSTITUTIONS] 341, 354 (Mark Steven Carey & René M. Stulz eds., 2007).

[49] *See* Frank H. Easterbrook, *Derivative Securities and Corporate Governance*, 69 U. CHI. L. REV. 733, 737 (2002).

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] For 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, 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

[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); *see also* Paredes, *supra* note 10, at 983.

[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 in a Time of Restructuring*, 1989 DUKE L.J. 92, 139-42 (noting "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 temporarily cover shortfalls in liquidity 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.

pension funds also benefit from government-directed insurance programs.[54] Insurance, however, creates a risk of moral hazard. An intermediary may 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 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 assets[59] and its capital structure,[60] and indirectly

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[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 96-100 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, Dep't of Treasury, *Treasury Announces Expiration of Guarantee Program for Money Market Funds* (Sept. 29, 2009), *available at* http://www.ustreas.gov/press/releases/tg293.htm.

[55] *See* Patricia A. McCoy, *The Moral Hazard Implications of Deposit Insurance: Theory and Evidence*, *in* CURRENT DEVELOPMENTS IN MONETARY AND FINANCIAL LAW 417, 423-25 (Int'l Monetary Fund Legal Dep't, 2008); 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); Franklin Allen & Douglas Gale, *Capital Adequacy Regulation: In Search of a Rationale* 4-6 (Wharton Fin. Inst. Ctr., Working Paper 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 also infra* notes 143-146 and accompanying text.

[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 Appendix B for examples of regulations governing a financial intermediary's investment

through rules regarding the intermediary's net worth, capital, or surplus that effectively cap its risk-taking activities.[61] Those regulations also lower systemic risk by reducing the likelihood of disruption in the intermediation process itself. Insurance companies, for example, are required to meet minimum capital standards in order to protect policy-holders against insolvency, but also to safeguard against the systemic consequences of default by a large insurer.[62] 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.[63]

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.

III. 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.[64] The Glass-Steagall Act, for example, created a clear regulatory divide between commercial and

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portfolio.

[60] See 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, 721-25 (2006). Examples of regulations covering net worth, capital (including risk-based capital), and surplus are included in Appendix B. A discussion of differences in regulatory capital requirements among financial intermediaries is also set out *infra* at notes 102-104 and accompanying text.

[62] *See* Herring & Santomero, *supra* note 23, at 13-14; Robert W. Klein, *An Overview of the Insurance Industry and Its Regulation* 21-25 (Working Paper, June 12, 2008), *available at* http://www.rmi.gsu.edu/insurance_regulation/rel_papers/Klein_Reg Overview_6-12-08.pdf; *see also* Brady Dennis, *AIG Warned of 'Catastrophic' Failure*, N.Y. TIMES, Mar. 10, 2009, at D1.

[63] *See* Clark, *supra* note 33, at 47.

[64] *See* Allen & Gale, *supra* note 55, at 3; 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 BROOKLYN L. REV. 1043, 1056-58 (1998) (describing definitional distinctions that control regulatory oversight); *see also* Heidi Mandanis Schooner & Michael Taylor, *United Kingdom and United States Responses to the Regulatory Challenges of Modern Financial Markets*, 38 TEX. INT'L L.J. 317, 328-29 (2003) (noting that U.S. regulation is largely tied to business model rather than function).

investment banking.[65] Twenty years later, the Bank Holding Company Act extended that separation by walling off banks from the underwriting of insurance products.[66]

Those differences began to blur in the 1970s, in part due to increasing competition,[67] new products and other innovation,[68] and changes in financial regulation.[69] For banks, for 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.[70] New technologies and new competitors, like MMFs and finance companies, also made the banks' traditional business model less profitable.[71]

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. Financial market participants saw an opportunity to profit from the creation and trading of new financial instruments that responded to the new demands.[72] 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

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

[66] Bank Holding Company Act of 1956, 84 Cong. Ch. 240, 70 Stat. 133 (1956) (codified as amended at 12 U.S.C. §§ 1841-1850 (2006)). *See* Alan E. Sorcher & Satish M. Kini, *Does the Term "Bank Broker-Dealer" Still Have Meaning?*, 6 N.C. BANKING INST. 227, 242-43 (2002).

[67] *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); Michael C. Keeley, *Deposit Insurance, Risk, and Market Power in Banking*, 80 AM. ECON. REV. 1183, 1184-86 (1990); Sorcher & Kini, *supra* note 66, at 232-34; Franklin Allen & Anthony M. Santomero, *What Do Financial Intermediaries Do?*, 25 J. BANKING & FIN. 271, 274-82 (2001).

[68] *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 (1995).

[69] *See* COOPER & FRASER, *supra* note 67, at 195-217; ROBERT E. LITAN, WHAT SHOULD BANKS DO? 33-59 (1987); Berger, Kashyap & Scalise, *supra* note 68, at 127.

[70] *See* Smoot, *supra* note 65, at 654-60; Whitehead, *supra* note 61, at 721-25.

[71] 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 (Briefing Paper, Econ. Pol'y Inst., 1993). 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 (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, $1/share. Together, MMFs and finance 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.

[72] *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).

counterparties to those who, through diversification or otherwise, could manage that risk at lower cost.[73] 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 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, they 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 Buyer's default, but benefiting from any gain if Buyer paid more than the discounted price.[74]

- 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, as well as adjust the amount of coverage depending on changes in Buyer's financial position.[75]

Today, faced with the same problem, the COO would have available to her an even greater menu of new products and strategies to select from.[76]

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[73] *See* Allen & Santomero, *supra* note 32, at 1479-80; Van Horne, *supra* note 72, at 621-22.

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

[75] For a description of a commercial credit insurance policy, see AON Trade Credit, Inc. v. Quintec, S.A., 981 So.2d 475, 478 (Fla. 3d DCA 2008); *see also* Arjan van de Wall, *Trade Credit Insurance: A New and Sustainable Approach to Corporate Credit Management*, CREDIT & FIN. MGM'T REV., Jan 1, 2004, at 4; Roberto Ceniceros, *Credit Crunch Fuels Rush for Coverage; Trade Credit Insurers See Rise in Demand as Bankruptcies Grow*, BUS. INS., Apr. 13, 2009.

[76] 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*

- 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. Like factoring, interest holders would take on both the risks and benefits of Buyer's credit quality.[77]

- Alternatively, the COO could decide to short sell Buyer's stock,[78] with any profit potentially offsetting a portion of the losses it 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 whose value is tied to an outstanding Buyer loan or bond. Using a CDS, the COO 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 risk in the event of a mismatch between the CDS and the amounts owed by Buyer to Seller.[79]

- 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.[80]

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 –

Financial Markets: Hybrid and Securitized Risk-Transfer Solutions, 76 J. RISK & INSUR. 493, 515-27 (2009).

[77] *See* White, *supra* note 74, at 153-55.

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

[79] *See supra* note 9 and accompanying text.

[80] *See* Jonathan Batten & Warran Hogan, *A Perspective on Credit Derivatives*, 11 INT'L REV. FIN. ANALYSIS 251, 255-57 (2002).

with banks, most notably, losing ground to less regulated businesses, and the securities markets becoming a lower cost source of capital and risk-bearing.[81] 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.[82] Thus, Seller's exposure to Buyer could be managed through one or more of a bank, insurance company, securities firm, or hedge fund, in each case with economically similar outcomes.

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.

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.[83] 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.[84] Additional regulatory changes reflected new market participants and products, in some cases spurred by pressure to stay competitive,[85] and in others, in order to accommodate new financial practices.[86]

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

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

[82] *See* Gorton, *supra* note 64, 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.

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

[84] *See* F 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 66, at 233-34.

[85] *See* Coffee & Sale, *supra* note 10, at 23, 30.

[86] *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).

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.[87] Banks, in turn, face a liquidity problem, since deposits are typically invested in assets that cannot be sold quickly enough to repay large numbers of depositors.[88]

Bear Stearns' meltdown in spring 2008 was also a bank run – but involving a securities firm, not a bank, borrowing through the capital markets from investors who were sophisticated institutions, not retail depositors.[89] Like a bank, Bear Stearns relied on short-term credit to fund longer-term investments, including subprime assets, a common practice across Wall Street.[90] Creditors relied on collateral (including subprime assets) to protect against a decline in Bear Stearns' credit quality.[91] Beginning in 2007,

[87] *See* Douglas W. Diamond & Phillip H. Dybvig, *Banking Theory, Deposit Insurance, and Bank Regulation*, 59 J. BUS. 55, 65-66 (1986). Although uncommon today, the United 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.

[88] 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).

[89] *See* 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. Securities that had traded freely became illiquid following Michael Milken's six felony convictions (Milken was a senior Drexel Burnham executive who launched the high-yield bond market), changes in regulation requiring thrifts to sell their holdings, and a collapse in confidence over the value of high-yield instruments – resulting, like in the case of Bear Stearns, in an increased cost of borrowing that forced Drexel Burnham into bankruptcy. *See* Franklin Allen & Richard Herring, *Banking Regulation versus Securities Market Regulation* 28-34 (Wharton Fin. Inst. Center Working Paper No. 01-29, Jul. 2001), *available at* http://knowledge.wharton.upenn.edu/papers/1174.pdf.

[90] *See* 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 10; 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.

[91] *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 repo buyer's object is not to invest in the securities; rather, it expects to receive a return from the repo seller for the use of its cash. Accordingly, as

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. That liquidity suddenly dried up – in a classic bank run – as creditors became troubled over Bear Stearns' exposure to credit derivatives and subprime loans.[92] 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, causing Bear Stearns' balance sheet problems to be transmitted across the market.[93]

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, described in more detail below, 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.[94] When subprime prices declined further, AIG was obligated to post additional collateral, eventually requiring the federal government to bail out the firm when it became unable to meet further calls.[95]

In fall 2008, when the share price of the Reserve Primary Fund, the nation's oldest MMF, fell below the presumptive minimum of $1/share – the first MMF in

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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. 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* Jeanne L. Schroeder, *A Repo Opera: How Criimi Mae Got Repos Backwards*, 76 AM. BANKR. L.J. 565, 570-72 (2002). Repo transactions take place through purchases and sales of securities in the capital markets. For ease of reference, however, I sometimes refer to the Bear Stearns transactions by their economic equivalence as "loans" and "collateral."

[92] *See* Chairman Ben S. Bernanke, Bd. of Governors of the Federal Res. Sys., *Speech at the Fed. Reserve Bank of Kansas City's Ann. Econ. Symp.: Reducing Systemic Risk* (Aug. 22, 2008), *available at* http://www.federalreserve.gov/newsevents/speech/bernanke20080822a.htm.

[93] *See* Gorton, *supra* note 4, at 4-5, 31-35; Brunnermeier, *supra* note 90, at 82-84, 88; *see also* Tobias Adrian & Hyun Song Shin, *Liquidity and Financial Contagion*, Banque de France, Fin. Stability Rev. – Special Issue on Liquidity, No. 11, Feb. 2008, at 2-3, *available at* http://www.banque-france.fr/gb/publications/telechar/rsf/2008/etud1_0208.pdf.

[94] *See* Gary Gorton, *The Panic of 2007* 65-66 (Yale Sch. of Mgmt., Working Paper, Aug. 25, 2008), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1255362 (describing collateral calls).

[95] *See infra* notes 128-159 and accompanying text; *see also* Sjostrom, *supra* note 9, at (manuscript at 9-16).

fourteen years to "break the buck"[96] – the news sparked a market-wide run by investors, who withdrew a total of approximately $480 billion in cash.[97] 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.[98] 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.[99] Thus, the drop below $1/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 comprised a substantial portion of their investments) and a general freeze on new issuance.[100]

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 Stearns' 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' 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' 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 costs were particularly problematic, resulting in a downward spiral as Bear Stearns was forced to sell subprime assets, causing a drop in their price (and collateral

[96] *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 ICI, *Money Market Report*, *supra* note 98, at 53-67.

[97] *See* Daniel Gross, *The Anatomy of Fear*, NEWSWEEK, Oct. 20, 2008, at 31; Neil Irwin, *Fed Prepared to Prop Up Money-Market Funds*, WASH. POST, Oct. 22, 2008, at D1; Annys Shin, *Funds Turn To Treasury Guaranty; Money-Market Managers Seek to Boost Confidence*, WASH. POST, Oct. 12, 2008, at F01.

[98] *See* 17 C.F.R. 270.2a-7 (2008); *see also* Investment Company Institute ("ICI"), *Report of the Money Market Working Group* 31-39 (Mar. 17, 2009), *available at* http://www.ici.org/pdf/ppr_09_ mmwg.pdf (describing regulation of MMFs) [hereinafter ICI, *Money Market Report*].

[99] *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 $1).

[100] *See* 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); Edmund L. Andrews & Michael M. Grynbaum, *Fed Considers Plan to Buy Companies' Unsecured Debt*, N.Y. TIMES, Oct. 7, 2008, at A1; *see also* EDWARDS, *supra* note 71, at 76-91.

value), requiring Bear Stearns to post additional collateral or sell more assets, and so forth.[101]

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 their systemic importance, the resulting harm to the economy.[102] For insurance companies, capital requirements principally protect policyholders. 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.[103] 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 firm's adjusted liquidation value, requiring it to maintain a sufficient amount of liquid assets in order to satisfy its obligations to customers and others.[104]

Regulators have long known that intermediaries transfer risk based on their relative cost of capital.[105] Properly structured, capital requirements provided an incentive for intermediaries to transfer risk to lower cost participants in order to optimize risk allocation.[106] 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.[107]

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[101] *See* Gorton, *supra* note 4, at 33-35; Brunnermeier, *supra* note 90, at 92-94.

[102] See Appendix A for examples of bank capital requirements. *See also* Allen & Herring, *supra* note 89, at 4-7; The Joint Forum, *Risk Management Practices and Regulatory Capital: Cross-Sectoral Comparison* 10-11, 31, 34-38 (Nov. 2001), *available at* http://www.bis.org/publ/joint04.pdf [hereinafter Joint Forum, *Risk Management*]; Stephen Morris & Hyun Song Shin, *Financial Regulation in a System Context* 2 (BROOKINGS PAPERS ON ECON. ACTIVITY, Sept. 7, 2008), *available at* http://www.brookings.edu/economics/bpea/~/media/Files/Programs/ES/BPEA/2008_fall_bpea_papers/2008_fall_bpea_morris_shin.pdf.

[103] See Appendix B for examples of insurance capital requirements. *See also* Joint Forum, *Risk Management*, *supra* note 102, at 12-13, 29-30, 41-46; Klein, *supra* note 62, at 23-24.

[104] See Appendix B for a description of the net capital rules applicable to securities firms. *See also* Joint Forum, *Risk Management*, *supra* note 102, at 11-12, 30-31, 38-41; Allen & Herring, *supra* note 89, at 22-24.

[105] *See* Joint Forum, *Risk Management*, *supra* note 102, at 46-57; Frank Partnoy, *Financial Derivatives and the Costs of Regulatory Arbitrage*, 22 J. CORP. L. 211, 227-35 (1997) (describing use of derivatives to arbitrage financial regulation).

[106] *See* Günter Franke & Jan Pieter Krahnen, *Default Risk Sharing between Banks and Markets: The Contribution of Collateralized Debt Obligations*, *in* 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).

[107] *See* Allen & Gale, *supra* note 48, at 346.

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. Banks were reportedly forced to move subprime assets off their balance sheets in light of the greater capital costs to which they were subject compared to securities firms. Assets that were traditionally held by banks moved to a "shadow" banking system comprised of structured investment vehicles and other financing conduits set up to minimize regulatory capital charges.[108] Those vehicles raised funds primarily by selling short-term commercial paper and medium-term notes to MMFs and other investors, the proceeds of which were used to purchase longer-term mortgage loans (or, in some cases, mortgage-backed securities) – in effect, replicating the short-term/long-term financing relationship traditionally managed by commercial banks.[109] Assets owned by the conduits were used to make payments on the outstanding securities, as well as provide collateral in the event of default.[110] Unlike banks, however, the conduits lacked a safety net – 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.[111]

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.[112] 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.[113] As concerns arose over loan quality, however, investors grew reluctant to roll-

[108] *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, New York City, Reducing Systemic Risk in a Dynamic Financial System, Remarks at The Economic Club of New York (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, 59 (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." *See* Nelson D. Schwartz & Julie Creswell, *What Created This Monster?*, N.Y. TIMES, Mar. 23, 2008, at BU1, BU7.

[109] *See* Standard & Poor's, *Structured Investment Vehicle Criteria*, *available at* http://www2.standardandpoors.com/portal/site/sp/en/us/page.article/2,1,1,0,1031342466642.html?vregion=us&vlang=en.

[110] *See* Brunnermeier, *supra* note 90, at 79-80.

[111] *See* Geithner, *supra* note 108. Professor Gorton also describes the substantial rise in off-balance sheet financing in Gorton, *supra* note 4, at 25-29.

[112] 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.

[113] As former Citigroup Chairman and CEO Charles Prince was famously quoted, "When the music stops, in terms of liquidity, things will get complicated. But as long as the music is playing, you've got to

over or continue holding subprime mortgage-backed investments.[114] In many instances, the sponsoring bank agreed to move the loans back on to its balance sheet[115] or had extended a credit line to the conduit and so continued to be exposed to a decline in the value of the subprime assets.[116] The result, in either case, was sudden write-offs by the sponsoring bank – to the surprise of regulators, customers, and shareholders – as mortgage values dropped.[117] 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.[118] Investors, however, are 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 provide an attractive alternative. Lenders can transfer all or a portion of a borrower's credit risk without requiring a working capital commitment,[119] which opened up the credit market to new participants, increasingly hedge funds.[120] In effect, with CDSs,

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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.

[114] *See* Shannon 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.

[115] 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 114.

[116] *See* Brunnermeier, *supra* note 90, at 80.

[117] *See Testimony of Robert E. Litan, Vice President, Research & Policy, The Kauffman Foundation, and Senior Fellow, Economic Studies & Global Economics Programs, The Brookings Institution, Before the Senate Committee on Homeland Security and Governmental Affairs: Where Were The Watchdogs? Systemic Risk and the Breakdown of Financial Governance* 3 (Mar. 4 2009), *available at* http://hsgac.senate.gov/public/_files/030409Litan.pdf; Daniel Immergluck, *Private Risk, Public Risk: Public Policy, Market Development, and the Mortgage Crisis*, 36 FORDHAM URB. L.J. 447, 461-64 (2009).

[118] *See* Whitehead, *supra* note 8, at 656-57.

[119] *See* JOHN B. CAOUETTE, EDWARD I. ALTMAN & PAUL NARAYANAN, MANAGING CREDIT RISK: THE NEXT GREAT FINANCIAL CHALLENGE 311-12 (1998); GLANTZ, *supra* note 101, at 532; Angus Duncan, *Loan-only Credit Default Swaps: The March to Liquidity,* COM. LENDING REV., Sept.-Oct. 2006, at 19, 19-20; 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 (noting that "[w]hen investors can't get the loans, they're increasingly using credit-default swaps").

[120] *See* U.S. Government Accountability Office ("GAO"), *Credit Derivatives: Confirmation Backlogs Increased Dealers' Operational Risks, but Were Successfully Addressed after Joint Regulatory Action* 6 n.8 (GAO-07-716) (June 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

banks can continue to hold and fund an asset – and maintain the client relationship[121] – 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 hedge funds, 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. 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.[122]

CDSs, however, pose their own unique problems. Unlike most outsourcing, it may be difficult for the risk originator 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.[123] Originators and managers, of course, share an interest in ensuring that the risk is properly managed. However, like banks, outside managers may incur risks 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.[124] For banks, prudential regulation helps manage the amount of risk incurred, and the 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

percent), hedge funds (32 percent), insurers (17 percent), pension funds (4 percent), and mutual funds (3 percent)"); Risk, *supra* note 119; Daniel Fisher, *A Dangerous Game*, FORTUNE, Oct. 16, 2006, at 40,40 (citing Greenwich Associates analysis that 58% of CDSs are traded by hedge funds); Janet Morrissey, *Credit Default Swaps: The Next Crisis?*, TIME, Mar. 17, 2008, *available at* http://www.time.com/time/business/article/0,8599,1723152,00.html (noting that an original CDS can be traded fifteen or twenty times).

[121] 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. Securities Litigation, 346 F. Supp.2d 628, 651-52 (S.D.N.Y. 2004).

[122] *See* George S. Geis, *Business Outsourcing and the Agency Cost Problem*, 82 NOTRE DAME L. REV. 955, 982-1002 (2007) (analyzing techniques to control agency costs in outsourcing).

[123] For example, at the time of its bankruptcy, there were 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. On a net basis, however, only $5.2 billion was ultimately paid out. Part of the difference reflected trading among market participants, with offsetting trades shrinking the amount of actual risk that was covered by outstanding swaps. *See* Gordon Platt, *Credit Default Swaps Market Outstandings Shrink as Dealers Tear Up Offsetting Agreements*, GLOBAL FIN. MAG., Dec. 2008, at 68.

[124] *See supra* notes 55-57, and *infra* notes 143-146, and accompanying text.

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.[125] The resulting impact on the financial markets is difficult to gauge,[126] but – like the AIGFP story, below – a run on hedge funds may ripple through to intermediaries, like banks and insurance companies, that have relied on CDSs to mitigate credit exposure.[127]

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, AIG was one of the world's largest financial holding companies, engaged in the insurance, financial services, and asset management businesses.[128] Most of AIG's profits were generated by its insurance subsidiaries, although operating income from its non-insurance businesses rose to over 29 percent of AIG's bottom line in 2005.[129] A substantial portion of that income (roughly 17.5 percent), 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.[130]

[125] *See* Tomas Garbaravicius & Frank Dierick, *Hedge Funds and Their Implications for Financial Stability* 56-63 (Eur. Cent. Bank Occasional Paper No. 34, Aug. 2005), *available at* http://www.ecb.int/pub/pdf/scpops/ecbocp34.pdf.

[126] Although derivatives are held among a broad cross-section of banks, the impact of a fall in the CDS market is likely to be concentrated among the five largest, which hold more than 90 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* 1, 5-6 (Dec. 29, 2008), *available at* http://www.occ.treas.gov/ftp/release/2008-152a.pdf.

[127] Recent change in the financial markets may help limit the impact. The first central counterparty ("CCP") for CDSs began to operate in March 2009. *See* Gordon Platt, *ICE Begins Clearing Credit Default Swaps As Counterparty Risk Hits Record High*, GLOBAL FIN. MAG., Apr. 2009, at 64. Each party transfers its CDS position to the CCP after a trade is agreed, potentially minimizing their counterparty credit exposure. Of course, CDS trades that continue to be handled directly will still be subject to the risk of counterparty default. *See* Darrell Duffie & Haoxiang Zhu, *Does a Central Clearing Counterparty Reduce Counterparty Risk?* 2-3 (Rock Center for Corp. Gov., Working Paper No. 46, Feb. 27, 2009).

[128] 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. *See also* AMERICAN INTERNATIONAL GROUP, INC., 2007 ANNUAL REPORT (FORM 10-K), at 3-13 [hereinafter AIG 2007 ANNUAL REPORT], *available at* http://www.sec.gov/Archives/edgar/data/5272/000095012308002280/y44393e10vk.htm#102; *Testimony of Scott M. Polakoff, Senior Deputy Director & Chief Operating Officer, Office of Thrift Supervision, Before the Senate Committee on Banking, Housing, and Urban Affairs: Hearing on American International Group: Examining What Went Wrong, Government Intervention, and Implications for Future Regulation* 3-5 (Mar. 5, 2009), *available at* http://banking.senate.gov/public/_files/PolakoffTestimony3509.pdf (describing AIG, AIGFP, and AIG's securities lending business) [hereinafter *Polakoff March 2009 Testimony*].

[129] AIG 2007 ANNUAL REPORT, *supra* note 128, at 5 (disclosing that in 2005 financial services operations accounted for $4.424 billion of AIG's total operating income of $15.213 billion).

[130] AMERICAN INTERNATIONAL GROUP, INC., AMENDED 2005 ANNUAL REPORT (FORM 10-K/A), at 13, 93, *available at* http://www.sec.gov/Archives/edgar/data/5272/ 000095012306007835/y20400e10vkza.htm [hereinafter AIG 2005 ANNUAL REPORT]; *Polakoff March 2009 Testimony*, *supra* note 128, at 4-5.

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, using a sophisticated computer model to pool and, if necessary, offset the exposures it incurred.[131] What complicated the plan was AIGFP's decision in the late 1990s to enter the CDS market.[132] 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.[133]

Beginning in 2003, AIGFP wrote close to $80 billion 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.[134] 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.[135] Nevertheless, during those two years, AIGFP's customers grew to include hundreds of U.S. and foreign financial firms, the majority of which relied on AIGFP to mitigate credit risk and minimize regulatory capital charges[136] – 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.[137]

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[131] Robert O'Harrow Jr. & Brady Dennis, *The Beautiful Machine*, WASH. POST, Dec. 29, 2008, at A1, A6-A7.

[132] Brady Dennis & Robert O'Harrow Jr., *A Crack in The System*, WASH. POST, Dec. 30, 2008, at A1, A8.

[133] *See* Minton, Stulz & Williamson, *supra* note 119, at 3-5; Mengle, *supra* note 32, at 13. A description of CDSs is included *supra* at notes 9, 119-127 and accompanying text. *See also* SATYAJIT DAS, CREDIT DERIVATIVES: TRADING & MANAGEMENT OF CREDIT & DEFAULT RISK 32-68 (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) (describing function and use of CDSs).

[134] *Polakoff March 2009 Testimony*, *supra* note 128, at 5; Carol J. Loomis, *AIG: The Company that Came to Dinner*, FORTUNE, Jan. 19, 2009, at 70, 73.

[135] *See* Robert O'Harrow Jr. & Brady Dennis, *Downgrades And Downfall*, WASH. POST, Dec. 31, 2008, at A1, A8.

[136] AIG 2007 ANNUAL REPORT, *supra* note 128, at 33 (noting 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).

[137] *See* Gretchen Morgenson, *Behind Insurer's Crisis, Blind Eye to a Web of Risk*, N.Y. TIMES, Sept. 28, 2008, at 1, 28; O'Harrow & Dennis, *supra* note 135, at A9; Joe Nocera, *Propping Up A House Of Cards*, N.Y. TIMES, Feb. 28, 2009, at B1; *see also* Press Release, Dep't of Treasury, *U.S. Treasury and Federal Reserve Board Announce Participation in AIG Restructuring Plan* (Mar. 2, 2009), *available at*

AIGFP's decision to enter the CDS market was based, in part, on computer simulations that indicated there was a 99.85 percent chance it would never be obligated to make a CDS payment.[138] 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.[139] 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.[140] 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 post billions of dollars in collateral against the unrealized paper losses,[141] weighing down its credit rating even further.[142]

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.[143] 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.[144] Relying on AIG to police risk, however, 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 as banks and other intermediaries) 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.[145] In addition, AIG's risk managers may have underestimated the probability of occurrence of an infrequent economic shock, sometimes referred to as

http://www.ustreas.gov/press/releases/tg44.htm (noting that AIG "is a significant counterparty to a number of major financial institutions"); Dennis, *supra* note 62, at D1 (describing AIG presentation to U.S. government indicating that AIG bankruptcy could force European banks to raise $10 billion in capital and "'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 (manuscript at 19-30).

[138] Dennis & O'Harrow, *supra* note 132, at A1.

[139] Brady Dennis, *A Meek Ending For Mighty Unit That Gutted AIG*, WASH. POST, Feb. 21, 2009, at A1, A7; Roger Parloff, *Wall Street: It's Payback Time*, FORTUNE, Jan. 19, 2009, at 57, 62.

[140] O'Harrow & Dennis, *supra* note 135, at A8-A9; Parloff, *supra* note 139, at 62.

[141] AIG 2007 ANNUAL REPORT, *supra* note 128, at 33, 81; *see also* PAUL GORIS, THE LEGAL ASPECTS OF SWAPS 130-37 (1994); Gorton, *supra* note 4, at 11-12.

[142] Morgenson, *supra* note 137, at 28; Parloff, *supra* note 139, at 62.

[143] *See* CHARLES A.E. GOODHART ET AL., FINANCIAL REGULATION: WHY, HOW AND WHERE NOW? 38-43 (Routledge 1998).

[144] *See* AIG 2007 ANNUAL REPORT, *supra* note 128, at 112-18.

[145] *See* PRESIDENT'S WORKING GROUP ON FIN. MKTS., HEDGE FUNDS, LEVERAGE, AND THE LESSONS OF LONG TERM CAPITAL MANAGEMENT 31 (1999) (noting that individual firms limit risk taking to protect themselves, not system as a whole); Jackson, *supra* note 3, at 335-36; *see also* 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?").

"disaster myopia," or may have taken comfort in others' decisions to discount the likelihood of such a shock ever occurring.[146]

Like insurance, if a credit event was triggered, AIGFP was obligated to make the customer whole – although the means by which it did so, which could include buying the impaired assets at par, differed from traditional insurance products. CDSs, consequently, are regulated as insurance contracts in some states,[147] reflecting the economic similarity in payouts between CDSs and term insurance policies written against the credit downgrade of a referenced borrower.[148] In New York, most of AIGFP's swaps were expressly excluded from insurance regulation. AIGFP, therefore, was able to escape the strict state-level control to which AIG's insurance businesses were subject.[149] 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.[150] The differences in regulation sparked a curious result: By dispensing with regulatory capital, AIGFP was able to offer CDSs at 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,[151] as well as being preempted from state gaming or bucketshop laws under the Commodity Exchange Act.[152] By default, AIGFP's principal regulator became the Office of Thrift Supervision ("OTS"),[153] notwithstanding concerns

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[146] *See* Richard J. Herring & Susan Wachter, *Bubbles in Real Estate Markets* 8 (Wharton School Zell/Lurie Real Estate Center Working Paper No. 402, Mar. 2002), *available at* http://realestate.wharton.upenn.edu/newsletter/bubbles.pdf; P. Emre Ergungor & James B. Thomson, *Systemic Banking Crises* 5 (Fed. Reserve Bank of Cleveland Pol'y Disc. Paper No. 9, Feb. 2005), *available at* http://www.clevelandfed.org/research/POLICYDIS/No9Jan05.pdf (describing potential for herd behavior among banks).

[147] *See* 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, 173-74, 181-88 (2007).

[148] *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.

[149] *See* N.Y. INS. LAW § 6901(j)(1) (McKinney 2005); *see also Hearing on the Causes and Effects of the AIG Bailout Before the House Comm. On Oversight and Gov't Reform*, 110th Cong. 18-19, 81 (2008) [hereinafter *AIG Hearing*], *available at* http://oversight.house.gov/documents/20081010162126.pdf (statement of Eric R. Dinallo, Superintendent, New York State Ins. Dep't) [hereinafter *Dinallo Statement*]; Schwartz, *supra* note 133, at 174.

[150] *See Dinallo Statement*, *supra* note 149, at 27-28.

[151] *See* Partnoy & Skeel, *supra* note 9, at 1046-47.

[152] *See* 7 U.S.C. § 16(e)(2) (2008). 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., 269 F. Supp.2d 424, 442 (2003) (interpreting New York Anti-Gambling Statute).

[153] AIG selected OTS, as its regulator of choice, by acquiring a thrift bank (AIG Federal Savings Bank) in 1999. *See* GAO, *Financial Regulation: A Framework for Crafting and Assessing Proposals to Modernize the Outdated U.S. Financial Regulatory System* 10 (GAO-09-216) (Jan. 2009), *available at*

over the OTS's effectiveness as a regulator and its inability to oversee complex financial institutions like AIG.[154]

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.[155] AIG's insurance subsidiaries were solvent and fully capitalized at the time the New York State Insurance Department authorized them to lend up to $20 billion to their parent holding company.[156] 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,[157] and CDSs could offer regulated intermediaries a lower cost means to manage and transfer credit risk.[158] Thus, AIGFP – like other intermediaries – may have simply capitalized on regulatory differences in order to assume risks from firms that sought to

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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).

[154] *See* GAO, *Financial Market Regulation: Agencies Engaged in Consolidated Supervision Can Strengthen Performance Measurement and Collaboration* 54 (GAO-07-154) (Mar. 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; Bill McConnell, *While Washington Slept*, THEDEAL.COM, Sept. 17, 2008, http://www.thedeal.com/servlet/Satellite?cid =1221081363955&pagename=TheDeal%2FNWStArticle&c=TDDArticle. 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 128, 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* 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; *Polakoff March 2009 Testimony*, *supra* note 128, at 18-19.

[155] AIG was not alone. Other institutions, ranging from American Express to Morgan Stanley, also chose to be regulated by the OTS. *See Testimony of Scott M. Polakoff, Senior Deputy Director & Chief Operating Officer, Office of Thrift Supervision, Before the Subcommittee on Securities, Insurance and Investment of the Senate Committee on Banking, Housing and Urban Affairs: Hearing on Risk Management and Its Implications for Systemic Risk* 3 (June 19, 2008), *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.

[156] *See Testimony of Superintendent Eric Dinallo, New York State Insurance Department, Before the House Committee on Oversight and Government Reform: Hearing on The Causes and Effects of the AIG Bailout* 2-3 (Oct. 7, 2008), *available at* http://oversight.house.gov/documents/20081007100906.pdf.

[157] *See supra* notes 108-117 and accompanying text.

[158] *See supra* notes 118-127 and accompanying text.

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.[159]

IV. 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 re-introduced problems addressed by (but beyond the scope of) existing regulation, as well as created new problems that reflected 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 diagram below. No doubt, some portion of the shift may simply reflect differences in regulatory cost – a regulatory arbitrage, as new products and services are created in order to avoid the reach of regulation or to reduce their cost.[160] 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 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

[159] *See* Nocera, *supra* note 137, 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.

[160] *See* Partnoy, *supra* note 105, at 227-28.

align manager and shareholder interests, which helps them compete effectively against traditional intermediaries.[161]

Shift in the Financial Markets

Regulated Intermediaries	→	*Less Regulated Entities*
Ex. Problem: Incomplete Risk Assessment		*Mirror*: Incomplete Risk Assessment *New*: Dispersed/Outsourced Risk Management
Traditional Intermediation	→	*Capital Markets*
Ex. Problem: Depositors/Policyholders vs. Shareholders		*Mirror*: Short-term Investors vs. Shareholders *New*: Trading in Concert

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.[162] 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 we saw with Bear Stearns, may provide imperfect protection if it later declines in value.[163] 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.[164] 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. The growth of CDSs has resulted in the transfer of risk, and the outsourcing

[161] 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 Fund: Financial Innovation and Investor Protection* (forthcoming 2009) (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 (2008); *see also* 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).

[162] *See supra* notes 56-57 and accompanying text.

[163] *See supra* notes 89-93 and accompanying text.

[164] *See supra* notes 94-95, 134-142 and accompanying text.

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 that risk is managed. When outsourced to an unregulated third party, the bank must rely on its own protections to ensure the risk is properly managed. 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 manage it at lower cost, and so may provide a less expensive alternative to traditional intermediaries.[165]

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 over 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.[166]

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.[167] 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.[168] When first developed, VaR was

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[165] *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.

[166] *See supra* notes 89-93 and accompanying text.

[167] *See supra* note 16 and accompanying text.

[168] *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 99 percent confidence level" is $300,000. That would mean that, under normal condi-

a specialized tool known only to a closed universe of risk managers. However, it quickly became a recognized standard – best practices among portfolio managers and banks, and an accepted form of SEC disclosure[169] – 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 reduction in the price of those assets, causing further sales, and so forth – in effect, acting in concert, even if not in coordination.[170] 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.[171] 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 intermediaries – such as a return to the Glass-Steagall era[172] – are likely to miss new risks, as evidenced by the last thirty years. Partly in response, politicians, regulators, and academics, most notably, Nobel laureate Robert Merton, have advocated a functional approach to regulation, in which equivalent

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tions, there is a 99 percent probability that the portfolio manager will not lose more than $300,000 by holding the portfolio for a day.

[169] *See* Regulation S-K, Item 305(a)(1)(iii), 17 C.F.R. § 229.305(a)(1)(iii) (2008) (SEC disclosure); THE GROUP OF THIRTY, DERIVATIVES: PRACTICES AND PRINCIPLES 10-11 (1993) (portfolio managers); Whitehead, *supra* note 61, at 723 n.146 (describing bank regulation).

[170] *See* Avinash Persaud, *Sending the Herd Off the Cliff Edge: The Disturbing Interaction Between Herding and Market-Sensitive Risk Management Practices*, 2 J. RISK FIN. 59, 59-65 (Dec. 2000); Tobias Adrian & Markus K. Brunnermeier, *CoVar* 1-4, 25 (Fed. Reserve Bank of N.Y. Staff Report No. 348, Sept. 2008), *available at* http://www.newyorkfed.org/research/staff_reports/sr348.pdf. 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. *See* Philippe Jorion, *Bank Trading Risk and Systemic Risk*, *in* RISKS OF FINANCIAL INSTITUTIONS, *supra* note 48, at 29, 56.

[171] *See* Stephen Morris & Hyun Song Shin, *Risk Management with Interdependent Choice*, 15 OXFORD REV. ECON POL'Y 52, 52-53, 59-60 (1999). 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. As a trigger price was reached, 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).

[172] *See* Matthew Benjamin and 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.

functions are regulated in the same way, irrespective of the institutions performing them. Institutions may change over time, they argue, but core functions will stay the same.[173]

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.[174]

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, prompting recent calls – in light of their aggregate size,[175] the recent investor run, and the U.S. guarantee of fund accounts[176] – for MMFs to be regulated like banks.[177] 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 management, and therefore different agency costs from traditional bank managers, whose salaries are largely fixed.[178] 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

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[173] *See, e.g.,* Merton, *supra* note 22, at 21-27; Robert C. Merton, *Financial Innovation and the Management and Regulation of Financial Institutions*, 19 J. BANKING & FIN. 461, 466-70 (1995); Robert C. Merton & Zvi Bodie, *The Design of Financial Systems: Towards a Synthesis of Function and Structure,* 3 J. INVESTMENT MGMT. 1, 13 (2005).

[174] *See* COP, *Special Report*, *supra* note 16, at 29 (noting that "[f]unctional regulation can mean applying the same principles and not necessarily producing identical regulatory outcomes").

[175] Aggregate MMF assets are now about $4 trillion. *See* Svea Herbst-Bayliss, *U.S. Money Market Funds Expected to Face New Rules*, REUTERS, Mar. 18, 2009, *at* http://www.reuters.com/article/AmericasRegulatoryNews/idUSN1834332120090318.

[176] *See supra* notes 96-100 and accompanying text.

[177] Group of Thirty, *Financial Reform*, *supra* note 16, at 9. 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, *Treasury Pads Coffers in Bailout*, WALL ST. J., Feb. 17, 2009, at C1.

[178] *See* Raghuram G. Rajan, *Has Financial Development Made the World Riskier?* 2, 18-20 (Nat'l Bur. Econ. Res. Working Paper No. 11728, Nov. 2005), *available at* http://www.nber.org/papers/w11728.pdf.

investments are more likely to address the portfolio risks to which an MMF's investors are subject.[179]

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's 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. 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.[180]

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

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[179] *See* ICI, *Money Market Report*, *supra* note 98, at 72-82; Treasury, *Financial Regulatory Reform, supra* note 16, at 38-39; *see also* Andrew Ackerman, *ICI: Tweak Money Market Fund Rule to Aid Liquidity*, AM. BANKER, Mar. 19, 2009, at 6.

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

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 within which that function is now being performed. 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 of runs in the capital markets on traditional intermediaries 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 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 a credit risk 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.

V. 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 the 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, *see* 12 U.S.C. § 1821(c) (2006), at which time the FDIC can act as a conservator or receiver of the bank, *see* 12 U.S.C. §§ 1821(c), (e) (2006).

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. *See* 12 U.S.C. § 1821 (2006). 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. 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 percent (but no more than 1.50 percent) of total insured deposits. *See* 12 U.S.C. § 1817 (2006).

The limit on coverage was temporarily increased from $100,000 to $250,000 per depositor through December 31, 2013. *See* Press Release, Federal Deposit Ins. Corp., *Congress Extends $250,000 Insurance Coverage Through 2013* (May 26, 2009), *available at* http://www.fdic.gov/consumers/consumer/news/cnspr09/coverage.html.

B. Insurance Companies

Insurance guaranty associations are operated 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, 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, *see* N.Y. INS. LAW § 7603 (McKinney 2009), and policyholders of insolvent life insurers are protected by the Life Insurance Company Guarantee Corporation, *see* N.Y. INS. LAW § 7706 (McKinney 2009).

C. Securities Firms

Cash and securities deposited by a customer with a securities firm are segregated from the firm's own property. *See* 17 C.F.R. § 240.15c3-3 (2008).

Congress also created the Securities Investor Protection Corporation ("SIPC"), as part of the Securities Investor Protection Act of 1970, 15 U.S.C. § 78ccc (2006), 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. *See* Daniel J. Morse, *When a Securities Brokerage Firm Goes Broke: A Primer on the Securities Investment Protection Act of 1970*, 25-1 AM. BANKR. INST. J. 34, 34 (2006). The SIPC is authorized to pay up to $500,000 per customer, including a maximum of $100,000 for cash claims. *See* 15 U.S.C. § 78fff-3(a) (2006).

D. Thrifts

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. *See* Financial Institutions Reform, Recovery, and Enforcement Act of 1989, Pub. L. No. 101-73, 103 Stat. 183 (1989).

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. *See* 29 U.S.C. §§ 1301-68 (2006); *see also* Pension Ben. Guar. Corp. v. LTV Corp., 496 U.S. 633, 637 (1990).

APPENDIX B – SELECTED REGULATIONS

In his thoughtful 1976 article,[181] Dean Clark offered examples of how a financial intermediary is regulated. My purpose here is to provide an updated, but abbreviated, list of examples to illustrate the continued regulatory oversight.

A. Portfolio Regulation

COMMERCIAL BANKS

A. *National Banks*: Pursuant to 12 U.S.C. § 24, para. Seventh (2006), 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 (2006). *See also* 12 U.S.C. §§ 29, 371 (2006) (restricting bank's ability to hold real property and extend real estate loans); *id.* § 84 (establishing caps on extending credit to a single borrower). 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. *See* 12 U.S.C. § 24 (seventh) (2006). 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. *See* 12 U.S.C. § 1843(c)(6) (2006).

B. *State Member Banks*: Restrictions that apply to national member banks under 12 U.S.C. § 24, para. Seventh (2006), and 12 C.F.R. §§ 1.1-1.8 (2006) also apply to state banks that are members of the Federal Reserve System. 12 C.F.R. § 1.1(c) (2006); 12 U.S.C. § 335 (2006).

C. *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. *See, e.g.*, CAL. FIN. §§ 750, 751 (West, Westlaw through May 1, 2009, legislation); N.Y. BANKING LAW § 98 (McKinney 2009). State regulations may also prescribe the valuation of bank assets. *See, e.g., id.* § 104.

LIFE INSURANCE COMPANIES

Insurance companies are largely regulated at the state level. 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). 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.

[181] Clark, *supra* note 33.

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. *See, e.g.*, 15 U.S.C. §§ 80a-8(b)(l), 80a-12(a), 80a-13 (2006); 17 C.F.R. § 210.6-03 (2008). MMFs, however, are subject to special requirements regarding the quality of their investment portfolios. *See supra* notes 6, 98.

B. Capital Instruments

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. *See* R. Alton Gilbert, *Requiem for Regulation Q: What It Did and Why It Passed Away*, REVIEW, Feb. 1986, at 22, 30-34 (Fed. Reserve Bank of St. Louis).

A. *State Member Banks*: The payment of interest on demand deposits continues to be prohibited, except as permitted by 12 U.S.C. § 371a (2006). Limitations on bankers' acceptances appear in 12 U.S.C. § 372 (2006).

B. *Other State Banks*: The payment of interest on demand deposits in insured banks is prohibited by 12 U.S.C. § 1828(g) (2006) and 12 C.F.R. § 329 (2008). Capital adequacy, under state law, may also be tied to a bank's liabilities (including capital notes or debentures and any contingent liabilities). *See, e.g.*, CAL. FIN. CODE § 660 (West, Westlaw through May 1, 2009, legislation).

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. *See, e.g.*, N.Y. INS. LAW § 1307 (McKinney 2009). In addition, state regulation may limit the aggregate amount of indebtedness that a life insurer can issue. *See, e.g.*, N.Y. INS. LAW § 1323 (McKinney 2009). Other regulations proscribe the provisions of a life insurance contract. *See, e.g.*, N.Y. INS. LAW art. 32 (McKinney 2009).

INVESTMENT COMPANIES

The Investment Company Act of 1940 includes specific capital structure limitations for registered open-end and closed-end mutual funds. *See* 15 U.S.C. § 80a-18 (2006).

C. Net Worth, Capital, or Surplus

COMMERCIAL BANKS

A. *National Banks*: Initial capital requirements for formation of a national bank are provided for in 12 U.S.C. § 281 (2006) (requiring a $4,000,000 minimum capitalization). Furthermore, 12 U.S.C. §§ 56, 59 (2006) prohibit banks from withdrawing or reducing their "legal" capital. National banks must also be members of the Federal Reserve System. *See* 12 U.S.C. §§ 142, 282 (2006).

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. *See* 12 C.F.R. pt. 3, apps. A & B; *see also* 12 C.F.R. pt. 225, app. A (applicable to bank holding companies). 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, intended to promote the build-up of capital buffers by banks which can be drawn upon in times of financial stress, and strengthening the quality of capital that banks hold in their reserves. The details of the changes will be worked out in 2009-2010. *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.

B. *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. 12 U.S.C. § 329 (2006); Regulation H, 12 C.F.R. pt. 208 (2008). The Board is also permitted, within statutory limits, to set reserve requirements as a percentage of deposits. 12 U.S.C. § 461(b) (2006); Regulation D, 12 C.F.R. pt. 204 (2008). State member banks are also subject to risk-based capital requirements. *See* 12 C.F.R. pt. 208, app. A.

C. *Other State Banks*: The minimum capital requirements for banks chartered under their laws are established by the individual states. *See, e.g.*, N.Y. BANKING LAW § 4001 (McKinney 2009). The states also provide remedies for capital impairment and regulate capital reduction. *See, e.g.,* CAL. FIN. §§ 660, 661 (West, Westlaw through May 1, 2009, legislation); N.Y. BANKING LAW § 114 (McKinney 2009). In addition, state law is responsible for establishing minimum reserve requirements. *See, e.g.,* N.Y. BANKING Law §§ 14, 107 (McKinney 2009).

LIFE INSURANCE COMPANIES

For an example of minimum capital requirements, see N.Y. INS. LAW § 4202 (McKinney 2009) (requiring paid-in capital of at least $2,000,000 and paid-in initial surplus equal to greater of $4,000,000 or 200 percent of its capital). Insurers may also be subject to regulations on how to calculate their financial condition, *see* N.Y. INS. LAW § 1301 (McKinney 2009), as well as to risk-based and minimum capital requirements, *see* N.Y. INS. LAW § 1322 (McKinney 2009).

INVESTMENT COMPANIES

In general, the required minimum net worth for an investment company is $100,000. 15 U.S.C. § 80a-14 (2006); 17 C.F.R. §§ 270.14a-l, 14a-2 (2008).

SECURITIES FIRMS

Rule 15c3-1 under the Securities Exchange Act of 1934, 17 C.F.R. § 240.15c3-1 (2008), requires a securities firm to maintain sufficient liquid assets in order to satisfy its obligations to customers and others. A firm's requirements are based on a ratio of liabilities to net capital, 17 C.F.R. § 240.15c3-1(a) (2008), as well as minimum requirements based on the type of business the firm conducts, 17 C.F.R. § 240.15c3-1(a)(2) (2008). Recall, as well, that securities firms are required pursuant to Rule 15c3-3 to maintain customer assets in a "segregated" account. 17 C.F.R. § 240.15c3-3 (2008). *See also* LOUIS LOSS & JOEL SELIGMAN, FUNDAMENTALS OF SECURITIES REGULATION 853-56 (4th ed. 2004).