

THE VOLCKER RULE AND EVOLVING FINANCIAL MARKETS

CHARLES K. WHITEHEAD*

The Volcker Rule prohibits proprietary trading by banking entities—in effect, reintroducing to the financial markets a substantial portion of the Glass-Steagall Act’s static divide between banks and securities firms. This Article argues that the Glass-Steagall model is a fixture of the past—a financial Maginot Line within an evolving financial system. To be effective, new financial regulation must reflect new relationships in the marketplace. For the Volcker Rule, those relationships include a growing reliance by banks on new market participants to conduct traditional banking functions.

Proprietary trading has moved to less-regulated businesses, in many cases, to hedge funds. The result is likely to be an increase in overall risk-taking, absent market or regulatory restraint. Ring-fencing hedge funds from other parts of the financial system may be increasingly difficult as markets become more interconnected. For example, new capital markets instruments—such as credit default swaps—enable banks to outsource credit risk to hedge funds and other market participants. Doing so permits banks to extend greater amounts of credit at lower cost. A decline in the hedge fund industry, therefore, may prompt a contraction in available credit by banks that are no longer able to manage risk as effectively as before.

In short, even if proprietary trading is no longer located in banks, it may now be conducted by less-regulated entities that affect banks and banking activities. Banks that rely on hedge funds to manage credit risk will continue to be exposed to proprietary trading—perhaps less directly, but now also with less regulatory oversight, than before. The Volcker Rule, consequently, fails to reflect an important shift in the financial markets, arguing, at least initially, for a narrow definition of proprietary trading and a more fluid approach to implementing the Rule.

TABLE OF CONTENTS

I. INTRODUCTION	40
II. THE VOLCKER RULE	47
III. EVOLVING FINANCIAL MARKETS	53
IV. OUTSOURCING RISK MANAGEMENT	58
V. IMPLEMENTING THE VOLCKER RULE	69
VI. CONCLUSION	72

* Associate Professor of Law, Cornell Law School. I appreciate the thoughtful comments provided by James Bishop, Michelle Harner, Linda Lord, Ray Minella, Barak Orbach, and Bradley Sabel, as well as participants in the Capital Markets Board of Turkey and Boğaziçi University—Centre for Economics and Econometrics Financial Seminar Series. I am also grateful to John Siemann for his invaluable research assistance. Any errors are the author’s alone. Portions of this Article are derived from Charles K. Whitehead, *The Evolution of Debt: Covenants, the Credit Market, and Corporate Governance*, 34 J. CORP. L. 641 (2009), and Charles K. Whitehead, *Reframing Financial Regulation*, 90 B.U. L. REV. 1 (2010).

I. INTRODUCTION

Section 619 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act),¹ commonly known as the “Volcker Rule” (for former Federal Reserve Chairman Paul Volcker, who is credited as its chief architect) (the Volcker Rule or the Rule), prohibits a banking entity² from “engag[ing] in proprietary trading” or “acquir[ing] or retain[ing] any equity, partnership, or other ownership interest in or sponsor[ing] a hedge fund or private equity fund,”³ subject to certain exceptions.⁴ The Rule also limits similar activities by certain systemically important non-bank financial institutions.⁵

¹ See Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111–203, § 619, 24 Stat. 1376 (2010) (Dodd-Frank Act).

² “Banking entity” is defined in section 13(h)(1) of the Bank Holding Company Act of 1956 (2010) (BHA), as amended by section 619 of the Dodd-Frank Act. The term includes any insured depository institution (other than certain limited purpose trust institutions), any company that controls an insured depository institution, any company that is treated as a bank holding company for purposes of section 8 of the International Banking Act of 1978 (see 12 U.S.C. § 3106), and any affiliate of any of the foregoing. Subsequent regulations are expected to further clarify the definition. See FIN. STABILITY OVERSIGHT COUNCIL, STUDY & RECOMMENDATIONS ON PROHIBITIONS ON PROPRIETARY TRADING & CERTAIN RELATIONSHIPS WITH HEDGE FUNDS & PRIVATE EQUITY FUNDS 68–69 (2011), available at <http://www.treasury.gov/initiatives/Documents/Volcker%20sec%20%20619%20study%20final%201%2018%2011%20rg.pdf> (study of the Volcker Rule mandated by the Dodd-Frank Act, including a recommendation that the agencies charged with clarifying terms in the Volcker Rule provide definitions consistent with congressional intent) [hereinafter FSOC STUDY].

³ Dodd-Frank Act sec. 619, § 13(a)(1) (amending the Bank Holding Company Act of 1956, 12 U.S.C.A. § 1841 (West 2010)); see also *infra* notes 39–48 and accompanying text.

⁴ Certain proprietary trading activities are still permitted under the Rule, Dodd-Frank Act sec. 619, § 13(d)(1)—including trading in U.S. government securities, *id.* sec. 619, § 13(d)(1)(A), market-making, *id.* sec. 619, § 13(d)(1)(B), and hedging to mitigate risk, *id.* sec. 619, § 13(d)(1)(C)—although the full scope of the permitted activities remains to be finalized. See FSOC STUDY, *supra* note 2, at 16; see also Public Input for the Study Regarding the Implementation of the Prohibitions on Proprietary Trading and Certain Relationships with Hedge Funds and Private Equity Funds, 75 Fed. Reg. 61,758, 61,759–60 (proposed Oct. 6, 2010) (soliciting comments on provisions of the Volcker Rule, including permitted activities) [hereinafter FSOC, Public Input]. A discussion of permitted market-making and hedging activities appears *infra* at notes 54–58 and accompanying text. Proprietary trading conducted solely outside the United States by an entity that is not directly or indirectly controlled by a U.S. bank or systemically important firm is excluded from the Volcker Rule. Dodd-Frank Act sec. 619, § 13(d)(1)(H). The Rule also authorizes regulators to carve-out trading activities if they “promote and protect the safety and soundness of” the firm and U.S. financial stability. *Id.* sec. 619, § 13(d)(1)(J). An otherwise permitted activity, however, is still prohibited if it will result in “a material conflict of interest” with clients or “a material exposure to high-risk assets or high-risk trading strategies.” *Id.* sec. 619, § 13(d)(2)(A); see also *infra* notes 49–52 and accompanying text. Permitted activities may be subject to additional capital requirements and other limitations if determined to be “appropriate to protect the safety and soundness” of the firms engaged in such activities. *Id.* sec. 619, § 13(d)(3); see also *infra* note 53 and accompanying text.

⁵ See 156 CONG. REC. S5894 (daily ed. Jul. 15, 2010) (statement of Sen. Jeff Merkley) (describing the rationale behind the Dodd-Frank Act, including subjecting nonbank financial institutions to oversight by the Federal Reserve Board), [hereinafter Merkley Statement]; see also Definitions of “Predominantly Engaged in Financial Activities” and “Significant” Non-bank Financial Company and Bank Holding Company, 76 Fed. Reg. 7,731, 7,732–33 (pro-

Why restrict proprietary trading? The answer is far from apparent. Senator Jeff Merkley, a co-sponsor of the Senate version of the Volcker Rule, placed “blame [for the financial crisis] squarely on proprietary trading,” citing a Group of Thirty study headed by Chairman Volcker.⁶ That statement contrasts with Chairman Volcker’s own view that “proprietary trading in commercial banks was . . . not central” to the crisis.⁷ As U.S. Treasury Secretary Timothy Geithner separately testified, “most of the losses that were material . . . did not come from [proprietary trading] activities.”⁸ Rather, according to Secretary Geithner, many of the most significant losses arose from traditional, bank-like extensions of credit—especially loans related to real estate.⁹

The evidence regarding proprietary trading is mixed¹⁰—but the Rule’s ultimate intention was less to cure a particular cause of the financial crisis

posed Feb. 11, 2011). The Dodd-Frank Act authorizes the newly created Financial Stability Oversight Council (FSOC) to designate systemically important non-bank financial institutions for heightened regulation by the Federal Reserve Board. Firms are included “if the Council determines that material financial distress . . . , or the nature, scope, size, scale, concentration, interconnectedness, or mix of the [firm’s] activities . . . , could pose a threat to the financial stability of the United States.” Dodd-Frank Act § 113(a)(1); *see also* Authority to Require Supervision and Regulation of Certain Nonbank Financial Companies, 76 Fed. Reg. 4,555, 4,559–60 (proposed Jan. 26, 2011) (describing proposed criteria to be used in determining whether to subject a nonbank financial firm to Federal Reserve Board supervision and standards). The limitation on proprietary trading and investing in any hedge fund or private equity fund will be implemented through capital requirements and quantitative limits imposed by the Federal Reserve Board. *See* Dodd-Frank Act sec. 619, §§ 13(a)(2), 13(b)(2).

⁶ *See* Merkley Statement, *supra* note 5, at S5894; *see also* GROUP OF THIRTY, FINANCIAL REFORM—A FRAMEWORK FOR FINANCIAL STABILITY 27 (Jan. 15, 2009) (noting the “unanticipated and unsustainably large losses in proprietary trading” leading up to the financial crisis). Senator Merkley and co-sponsor Senator Carl Levin also noted the “distort[ion caused] by proprietary trading practices” on the U.S. financial markets. *See* Press Release, Sens. Merkley and Levin, Senators Call on Regulators to Implement Strong Merkley-Levin Provisions, (Oct. 28, 2010), <http://merkley.senate.gov/newsroom/press/release/?id=BE745FF9-1820-43DF-978E-35809510CBAC> (asserting that proprietary trading helped distort the financial markets by encouraging excessive risk-taking among financial firms and fostering a “casino-like” culture amongst market participants) [hereinafter Senators Call]; *see also* FSOC STUDY, *supra* note 2, at 2 (noting that, following passage of the Dodd-Frank Act, a number of banking entities closed proprietary trading, hedge fund, and private equity fund businesses “that were a source of losses during the crisis”).

⁷ *See* Kim Dixon & Karey Wutkowski, *Volcker: Proprietary Trading Not Central to Crisis*, REUTERS, Mar. 30, 2010, <http://www.reuters.com/article/2010/03/30/us-financial-regulation-volcker-idUSTRE62T56420100330> (reporting that Chairman Volcker, although still supporting the ban on proprietary trading, conceded it was not central to the financial crisis).

⁸ *See* *Hearing Before the Congressional Oversight Panel*, 111th Cong. (2009) (testimony of Sec. of Treasury Timothy Geithner), *available at* <http://cop.senate.gov/hearings/library/hearing-091009-geithner.cfm> (testifying about the causes of the financial crisis before the Congressional Oversight Panel).

⁹ *See id.*

¹⁰ There is evidence that bank losses resulted primarily from a drop in the value of long-term investments—namely, mortgage-backed securities that banks chose to hold to maturity rather than trade—as well as collateralized debt obligations they repurchased from off-balance-sheet funding vehicles. *See* RAGHURAM G. RAJAN, *FAULT LINES* 173 (2010) (noting that the tendency of banks to hold mortgage-backed securities, rather than the speculative trading of those securities, resulted in banks suffering losses); Michael McKenzie, ‘Super-senior’ CDO Investors Flex Their Muscles, FIN. TIMES, Apr. 14, 2008, *available at* <http://us.ft.com/ftgate>

and more to champion the populist view that commercial banking should be separated from investment banking, increasingly comprised of proprietary trading and principal investments.¹¹ The Volcker Rule, in effect, was motivated by a desire to return to a traditional banking model—to create a regulatory divide,¹² much like the Glass-Steagall Act had before its repeal in

way/superpage.ft?news_id=fto041420081618488777 (reporting that banks often remained holders of the super-senior tranches of many collateralized debt obligations (CDOs) because they chose to hold the securities when they were issued or they were forced to repurchase them from off-balance sheet vehicles when their value declined). Others have argued, however, that proprietary trading contributed substantially to the losses that large commercial banks suffered. See, e.g., Matthew Richardson et al., *Large Banks and the Volcker Rule*, in REGULATING WALL STREET: THE DODD-FRANK ACT AND THE NEW ARCHITECTURE OF GLOBAL FINANCE 181, 202–03 (Thomas F. Cooley et al. eds., 2011) (analyzing the 2009 balance sheets of the four largest U.S. banks and finding heavy concentrations of asset-backed securities that dramatically affected those banks' ability to withstand a financial downturn); James Crotty et al., *Proprietary Trading is a Bigger Deal than Many Bankers and Pundits Claim*, POLICY NOTES (Pol. Econ. Research Inst., Amherst, Mass.), Feb. 8, 2010, at 2, available at http://www.peri.umass.edu/fileadmin/pdf/other_publication_types/SAFERbriefs/SAFER_note15.pdf (noting that proprietary trading was harmful to banks because, during the period leading up to the financial crisis, many banks became overly dependent on proprietary trading for revenues). Recent disclosures by Goldman Sachs suggest that, in some cases, the magnitude of the losses may have been significant. See Francesco Guerrero & Kara Scannell, *Goldman Reveals Fresh Crisis Losses*, FIN. TIMES, Jan. 13, 2011, available at <http://www.ft.com/cms/s/0/f1dcbf2e-1f56-11e0-8c1c-00144feab49a.html#axzz1D7KF2rY8> (reporting that Goldman Sachs, after revealing an additional \$5 billion in investment losses, has disclosed a total of \$13.5 billion in losses stemming from the recent financial crisis). Part of the discrepancy may turn on what is meant by proprietary trading. Short-term trading, which is what the Volcker Rule addresses, may have been less of a concern than longer-term holdings of risky asset-backed securities. See Richardson et al., *supra*, at 203–04 (linking bank losses in the recent financial crisis to the banks' strategy of holding mortgage-backed securities as long-term investments); see also Tom Braithwaite, *Volcker Takes Aim at Long-Term Investments*, FIN. TIMES, Jan. 20, 2011, available at <http://www.ft.com/cms/s/0/2a03c58c-242a-11e0-a89a-00144feab49a.html#axzz1D7KF2rY8> (noting Chairman Volcker's view that Congress, in passing new financial regulation, is not sufficiently regulating banks' longer-term investment activities). Going forward, however, the prohibition on proprietary trading is likely to result in a significant loss of bank revenues. Analysts predict that the Volcker Rule will cost Goldman Sachs and Morgan Stanley approximately fourteen percent of their estimated earnings in 2012. See Aaron Luchetti & Victoria McGrane, *Broad Tack Expected in Implementing Volcker Rule*, WALL ST. J., Jan. 15, 2011, available at <http://online.wsj.com/article/SB10001424052748703959104576081652657753690.html> (describing the costs imposed by the Volcker Rule, including a reduction in overall earnings and the departure of talented traders and other personnel).

¹¹ See DAVID SKEEL, THE NEW FINANCIAL DEAL 86–87 (2011) (noting that, due to changes in market practices and technology, proprietary trading has become crucial to investment banking). Investment banking revenues had moved away from traditional underwriting and were increasingly tied to trading and principal investments. See Fin. Crisis Inquiry Comm'n, THE FINANCIAL CRISIS INQUIRY REPORT 65–66 (2011), http://c0182732.cdn1.cloudfiles.rackspacecloud.com/fcic_final_report_full.pdf.

¹² See Merkley Statement, *supra* note 5, at S5894. Some have characterized proprietary trading leading up to the crisis as “a mainstay” business of the largest commercial banks. Consequently, the restriction on proprietary trading was understood to effectively separate a significant portion of investment banking from commercial banking. See SKEEL, *supra* note 11, at 87. In addition to the Volcker Rule, the Dodd-Frank Act provides that no federal assistance, including access to Federal Reserve funding and FDIC insurance, may be provided to a “swaps entity,” which includes a swaps dealer, commonly referred to as the “Swap Pushout Rule.” Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111–203, §§ 716(a)–(b), 24 Stat. 1376 (2010). The effect of the Swap Pushout Rule is to “push out” the swaps trading business from many commercial banks, even though—unlike the Volcker Rule,

1999.¹³ The Rule's proponents argued that proprietary trading had distracted banks from their fiduciary obligations to clients,¹⁴ as well as from their core function of "safe[ly] and sound[ly providing] long-term credit to families and business enterprises."¹⁵ Traders, instead, benefited from the low-cost, government-subsidized funding of short-term, "speculative activities" that were "far better suited for other areas of the financial markets."¹⁶ By removing proprietary trading from banking entities, the Rule's proponents expected utility services, such as taking deposits and making loans, to once again dominate the commercial banking business.¹⁷

This Article questions whether the Volcker Rule properly takes account of change in the financial markets. In particular, it argues that the Glass-Steagall model reflected in the Volcker Rule is a fixture of the past—a financial Maginot Line¹⁸ within an evolving financial system.¹⁹ To be effective,

which prohibits proprietary trading altogether—swaps trading is still permitted by bank affiliates. *Id.* § 716(c). Swaps entered into for hedging and other similar risk mitigating activities are not subject to the Swap Pushout Rule. *Id.* § 716(d). The cost of trading for affected banks is likely to increase due to new regulation that, among other things, takes into account the financial strength of the newly-created swaps entity. *Id.* § 716(k).

¹³ The relevant provisions of the Glass-Steagall Act appeared in the Banking Act of 1933 §§ 16, 20, 21, 32, 12 U.S.C. §§ 24 (seventh), 377, 378(a), 78 (2006); see also Alan E. Sorcher & Satish M. Kini, *Does the Term "Bank Broker-Dealer" Still Have Meaning?*, 6 N.C. BANKING INST. 227, 242–43 (2002) (describing the Gramm-Leach-Bliley Act's purpose, mechanical operation, and interaction with prior banking regulation). The barrier between commercial 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).

¹⁴ See FSOC STUDY, *supra* note 2, at 48–49 (noting that combining traditional banking and proprietary trading within one institution creates potential conflicts of interest, especially if loan-related information is transmitted to trading desks); Dixon & Wutkowski, *supra* note 7.

¹⁵ Merkley Statement, *supra* note 5, at S5894.

¹⁶ Paul Volcker, Op-Ed, *How to Reform our Financial System*, N.Y. TIMES, Jan. 31, 2010, at WK11 (arguing that, due to their importance to the general economy, banks should not bear the additional risks associated with proprietary trading); see also Letter to the Editor, *Congress Should Implement the Volcker Rule for Banks*, WALL ST. J., Feb. 22, 2010, at A18 (arguing that commercial banks' access to public support should limit their ability to "engage in essentially speculative activity unrelated to essential bank services"—in a letter authored by five former U.S. Treasury Secretaries in support of the Volcker Rule). Government subsidies include the ability to access Federal Reserve funds to temporarily cover shortfalls in liquidity. 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) (describing the three essential elements of the federal "safety net," including federal insurance of bank deposits, access to the Federal Reserve's discount window, and access to the Federal Reserve's payment system). In addition, Federal Deposit Insurance Corporation (FDIC) insurance protects depositors against losses, currently up to \$250,000. See Charles K. Whitehead, *Reframing Financial Regulation*, 90 B.U. L. REV. 1, 14 (2010) (noting that, in response to the financial crisis, the maximum insurable amount for each deposit account was raised from \$100,000 to \$250,000) [hereinafter Whitehead, *Reframing*].

¹⁷ See Merkley, Statement, *supra* note 5, at S5894; see also SKEEL, *supra* note 11, at 86.

¹⁸ See *infra* note 182 and accompanying text. The Maginot Line was a line of fortifications and other defenses that France constructed along its borders with Germany during the period before World War II. The fortification was based on the success of static, defensive combat in World War I and was intended to provide time for the French army to mobilize in the event of attack. It ultimately proved to be ineffective in World War II, as motorized elements of the German army were able to flank the Maginot Line and proceed directly into France. See Irving M. Gibson, *The Maginot Line*, 17 J. MODERN HISTORY 130, 141–46 (1945).

new financial regulation must reflect new relationships in the marketplace. For the Volcker Rule, those relationships include a growing reliance by banks on new market participants to conduct traditional banking functions. By failing to do so, the Volcker Rule's static approach to regulating banks may prove to be ineffective. Worse still, as illustrated below, it may have the unintended effect of causing hedge funds²⁰ to increase risk-taking at a time when banks have come to rely on them to help manage credit exposure.²¹

As a starting point, what will happen to proprietary trading? It could simply decline, but more likely, it will move to less-regulated businesses—in many cases, hedge funds²²—that are likely to then incur greater risk.²³

¹⁹ See Whitehead, *Reframing*, *supra* note 16, at 2–5 (describing broad changes in the financial markets relating to market participants and financial instruments).

²⁰ 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 TECHNICAL COMM. OF THE INT'L. ORG. SEC. COMM'N, CONSULTATION REPORT: HEDGE FUNDS OVERSIGHT 6–9 (Mar. 2009), <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD288.pdf> (providing a list of some of the principal characteristics used by the International Organization of Securities Commissions to determine whether an entity ought to be considered a hedge fund). In addition, hedge funds and their advisers have historically been subject to minimal regulation—often being defined by reference to the federal securities laws from which they were exempt. See Steven M. Davidoff, *Black Market Capital*, 2008 COLUM. BUS. L. REV. 172, 201–16 (2008) (explaining why the structure and operation of modern hedge funds are incompatible with the regulatory regimes under which, but for their unique structure, they would normally need to operate); 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 (2006) (describing the more common structural components of hedge funds and how they assist hedge funds in avoiding more stringent regulation). That regulation, principally by the Securities and Exchange Commission (SEC), has increased somewhat following passage of the Dodd-Frank Act. See *infra* notes 163–70 and accompanying text.

²¹ There is a question, which I do not address in this Article, about whether prohibiting banks from engaging in risky activities necessarily increases bank safety. Even “safer” activities can expose a bank to significant risk. Traditional bank lending, for example, can be quite risky if banks choose to extend, and then hold, unsecured “covenant-lite” loans to lower-quality borrowers. See RAJAN, *supra* note 10, at 173; Charles K. Whitehead, *The Evolution of Debt: Covenants, the Credit Market, and Corporate Governance*, 34 J. CORP. L. 641, 676 (2009) (noting that increased default rates for loans with minimal covenant levels reflected the limited protection for lenders) [hereinafter Whitehead, *Evolution*].

²² Proprietary traders from Goldman Sachs and Morgan Stanley have already moved to hedge funds. See Sam Jones, *More Goldman Traders to Exit for Funds*, FIN. TIMES, Jan. 9, 2011, available at <http://www.ft.com/cms/s/0/1d8d8836-1c39-11e0-9b56-00144feab49a.html#axzz1BxvAoR4p> (reporting that senior members of Goldman Sachs' last big proprietary trading team left to launch a private hedge fund); Aaron Lucchetti, *Morgan Stanley Team to Exit in Fallout from Volcker Rule*, WALL ST. J., Jan 11, 2011, at C1 (reporting that Morgan Stanley's proprietary trading unit will leave Morgan Stanley to form an independent trading firm); see also *Private Equity Groups Diversify*, FIN. TIMES, Dec. 20, 2010, available at <http://www.ft.com/cms/s/0/aa371bae-0c61-11e0-8408-00144feabdc0.html#axzz1BbbTf1cN> (reporting that private equity firms are capitalizing on the forced divestiture of proprietary trading units by purchasing stakes in newly-created funds launched by those units).

²³ Financial market participants have raised similar concerns. See Francesco Guerrero & Gillian Tett, *Goldman President Warns on Bank Rules*, FT.COM (Jan. 26, 2011), <http://www.ft.com/cms/s/0/f9753506-2990-11e0-bb9b-00144feab49a,s01=1.html#axzz1F56PbpaL> (reporting the view of a senior executive at Goldman Sachs that increased regulation of banks may decrease financial stability as risky activities move from banks to hedge funds and other

That risk can be mitigated if traders are subject to a market discipline that takes account of the full cost of their activities. The financial markets, however, are unlikely to compel traders to do so—a negative externality, as market participants focus instead on their investors’ returns rather than on the broader consequences of hedge fund failure.²⁴

Such failure can be industry-wide. Hedge funds can be affected at the same time and in the same way following large adverse shocks to asset and hedge fund liquidity, irrespective of management style.²⁵ Greater coordination, in turn, can magnify any resulting loss of portfolio value.²⁶ Moreover, simply ring-fencing hedge funds may be difficult as markets become increasingly interconnected. Hedge funds, for example, are significant participants in the credit default swaps (CDS) market, which banks and other financial intermediaries use to manage and transfer credit risk.²⁷ Doing so,

less-regulated entities); Francesco Guerrera, *Monsters that Lurk in the Shadows of Wall St.*, FT.COM, Mar. 7, 2011, <http://www.ft.com/cms/s/0/72503e60-48dd-11e0-af8c-00144feab49a.html#axzz1G0q8jHUQ> (quoting Vikram Pandit, Citigroup CEO, as warning, “Shifting risk into unregulated or differently regulated sectors won’t make the banking system safer.”). FDIC Chairperson Sheila Bair made the same point about the Swap Pushout Rule in an April 30, 2010, letter to Senators Christopher Dodd and Blanche Lincoln. See *Sheila Bair Letter to Dodd and Lincoln re: Derivative Regulations*, THE BIG PICTURE (May 3, 2010, 11:15 AM), <http://www.ritholtz.com/blog/2010/05/55714/> (arguing that forcing banks to move activities to less-regulated entities might reduce financial stability because those entities would be subject to lower levels of regulation and oversight). Federal Reserve Chairman Ben Bernanke raised the same concern in a May 12, 2010, letter to Senator Dodd. See Letter from Ben Bernanke, Chairman, Fed. Reserve, to Sen. Christopher Dodd (May 12, 2010), <http://americanactionnetwork.org/files/Bernanke%20derivatives%20letter.pdf?phpMyAdmin=yVaoFlsOJaixGsCDQKevn%2Cgw%2CQ9> (making a similar point as Chairperson Blair).

²⁴ See Whitehead, *Reframing*, *supra* note 16, at 15 (noting that a firm’s managers, shareholders, and customers are unlikely to properly consider or price the costs associated with the firm’s assumption of high levels of risk); see also PRESIDENT’S WORKING GROUP ON FIN. MKTS., HEDGE FUNDS, LEVERAGE, AND THE LESSONS OF LONG TERM CAPITAL MANAGEMENT 31 (1999), available at <http://www.treasury.gov/resource-center/fin-mkts/Documents/hedgefund.pdf> (noting that individual firms limit risk-taking to protect themselves, not the system as a whole).

²⁵ See Nicole M. Boyson et al., *Hedge Fund Contagion and Liquidity Shocks*, 65 J. FIN. 1789, 1791–92 (2010) (linking contagion in the hedge fund industry to liquidity shocks); see also *infra* notes 158–59 and accompanying text.

²⁶ See Charles K. Whitehead, *Destructive Coordination*, 96 CORNELL L. REV. 323, 346–52 (2011) (noting that increased coordination can cause independent market participants to respond to external events in similar ways which, in the case of a market downturn, can drive down asset prices and increase market volatility); see also *infra* note 160 and accompanying text.

²⁷ See Whitehead, *Evolution*, *supra* note 21, at 657–58; see also *infra* notes 139–46, 151 and accompanying text. A credit default swap (CDS) is a type of derivative that permits a counterparty to a swap contract to buy or sell all or a portion of the credit risk tied to a loan or bond. The CDS customer pays the “writer” of the swap a periodic fee in exchange for a contingent payment in the event of a credit default. If a credit event occurs, typically involving default by the borrower, the CDS writer must pay the counterparty an amount sufficient to make it whole or purchase the referenced loan or bond at par. See William K. Sjostrom, Jr., *The AIG Bailout*, 66 WASH. & LEE L. REV. 943, 947–52 (2009) (providing general overview of CDS and their increasing importance in managing risk); 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).

for banks, increases the amount of capital available for lending.²⁸ The Dodd-Frank Act limits direct counterparty credit risk by requiring banks and hedge funds, with certain exceptions, to centrally clear standardized swaps.²⁹ It does not, however, address the impact on banks if hedge funds, as a group, are unable to manage bank-originated risk or can do so only at higher cost. The effect can be significantly greater than the failure of any one fund. It can also ripple through to other parts of the financial system, resulting in a drop in available credit if banks—no longer able to rely on risk-taking by hedge funds—must then limit the amount of new loans they can extend.³⁰

In short, even if proprietary trading is no longer located *in* banks, it may now be conducted by less-regulated entities that *affect* banks and banking activities.³¹ Banks that rely on hedge funds to manage credit risk will continue to be exposed to proprietary trading—perhaps less directly, but now also with less regulatory oversight, than before. The Volcker Rule, consequently, fails to reflect an important shift in the financial markets: the transfer, in this illustration, of a traditional bank function to new, less-regulated market participants.

Part II describes the Volcker Rule and its prohibition on proprietary trading. It also illustrates some of the ambiguities that must still be addressed in implementing the Rule. Part III explains how change in the financial markets has enabled new market participants to replicate products and services provided by traditional intermediaries. Part IV then focuses on the role of hedge funds in the CDS market—in effect, assuming risks traditionally managed within banks and other intermediaries, but without the same level of regulatory oversight. Part V, in turn, briefly considers the resulting

²⁸ See Whitehead, *Evolution*, *supra* note 21, at 658 (explaining that banks, by being able to better manage risk through securitization, are able to reduce overall capital costs and may permit borrowers to enjoy a portion of the savings); see also *infra* note 147 and accompanying text.

²⁹ Banks and hedge funds that enter into standardized swaps with each other will generally be required to place those swaps through a derivatives clearing organization (DCO). Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111–203, sec. 723(a)(3), § 2, 24 Stat. 1376 (amending the Commodity Exchange Act, 7 U.S.C.A. § 2 (West 2010)) (Dodd-Frank Act). DCOs may help limit direct credit exposure. A standardized CDS between two parties could be cleared and settled through a DCO after the trade is agreed—in effect, making the DCO the middleman in the trade between the two of them. The DCO must collect margin as well as implement other risk control mechanisms to limit its exposure to default, minimizing the risk of direct credit exposure between the two counterparties. *Id.* § 723(c); see also Darrell Duffie & Haoxiang Zhu, *Does a Central Clearing Counterparty Reduce Counterparty Risk?* 2–5 (Rock Ctr. for Corp. Gov., Working Paper No. 46, 2010), available at <http://www.stanford.edu/~duffie/DuffieZhu.pdf> (concluding that the effectiveness of centralized clearing depends on whether the number of clearing participants is sufficiently large relative to the aggregate exposure on the derivatives being cleared).

³⁰ See Whitehead, *Reframing*, *supra* note 16, at 38 (noting that change in the CDS market has made it more difficult for banks to ensure that entities to whom the risk is outsourced—often, hedge funds—are properly doing so); see also *infra* notes 152–62 and accompanying text.

³¹ The same may be true for systemically important non-bank financial firms that become subject to heightened regulation. See *supra* note 5 and accompanying text.

implications of change in the financial markets for implementing the Volcker Rule. It suggests that a static business model—such as contemplated by the Rule—does not properly account for that change, arguing, at least initially, for a narrow interpretation of the Rule and reliance on more fluid means to regulate risk-taking, such as imposing new capital requirements.

II. THE VOLCKER RULE

The Volcker Rule prohibits a banking entity from engaging in proprietary trading or investing in, sponsoring, or having certain other relationships with hedge funds or private equity funds.³² It also provides for additional capital requirements, quantitative limits, and other restrictions to be imposed on systemically important nonbank financial firms, supervised by the Federal Reserve, that engage in such activities.³³ To provide greater definition, the newly-created Financial Stability Oversight Council (FSOC) was directed to undertake a study of the Volcker Rule, including recommendations regarding its implementation (the FSOC Study or the Study).³⁴ The Study was published on January 18, 2011;³⁵ and, pursuant to the Dodd-Frank Act, implementing regulations must be adopted within nine months after that date (no later than October 18, 2011).³⁶ Firms will initially have up to two years to comply with the Volcker Rule after implementing rules are issued and may, in total, have up to six years to comply with the new requirements.³⁷

³² See *supra* notes 1–4 and accompanying text. This Article focuses primarily on the Volcker Rule’s direct prohibition of proprietary trading by banking entities, rather than on its regulation of banking entity investments in, and relationships with, hedge funds and private equity funds. The Volcker Rule defines a “hedge fund” and a “private equity fund” broadly to be any entity that would be an investment company, as defined in the Investment Company Act of 1940, but for section 3(c)(1) or 3(c)(7) of that Act, or any similar funds as the appropriate federal banking agencies, the SEC, or the Commodity Futures Trading Commission (CFTC) may, by rule, determine should be treated as a hedge fund or private equity fund. Dodd-Frank Act, sec. 619, § 13(h)(2). The limitation on investing in or sponsoring a hedge fund or private equity fund has three principal purposes—to ensure banking entities cannot circumvent the Volcker Rule, to confine private fund activities to customer-related services, and to eliminate incentives for banks to bail out funds they sponsor or in which they have significantly invested. See FSOC STUDY, *supra* note 2, at 56. More tailored definitions have been left to later rule-making. See *id.* at 56–70 (describing factors to be considered in regulating banking entity investments in, and relationships with, hedge funds and private equity funds); see also 75 Fed. Reg. 61,758, *supra* note 4, at 61,758–59 (soliciting comments on provisions of the Volcker Rule, including the definitions of “hedge fund” and “private equity fund”).

³³ See *supra* note 5 and accompanying text.

³⁴ Dodd-Frank Act sec. 619, § 13(b)(1); see also FSOC STUDY, *supra* note 2, at 8–9 (describing the statutory mandate and objectives of the FSOC Study).

³⁵ The full text of the FSOC Study can be found at the corresponding hyperlink, *supra* note 2.

³⁶ Dodd-Frank Act sec. 619, § 13(b)(2)(A).

³⁷ The Volcker Rule takes effect upon the earlier of twelve months after the issuance of final implementing rules and two years after the date the Volcker Rule was enacted (July 21, 2012). *Id.* sec. 619, § 13(c)(1). Banks then have up to two years to comply, and nonbank financial firms have up to two years to comply after becoming subject to the Volcker Rule. During that time, they can wind down, sell, or otherwise conform their activities, investments,

Authority to adopt the regulations is divided among the principal federal financial regulators, under coordination of the Treasury Secretary as FSOC Chairman.³⁸

As of this Article's publication, the core regulations implementing the Volcker Rule have not been publicly released for comment. The FSOC Study, however, provides a general idea of what they are likely to address, as well as the open issues regulators must resolve.³⁹ Chief among them is defining "proprietary trading."⁴⁰ The Dodd-Frank Act defines it as engaging as principal for a "trading account . . . in any transaction to purchase or sell, or otherwise acquire or dispose of any security, any derivative, any contract of sale of a commodity for future delivery, any option on [any of the foregoing], or any other security or financial instrument" as determined by the appropriate federal regulator.⁴¹ "Trading account," in turn, is defined as "any account used for acquiring or taking positions in securities and [financial] instruments . . . for the purpose of selling in the near term (or otherwise with the intent to resell in order to profit from short-term price movements)" and other accounts the regulators may identify.⁴²

The definitions raise some critical questions, which the Study fails to fully resolve. For example, trading activity can vary among markets and by asset class, and so what constitutes a "near term" or "short-term" transaction for one instrument may be quite different for another.⁴³ How, if at all, should the Volcker Rule distinguish among them? The Study's response is

and relationships to the Volcker Rule's requirements. *Id.* sec. 619, § 13(c)(2). The Federal Reserve Board can, in its discretion, extend the compliance period for one year at a time, up to three years in total. *Id.* For investments in illiquid funds, the Board may grant a single extension of up to five years. *Id.* sec. 619, § 13(c)(3). During the transition period, affected firms may be subject to additional capital and other requirements. *Id.* sec. 619, § 13(c)(5). The Federal Reserve Board has adopted final rules implementing the Volcker Rule's conformance period requirements. *See* 12 C.F.R. §§ 225.181, 225.182.

³⁸ The regulators charged with implementing the Volcker Rule are the Federal Reserve Board, the Office of the Comptroller of the Currency, the FDIC, the SEC, and the CFTC. Each agency must consult and coordinate with the others in order to assure comparability and consistency across the new regulations. Dodd-Frank Act sec. 619, § 13(b)(2)(B)(ii), (iii).

³⁹ The FSOC Study does so principally through ten recommendations, including recommendations that regulators (i) require banking entities to sell or wind down impermissible trading desks and divest themselves of impermissible positions, (ii) perform a supervisory review of trading activity to distinguish between proprietary trading and permitted activities, and (iii) require banking entities to implement a mechanism to identify to regulators which trades are customer-initiated and which are not. *See* FSOC STUDY, *supra* note 2, at 3.

⁴⁰ *See* Richardson et al., *supra* note 10, at 201–04 (noting that a number of normal banking activities involve banks trading for their own account, even though the activities are ultimately intended to meet client needs).

⁴¹ Dodd-Frank Act sec. 619, § 13(h)(4).

⁴² *Id.* sec. 619, § 13(h)(6).

⁴³ Limiting the Volcker Rule to "short-term" transactions is a significant weakness. Longer-term commitments may not be covered—and those transactions are reported to have been a significant source of banking losses during the recent financial crisis. *See supra* note 10; *see also* Francesco Guerrero et al., *Wall Street to Sidestep "Volcker Rule,"* FT.COM, Nov. 10, 2010, <http://www.ft.com/cms/s/0/3d49f12e-ed03-11df-9912-00144feab49a.html#axzz1F5M56N00> (reporting that banks may avoid the Volcker Rule's prohibitions by engaging in longer-term "principal investing").

open-ended, cautioning regulators to consider the characteristics, liquidity, and trading volumes of each relevant market, but without defining how to do so.⁴⁴ It also cautions that measures used to detect impermissible activities are likely to vary based upon the assets and activity in question, requiring a tailored approach to implementing the Rule's prohibitions.⁴⁵

In addition, different firms may employ different trading strategies, so that what would be considered proprietary at one firm may not be the same at another. A firm may also vary its approach to trading based on changes in the marketplace. A longer-term investment, for example, may be resold quickly in the face of an increasingly volatile market. How can regulators distinguish between changes in strategy and prohibited transactions? Here, the FSOC Study provides clearer guidance, but still leaves important details to later rule-making. The Study recommends new rules that impose affirmative obligations on the board and CEO, among other things, to implement comprehensive compliance programs that facilitate monitoring and supervision.⁴⁶ Banks must also develop quantitative measures to assist in identifying which activities are permissible and which are not.⁴⁷ Trading metrics, the Study notes, can provide a useful guide, but may not be predictive of which trades are the riskiest or whether the bank is engaged in impermissible activity. Consequently, the new measures—rather than being dispositive of compliance—may simply trigger a heightened scrutiny, as well as a “regular dialogue” between regulators and banks.⁴⁸

Exemptions from the Volcker Rule are the other side of the coin. The Dodd-Frank Act carves out permitted activities that would otherwise be considered proprietary trading.⁴⁹ Yet, even those activities are prohibited if they would result in a material conflict of interest with clients or materially expose a banking entity to high-risk assets or trading strategies.⁵⁰ The FSOC Study includes factors that regulators can consider, but with minimal detail.

⁴⁴ See FSOC STUDY, *supra* note 2, at 24–25. The Study also recommends the use of various metrics to distinguish between permissible activities and proprietary trading. See *infra* notes 62–66 and accompanying text.

⁴⁵ See FSOC STUDY, *supra* note 2, at 37 (conceding that quantitative metrics, although helpful in identifying impermissible trading, will invariably produce both “false positives” and “false negatives”). The FSOC Study notes that the Volcker Rule’s language regarding short-term price movements is similar to accounting and other banking standards used to identify short-term assets. For example, the Financial Accounting Standards Board (FASB) differentiates short-term “held for trading” assets from those “held to maturity” or “available for sale.” The Study cautions regulators who incorporate the FASB standard into the Volcker Rule to consider how a change in accounting designation could affect an entity’s ability to avoid the prohibition against proprietary trading. See *id.* at 25.

⁴⁶ See *id.* at 33–36 (noting that requiring banks to adopt internal trading controls will produce optimally tailored regulation that properly reflects differences across firms and across different trading units within the same firm).

⁴⁷ See *infra* notes 62–66 and accompanying text.

⁴⁸ See FSOC STUDY, *supra* note 2, at 37, 45 (suggesting that regular dialogue with a bank’s managers and other control personnel will assist regulators in understanding specific trading activity by each bank).

⁴⁹ See *supra* note 4 and accompanying text.

⁵⁰ See FSOC STUDY, *supra* note 2, at 48–49.

The Study, for example, notes that concerns over conflicts are “elevated” when instruments are complex, highly structured or opaque, illiquid or hard-to-value, require coordination across multiple business units within a bank, or involve significant information asymmetries. In addition, assets or strategies may be high risk if they involve new products with rapid growth, embedded leverage, high volatility, or assets whose values cannot be externally priced or effectively hedged.⁵¹ Identifying which activities fall within these criteria is left to regulators, who may adjust their requirements over time based on information they receive as supervisors and examiners.⁵² Likewise, reflecting the potential for heightened risk, permitted activities may be subject to additional capital requirements and other limitations to be set by future regulation.⁵³

Among the permitted activities, market-making and hedging are perhaps the most important.⁵⁴ Neither term, however, is defined.⁵⁵ Drawing a line between speculation and market-making may be particularly difficult. This is worrisome because market-making is essential to capital-raising, helping to fill a temporal gap between sellers and buyers of financial assets. It mirrors a classic bank function—providing liquidity to lenders without affecting borrowers’ access to a stable source of capital—but relying on the capital markets rather than traditional banking channels. To do so, banks intermediate between clients seeking to buy or sell financial assets and those wishing to sell or buy the same assets. A customer can sell assets immediately to a market-maker or postpone her sale until she locates an eager buyer. The risk, of course, is that the price may move against the seller while she waits. Market-makers are prepared to bear that risk—offering immediate liquidity, but typically at a discount from the price the seller might otherwise receive in the future. The market-maker’s gross return is the difference between its purchase price and the higher price at which it later sells the assets it holds.⁵⁶ Banks, consequently, are contacted daily to trade billions of dollars of financial instruments. Airlines, for example, can buy oil futures to lock in energy prices; agribusinesses can trade weather derivatives to offset the risk of a bad crop; and traders outside a bank can buy and sell, and sometimes speculate in, financial assets ranging from stocks and bonds to pork bellies and gold. Banks, as a result, may acquire inventory and maintain risk exposures in order to meet (or anticipate) customer demand. Proprietary

⁵¹ See *id.* at 51 (noting that limits on high-risk activity apply on desk-, business-, and firm-wide levels).

⁵² See *id.* at 49–51 (suggesting that, in creating new regulations, regulators must remain focused on the need to prohibit banking entities from profiting from trading that might present heightened conflicts of interest).

⁵³ Dodd-Frank Act sec. 619, § 13(d)(3).

⁵⁴ See *id.* sec. 619, § 13(d)(1)(B).

⁵⁵ See FSOC, Public Input, *supra* note 4, at 61,759.

⁵⁶ See Sanford J. Grossman & Merton H. Miller, *Liquidity and Market Structure*, 43 J. FIN. 617, 617–18 (1988) (describing the basic principles by which market-making operates); see also *infra* notes 89–92 and accompanying text.

traders, likewise, accumulate positions with the expectation of profiting from future transactions. Identifying which trades are a part of market-making and which are proprietary may be quite difficult—both involve principal trading with customers or counterparties, where the firm may gain or lose as a result of short-term changes in asset price.⁵⁷

Hedging is also integral to a bank's business. A bank may hedge its exposure to financial instruments, including inventory from market-making. It may also hedge interest rate and credit risk as part of its traditional lending business. Hedging risk can be effected in a number of ways, depending on the nature of the risk and the firm's aggregate exposure. To do so, a bank can buy or sell financial instruments, which may replicate (or mask) proprietary trading. Since a direct link between risk and hedging is not always possible, it may appear to an outsider that a legitimate hedging transaction is, in fact, an impermissible activity. Articulating the difference, however, is left to later rule-making.⁵⁸

As noted earlier, a key recommendation of the FSOC Study is the use of quantitative metrics—objective data points—to aid regulators in separating proprietary trading from permitted activities.⁵⁹ Metrics will also help banking entities more easily comply with the Volcker Rule, although they leave open the risk of trading strategies that satisfy quantitative standards but still violate the Rule's intent. More importantly, the new metrics are likely to require banks to change how they do business in order to comply with the regulators' definition of permitted activities.⁶⁰ By dictating business models, the Volcker Rule may delay the introduction of new instruments and strategies that—while otherwise consistent with the Rule—extend beyond existing indicia of permissible trading, potentially slowing beneficial innovation.⁶¹

The proposed metrics are fairly comprehensive, although regulators may identify additional measures in the future.⁶² They include:

- Revenue-based metrics based on daily trading revenues and profits from particular transactions, measured against historical revenue trends and profits from total trading activity, including data from other banks;⁶³

⁵⁷ See FSOC STUDY, *supra* note 2, at 18–24 (noting that current market-making often includes elements of proprietary trading and that, coupled with differences in market-making for different assets and markets, delineating between permissible and impermissible trading is challenging).

⁵⁸ See *id.* at 20–21.

⁵⁹ See *id.* at 37 (suggesting that the use of quantitative metrics will assist regulators in distinguishing between permissible and impermissible activities and facilitate the comparison of trading activity across different banks); see also *supra* notes 47–48 and accompanying text.

⁶⁰ See FSOC STUDY, *supra* note 2, at 5–6.

⁶¹ See *id.* at 26–27.

⁶² See *id.* at 6, 43.

⁶³ See *id.* at 36–38.

- Revenue-to-risk metrics that measure the amount of revenue a bank generates, and the volatility of its earnings, in relation to the risks the bank assumes, with the expectation that permitted activities will have greater revenue-to-risk ratios than proprietary trading;⁶⁴
- Inventory metrics that assess daily trading values against the value of assets held in inventory. Excess inventory, the FSOC Study argues, is more likely to indicate that a trading desk is holding an impermissible proprietary position—although the Study also recognizes that, as a result of differences in liquidity and complexity, values are likely to vary depending on asset class and may need to be determined on a desk-by-desk basis;⁶⁵ and
- Customer-flow metrics that compare the volume of trading from customer orders against orders initiated by a bank trader, including trading in order to build an inventory (against future customer demand) or hedge an existing position. Regulators may also assess customer order-flow against inventory, as well as determine how much of a trading desk’s revenues are from customer-related business.⁶⁶

Implementing the new measures is likely to be expensive. The FSOC Study notes that banks will be required to develop new regulatory and supervisory tools beyond their current risk management systems.⁶⁷ In addition, banks must collect and test new data, including metrics to assess industry-wide trading on a desk-by-desk basis, as well as comparing bank trading with hedge fund and other proprietary operations.⁶⁸ Greater detail may improve the usefulness of the new measures, but doing so will also require an assessment of different trading strategies across banks and, within banks, across different business units.⁶⁹ The FSOC Study, therefore, recommends that each bank be required to devise its own internal program of policies, procedures, and other controls, subject to regulatory review, in order to tailor how the Volcker Rule is implemented.⁷⁰

⁶⁴ *See id.* at 36, 38–39.

⁶⁵ *See id.* at 37, 39–40.

⁶⁶ *See id.* at 37, 41.

⁶⁷ *See id.* at 31 (noting that current risk management frameworks, because they are designed principally to limit losses, will, need to be re-developed to prioritize compliance with the Volcker Rule’s prohibitions). Regulators, as well, will need significant resources in order to hire and train staff with quantitative and market expertise, develop and analyze data, and review information in order to identify prohibited activities. *See id.* at 43–44.

⁶⁸ *See id.* at 42 (noting that regulators, by increasing the diversity of data points it surveys and collects, will have a more accurate representation of the trading activities of banking entities).

⁶⁹ *See id.* at 42–43 (noting that increased granularity, although preventing bank entities from masking impermissible trading, is likely to produce false positives).

⁷⁰ *See id.* at 33–34.

Regulators, the FSOC Study cautions, must be “flexible and dynamic” in implementing the Rule.⁷¹ The Study notes that “markets, products and trading activities will continue to evolve,” reflecting change in the financial markets over time.⁷² Regulation will be ineffective if it fails to take account of that change.⁷³ Evolution, however, is not confined to proprietary trading. The need for flexibility may be more fundamental—reflecting new relationships in the financial markets—as functions traditionally provided by banks are now also provided by new market participants. The concern, therefore, may extend beyond proprietary trading to whether the core of the Volcker Rule—namely, the divide between proprietary trading and banking—itself fails to take account of change in the financial markets. I begin to address that question in the next Part.

III. EVOLVING FINANCIAL MARKETS

Much of U.S. financial regulation divides traditional intermediaries into categories, as banks, thrifts, broker-dealers, insurance firms, and pension and investment advisers.⁷⁴ Those categories largely reflect the functions, products, and services provided by financial intermediaries in the 1930s and 1940s when many of the regulations were first introduced.⁷⁵ Financial regulation began to evolve in the 1950s as concerns arose that new market participants had begun to overtake traditional intermediaries.⁷⁶ Regulators, for

⁷¹ *Id.* at 32.

⁷² *See id.* at 26.

⁷³ *See id.*

⁷⁴ *See* Franklin Allen & Douglas Gale, *Capital Adequacy Regulation: In Search of a Rationale* 3 (Wharton Fin. Inst. Ctr., Working Paper No. 03–07, 2002), available at <http://fic.wharton.upenn.edu/fic/papers/03/0307.pdf> (noting that the mindset of the 1930s—one which was largely informed by the Great Depression—continues to influence thinking about financial regulatory policy); Gary Gorton, *Bank Regulation When “Banks” and “Banking” Are Not the Same*, OXFORD REV. ECON POL’Y, Winter 1994, at 106, 107 (describing historical definition of banks); Roberta S. Karmel, *The Challenge to Financial Regulators Posed by Social Security Privatization*, 64 BROOK. L. REV. 1043, 1056–58 (1998) (describing definitional distinctions that control regulatory oversight); *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).

⁷⁵ Types of financial intermediaries are described in Robert Charles Clark, *The Federal Income Taxation of Financial Intermediaries*, 84 YALE L.J. 1603, 1605–06 (1975) (dividing financial intermediaries into two broad types based on the source of their funding), and Howell E. Jackson, *Regulation in a Multisectoral Financial Services Industry: An Exploration Essay*, 77 WASH. U. L. Q. 319, 322–31 (1999) (suggesting one means to distinguish among different financial intermediaries is through comparing degrees of diffusion and opacity).

⁷⁶ *See* Franklin Allen & Anthony M. Santomero, *The Theory of Financial Intermediation*, 21 J. BANKING & FIN. 1461, 1464–74 (1997) (describing changes in the markets and the introduction of new instruments that have increased the overall size of the financial sector, but reduced the importance of traditional intermediaries); Richard J. Herring & Anthony M. Santomero, *What is Optimal Financial Regulation?* 29–35 (Wharton Fin. Inst. Ctr., Working Paper 00–34, May 1999), available at <http://fic.wharton.upenn.edu/fic/papers/00/0034.pdf> (noting the general decline of bank financial intermediation—especially noticeable in the con-

example, began to loosen their interpretation of the Glass-Steagall Act, largely due to the banks' interest in offering new products and services.⁷⁷ Additional changes were made in response to new market participants and products, in some cases spurred by pressure to stay competitive,⁷⁸ and in others, in order to accommodate new financial practices.⁷⁹ Traditional categories, nevertheless, continue today to frame much of U.S. financial regulation,⁸⁰ even though convergence in the financial markets has resulted in similar functions, products, and services appearing across multiple categories.⁸¹

Money market funds (MMFs) and finance companies together provide one example. Managing credit risk is at the heart of a bank's traditional function as an intermediary between depositors and borrowers.⁸² A key is its ability to balance depositors' interests in liquid liabilities (deposits) against borrowers' interests in longer-term, illiquid assets (loans), with loan portfolio risks spread across depositors and over time.⁸³ MMFs and finance companies replicate that balance, but do so through the capital markets. On the depositor side, MMFs provide investors with many of the conveniences of a bank, such as liquidity and checking services,⁸⁴ by managing portfolio investments

text of business finance—resulting from technological changes, new products, and competition from less-regulated entities).

⁷⁷ See Thomas G. Fischer et al., *The Securities Activities of Commercial Banks: A Legal and Economic Analysis*, 51 TENN. L. REV. 467, 474–502 (1984) (providing a general survey of the expansion of commercial banks into investment banking and noting the ways in which regulators and courts interpreted that expansion); Sorcher & Kini, *supra* note 13, at 233–34; see also Richardson et al., *supra* note 10, at 186–91 (noting how regulators in the 1980s issued a number of administrative rulings that permitted banks to hold and operate wholesale securities subsidiaries).

⁷⁸ See John C. Coffee, Jr. & Hillary A. Sale, *Redesigning the SEC: Does the Treasury Have a Better Idea?*, 95 VA. L. REV. 727, 737–38, 749 (2009) (noting that the SEC's decision to relax net capital rules for large investment banks was taken, in part, because of changes in European regulation).

⁷⁹ 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, 728–29 (1987) (describing how the Comptroller, in response to the proliferation of shared ATMs, altered the traditional definition of bank branches to ensure that their use was permissible).

⁸⁰ 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.

⁸¹ See Whitehead, *Reframing*, *supra* note 16, at 21.

⁸² 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”).

⁸³ See Franklin Allen & Douglas Gale, *Financial Markets, Intermediaries, and Intertemporal Smoothing*, 105 J. POL. ECON. 523, 525 (1997) (contending that, even where a certain risk cannot be diversified away, such risk can be averaged (or smoothed) over time, reducing its impact); Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POL. ECON. 401, 405 (1983) (describing banks' “role of turning illiquid assets into liquid assets”); Eugene F. Fama, *What's Different About Banks?*, 15 J. MONETARY ECON. 29, 34–35 (1985) (describing how banks can tailor their portfolios to reduce overall risk and cost).

⁸⁴ See Tamar Frankel, *The Scope and Jurisprudence of the Investment Management Regulation*, 83 WASH. U. L. Q. 939, 943 (2005) (noting that money market funds (MMFs), which

against investor withdrawals.⁸⁵ On the borrower side, finance companies lend to retail and business customers,⁸⁶ relying on MMFs for funding through the sale to them of short-term commercial paper.⁸⁷ The result, by placing MMFs and finance companies together, is the functional equivalent of deposit-taking and lending by banks.⁸⁸

Market-making is another example of a traditional bank function being executed through the capital markets.⁸⁹ Most securities transactions involve a specialized financial intermediary known as a “market-maker.” A market-maker trades securities as principal on either side of the market—in other words, it is both a buyer and seller of the same securities. If there are more buyers than sellers, or vice versa, the market-maker must adjust its inventory in response to customer demand, as well as change the bid-ask prices in order to rebalance order flow.⁹⁰ Market-makers mirror a classic bank function: both span the maturity gap between capital providers (who, as depositors or investors, expect liquidity) and capital users (who require longer-term stability).⁹¹ There are, of course, important differences between market-makers and traditional banks. For example, a bank’s obligation is evidenced by a contract to pay a fixed return on demand, whereas a market-maker’s obligation is typically enforced through reputation, and price is not agreed in advance. Both, however, facilitate capital-raising by providing investors with

were not subject to the interest rate caps placed on banks, were able to offer higher interest rates to customers and, at the same time, offer services consistent with traditional banks).

⁸⁵ MMFs are able to sell assets and raise money quickly, in part due to special requirements that impose strict standards on the credit quality and liquidity of their investment portfolios. See *Money Market Funds*, 17 C.F.R. § 270.2a-7(c)(3)-(4) (2008) (outlining criteria relating to portfolio quality and diversification that MMFs must satisfy); see also REPORT OF THE MONEY MARKET WORKING GROUP 31–39 (submitted to the Board of Governors of the Investment Company Inst., Washington, D.C.) (Mar. 2009), available at http://www.ici.org/pdf/ppr_09_mmwg.pdf (describing regulation of MMFs).

⁸⁶ See Harvey Rosenblum et al., *Banks and Nonbanks: A Run for the Money*, ECON. PERSP., May-June 1983, at 3, 3–7 (describing the inroads, as measured by increases in overall profits attributable to financial services, made by nonfinancial companies).

⁸⁷ See Jane W. D’Arista & Tom Schlesinger, *The Parallel Banking System*, BRIEFING PAPER (Econ. Policy Inst., Washington, D.C.), June 1, 1993, at 7–14 (noting that the commercial paper market is the essential link between the borrower and depositor aspects of MMF activity).

⁸⁸ See Jonathan R. Macey, *Reducing Systemic Risk: The Role of Money Market Mutual Funds as Substitutes for Federally Insured Bank Deposits* 6 (Yale Law Sch., Research Paper No. 422, 2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1735008 (noting that the needs and expectations of MMF investors and commercial depositors are roughly the same, tracking the functional similarity between the two).

⁸⁹ See THE CITY UK, *BOND MARKETS 2010 3* (2010), available at <http://www.thecityuk.com/media/156879/bond%20markets%202010.pdf> (noting that the U.S. bond market lacks a central exchange and instead operates through hundreds of market-makers); see also *supra* notes 56–57 and accompanying text.

⁹⁰ See Maureen O’Hara & George S. Oldfield, *The Microeconomics of Market Making*, 21 J. FIN. & QUANT. ANAL. 361, 361 (1986).

⁹¹ See OLIVER WYMAN, *THE VOLCKER RULE—CONSIDERATIONS FOR IMPLEMENTATION OF PROPRIETARY TRADING REGULATIONS* 9 (2011), <http://www.sifma.org/issues/item.aspx?id=22888> (report commissioned by the Securities Industry and Financial Markets Association).

liquidity—the ability to raise cash quickly—without interrupting the end-user’s longer-term employment of capital.⁹²

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 risk. Financial market participants saw an opportunity to profit from the creation and trading of new financial instruments that responded to the new demands.⁹³ In many cases, they adopted technologies similar to those used by (but no longer limited to) insurers and banks—namely, the pooling and transferring of financial risk from corporate counterparties to those who, through diversification or otherwise, could manage that risk at lower cost.⁹⁴ 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.⁹⁵ Over time, the growing demand for those instruments resulted in greater liquidity,⁹⁶ which, in turn, lowered their cost⁹⁷

⁹² See Hans R. Stoll, *Alternative Views of Market Making*, in MARKET MAKING AND THE CHANGING STRUCTURE OF THE SECURITIES INDUSTRIES 67, 81–82 (Yakov Amihud et al. eds., 1985) (noting that, from a functional standpoint, a market-maker’s services mirror those provided by financial intermediaries, such as banks, since the market-maker borrows short-term to finance long-term investments); Thomas S.Y. Ho & Anthony Saunders, *The Determinants of Bank Interest Margins: Theory and Empirical Evidence*, 16 J. FIN. & QUANT. ANAL. 581, 582–83 (1981) (noting that a major uncertainty that banks face relates to the demand for bank loans and the supply of deposits—outflows and inflows, respectively—tending to follow independent schedules); see also Darrel Duffie, *The Failure Mechanics of Dealer Banks 2–4* (Bank for Int’l Settlements, Working Paper No. 301, 2010), available at <http://www.bis.org/publ/work301.pdf> (describing depositors as individuals interested in short-term liquidity and borrowers as individuals looking for longer-term finance, with banks acting as intermediators).

⁹³ See FRANKLIN ALLEN & DOUGLAS GALE, FINANCIAL INNOVATION AND RISK SHARING 38 (1994) (explaining that the initial impetus for the creation of MMFs was banking regulation that limited the ability of banks to increase interest rates in a rising interest rate environment); Allen & Santomero, *supra* note 76, at 1479–80; Ronald J. Gilson & Charles K. Whitehead, *Deconstructing Equity: Public Ownership, Agency Costs, and Complete Capital Markets*, 108 COLUM. L. REV. 231, 245–47 (2008) (stating that the growing demand for risk-management instruments increased the liquidity of the risk markets which, in turn, lowered the instruments’ cost and permitted financial intermediaries to provide products more carefully tailored to individual clients); James C. Van Horne, *Of Financial Innovations and Excesses*, 40 J. FIN. 621, 622–24 (1985) (noting that financial innovation, and the offering of new products and services, correlate with the increased market volatility, regulatory changes, and technological improvements that occurred in the 1970s and 1980s).

⁹⁴ See Allen & Santomero, *supra* note 76, at 1479–80 (noting that, where a financial institution is holding a transferable risk but has no comparative advantage in managing it, there is no reason for the firm not to transfer it through the capital markets); Van Horne, *supra* note 93, at 622–28.

⁹⁵ See Whitehead, *Reframing*, *supra* note 16, at 36–40.

⁹⁶ The Black-Scholes options pricing formula provided a means to value options based on their terms and factors affecting the market price and volatility of the underlying asset. Consequently, even illiquid derivatives could be valued if there was a market for the underlying asset. See Fischer Black & Myron Scholes, *The Pricing of Options and Corporate Liabilities*, 81 J. POL. ECON. 637, 640–53 (1973) (explaining the principles and formula that permit the pricing of options through reference to the value of an underlying asset). That pricing model quickly gained hold among traders and risk managers, allowing instruments to be created and valued even where there was no trading market for the derivative itself. See PETER L. BERNSTEIN, CAPITAL IDEAS: THE IMPROBABLE ORIGINS OF MODERN WALL STREET 227 (1992) (dis-

and expanded the scope of risks that could be transferred through the capital markets.⁹⁸ Exchange-traded currency and oil price derivatives, for example, overtook less liquid and more costly private instruments that had been popular just a few years earlier.⁹⁹ Greater liquidity in the risk markets, and the introduction of new risk management technologies,¹⁰⁰ also permitted the creation of a growing array of private, over-the-counter hedging solutions that were closely tailored to a firm's specific risks.¹⁰¹

Of course, in a frictionless world, if a firm chooses to transfer risk, we would expect the premium it pays to mirror the risk-related costs the firm would otherwise incur in raising capital—a zero-sum game, since the risk would now be borne by the transferee's shareholders, who should demand

curring the popularity of the Black-Scholes model among traders); Frank H. Easterbrook, *Derivative Securities and Corporate Governance*, 69 U. CHI. L. REV. 733, 734–35 (2002) (describing the effect of the Black-Scholes model on the derivatives market).

⁹⁷ See Myron S. Scholes, *Global Financial Markets, Derivative Securities, and Systemic Risks*, 12 J. RISK & UNCERTAINTY 271, 272 (1996) (noting that frictions limit an innovation's adoption and so successful financial innovations must provide financial services at lower cost). For example, financial intermediaries in the early 1980s typically earned an up-front fee for arranging a plain vanilla swap, plus a spread as high as fifty basis points over the life of the transaction. Less than ten years later, reflecting new entrants and increased competition in the swaps marketplace, the up-front fee was dropped and spreads were reduced to five to ten basis points. See Robert T. Daigler & Donald Steelman, *Interest Rate Swaps and Financial Institutions* 8–9 (Nov. 1988) (unpublished working paper, on file with author), available at <http://www.fiu.edu/~daigler/pdf/swaps.pdf>.

⁹⁸ See CHRISTOPHER L. CULP, *STRUCTURED FINANCE AND INSURANCE* 22 (2006); Allen & Gale, *supra* note 74, at 38–39 (demonstrating why increased liquidity encourages a bank to more effectively manage the different risks it must bear which, in turn, improves its overall level of risk-sharing).

⁹⁹ The Chicago Mercantile Exchange, for example, provided a liquid and standardized alternative to the over-the-counter (OTC) market for foreign exchange derivatives. See ERIK BANKS, *EXCHANGE-TRADED DERIVATIVES* 129 (2003); CHARLES W. SMITHSON, *MANAGING FINANCIAL RISK* 18–19 (3d ed. 1998) (noting that the introduction of futures contracts on the Chicago Mercantile Exchange opened the forward foreign exchange market to new types of investors). The Chicago Board Options Exchange did the same for options trading. See ROBERT C. MERTON, *CONTINUOUS-TIME FINANCE* 330 (1990) (explaining that the Chicago Board Options Exchange initially permitted trading in call options for twelve companies but later expanded to include both calls and puts on hundreds of stocks). Firms also began to hedge by issuing hybrid instruments that combined traditional debt or equity with foreign exchange, interest rate, and commodity hedging instruments. For example, Mexico's state-owned petroleum company, PEMEX, issued petroleum-linked bonds in 1973. In the mid-1980s, firms began issuing dual currency bonds, bonds with embedded foreign exchange options, convertible/exchangeable floating-rate notes, and inverse floating-rate notes. Other firms issued securities whose returns were tied to natural gas, petroleum, and other commodity prices. See SMITHSON, *supra*, at 18–23, 320–30.

¹⁰⁰ See Dan Rosen, *The Development of Risk Management Software*, in *MODERN RISK MANAGEMENT: A HISTORY* 135, 136–37 (Sarah Jenkins & Tamsin Kennedy eds., 2003) (noting that the spread of third-party risk management software in the mid 1980s was preceded by hardware that permitted derivatives traders to quickly apply the Black-Scholes model to price their trades).

¹⁰¹ In general, OTC derivatives become less costly as public risk transfer markets develop that allow financial intermediaries to diversify away their risks across a broader array of counterparties. See Myron S. Scholes, *The Future of Futures*, in *RISK MANAGEMENT PROBLEMS & SOLUTIONS* 349, 365 (William H. Beaver & George Parker eds., 1995) (explaining that the cost of derivatives and other instruments decreased as their increasing importance in risk management strategies resulted in investors being able to more properly price them).

the same returns as the transferor's shareholders. If the risk counterparty, however, is better able to manage risk at lower cost, then, over time, the premium ought to fall below the cost the transferor would otherwise bear if the risk was retained.¹⁰² The implications are significant: as markets have continued to develop, risk transfer instruments—like CDS, in the case of credit risk—have become a lower cost substitute for the in-house management of the same risk. The result, as described in the next Part, is the ability of traditional intermediaries to transfer risk-bearing to new, lower-cost market participants through the capital markets. In effect, new instruments have enabled banks to outsource a core function from an industry subject to close, prudential supervision to new non-bank financial firms, in many cases subject to lower levels of regulation.¹⁰³

IV. OUTSOURCING RISK MANAGEMENT

Most corporate debt is private, and most private lenders are banks (although increasingly they include non-banks).¹⁰⁴ Even among public firms, which can access large pools of capital, roughly eighty percent maintain pri-

¹⁰² See Prakash Shimpi, *Integrating Risk Management and Capital Management*, J. APPLIED CORP. FIN., Winter 2002, at 27, 29–37 (describing standard corporate finance and insurance models of capital structure).

¹⁰³ Regulators have long known that traditional intermediaries transfer risk among each other and have encouraged it based on the relative cost of capital. See THE JOINT FORUM, RISK MANAGEMENT PRACTICES AND REGULATORY CAPITAL: CROSS-SECTORAL COMPARISON 46–57 (2001), available at <http://www.bis.org/publ/joint04.pdf> (outlining the major differences between jurisdictions, including differences in accounting rules, capital requirements, and definitions of capital, that influence intermediaries to transfer risk to other jurisdictions) [hereinafter JOINT FORUM, RISK MANAGEMENT]; Frank Partnoy, *Financial Derivatives and the Costs of Regulatory Arbitrage*, 22 J. CORP. L. 211, 227–35 (1997) (describing the use of derivatives to arbitrage financial regulation). Properly structured, capital requirements provided an incentive for intermediaries to transfer risk to lower cost participants in order to optimize risk allocation. See Günter Franke & Jan Pieter Krahen, *Default Risk Sharing between Banks and Markets: The Contribution of Collateralized Debt Obligations*, in THE RISKS OF FINANCIAL INSTITUTIONS 603, 629 (Mark Steven Carey & René M. Stulz eds., 2007) (exploring the effect that CDO transactions have on the risk profiles of originating banks) [hereinafter RISKS OF FINANCIAL INSTITUTIONS]; Wolf Wagner & Ian W. Marsh, *Credit Risk Transfer and Financial Sector Stability*, 2 J. FIN. STABILITY 173, 174–75 (2006) (noting that, although credit risk transfer helps firms diversify away risk, such transfers may also destabilize institutions participating in the credit risk transfer markets). 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. See Franklin Allen & Douglas Gale, *Systemic Risk and Regulation*, in RISKS OF FINANCIAL INSTITUTIONS, *supra*, at 341, 346 (modeling credit risk transfers in complete markets and finding that such transfers can promote efficient risk-sharing and increase overall welfare if properly structured).

¹⁰⁴ See Yakov Amihud et al., *A New Governance Structure for Corporate Bonds*, 51 STAN. L. REV. 447, 458 (1999); Joel Houston & Christopher James, *Bank Information Monopolies and the Mix of Private and Public Debt Claims*, 51 J. FIN. 1863, 1870–79 (1996) (tracking the debt structure of 250 publicly traded firms between 1980 and 1990); Marcel Kahan & Bruce Tuckman, *Private vs. Public Lending: Evidence from Covenants* 11–13 (Anderson Grad. Sch. Mgmt., Paper No. 13-93, 1993) (finding that private debt agreements control management actions more than public debt).

vate credit arrangements.¹⁰⁵ Within the traditional framing, lenders tend to rely on covenants to manage a borrower's credit risk. Covenants act as early warning "trip wires,"¹⁰⁶ permitting lenders to reassess borrowers and mitigate loss by renegotiating loans upon (or prior to) default.¹⁰⁷ To be effective, however, covenants must be monitored and enforced.¹⁰⁸ Lenders can rely on pre-existing relationships to do so inexpensively.¹⁰⁹ Delegating authority to an intermediary, such as a bank, can further lower costs to the extent the bank is better able to monitor and respond to change in a borrower's circumstances.¹¹⁰ Key to such delegation is the bank's ability to obtain quasi-public information about borrowers at lower cost than others.¹¹¹ Banks rely on monitoring and long-term relationships to develop that information, without the cost of duplication across multiple lenders.¹¹²

Historically, that informational advantage limited the banks' ability to resell loans, which partly explains why a liquid private credit market failed to develop before change in the lending business in the 1980s.¹¹³ Less knowledgeable purchasers were likely to discount a loan's value, or attempt to engage in their own costly monitoring of a borrower, resulting in a drop in the price at which the loan could be sold.¹¹⁴ Consequently, banks were better

¹⁰⁵ See Greg Nini et al., *Creditor Control Rights and Firm Investment Policy*, 92 J. FIN. ECON. 400, 401 (2009) (noting, as well, that roughly only fifteen to twenty percent of public firms have outstanding public debt).

¹⁰⁶ George G. Triantis & Ronald J. Daniels, *The Role of Debt in Interactive Corporate Governance*, 83 CAL. L. REV. 1073, 1093–94 (1995) (suggesting that the voidable preference in bankruptcy law encourages lenders to closely monitor borrowers through the use of covenants).

¹⁰⁷ Oliver Hart & John Moore, *Default and Renegotiation: A Dynamic Model of Debt*, 63 Q. J. ECON. 1, 2 (1998) (describing the role of renegotiation in a lender-borrower relationship).

¹⁰⁸ See Nicolae Gârleanu & Jeffrey Zwiebel, *Design and Renegotiation of Debt Covenants*, 22 REV. FIN. STUDIES 749, 750–53 (2009) (noting that initial covenants are purposefully designed to be overly strict, which permits the lender to control or influence the actions of the borrower); Kahan & Tuckman, *supra* note 104, at 6–7.

¹⁰⁹ Kahan & Tuckman, *supra* note 104, at 7, 25–26 (noting that, because private debt issues are usually held by a small, sophisticated group of investors, agency costs can be minimized).

¹¹⁰ See Douglas W. Diamond, *Financial Intermediation and Delegated Monitoring*, 51 REV. ECON. STUD. 393, 393–95 (1984) (developing a model in which a financial intermediary has a net cost advantage relative to direct lending); Fama, *supra* note 83, at 36–38.

¹¹¹ Fischer Black, *Bank Funds Management in an Efficient Market*, 2 J. FIN. ECON. 323, 323–24 (1975) (noting that the inefficiency of banking markets permits banks to profitably exploit quasi-public information); Fama, *supra* note 83, at 35–39 (explaining how other market participants, cognizant of the banks' informational advantage, react to bank action); Triantis & Daniels, *supra* note 106, at 1083–90 (attributing the monitoring advantage enjoyed by banks to special characteristics of the banking sector, including the banks' ability to cross-benchmark different borrowers and press borrowers for more information).

¹¹² Douglas G. Baird & Robert K. Rasmussen, *Private Debt and the Missing Lever of Corporate Governance*, 154 U. PA. L. REV. 1209, 1212–13, 1219–23 (2006) (describing the role of banks and covenants in the corporate decision-making of firms in financial distress); Diamond, *supra* note 110, at 393–95.

¹¹³ Those changes are described *infra* notes 118–35 and accompanying text.

¹¹⁴ Diamond, *supra* note 110, at 410. The asymmetry resulted in the classic "lemons problem" described in George A. Akerlof, *The Market for Lemons: Quality Uncertainty and the Market Mechanism*, 84 Q. J. ECON. 488 (1970).

off if they assessed credit risk and borrower concentrations at the time the loan was made¹¹⁵ and then held that loan to its maturity.¹¹⁶ The inability to transfer loans, in turn, reinforced the value to lenders of covenants and monitoring.¹¹⁷

The business of banking, and the role of banks as intermediaries, began to change in the 1970s and 1980s, driven by increasing bank and non-bank competition,¹¹⁸ product and other innovation in the marketplace,¹¹⁹ and changes in financial regulation.¹²⁰ New capital requirements, introduced in the late 1980s, were intended to provide banks with a cushion against the risk of loan loss, the possibility of a bank run, and, in light of the banks' systemic importance, the resulting harm to the real economy.¹²¹ The new

¹¹⁵ See JOHN B. CAOUILLE ET AL., *MANAGING CREDIT RISK: THE NEXT GREAT FINANCIAL CHALLENGE* 65 (1998) (noting that banks traditionally evaluated only the risk associated with individual loans and were not concerned with selling loans to diversify their exposure at the portfolio level); Edward I. Altman, *Corporate Bond and Commercial Loan Portfolio Analysis* 1 (Wharton Fin. Inst. Ctr., Working Paper No. 96-41, 1996) (noting that banks, apart from measuring the credit risk related to individual loans, recognize the value of properly measuring credit concentration risks); Paul Glasserman, *Probability Models of Credit Risk* 1 (2000), available at http://www2.gsb.columbia.edu/faculty/pglasserman/B6014/Prob_Credit.pdf (noting that increasing complexity in measuring credit risk has encouraged banks to measure credit risk at the portfolio level).

¹¹⁶ See Amihud et al., *supra* note 104, at 466; Saul Levmore, *Monitors and Freeriders in Commercial and Corporate Settings*, 92 *YALE L.J.* 49, 56 (1982) (noting that banks have an incentive to monitor borrowers, irrespective of free riding by other creditors); Gary Gorton & George Pennacchi, *Banks and Loan Sales: Marketing Non-marketable Assets* 1-3, 29 (Nat'l Bureau of Econ. Research, Working Paper No. 3551, 1990) (examining the opening of loan sales markets during 1980s).

¹¹⁷ See Black, *supra* note 111, at 329-30; Philip E. Strahan, *Borrower Risk and the Price and Nonprice Terms of Bank Loans* FED. RESERVE BANK OF N.Y. RESEARCH PAPER SERIES, STAFF REPORT NO. 90, 2-8 (1999), available at <http://ssrn.com/abstract=192769> (finding that banks adjust price and non-price terms to facilitate monitoring and limit loan losses).

¹¹⁸ See LOWELL L. BRYAN, *BREAKING UP THE BANK: RETHINKING AN INDUSTRY UNDER SIEGE* 22-28 (1988) (noting that banks, in an effort to compensate for losses caused by the expansion of MMFs, adopted a variety of different tactics, including shedding unproductive divisions and expanding into new product areas); KERRY COOPER & DONALD R. FRASER, *BANKING DEREGULATION AND THE NEW COMPETITION IN FINANCIAL SERVICES INDUSTRY* 2-17 (1984) (outlining the commercial banks' decline in market share and the convergence in financial services that blurred the traditional distinction between depository and non-depository financial institutions); Franklin Allen & Anthony M. Santomero, *What Do Financial Intermediaries Do?*, 25 *J. BANKING & FIN.* 271, 276-82 (2001) (explaining how the rise of nonbank financial institutions and new financial products cut into the traditional types of services offered by banks).

¹¹⁹ See Allen N. Berger et al., *The Transformation of the U.S. Banking Industry: What a Long, Strange Trip It's Been*, *BROOKINGS PAPERS ON ECON. ACTIVITY*, 1995, Issue 2, at 55, 68-70 (describing key product innovations, including swaps and certain types of futures, that permitted banks to enter into new lines of business).

¹²⁰ See COOPER & FRASER, *supra* note 118, at 195-217; ROBERT E. LITAN, *WHAT SHOULD BANKS DO?* 33-59 (1987); Berger et al., *supra* note 119, at 127 (attributing the dramatic change in the banking industry during the 1970s and 1980s to the "extraordinary number of major regulatory changes that occurred during this period"); see also Richardson et al., *supra* note 10, at 182.

¹²¹ See JOINT FORUM, *RISK MANAGEMENT*, *supra* note 103, at 10-11, 31, 34-38 (identifying the key elements informing the supervisory efforts made by regulators over banks); Franklin Allen & Richard Herring, *Banking Regulation versus Securities Market Regulation* 4-7

requirements, however, also made it more expensive for banks to continue the lending business as they had before.¹²² In addition, competing products (such as MMFs) offered attractive alternatives to bank deposits, so that banks could no longer count on depositors to cushion against loan losses.¹²³ Banks therefore began to consider new businesses such as trading for their own account and selling new products and services. These new lines of business were not only more profitable than lending but were also not subject to the same levels of credit risk.¹²⁴ In addition, banks began to reassess the lending business—with many turning to a defensive, portfolio-based strategy in order to minimize overall credit costs.¹²⁵

New technologies also helped banks optimize their loan portfolios.¹²⁶ Banks could more actively buy and sell loans and other credit instruments in

(Wharton Fin. Inst. Ctr., Working Paper No. 01–29, 2001), available at <http://knowledge.wharton.upenn.edu/papers/1174.pdf> (noting that the focus of banking regulation, in light of the harm caused by the Great Depression, is to avoid financial crises through the elimination or control of systemic risk); Stephen Morris & Hyun Song Shin, *Financial Regulation in a System Context*, BROOKINGS PAPERS ON ECON. ACTIVITY, Fall 2008, at 229, 230, 234–35 (explaining the mechanics of a bank run and demonstrating that actions taken by firms to shore-up their own positions to avoid runs may weaken financial market stability).

¹²² See Charles K. Whitehead, *What's Your Sign?—International Norms, Signals, and Compliance*, 27 MICH. J. INT'L L. 695, 721–25 (2006) (describing implementation of the Basel Accord on bank regulatory capital); Charles Smithson et al., *Results from the 2002 Survey of Credit Portfolio Management Practices 5* (2002) (noting that regulatory capital was a primary motivation to transfer loans), available at http://www.isdadocs.org/c_and_a/pdf/2002-cpm-survey.pdf.

¹²³ Robert DeYoung & William C. Hunter, *Deregulation, the Internet, and the Competitive Viability of Large Banks and Community Banks*, in THE FUTURE OF BANKING 173, 178–79 (Benton E. Gup ed., 2003) (describing the effect of information technology innovation on the financial markets); Arthur E. Wilmarth, Jr., *The Transformation of the U.S. Financial Services Industry, 1975–2000: Competition, Consolidation, and Increased Risks*, 2002 U. ILL. L. REV. 215, 239–42 (2002) (describing the structure and evolution of MMFs, their comparative advantages over traditional bank deposits, and congressional attempts to put banks on an equal competitive footing with MMFs); see also *supra* notes 82–88 and accompanying text.

¹²⁴ Allen & Santomero, *supra* note 118, at 279–81 (noting that banks now derive more than half their income from fee-producing and trading activities, whereas they had traditionally relied on interest rate spreads for roughly eighty percent of their income).

¹²⁵ See Allen & Gale, *supra* note 83, at 538–41; Berger et al., *supra* note 119, at 68–69, 80–83; Allen & Santomero, *supra* note 118, at 288, 290–91. Actively managing portfolio risk was, at the time, principally limited to equities, with credit risk instead being transferred through traditional (and more costly) instruments like financial guarantees and credit insurance. A liquid market to buy and sell credit risk, as well as the creation of a measure of default risk and correlation across loans, was necessary in order for portfolio risk management to be extended to debt. See CAQUETTE ET AL., *supra* note 115, at 231–42, 267–72; Paul Bennett, *Applying Portfolio Theory to Global Bank Lending*, 8 J. BANKING & FIN. 153, 156–57 (1984) (noting that the measurement of covariances across different borrowers is key for efficient portfolio construction).

¹²⁶ By 2002, a credit portfolio model developed by quantitative risk management firm KMV, LLC (KMV) had become the most widely used in the banking industry. See *2000 Hall of Fame*, DERIVATIVESSTRATEGY.COM (Mar. 2000), <http://www.derivativesstrategy.com/magazine/archive/2000/0300fea1.asp> (explaining that KMV provides default probabilities, with windows ranging from one to five years, for over 20,000 companies around the world). The KMV model is described in Stephen Kealhofer & Jeffrey R. Bohn, *Portfolio Management of Default Risk*, KMV (May 2001), available at http://www.moodykmv.com/research/whitepaper/Portfolio_Management_of_Default_Risk.pdf. Other methods have also been devel-

order to better manage their credit exposure.¹²⁷ Banks also became less interested in holding loans to maturity in light of the ability to enhance returns by selling loan interests to others.¹²⁸ The result was a shift in the lending business.¹²⁹ Syndicated loans and secondary loan trading,¹³⁰ spurred by the leveraged buyout wave that began in the mid-1980s,¹³¹ grew both in aggregate size¹³² and total number of investors.¹³³ The new liquidity enabled banks to

oped to measure a loan portfolio's risk and return characteristics. See CAOINETTE ET AL., *supra* note 115, at 285–99.

¹²⁷ See GLANTZ, *supra* note 27, at 423–49; CAOINETTE ET AL., *supra* note 115, at 4; Bennett, *supra* note 125, at 156–59 (noting that, for modern portfolio theory to be effective, banks must be able to measure the riskiness of the individual assets comprising a particular portfolio).

¹²⁸ See JAMES L. PIERCE, *THE FUTURE OF BANKING* 83 (1991) (noting that banks, by leveraging expertise, technological efficiencies, and informational advantages, have been able to offer additional financial services that compete with mutual funds); David T. Llewellyn, *Banking in the 21st Century: The Transformation of an Industry*, in *THE FUTURE OF THE FINANCIAL SYSTEM* 141, 164, 169 (Malcom Edey ed., 1996) (describing pressures on banking due to structural and operational change); Allen & Santomero, *supra* note 118, at 280–82.

¹²⁹ See CHARLES W. CALOMIRIS, *U.S. BANK DEREGULATION IN HISTORICAL PERSPECTIVE* 341 (2000) (noting that banks, in response to changes in business model, began to concentrate less on the profitability of particular retail transactions or product lines and more on expanding client relationships); Llewellyn, *supra* note 128, at 169–70; Patrick Bolton & Xavier Freixas, *Equity, Bonds, and Bank Debt: Capital Structure and Financial Market Equilibrium Under Asymmetric Information*, 108 J. POL. ECON. 324, 326–27 (2000) (describing the banks' motivation to securitize loans); Harvey R. Miller, *Chapter 11 in Transition – From Boom to Bust and Into the Future*, 81 AM. BANKR. L.J. 375, 379 (2007) (describing a shift in bank holdings, comprising over seventy percent of loans in 1995 to below thirteen percent by 2007).

¹³⁰ In a syndicated loan, one or more “lead banks” negotiate the terms of the loan with the borrower and sell portions to others at the time of origination. See Glenn Yago & Donald McCarthy, *The U.S. Leveraged Loan Market: A Primer*, MILKEN INST. 14–22 (Oct. 2004), http://www.milkeninstitute.org/pdf/loan_primer_1004.pdf (providing a general history of the syndicated loan market). Interests in a loan, whether or not it is syndicated, can also be sold in the secondary market, although secondary trading is dominated by loans to riskier borrowers and non-bank investors. See William H. Widen, *Lord of the Liens: Towards Greater Efficiency in Secured Syndicated Lending*, 25 CARDOZO L. REV. 1577, 1585–90 (2004) (explaining how growth of the syndicated loan market led to the creation of new syndicated loan structures); Yago & McCarthy, *supra*, at 23–28, 35–37 (documenting the growth in the transference of loans from the primary to the secondary market and in the trading of syndicated loans from the 1980s to 2000s); Steven Drucker & Manju Puri, *On Loan Sales, Loan Contracting, and Lending Relationships* 1 (FDIC Ctr. for Research, Working Paper No. WP 2007–04, Mar. 2007) (noting that U.S. banks in 2005 raised over \$1.5 trillion through the use of loan syndications). Bank lenders, therefore, can transfer loans at the time of origination, as well as sell all or part of a loan at a later date. A description of the syndicated loan market, and how it differs from the secondary trading market, can be found in Amir Sufi, *Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans*, 62 J. FIN. 629, 632–34 (2007) (contending that the principal differences between the syndicated loan market and the secondary trading market relate to the nature of the relationship between the parties and the quality of the underlying loans).

¹³¹ A description of the growth of the leveraged loan market appears in Robert P. Bartlett III, *Taking Finance Seriously: How Debt Financing Distorts Bidding Outcomes in Corporate Takeovers*, 76 FORDHAM L. REV. 1975, 2011–20 (2008) (noting that the need for banks to help their customers finance leveraged buyouts during the mid-1980s led to an explosion in the syndicated loan market).

¹³² The market for syndicated loans grew from \$137 million in 1987 to over \$1 trillion in 2007. Sufi, *supra* note 130, at 629. Loan trading also grew, from \$8 billion in 1991 to \$176.3 billion in 2005. See Drucker & Puri, *supra* note 130, at 1.

minimize credit costs by diversifying their exposure across a range of borrowers.¹³⁴ Likewise, banks that participated in the loan market could hold less capital against riskier loans, which, in turn, produced more profitable loan portfolios.¹³⁵

Investing in a loan, however, requires the buyer to invest working capital. Consequently, a credit derivatives market also developed,¹³⁶ partly to permit lenders to transfer credit risk without requiring the buyer to make a working capital commitment.¹³⁷ The result was to open up the private credit market to new participants—particularly hedge funds.¹³⁸ At the same time,

¹³³ Investors now include pension funds, hedge funds, insurance companies, specialty finance companies, and foreign institutions. See Joseph G. Haubrich & James B. Thomson, *The Evolving Loan Sales Market*, ECON. COMMENTARY, FED. RESERVE BANK OF CLEVELAND 3 (July 15, 1993), <http://www.clevelandfed.org/research/commentary/1993/0715.pdf>.

¹³⁴ Greater liquidity, for example, resulted in increased diversification among leveraged loan investors. U.S. banks held only seven percent of the underwritten loans, compared with thirty percent or more in the mid-1990s. Institutional investors, in turn, held seventy-five percent of the loans, compared with only sixteen percent in 1995. See *The Risk of Leveraged Loans is Reportedly Growing*, N.Y. TIMES.COM, June 12, 2007, <http://www.nytimes.com/2007/06/12/business/worldbusiness/12iht-risks.1.6105944.html> (quoting a Goldman Sachs Group research report that found institutional investors to have replaced banks in certain types of leveraged-loan deals); see also Serena Ng & Henry Sender, *Easy Money: Beyond Buyout Surge, A Debt Market Booms*, WALL ST. J., June 26, 2007, at A1 (reporting that the increased liquidity provided by collateralized loan obligations helped fuel a record number of corporate buyouts).

¹³⁵ See A. Sinan Cebenoyan & Philip E. Strahan, *Risk Management, Capital Structure and Lending at Banks*, 28 J. BANKING & FIN. 19, 38 (2004) (attributing the increased profitability of banks participating in the secondary market to their ability to operate with less capital and engage in risky lending, in each case through the purchase and sale of loans).

¹³⁶ The global credit derivatives market was estimated to be \$180 billion (notional amount) in 1996. Ross Barrett & John Ewan, *BBA Credit Derivatives Report 2006* 5, BRITISH BANKERS' ASSOC. (2006), www.bba.org.uk/download/6158. By the end of 2007, an estimated \$45 trillion in notional amount of CDS were traded (up from \$632 billion in 2001). David Mingle, *Credit Derivatives: An Overview*, FED. RESERVE BANK OF ATLANTA: ECON. REV. 7 (4th Quarter, 2007), www.frbatlanta.org/filelegacydocs/erq407_mingle.pdf; see also Gretchen Morgenson, *First Comes the Swap. Then It's the Knives.*, N.Y. TIMES, June 1, 2008, at BU1 (reporting that, in 2008, the nominal value of outstanding CDS stood at \$62 trillion compared to \$900 billion in 2000). A description of credit derivative instruments appears in GLANTZ, *supra* note 27, at 531–49; Masters & Bryson, *supra* note 27, at 43–85.

¹³⁷ See CAOUILLE ET AL., *supra* note 115, at 311–12; GLANTZ, *supra* note 27, at 532; Angus Duncan, *Loan-only Credit Default Swaps: The March to Liquidity*, COM. LENDING REV., Sept.–Oct. 2006, at 19, 20 (noting that CDS, because they are functionally a hedge against default, can be used by banks to limit or reduce capital requirements); Bernadette Minton et al., *How Much Do Banks Use Credit Derivatives to Reduce Risk?* 35 J. FIN. SERVICES RESEARCH 1, 7 (2009) (finding that the banks most likely to employ credit risk protection were large banks controlling a high concentration of overall bank assets); 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”).

¹³⁸ See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-07-716, CREDIT DERIVATIVES: CONFIRMATION BACKLOGS INCREASED DEALERS' OPERATIONAL RISKS, BUT WERE SUCCESSFULLY ADDRESSED AFTER JOINT REGULATORY ACTION 6 n.8 (2007) (citing a British Bankers' Association report that the “top five end-users of credit derivatives are banks and broker-dealers (forty-four percent), hedge funds (thirty-two percent), insurers (seventeen percent), pension funds (four percent), and mutual funds (three percent)”; Risk, *supra* note 137; Daniel Fisher,

using CDS, a bank could buy and sell all or a portion of a borrower's credit risk—managing its credit exposure,¹³⁹ diversifying its portfolio,¹⁴⁰ and minimizing regulatory capital,¹⁴¹ while also maintaining the client relationship.¹⁴² Since the credit derivatives market is largely private, it is unclear how often lenders use derivatives to hedge credit risk. Total volumes, however, continued to grow through 2008, with indications that their use to diversify credit risk is becoming more common.¹⁴³ Moreover, Bank of America estimated that, in 2006, approximately thirteen percent of the CDS market—equal to \$3.2 trillion in notional amount—involved the net transfer of credit risk away from banks' loan portfolios.¹⁴⁴ For banks, the benefits have been substantial¹⁴⁵—enabling them to manage and diversify credit risk at lower cost

A Dangerous Game, FORBES, Oct. 16, 2006, at 40 (citing a Greenwich Associates analysis that fifty-eight percent of CDS are traded by hedge funds); Janet Morrissey, *Credit Default Swaps: The Next Crisis?*, TIME, Mar. 17, 2008 (noting that an original CDS can be traded fifteen or twenty times).

¹³⁹ See Mingle, *supra* note 136, at 15–17 (describing the hedging mechanics of CDS and the development of more sophisticated and flexible hedging strategies); Minton et al., *supra* note 137, at 3–4, 10–11 (explaining that banks that focus on extending loans to commercial and industrial borrowers are more likely to purchase credit risk protection to hedge against borrower default).

¹⁴⁰ CAOQUETTE ET AL., *supra* note 115, at 311–12; GLANTZ, *supra* note 27, at 532; Minton et al., *supra* note 137, at 25.

¹⁴¹ 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, 175 (2007) (describing the function and use of CDS); Duncan, *supra* note 137, at 19–20 (explaining the recent development of the loan-only CDS and how it differs from a standard CDS). The market also grew as a result of trading, unrelated to hedging, by banks and other institutions for their own accounts and for clients. See Darrell Duffie, *Innovations in Credit Risk Transfer: Implications for Financial Stability* 4–5 (Bank for Int'l Settlements, Working Paper No. 255, July 2008) (noting that, from 2001 through 2006, the majority of CDS executed by banks were on behalf of clients who used CDS as a form of investment).

¹⁴² 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 CDS without WorldCom becoming aware it had transferred the risk. See *In Re WorldCom, Inc. Secs. Litig.*, 346 F. Supp. 2d 628, 651–52 (S.D.N.Y. 2004).

¹⁴³ See Viral V. Acharya & Timothy C. Johnson, *Insider Trading in Credit Derivatives*, 84 J. FIN. ECON. 110, 111 (2007) (suggesting that credit derivatives have been “the most significant and successful financial innovation of the last decade,” permitting banks and other financial institutions to withstand high levels of corporate default during 2000–2004); Frank Partnoy & David A. Skeel, Jr., *The Promise and Perils of Credit Derivatives*, 75 U. CIN. L. REV. 1019, 1034 (2007) (discussing the growth in size and scope of the CDS market, particularly for many of the largest corporations); Henry T.C. Hu & Bernard Black, *Debt, Equity, and Hybrid Decoupling: Governance and Systemic Risk Implications*, 14 EUR. FIN. MGMT. 663, 682–83 (2008) (noting that the growth of the CDS market has caused conflicts for certain creditors who also hold CDS against their borrowers, as it may be more profitable for them if the borrower defaults); Duffie, *supra* note 141, at 4–5 (noting that, by 2006, the CDS market had an outstanding notional amount of \$25 trillion); Debtwire, *North American Distressed Debt Market Outlook 2008* 15 (2008), <http://www.debtwire.com/library.marketview?DocID=1083> (finding, in a poll of 101 different hedge fund managers, proprietary trading desks, and other asset managers, that CDS use was the most prevalent hedging strategy).

¹⁴⁴ See Duffie, *supra* note 141, at 4–5.

¹⁴⁵ Those benefits are described in more detail in Allen N. Berger & Gregory F. Udell, *Securitization, Risk, and the Liquidity Problem*, in STRUCTURAL CHANGE IN BANKING 227, 238–46 (Michael Klausner & Lawrence J. White eds., 1993) (surveying theories that relate to

than before.¹⁴⁶ Borrowers have benefited as well. A portion of the gains can be passed on, for example, through increased lending limits or lower interest rates, resulting in an overall decline in a borrower's real cost of capital.¹⁴⁷

The result is that banks can now rely on new instruments, such as CDS, to diversify and transfer credit risk.¹⁴⁸ New market entrants can invest in the credit risk of a bank's loan portfolio without extending loans themselves and, having transferred the credit risk, the originator no longer has a direct interest in monitoring the borrowers or managing the transferred exposure. In effect, with CDS, banks can now outsource the management of credit risk to someone else. The Bank of America data indicate that, after banks and securities firms, hedge funds are the second largest group of participants in the CDS market.¹⁴⁹ Thus, by investing in CDS, hedge funds can assume a core function of intermediation—the management of credit risk—but without the regulation or informational access that characterized such management by banks in the past.¹⁵⁰

Banks and hedge funds, therefore, are somewhat tied at the hip. Banks can transfer credit risk, and hedge funds can assist in managing it.¹⁵¹ Disloca-

the benefits of securitization and the reasons why lenders securitize loans); George Pennacchi, *Loan Sales and the Cost of Bank Capital*, 43 J. FIN. 375, 375–76 (1988) (noting that some of the benefits afforded by loan sales or securitizations include lower cost financing and improved risk management).

¹⁴⁶ See Katerina Simons, *Why Do Banks Syndicate Loans?*, NEW ENGLAND ECON. REV., Jan.-Feb. 1993, at 45, 45–47 (noting that loan syndications, and other forms of secondary intermediation, permit banks to reduce exposure to individual borrowers and reduce unwanted risk concentrations); Rebecca S. Demsetz, *Bank Loan Sales: A New Look at the Motivations for Secondary Market Activity* 22–23, FED. RESERVE BANK OF N.Y. RESEARCH PAPER SERIES, STAFF REPORT NO. 69 (Mar. 1999), available at http://www.newyorkfed.org/research/staff_reports/sr69.pdf (noting that loan syndications and other credit risk transfers permit banks to diversify their holdings which, in turn, allows banks to realize benefits—including increased profitability—not available to less diversified banks).

¹⁴⁷ See A. Burak Güner, *Loan Sales and the Cost of Corporate Borrowing*, 19 REV. FIN. STUD. 687, 713 (2006) (finding that corporate loans that are originated for sale have lower yields than traditional corporate loans because loans intended for sale have a lower cost of funding for banks than traditional loans); Pennacchi, *supra* note 145, at 375–76 (suggesting that the reduced finance and capital costs that banks can realize through loan sales permit them to lend to a greater number of borrowers, including riskier borrowers).

¹⁴⁸ See Duffie, *supra* note 141, at 5; see also Benedikt Goderis et al., *Bank Behaviour with Access to Credit Risk Transfer Markets* 9 n.1 (Bank of Finland Research Discussion Papers, Paper No. 4/2007) (2007), available at <http://www.bof.fi/NR/rdonlyres/801B7C28-819B-4A72-877A-0926F00563D1/0/0704netti.pdf> (noting that European banks are much more active than their U.S. counterparts in use of the CDS markets).

¹⁴⁹ See Duffie, *supra* note 141, at 5; see also *supra* note 138 and accompanying text.

¹⁵⁰ Hedge funds, like banks, can manage that risk through diversification, see *supra* notes 134, 140 and accompanying text, but may also choose to speculate on whether a referenced entity's credit quality will improve or decline. A discussion of the risks of speculation and the systemic issues surrounding credit derivatives is included in Partnoy & Skeel, *supra* note 143, at 1032–50.

¹⁵¹ Bank-hedge fund relationships may become increasingly concentrated as hedge funds continue to restructure and consolidate. See Matteo Tonello & Stephen Rabimov, *The 2010 Institutional Investment Report* 49–50 (The Conference Board, Research Report R-1468-10-RR), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1707512&download=yes (describing the losses—and resulting consolidation—in the hedge fund industry following the financial crisis).

tion in one industry is likely to create problems in the other,¹⁵² with aggregate bank returns to date appearing to have had a more significant impact on hedge funds than vice versa.¹⁵³ Part of the effect may have been due to banks (prior to the Volcker Rule) engaging in proprietary trading that competed with hedge funds.¹⁵⁴ Another part may have resulted from banks providing fee-based services to hedge funds that declined when the hedge fund industry slowed.¹⁵⁵ This Article illustrates a third linkage between the two—through the ability of banks to transfer credit risk to hedge fund managers, which can then trade and diversify that risk among other market participants. Doing so has enabled banks to pursue a traditional banking function—namely, the extension of loans—at lower cost.¹⁵⁶ Yet, as a result of its reliance on CDS, a downturn in the hedge fund industry may affect a bank's ability to extend new loans, resulting in a decline in available credit or an increase in the cost of capital. Stated differently, even though a principal goal of the Volcker Rule is to return banks to traditional banking,¹⁵⁷ the increased risk-taking resulting from the transfer of proprietary trading to hedge funds may still affect a bank's ability to extend credit.

There is, in fact, a real risk of an industry-wide slowdown among hedge funds. Recent evidence suggests that, under some circumstances, hedge funds may perform in the same way, irrespective of management style, causing an overall decline in hedge fund performance at the same time. Specifically, if there is a reduction in funding—for example, due to creditor concerns over the value of assets that hedge funds post as collateral¹⁵⁸—managers may be forced to reduce leverage and, in turn, trade fewer assets, resulting in a decline in liquidity. That decline can cause funding to drop even further, creating a downward spiral across the industry that affects most managers in the same way.¹⁵⁹ Greater coordination among hedge funds can,

¹⁵² See Nicholas Chan et al., *Systemic Risk and Hedge Funds*, in RISKS OF FINANCIAL INSTITUTIONS, *supra* note 103, at 235, 318, 326.

¹⁵³ See Monica Billio et al., *Econometric Measures of Systemic Risk in the Finance and Insurance Sectors 3* (Nat'l Bureau of Econ. Research, Working Paper No. 16223, July 2010), available at <http://www.nber.org/papers/w16223> (noting that financial innovation, like securitization, and the emergence of new business relationships between banks and hedge funds have resulted in a closer interrelationship between them).

¹⁵⁴ See Chan et al., *supra* note 152, at 90; Billio et al., *supra* note 153, at 3.

¹⁵⁵ See Chan et al., *supra* note 152, at 90.

¹⁵⁶ See *supra* notes 145–47 and accompanying text.

¹⁵⁷ See *supra* notes 12–17 and accompanying text.

¹⁵⁸ See Tomas Garbaravicius & Frank Dierick, *Hedge Funds and Their Implications for Financial Stability* 43–45 (Eur. Cent. Bank Occasional Paper Series, Paper No. 34, Aug. 2005), available at <http://www.ecb.int/pub/pdf/scpops/ecboep34.pdf> (noting that hedge funds, due to their high levels of leverage, can quickly suffer significant losses and the lack of liquidity buffers often results in their being forced to liquidate positions, further increasing market volatility).

¹⁵⁹ See Boyson et al., *supra* note 25, at 1814–15.

in turn, amplify any downturn in performance, as traders jointly react to the decline in asset prices.¹⁶⁰

Financial regulation helps police the amount of risk that a bank can incur, as well as how that risk is managed. When outsourced to a less-regulated entity, however, the bank must rely on its own protections to ensure proper management. Doing so may be difficult. Chief among the concerns 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 typically 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.¹⁶¹ Unlike most outsourcing, however, the bank may not know who is ultimately performing the outsourced function—in this case, managing the transferred risk. In fact, due to the sale and resale of CDS, the risk is most likely shared among a group of investors, making individual monitoring largely unfeasible.¹⁶²

To be sure, the Dodd-Frank Act expanded hedge fund regulation by, among other things, eliminating the private adviser exemption from the Investment Advisers Act of 1940 and, with certain exceptions, requiring private fund advisers to register with the Securities and Exchange Commission (SEC).¹⁶³ As a practical matter, however, the new requirements are likely to do little to affect the hedge fund industry, since many of the largest advisers were already SEC-registered.¹⁶⁴ Moreover, based on current resources, the

¹⁶⁰ See Whitehead, *supra* note 26 at 346–51; see also Jenny Strasburg & Susan Pulliam, *Hedge Funds' Pack Behavior Magnifies Swings in Market Funds*, WALL ST. J., Jan. 14, 2011, at A1 (noting the increased tendency of hedge funds to adopt similar trading strategies, amplifying market swings).

¹⁶¹ 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).

¹⁶² For example, at the time of its bankruptcy, there were approximately \$72 billion in notional amount of CDS 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., Dec. 2008, at 68, 70.

¹⁶³ See Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111–203, § 403, 24 Stat. 1376 (2010) (Dodd-Frank Act); see also *Exemptions for Advisers to Venture Capital Funds, Private Fund Advisers With Less Than \$150 Million in Assets Under Management, and Foreign Private Advisers*, Investment Advisers Act Release No. IA-3111 (Nov. 19, 2010), 75 Fed. Reg. 77,190 (Dec. 10, 2010); *Rules Implementing Amendments to the Investment Advisers Act of 1940*, Investment Advisers Act Release No. IA-3110 (Nov. 19, 2010), 75 Fed. Reg. 77,052 (Dec. 10, 2010).

¹⁶⁴ About seventy percent of hedge fund assets were managed by advisers that had voluntarily registered with the SEC. See *After Dodging Many Bullets, Hedge Funds Are Back in Regulators' Sights*, KNOWLEDGE@WHARTON (Mar. 18, 2009) <http://knowledge.wharton.upenn.edu/article.cfm?articleid=2185> (noting that many hedge funds were willing to voluntarily register with the SEC in order to attract institutional investor funds).

SEC estimates it will not be able to audit a registered investment adviser more than once every eleven years.¹⁶⁵

The Act also does little to directly address the outsourcing of a traditional bank function. Information the SEC gathers can be provided to the FSOC in order to assist efforts to assess systemic risk.¹⁶⁶ The principal regulator, however, remains the SEC, with a rules-based (rather than prudential) approach to overseeing the industry.¹⁶⁷ The FSOC, with a vote of seven of its ten members, can impose additional Federal Reserve regulation on systemically important non-bank financial firms.¹⁶⁸ Although hedge fund advisers can qualify,¹⁶⁹ the principal focus appears to be on individual firms that are “too big” or “too interconnected” to fail—a group that may include hedge fund advisers, but is less likely to reflect the industry-to-industry relationship between hedge funds and banks described in this Article.¹⁷⁰

Nevertheless, the FSOC is also charged with identifying risks to U.S. financial stability arising from activities in or outside the financial markets.¹⁷¹ As part of its mandate, the FSOC must “identify gaps in regulation that could pose risks to” U.S. financial stability,¹⁷² as well as make recommendations to primary regulators to “apply new or heightened standards and safeguards for financial activities or practices that could create or increase risks” among financial firms and markets.¹⁷³ Both provisions authorize the FSOC to assess the relationship between banks and hedge funds, including the potential impact of the Volcker Rule on risk-taking by hedge funds and the consequences for bank lending. As discussed in the next Part, that general authority, as well as the FSOC Study, suggests an approach to implementing the Volcker Rule that may help take account of changing financial markets.

¹⁶⁵ See SECS. EXCH. COMM'N, STUDY ON ENHANCING INVESTMENT ADVISER EXAMINATIONS 14 (Jan. 2011), <http://www.sec.gov/news/studies/2011/914studyfinal.pdf> (study of examination and enforcement resources for investment advisers required by Dodd-Frank Act sec. 914).

¹⁶⁶ Section 404 of the Dodd-Frank Act directs the SEC to require private fund advisers to maintain records and file reports, including information necessary for the FSOC to assess systemic risk. See Dodd-Frank Act § 404; see also *Reporting by Investment Advisers to Private Funds and Certain Commodity Pool Operators and Commodity Trading Advisors on Form PF*, Investment Advisers Act Release No. IA-3145 (Jan. 26, 2011), 76 Fed. Reg. 8,068 (Feb. 11, 2011), available at <http://www.sec.gov/rules/proposed/2011/ia-3145.pdf>.

¹⁶⁷ See Coffee & Sale, *supra* note 78, at 776–79 (noting that the SEC’s focus on rules-based regulation leaves it ill-suited to adapt to changes in the financial markets).

¹⁶⁸ See *supra* note 5 and accompanying text.

¹⁶⁹ See 76 Fed. Reg. 7,731, *supra* note 5, at 7,734–35.

¹⁷⁰ See Rebecca Christie & Ian Katz, *Hedge Funds May Pose Systemic Risk in Crisis*, U.S. Report Says, BLOOMBERG, Feb. 17, 2011, <http://www.bloomberg.com/news/2011-02-17/hedge-funds-may-pose-systemic-risk-in-crisis-u-s-report-says.html> (describing a confidential, draft FSOC report that considers including certain hedge funds under Federal Reserve oversight).

¹⁷¹ Dodd-Frank Act §§ 111, 112, (to be codified at 12 U.S.C. §§ 5321, 5322).

¹⁷² *Id.* § 112(a)(2)(G) (to be codified at 12 U.S.C. § 5322(a)(2)(G)).

¹⁷³ *Id.* § 112(a)(2)(K) (to be codified at 12 U.S.C. § 5322(a)(2)(K)).

V. IMPLEMENTING THE VOLCKER RULE

As the FSOC Study acknowledges, regulators who implement the Volcker Rule have a narrow tightrope to walk.¹⁷⁴ Among the issues to be addressed, first, they must draw a line between permitted activities and proprietary trading. Too narrow a definition of proprietary trading will undercut the Volcker Rule, and too broad a definition may weaken the financial markets.¹⁷⁵ Second, in implementing the Rule, regulators must account for differences in assets and markets, as well as among banks and traders. The FSOC Study, therefore, recommends a tailored approach to implementation, relying on banks (subject to regulatory approval) to create their own compliance programs and metrics. In order to minimize the risk of unfair advantage, regulators must also be able to compare trading practices from firm to firm and across different business units.¹⁷⁶ And third, the FSOC Study recommends that regulation adapt over time to a fluid and changing marketplace. Innovation can result in strategies that circumvent the Volcker Rule, but innovation can also be slowed, even when consistent with the Rule, if it falls outside of whatever regulatory standards have been introduced.¹⁷⁷

Part of the difficulty springs from the rise of new market participants and new means to manage and transfer capital and risk. No doubt, some portion of the shift away from traditional intermediaries has simply reflected differences in regulation—a regulatory arbitrage, as new products and services are created in order to minimize cost.¹⁷⁸ Yet, arbitrage alone does not fully explain the change. Many less-regulated firms are able to manage risk more efficiently than traditional intermediaries. Hedge funds, for example, minimize agency costs through a governance structure that helps them compete effectively against others.¹⁷⁹ Moreover, the capital markets permit efficient risk-sharing among investors, who can transfer risks to entities that are

¹⁷⁴ See *supra* notes 70–72 and accompanying text.

¹⁷⁵ See *supra* notes 54–58 and accompanying text.

¹⁷⁶ See *supra* notes 62, 67 and accompanying text.

¹⁷⁷ See *supra* notes 59–61 and accompanying text.

¹⁷⁸ See Partnoy, *supra* note 103, at 227–28.

¹⁷⁹ Hedge funds are typically organized as limited partnerships and may employ provisions that restrict management discretion or otherwise grant investors specific rights, including the regular distribution of free cash flow to a fund's investors. Advisers 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) (noting that the hedge fund structure closely aligns the interests of the fund manager with those of investors). In addition, a hedge fund adviser's poor performance may result in liquidation of the fund or difficulty in raising capital for successive funds. See Houman B. Shadab, *The Law and Economics of Hedge Funds: Financial Innovation and Investor Protection*, 6 BERKELEY BUS. L.J. 240, 262 (2009) (noting that market discipline, coupled with the tendency of fund managers to invest in the funds they manage, reduces agency costs). Hedge fund advisers also typically charge performance fees for gains in fund performance, but are not required to rebate fees for losses. Public mutual fund advisers, 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 (2006); see also Robert C. Illig, *The Promise of Hedge Fund Governance: How Incentive Compensation can Enhance Institutional Investor Monitoring*, 60 ALA. L. REV. 41,

better able to manage them at lower cost, and so provide a less expensive alternative to traditional intermediaries.¹⁸⁰ Accordingly, a change in regulation—simply freezing the division among financial firms—is unlikely to halt change in the financial markets.

This is, at its heart, the principal problem with the Volcker Rule. The FSO Study acknowledges the problem, but confines its focus (consistent with the Volcker Rule) to the effect of market change on proprietary trading.¹⁸¹ Yet, the same concern applies equally to introducing a static divide—between proprietary trading and banking—within changing financial markets. As Justice William O. Douglas, writing about continuity in the law, observed over sixty years ago:

Th[e] search for static security—in the law or elsewhere—is misguided. The fact is that security can only be achieved through constant change, through the wise discarding of old ideas that have outlived their usefulness, and through the adapting of others to current facts. There is only an illusion of safety in a Maginot Line. Social forces like armies can sweep around a fixed position and make it untenable. A position that can be shifted to meet such forces and at least partly absorb them alone gives hope of security.¹⁸²

The same can be said of the financial markets. Bank functions may now be performed by non-bank entities—such as the outsourcing of credit risk management to hedge funds. Financial risk may be bought and sold among new market participants, some of whom may be subject to lower levels of regulation than banks. What this suggests is that regulators must begin to address the banking industry's exposure to market-based risks. Banking activities may still be affected by proprietary trading—an end-run around the Volcker Rule's divide—but now through the banks' reliance on risk outsourcing to hedge funds and the hedge fund industry.¹⁸³

At the same time, because it focuses only on proprietary trading, there are likely to be real limits on the Volcker Rule's ability to address problems that led up to the financial crisis. The Volcker Rule leaves open the banks' ability to continue to pursue substantially riskier activities—including, for

70–77 (2008) (describing the role of the “carried-interest” compensation scheme employed by most hedge funds in reducing agency costs).

¹⁸⁰ 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) (noting that market mechanisms, because of uncertainty and the possibility for rapid change, are more well-suited to efficiently allocate resources than other nonmarket mechanisms); Gilson & Whitehead, *supra* note 93 at 243–47 (describing the capital markets' response to increasing demand for risk mitigation instruments).

¹⁸¹ See *supra* notes 71–73 and accompanying text.

¹⁸² William O. Douglas, *Stare Decisis*, 49 COLUM. L. REV. 735, 735 (1949) (noting that the respect for precedent must also take account of the “dynamic component of history”).

¹⁸³ See *supra* notes 151–60 and accompanying text.

example, the extension of subprime real estate loans.¹⁸⁴ The Rule also fails to cover longer-term commitments, which were reported to have been a significant source of bank losses—perhaps more significant than losses from short-term trading.¹⁸⁵ In addition, in light of the difficulty in separating proprietary from permitted activities, the Rule may be applied inconsistently from bank to bank, potentially creating arbitrage opportunities that fail to minimize actual risk-taking.¹⁸⁶ Finally, there is a risk the Rule will inadvertently block or limit beneficial activities. The most notable concern is with market-making, which may be restricted by an overly-broad definition of proprietary trading.¹⁸⁷ Innovation, even if consistent with the Rule, may also be slowed if there is a risk it will be perceived by regulators as violating a metric or pattern of trading used to detect impermissible activities.¹⁸⁸

This argues, at least initially, for a narrow definition of proprietary trading. Consistent with the Volcker Rule, activities that are clearly proprietary should be expressly identified and prohibited.¹⁸⁹ Other activities should be permitted, but subject to continued monitoring and supervision. Federal regulators may, in the interim, direct that certain of the permitted activities be segregated from banks in separately capitalized entities as an additional protection against the impact of trading on bank stability.¹⁹⁰ Over time, with additional data—and a clearer picture of the impact of the new regulation—regulators may then decide to restrict or prohibit additional trading. Some of the adjustments may occur during the period leading up to the Rule's initial implementation. Others may take place after the Rule has become effective, reflecting a greater need for data, over a longer period, to assess the impact of the new requirements. Doing so gradually would also allow banks and regulators to fine tune the detailed metrics that are likely to be used in separating proprietary from permissible activities.¹⁹¹ In the meantime, regulators—using the same metrics—could impose capital charges and other quantitative limits that control the impact of those activities on the banking industry, consistent with the approach taken in regulating systemically important non-bank financial firms.¹⁹² A reliance on capital charges and other limits would also be more flexible, allowing regulators, on a step-by-step basis, to assess the follow-on impact of the new restrictions they impose. Hedge funds, for example, may grow more important as additional risk-tak-

¹⁸⁴ See *supra* notes 9–10, 21 and accompanying text.

¹⁸⁵ See *supra* note 43 and accompanying text.

¹⁸⁶ See *supra* notes 44–46 and accompanying text.

¹⁸⁷ See *supra* notes 54–57 and accompanying text.

¹⁸⁸ See *supra* notes 59–61 and accompanying text.

¹⁸⁹ The FSOC Study identifies activities that would clearly be prohibited under the Volcker Act. See FSOC STUDY, *supra* note 2, at 27–28.

¹⁹⁰ This approach would be consistent with the Swap Pushout Rule, which prohibits a commercial bank from engaging in a swaps trading business, but permits it in bank affiliates. See *supra* note 12.

¹⁹¹ See *supra* notes 62–70 and accompanying text.

¹⁹² See *supra* notes 5, 53 and accompanying text.

ing becomes concentrated in a single industry. Making that assessment over time may be less disruptive than attempting to do so in parallel with the new Volcker Rule requirements.¹⁹³

There remains an open question about hedge fund regulation. That issue will need to be addressed, in light of the potential impact of hedge funds on the financial markets, irrespective of how the Volcker Rule is implemented. Hedge funds that engage in a credit-related business may become subject to new rules under proposals to regulate the “shadow banking” system.¹⁹⁴ Implementing them, however, will require a different approach to regulating hedge funds than the capital markets-based approach that has been adopted to date.¹⁹⁵ That does not necessarily suggest a need to regulate hedge funds in the same way as banks. Different structures, and varying agency and other costs,¹⁹⁶ may make differences in regulation appropriate, even if the functions are similar.¹⁹⁷ In that respect, the Dodd-Frank Act authorizes the FSOC to regulate new sources of market risk, which could include hedge funds that expose banks to prohibited activities.¹⁹⁸ Rather than a flat prohibition, however, the FSOC may consider more fluid regulation, like capital charges, that reflect the potential systemic importance of hedge fund failure.¹⁹⁹

VI. CONCLUSION

The Volcker Rule, this Article has argued, fails to properly take account of change in the financial markets. A principal goal of the Rule is to minimize risky trading by banks—by prohibiting banking entities from engaging in proprietary trading—and, therefore, to promote the provision of capital to businesses and consumers. As a result of the Rule, however, many of those trading activities have moved to the hedge fund industry. Properly segregated, transferring risk away from banks may limit the impact of a downturn in hedge fund performance. That fails, however, to take account of new relationships that have developed within fluid financial markets. Over the past

¹⁹³ No doubt, there will be political pressure on federal regulators to implement the Volcker Rule quickly and as comprehensively as possible. *See* Senators Call, *supra* note 6. Establishing procedures for implementing the Volcker Rule, including clear milestones, may be one way to demonstrate the regulators’ commitment to doing so, but without the potential side-effects of the rushed introduction of new regulation that may be too broad or not broad enough.

¹⁹⁴ *See* Carla Main, *Shadow Banks, Dodd-Frank, UBS Notice: Compliance*, BLOOMBERG, Feb. 7, 2011, <http://www.bloomberg.com/news/2011-02-07/shadow-banking-dodd-frank-delays-ubs-wells-notice-compliance.html>.

¹⁹⁵ *See supra* notes 163–70 and accompanying text.

¹⁹⁶ *See supra* note 179 and accompanying text.

¹⁹⁷ *See* CONGRESSIONAL OVERSIGHT PANEL, SPECIAL REPORT ON REGULATORY REFORM 29 (Jan. 2009), available at <http://cop.senate.gov/documents/cop-012909-report-regulatoryreform.pdf> (noting that “[f]unctional regulation can mean applying the same principles and not necessarily producing identical regulatory outcomes”); *see also* Whitehead, *Reframing*, *supra* note 16, at 41–43 (arguing that a strict function-only approach to regulation is inappropriate).

¹⁹⁸ *See supra* notes 171–73 and accompanying text.

¹⁹⁹ *See supra* notes 5, 53 and accompanying text.

thirty years, new market participants—in many cases, hedge funds—have begun to perform bank-like functions that permit banks to extend more credit or do so at lower cost. By causing proprietary trading to move to the hedge fund industry, banks continue to be exposed to the same risks—perhaps less directly than before, but now in an industry also subject to less regulation.

More generally, the Volcker Rule reflects the problem of imposing a static business model on modern financial markets. No doubt, the Volcker Rule removes proprietary trading from entities with government-subsidized funding. Less clear is whether an alternative method—one that reflects change in the financial markets—would be more effective. Perhaps recognizing the problem, the FSOC Study recommends that regulations implementing the Volcker Rule be dynamic and flexible. The problem, however, is more basic. If the regulatory concern is with proprietary trading, the question should not be whether banks are *engaged* in proprietary trading, but rather, whether banks and banking activities are *exposed* to the risks of proprietary trading. Today, the location of those risks extends beyond the banking industry, reflecting an evolving financial system and change in who is conducting bank-like activities. By failing to take that change into account, the Volcker Rule potentially results in new and costly regulation that increases risk-taking among less-regulated entities but may still affect banking activities.

