Size Matters: Commercial Banks and the Capital Markets

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The conventional story is that the Gramm–Leach–Bliley Act broke down the Glass–Steagall Act’s wall separating commercial and investment banking in 1999, increasing risky business activities by commercial banks and precipitating the 2007 financial crisis. But the conventional story is only one-half complete. What it omits is the effect of change in commercial bank regulation on financial firms other than the commercial banks. After all, it was the failure of Lehman Brothers—an investment bank, not a commercial bank—that sparked the meltdown.

This Article provides the rest of the story. The basic premise is straightforward: By 1999, the Glass–Steagall Act’s original purpose—to protect commercial banks from the capital markets—had reversed. Instead, its main function had become protecting the capital markets from new competition by commercial banks. Once the wall came down, commercial banks gained a sizeable share of the investment banking business. To offset lost revenues, investment banks pursued riskier businesses, growing their principal investments and increasing the amounts they borrowed to finance them. In effect, they assumed the features of commercial banks—a reliance on short-term borrowing to finance longer-term (and riskier) investments. For the investment banks, combining the two was lethal and eventually triggered the financial meltdown.

The divide between two sets of regulators, those regulating commercial banks and those regulating investment banks, enabled the change. The need for greater regulatory coordination has grown with convergence in the financial markets. Although new regulation has addressed some of the concern, the gap between regulators continues today—raising the risk of repeating mistakes from the past. Acknowledging the role of bank regulation (and deregulation) in reshaping the capital markets is a key step in the right direction.

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I. INTRODUCTION

For decades, the Glass–Steagall Act\(^1\) erected a wall between commercial and investment banks,\(^2\) largely by restricting a commercial bank’s (or its affiliate’s) ability to underwrite, trade, and sell securities.\(^3\) The separation was intended as a shield: To protect commercial banks and their depositors against risks that would arise if a bank or bank affiliate began to do business in the capital markets.\(^4\) It was no surprise, then, that when the Gramm–Leach–Bliley

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2 This Article’s focus is on the relationship between investment banks and the largest commercial banks. References to “banks” or “commercial banks” are to the largest U.S. deposit-taking institutions, including the U.S. operations of non-U.S. institutions. References to “investment banks” are to broker-dealers whose core business has traditionally been securities underwriting, securities trading (as principal and for customers), investment advice, and strategic (mergers and acquisitions) advice.


4 See Operation of the National and Federal Reserve Banking Systems: Hearing on S. Res. 71 Before the Subcomm. of the S. Comm. on Banking & Currency, 71st Cong. 480 (1931) (statement of W. Z. Ripley, Professor, Harvard University) (noting conflicts of interest in trading that resulted from having a commercial bank and investment bank as affiliates); id. at 1063–64 (summarizing responses to a subcommittee questionnaire relating to conflicts); S. Rep. No. 73-77, at 6–8 (1933) (blaming loose bank credit policies for fueling speculative investment and inflating securities prices); see also Bd. of Governors of Fed. Reserve Sys. v. Inv. Co. Inst., 450 U.S. 46, 61 (1981) (“Congress was persuaded that speculative activities, partially attributable to the connection between commercial banking and investment banking, had contributed to the rash of bank failures.”); Inv. Co. Inst. v. Camp, 401 U.S. 617, 630 (1971) (noting that “[t]he Glass–Steagall Act reflected a determination that policies of competition, convenience, or expertise which might otherwise support the entry of commercial banks into the investment banking business were outweighed by the ‘hazards’ and ‘financial dangers’ that arise when commercial banks engage in” investment banking). That purpose has been echoed in scholarship.
Act\textsuperscript{5} took down the final bricks in the wall in 1999,\textsuperscript{6} the principal concern was whether commercial banks would increase financial risk-taking\textsuperscript{7} and, later,
whether that risk-taking precipitated the 2007 financial crisis.\textsuperscript{8} No doubt, the banks’ (and their affiliates’) ability to enter the capital markets changed the nature and extent of the risks they incurred,\textsuperscript{9} and greater risk-taking contributed to losses that arose during the financial crisis.\textsuperscript{10} What the conventional story omits, however, is the effect of the Gramm–Leach–Bliley Act on financial firms other than commercial banks. That failure has resulted in a gap in our understanding of what led to the financial crisis. After all, it was Lehman Brothers—an \textit{investment bank}, not a commercial bank—that

\textsuperscript{7} See, e.g., Kevin J. Stiroh & Adrienne Rumble, \textit{The Dark Side of Diversification: The Case of US Financial Holding Companies}, 30 J. BANKING & FIN. 2131, 2133–34 (2006) (reporting that, for financial holding companies dependent on high volatility revenues, the benefits of diversification from the weak correlation across different income sources were more than offset by the risks); Michelle Heller, ‘03 Regulatory Outlook Suddenly Unsettled, AM. BANKER, Nov. 11, 2002, at 1 (“Sen. Shelby [senior member of the Senate Banking Committee] . . . said he was considering [committee] hearings as a way to determine whether mixing the [commercial and investment banking] businesses was jeopardizing the safety and soundness of the banking system.”).

\textsuperscript{8} See, e.g., \textsc{Lawrence G. McDonald & Patrick Robinson}, \textsc{A Colossal Failure of Common Sense: The Inside Story of the Collapse of Lehman Brothers} 7 (2009) (stating that the Gramm–Leach–Bliley Act was “directly responsible for bringing the entire world to the brink of financial ruin”); Julie A.D. Manasfi, \textit{Systemic Risk and Dodd–Frank’s Volcker Rule}, 4 WM. & MARY BUS. L. REV. 181, 182 (2013) (“[T]his Article asks the important question of whether the blending of commercial banking and investment banking produces the alleged harm: increased systemic risk.”).

\textsuperscript{9} See, e.g., Anthony Saunders et al., \textit{Enhanced Regulation of Large, Complex Financial Institutions}, \textit{in Restoring}, supra note 4, at 139–40, 143 (noting that competition for investment bank mandates was “increasingly aggressive . . . greatly increasing the risk exposures that banks were willing to take on their own books” and that, like investment banks, “the banks increasingly relied on proprietary trading revenues as competitive pressure eroded intermediation margins”); Arthur E. Wilmarth Jr., \textit{How Should We Respond to the Growing Risks of Financial Conglomerates?}, \textit{in Financial Modernization After Gramm–Leach–Bliley} 65, 77 (Patricia A. McCoy ed., 2002) (“[The Gramm–Leach–Bliley] Act will promote a greater consolidation of risk within the financial sector, because it has removed the structural separations that (i) previously shielded commercial and investment banks from problems occurring in the other sector, and (ii) enabled each sector to serve as an independent source of financing during financial disruptions.”).

\textsuperscript{10} See, e.g., Carmen M. Reinhart & Kenneth S. Rogoff, \textit{Is the 2007 US Sub-Prime Financial Crisis So Different? An International Historical Comparison}, 98 AM. ECON. REV. (PAPERS & PROC.) 339, 340 (2008) (“The impact of [sub-prime] defaults on the financial sector has been greatly magnified due to the complex bundling of obligations that was thought to spread risk efficiently.”); Wilmarth, \textit{supra} note 9, at 71 (noting that the growth, over the preceding two decades, of aggressive syndicated lending and securitization, as well as speculative underwriting and investment activities, “have made large financial institutions vulnerable to serious losses during disruptions in the capital markets”).
sparked the meltdown leading to the crisis.\textsuperscript{11} And, not having learned from our mistakes, we risk repeating them.\textsuperscript{12}

This Article provides the rest of the story—a facet of bank regulatory reform and its effect on the capital markets that legal scholarship has largely overlooked. The basic premise is straightforward: By the time the Gramm–Leach–Bliley Act passed in 1999, the Glass–Steagall Act’s principal original purpose—to protect commercial banks from the capital markets—had reversed. Instead, its main function had become protecting the capital markets from new competition by the commercial banks.

Once the Glass–Steagall Act’s wall came down, commercial banks gained a sizeable share of business in the capital markets, displacing the role of investment banks. The size of a bank’s balance sheet—its ability to extend credit through traditional lending—became a decisive factor for borrowers in determining who would win capital markets mandates.\textsuperscript{13} Commercial banks offered a package of products and services that competed with those traditionally provided by investment banks.\textsuperscript{14} To offset lost revenues, investment banks grew their principal investments\textsuperscript{15} and the amounts they borrowed to finance them.\textsuperscript{16} In effect, as commercial banks entered the investment banking business, investment banks began to assume the features of commercial banks—in particular, a reliance on short-term borrowing in order to finance longer-term (and riskier) investments.\textsuperscript{17} For investment banks, combining the two—greater risk-taking and leverage—was lethal\textsuperscript{18} and eventually triggered the financial meltdown.\textsuperscript{19}

\textsuperscript{11} See, e.g., Peter Thal Larsen, \textit{Collapse of the House of Lehman Was Trigger Point}, FIN. TIMES, Oct. 29, 2008, at 6 (“The starting point for the most recent meltdown was the decision by the US authorities to allow Lehman Brothers to fail. . . . At the time, some observers saw the Lehman bankruptcy as a cathartic moment. In fact, it was the trigger for a wave of failures and near-fails of banking institutions across the developed world.”). Interestingly, when assessing the Gramm–Leach–Bliley Act, its immediate effect on the investment banks—such as Lehman Brothers’ failure—is sometimes held out as evidence that repeal of the Glass–Steagall Act had limited impact on financial market instability because commercial banks were not directly affected. See, e.g., Andrew Ross Sorkin, \textit{Reinstating an Old Rule Is Not a Cure for Crisis}, N.Y. TIMES (May 21, 2012), http://dealbook.nytimes.com/2012/05/21/reinstating-an-old-rule-is-not-a-cure-for-crisis/ [http://perma.cc/ZQ32-5TQ6]. What that analysis fails to consider is the impact of the Gramm–Leach–Bliley Act on the capital markets and, in turn, the impact of investment bank failures on commercial banks.

\textsuperscript{12} See infra notes 246–56 and accompanying text.

\textsuperscript{13} See infra notes 59–67 and accompanying text.

\textsuperscript{14} See infra notes 69–75 and accompanying text.

\textsuperscript{15} See infra Figures 1 & 2, notes 93–125 and accompanying text.

\textsuperscript{16} See infra Figure 3, notes 131–41 and accompanying text.

\textsuperscript{17} This mismatch between assets and liabilities is a standard feature of commercial banks. See infra notes 49, 189 and accompanying text.

\textsuperscript{18} See RAGHURAM G. RAJAN, \textit{FAULT LINES: HOW HIDDEN FRACTURES STILL THREATEN THE WORLD ECONOMY} 17 (2010) (“[T]he central cause for the financial panic was not so much that the banks packaged and distributed low-quality subprime mortgage-
To illustrate, consider what occurred around Lucent Technologies’ decision to spin-off its optical network subsidiary, Agere Systems, in 2001. Goldman Sachs and Credit Suisse First Boston (CSFB), both investment banks, were originally tapped to lead Agere’s initial public offering (IPO) before Lucent found itself in need of $6.5 billion in short-term credit. In order to procure the additional funding, JPMorgan and Citigroup, two commercial banks, each committed $1.25 billion to Lucent and arranged for others to make up the shortfall. Goldman Sachs and CSFB declined to join the lending group and were dropped as co-managers of the IPO, positions that were picked up by the investment bank affiliates of Lucent’s new principal creditors, JPMorgan and Citigroup.

Morgan Stanley was also a co-lead manager of the Agere IPO. To be selected, Morgan Stanley agreed to purchase up to $2.6 billion in Lucent debt, a portion of which it exchanged with Lucent for up to 90 million Agere shares. For Morgan Stanley, the risks were significant. Prior to the IPO, Lucent’s credit rating dropped to one notch above “junk” (below investment-grade) status. When the deal became public, Morgan Stanley’s stock price plummeted by over twenty percent, principally due to concerns over the risk Morgan Stanley had assumed—the possibility of Lucent’s credit rating dropping further or the value of the Agere shares being less than the Lucent backed securities but that they held on to substantial quantities themselves, either on or off their balance sheets, financing these holdings with short-term debt.”; Viral Acharya et al., The Financial Crisis of 2007–2009: Causes and Remedies, 18 FIN. MKTS. INSTITUTIONS & INSTRUMENTS 89, 108 (2009) (“Whatever the reasons, and they may have differed across firms, we believe that the combination of leverage and the fact that financial firms chose not to transfer the credit risk (even though they pretended to do so) is the root cause of the financial crisis.”).

19 See ROGER LOWENSTEIN, THE END OF WALL STREET 287 (2010) (“Rampant speculation (and abuse) in mortgages was surely the primary cause of the bubble, which was greatly inflated by leverage in the banking system, in particular on Wall Street.”).
21 See Schack, supra note 20, at 37.
22 See id. Goldman Sachs and CSFB may have learned from the Agere IPO. They later bought $1 billion of AT&T debt as part of their participation in AT&T’s spin-off of AT&T Wireless Group. See Emily Thornton, Commentary: To Snare IPOs, Wall Street May Be Risking Too Much, BLOOMBERG (July 8, 2001), http://www.bloomberg.com/bw/stories/2001-07-08/commentary-to-snare-ipos-wall-street-may-be-risking-too-much [http://perma.cc/9EQR-EBVK].
23 See Agere Sys. Inc., Prospectus (Form 424B4), at cover (Mar. 27, 2001); Schack, supra note 20, at 37.
24 See AGERE, supra note 23, at cover.
25 See Schack, supra note 20, at 37.
26 See AGERE, supra note 23, at 141. The arrangement permitted Lucent to retire a portion of its debt in a tax-efficient manner. See id.
27 See Smith, supra note 20, at C1.
28 See Thornton, supra note 22.
debt Morgan Stanley had agreed to exchange.29 In the end, Morgan Stanley earned roughly $75 million in fees, but only following billions of dollars in lost market capitalization and at the risk of incurring significant loan-related losses.30

What the Lucent/Agere financing illustrates is the commercial banks’ use of their sizeable balance sheets to enter the traditional investment banking business. Investment banks, in response, assumed greater risk and leverage in order to remain competitive. To be sure, passage of the Gramm–Leach–Bliley Act was not the only reason for the change. Investment banks sought new ways to make up for the drop in profitability31 caused by a number of factors, including a general slowdown in the investment banking business32 and the rise of low-cost online and electronic trading.33 As Part II describes, however, what makes the effect of the Gramm–Leach–Bliley Act exceptional was the divide between two sets of regulators, those regulating commercial banks and those regulating investment banks, that resulted in a lapse in regulation as the investment banks changed how they conducted business. Rather than one or another regulator dropping the ball,34 problems leading up to the financial crisis arose due to a structure in which siloed regulators, for legitimate reasons, pursued policy initiatives that spilled over to other parts of the financial markets.35 As Part III describes, although new federal law has addressed some

29 See id.
30 See id.
31 See infra notes 87–91, 115–24 and accompanying text.
34 None of this is to suggest that regulatory oversight could not have been improved. See, e.g., Theo Francis, SEC’s Cox Catches Blame for Financial Crisis, BLOOMBERG (Sept. 19, 2008), http://www.bloomberg.com/bw/stories/2008-09-19/secs-cox-catches-blame-for-financial-crisis-businessweek-business-news-stock-market-and-financial-advice [http://perma.cc/TGT9-6AH2] (“[C]ritics argue that the agency has leaned toward a hands-off regulatory approach in recent years that has left it unprepared or unwilling to use the powers it has and slow to step in as trouble brewed.”). My point is that, even with improvements in oversight, the problems described in this Article would have existed.
of the coordination concerns, the gap between regulators exists today. The need for greater regulatory coordination continues in light of convergence in the financial markets. And a better understanding of the problems leading up to the financial crisis is important in helping address this need.

II. RAZING THE WALL: RISK-TAKING AND LEVERAGE

In this Part, I describe changes in the financial industry that led to the commercial banks’ entry into the capital markets and changes in the capital markets that resulted. Over time, bank regulators relaxed commercial bank restrictions in an effort to enhance financial market stability. Greater competition in the capital markets caused investment banks to seek new ways to enhance revenues by increasing the risks they incurred. Investment banks also borrowed in order to finance their entry into new business lines. The greater risk-taking and leverage, in turn, sparked the failures by Bear Stearns and Lehman Brothers, which were a principal catalyst of the 2007 financial crisis.

A. Never the Twain

The Glass–Steagall Act’s regulatory wall held in place for decades. Between commercial and investment banks, never the twain would meet, primarily due to concern over the risks commercial banks would face if they entered the investment banking business. Bank regulation, however, began to evolve, partly in response to change in the financial markets as new products and services appeared and banks began to lose competitive ground to non-banks. That change accelerated in the 1970s and 1980s with a rise in

[http://perma.cc/6JTN-LZ4P] (describing concerns over recent evidence of bank capture of the New York Federal Reserve). This Article highlights a more basic problem—a structural divide, causing commercial bank policies to work against stability in the capital markets—without regard to whether the regulators were captured.

36 See Merkley & Levin, supra note 4, at 518.
37 See supra note 5 and accompanying text.
38 See RESTORING, supra note 4, at 369.
competition between banks and non-banks, as well as a shift in capital-raising from traditional intermediation (such as lending by commercial banks) to less-regulated alternatives, as the capital markets became a lower-cost source of capital and risk-taking (such as through commercial paper and bonds).

A classic example is the combination of money market funds (MMFs) and finance companies. For commercial banks, new regulatory capital requirements made it more costly to continue the lending business as they had before. MMFs and finance companies offered products and services that were similar to what banks offered, but at competitive prices. MMFs are required by the federal securities laws to invest in short-term, liquid, high-quality debt instruments, such as Treasury bills and commercial paper. They offer investors the convenience of a bank account, including checking


services, toll-free telephone numbers, record-keeping, and wire transfers, but with nominally higher returns than bank deposits.\textsuperscript{47} Finance companies, in turn, lend to business and retail borrowers, relying on MMFs for funding through the sale to them of short-term commercial paper.\textsuperscript{48} Together, the relationship between MMFs and finance companies mirrors the traditional balance between depositors and borrowers within a bank. After MMFs were introduced, a substantial number of customers and billions of dollars in liquid assets shifted from commercial banks to the capital markets.\textsuperscript{49}

In response to greater competition, commercial banks began to offer new and more-profitable products and services,\textsuperscript{50} turning to the regulators to expand what was permissible under the Glass–Steagall Act.\textsuperscript{51} Regulators were concerned with the financial impact of a weakened banking sector, reasoning therefore that commercial banks should be permitted to diversify their income sources.\textsuperscript{52} To permit banks to do so, they began to whittle away at regulations that restricted the banks’ business activities.\textsuperscript{53} Subsequent passage of the


\textsuperscript{49}See D’Arista & Schlesinger, supra note 48, at 3–4, 7–14; Edwards, supra note 47, at 73–74.

\textsuperscript{50}See Helen A. Garten, Regulatory Growing Pains: A Perspective on Bank Regulation in a Deregulatory Age, 57 Fordham L. Rev. 501, 524–25 (1989) (noting that the result of greater competition was “a gradual decline in [bank] profitability”). In general, investment bank services were more profitable than commercial bank services. See Alastair J. Cairns et al., The Limits of Bank Convergence, 2002 McKinsey Q., no. 2, at 41, 41–42.


\textsuperscript{52}See Garten, supra note 50, at 530–31 (“The regulators’ recognition that improved safety and soundness in the banking industry will come from product diversification represents a revolution in bank regulatory strategy.”). For example, Alan Greenspan, Chairman of the Federal Reserve Board, was alarmed by the declining role of banks in the U.S. economy, arguing that “[p]ublic policy should be concerned with the decline in the importance of banking. The issues are too important for the future growth of our economy and the welfare of our citizens.” See Kenneth H. Bacon, Losing Ground: Banks’ Declining Role in Economy Worries Fed, May Hurt Firms—It Could Weaken Usefulness of Monetary Policy, Cut Funds for Small Business—Depositors Run Higher Risks, Wall Street J., July 9, 1993, at A1.

\textsuperscript{53}See Arthur E. Wilmarth, Jr., The Dark Side of Universal Banking: Financial Conglomerates and the Origins of the Subprime Financial Crisis, 41 Conn. L. Rev. 963, 972 (2009) (“During the 1980s and 1990s, federal regulators opened loopholes in the Glass–Steagall wall in response to growing competitive pressures in the financial marketplace. In 1987 and 1989, the Federal Reserve Board (FRB) allowed bank holding companies to underwrite debt and equity securities to a limited extent by establishing ‘Section 20 subsidiaries.’ During the 1990s, the FRB progressively relaxed its restrictions on Section 20 subsidiaries. By 1997, those subsidiaries could compete effectively with securities firms for underwriting mandates.” (footnote omitted)).
Gramm–Leach–Bliley Act enabled banks and their affiliates to fully participate in new business lines, including investment banking. Combining banks and non-banks was intended, among other things, to make U.S. financial intermediaries more competitive, particularly in the global markets where universal banks—offering both commercial and investment bank products and services—already existed.

B. Commercial Bank Competition

Investment banks were wary of the commercial banks’ new-found ability to compete in the capital markets. They were particularly concerned with growing consolidation in the financial services industry. The result, in many

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54 See Macey, supra note 6, at 692 (“[T]he Gramm–Leach–Bliley Act was, at its core, ostensibly a bailout bill for the banking industry. The justification for the statute was that it was needed to rescue a commercial banking industry that was thought to be obsolete. Banks were thought to be in a ‘long downward spiral’ caused by ‘deep structural problems’ that threatened the existence of federally insured depository institutions and raised ‘the specter of ongoing deposit-insurance cases.’” (footnote omitted) (quoting Jonathan R. Macey & Geoffrey P. Miller, Bank Failures, Risk Monitoring and the Market for Bank Control, 88 COLUM. L. REV. 1153, 1155 n.9 (1988)); Merkley & Levin, supra note 4, at 518 (“The rise of competition from investment banking and other ‘shadow banking’ firms put pressure on commercial bankers, who responded by seeking to engage in activities that had long been walled off.”) (footnote omitted)).

55 Laurence H. Meyer, a member of the Board of Governors of the Federal Reserve, noted, “Part of the motivation for the [Gramm–Leach–Bliley Act] was to put U.S. banking organizations in a more competitive position. To the extent that securities and banking are increasingly interconnected activities with power synergies, U.S. banking organizations are better able to play in the global arena than they were before.” James Smalhout, US Bank Regulation—Winners and Losers of New Finance Law, EUROMONEY, Dec. 1999, at 16.


57 See Goldman Sachs 2000, supra note 56, at 12 (noting possible acceleration of consolidation and bank competition resulting from recently enacted federal financial legislation); Morgan Stanley Dean Witter 2000, supra note 56, at 9 (noting that passage of the Gramm–Leach–Bliley Act may accelerate consolidation); see also Christian A. Johnson, Holding Credit Hostage for Underwriting Ransom: Rethinking Bank Antitying Rules, 64 U. PITT. L. REV. 157, 174–75 (2002) (describing bank industry consolidation); Randall Smith & Charles Gasparino, Lehman Tries to Thrive as a Solo Player as Mergers
cases, was larger and better-capitalized firms that offered a wider range of products and services than traditionally provided by investment banks alone.58

The investment banks had reason to worry. Commercial banks began to compete head-to-head with investment banks, using lending relationships59 and their ability to access and commit capital60 at relatively low cost61 within a contracting credit market62 to gain substantial market share in traditional investment bank businesses, including equity and debt underwriting.63 They

Turn Its Rivals into Goliaths, WALL STREET J., Oct. 27, 2000, at C1 (“Lehman typifies the handful of midsize securities firms that remain independent as the industry consolidates around them.”).

58 See, e.g., Goldman Sachs 2000, supra note 56, at 12–13; Lehman 2000, supra note 56, at 8 (noting, in particular, higher capital resources); Morgan Stanley Dean Witter 2000, supra note 56, at 9; see also Susan Chaplinsky & Gayle R. Erwin, Great Expectations: Banks as Equity Underwriters, 33 J. BANKING & FIN. 380, 389 (2009) (noting the growth of the underwriting business through acquisition); Smith & Gasparino, supra note 57, at C1 (“With more companies pressuring financial-services firms to make capital commitments to win roles in financing assignments, some say size matters.”).

59 See Suzanne McGee, Deals & Deal Makers: Chase Uses Its Lending Clout to Land Underwriting Work, WALL STREET J., Dec. 23, 1999, at C20 (noting that Chase Manhattan Bank was “willing to use its extensive lending relationships to muscle its way into stock-underwriting mandates”); Smith, supra note 20, at C1 (“[C]ommercial banks both domestic and foreign, including Citigroup, have pressed their lending customers to include them in more lucrative equity deals . . . .”)

60 See Smith, supra note 20, at C1 (noting that commercial banks “will use their balance sheets” to win investment bank mandates, “and clearly this is an issue at the fore because Citigroup has made a lot of progress and kind of pushed the issue”).

61 Commercial bank deposits, for example, are a relatively inexpensive and risk-free source of funds, primarily due to insurance provided by the Federal Deposit Insurance Corporation (FDIC) (in general, up to $250,000 per depositor, per bank, in accounts that meet FDIC requirements), which essentially makes those deposits risk free. See Garten, supra note 50, at 516 (“The power to take deposits, particularly given the protection afforded by deposit insurance and interest rate ceilings, not only provided banks with a cheap source of funding, but also enabled banks to build relationships with potential customers for other bank products, such as lines of credit, mortgages or credit cards.”); Maretno Harjoto et al., A Comparison of Syndicated Loan Pricing at Investment and Commercial Banks, FIN. MGMT., Winter 2006, at 49, 66 (finding investment banks lend to less profitable, more leveraged firms, price more aggressively and offer longer-term credits than commercial banks in syndicated loans).

62 See Johnson, supra note 57, at 173–75.

63 See Steven Drucker & Manju Puri, On the Benefits of Concurrent Lending and Underwriting, 60 J. FIN. 2763, 2764–65 (2005) (finding that, for highly-leveraged and below-investment-grade issuers, lending at the time of a seasoned equity offering significantly increases the probability of current and future underwriting business); Alexander Ljungqvist et al., Competing for Securities Underwriting Mandates: Banking Relationships and Analyst Recommendations, 61 J. FIN. 301, 302 (2006) (“By most accounts, commercial banks exploited their larger capital accounts to win underwriting mandates.”); see also Morgan Stanley, Annual Report (Form 10-K) 28 (Feb. 25, 2004) [hereinafter Morgan Stanley 2004] (pointing, in particular, to greater competition from “firms that have commercial banking capabilities”).
also began to acquire investment banks in order to capitalize on pre-existing reputations in the capital markets, merging their bank and capital markets businesses in order to offer clients a one-stop source of credit. As a result, investment banks increasingly were pressured to lend to corporate clients who used the lure of lucrative investment bank mandates to enhance their borrowing capability. The earlier Lucent/Agere example is just one illustration of how this occurred.

The effects were significant. Before the Glass–Steagall Act was repealed, the commercial banks’ share of the bond underwriting market was approximately ten percent, climbing to fifty-six percent by the end of the 1990s. Likewise, commercial banks made significant inroads into the


65 See Jennifer Morris, The Great League Table Debate, EUROMONEY, June 2001, at 116 (commenting that “the lending and securities businesses of most major institutions are no longer separate and distinct divisions”); Christopher O’Leary, Solly’s Big Climb, INV. DEALERS’ DIG., Apr. 30, 2001, at 16, 17, 20 (describing the merger of Salomon Brothers’ debt underwriting group and Citibank’s lending group, both subsidiaries of Citigroup). Note that, while significant, lending alone was not the only factor that a prospective issuer took into account in deciding which underwriter to select. Other factors, such as research analyst coverage of the company, were also important. See Papaioannou, supra note 64, at 87–88.

66 See Jane Croft, Putting More Value on Credit Facilities, FIN. TIMES, Jan. 27, 2005, at 5 (“[A]n investment bank is seen to have a huge advantage over rivals if it can offer clients vast loans or complex financial deals together with its M&A services.”); Patrick McGeehan, Showdown on Wall Street; Banks Are Getting Business at the Expense of Elite Firms, N.Y. TIMES (June 15, 2001), [http://www.nytimes.com/2001/06/15/business/showdown-on-wall-street-banks-are-getting-business-at-the-expense-of-elite-firms.html] (“Increasingly, companies . . . are demanding that Wall Street firms extend big, barely profitable loans if they want to have a shot at the highly profitable assignments of managing offerings of stock and bonds or advising on mergers.”); see also The Goldman Sachs Grp., Annual Report (Form 10-K), 15 (Feb. 5, 2007) [hereinafter Goldman Sachs 2007] (“[W]e have faced, and expect to continue to face, pressure to retain market share by committing capital to business or transactions on terms that offer returns that may not be commensurate with their risks.” (emphasis added)). Some investment banks sought to manage the incremental credit risk through loan syndication and derivatives. See, e.g., Morgan Stanley 2004, supra note 63, at 28.

67 See, e.g., Smith, supra note 20, at C1 (“[F]inancial-services firms [participating in a new loan facility] will get priority in more lucrative assignments such as merger advice and securities underwriting.”); Gregg Wirth & Michelle Celarier, Into the Crucible, INV. DEALERS DIG., June 11, 2001, at 32 (“First Ford Motor Co., then Deutsche Telekom AG and Vodafone Group Plc demanded that investment bankers looking for underwriting mandates put their money on the table—or risk being left out of the deal flow.”).

68 See supra notes 20–30 and accompanying text.


70 See id.
equities business, raising their share of equity underwriting from less than five percent in 1995 to twenty-six percent in 2000.\textsuperscript{71} Overall, the likelihood of having the same financial firm act as lender and underwriter increased substantially, from only one percent of seasoned equity issuers in 1994 to over twenty percent by 2001.\textsuperscript{72} The rise of commercial banks also contributed to the use of more than one manager in a securities underwriting, further eroding the revenues on which investment banks traditionally relied.\textsuperscript{73} Growing competition squeezed the amounts that banks and non-banks could charge for underwritings,\textsuperscript{74} placing even greater pressure on investment bank profitability.\textsuperscript{75}

\textsuperscript{71}See Chaplinsky & Erwin, supra note 58, at 382–83. Part of the increase resulted from banks acquiring investment banks that had an existing underwriting business, even though market share may have declined after the acquisition. Id. at 389.

\textsuperscript{72}See Drucker & Puri, supra note 63, at 2763.

\textsuperscript{73}See Robin Sidel et al., Investment Banks See Fees Shrink in Battle With New Rules, Rivals, WALL STREET J. (May 18, 2004), http://www.wsj.com/articles/SB108482963092613803 [http://perma.cc/AV96-ZPQS] (describing the decline in revenues for traditional investment bank services); see also Goldman Sachs 2007, supra note 66, at 53 (noting that the trend toward multiple book-runners and co-managers reduced the firm’s revenues). Multiple-lead bond underwriting was nearly non-existent before 1995, but comprised ninety-six percent of bond issues by 2008. See Shivdasani & Song, supra note 69, at 582–83 (arguing that commercial banks’ entry into bond underwriting spurred the co-led underwriting structure and lowered screening incentives of underwriters). On the equity side, IPO syndicate sizes decreased from 1997 to 2002, while the mean number of co-managers rose. See Shane A. Corwin & Paul Schultz, The Role of IPO Underwriting Syndicates: Pricing, Information Production, and Underwriter Competition, 60 J. FIN. 443, 445 (2005).

\textsuperscript{74}See Amar Gande et al., Bank Entry, Competition, and the Market for Corporate Securities Underwriting, 54 J. FIN. ECON. 165, 167 (1999) (finding that bank entry into the corporate debt market substantially reduced the amounts underwriters could charge); Dongcheol Kim et al., The Impact of Commercial Banks on Underwriting Spreads: Evidence from Three Decades, 43 J. FIN. & QUANTITATIVE ANALYSIS 975, 989 (2008) (finding a decline in average underwriting spreads from 1975 to 2004); see also Goldman Sachs 2007, supra note 66, at 16 (reporting that equity and debt underwriting discounts, as well as trading spreads, had been under pressure for a number of years); Merrill Lynch & Co., Annual Report (Form 10-K) 24 (Feb. 27, 2006) (noting diminishing margins in standard products as a result of intensifying competition).

\textsuperscript{75}See David Wells, Mergers Are Unpalatable but Necessary, FIN. TIMES, June 26, 2004, at M20 (“When bankers compete for mandates from clients, they face a scrub of like-minded and similarly equipped rivals that includes more than a dozen names. . . . This mass of competition squeezes margins and reduces profitability.”); Gregory Zuckerman et al., Investors Hear a Takeover Wave, WALL STREET J. (Jan. 16, 2004), http://www.wsj.com/articles/SB107420645593293700 [http://perma.cc/6QKE-N5UM] (noting that investment bank profits were booming, due to cost reductions and greater proprietary trading, even though there was a decline in stock and underwriting business by investment banks); Sidel et al., supra note 73 (“Total revenue at securities firms dropped nearly 3% . . . despite a 25.3% gain in the Dow Jones Industrial Average. Fees for traditional services such as underwriting and merger advice are falling.”).
On its face, the commercial banks’ ability to leverage lending into investment banking was limited by federal anti-tying laws. The Bank Holding Company Act generally prohibits a commercial bank from requiring a prospective borrower to purchase another product or service from the bank or refrain from purchasing a product or service from the bank’s competitors as a condition to obtaining a loan.⁷⁶ For example, a bank cannot condition a loan on the borrower selecting it to be an underwriter or refraining from selecting a competitor. The Act does, however, permit a bank to tie loans to “traditional bank products,” such as deposits and trust services,⁷⁷ an exception to the anti-tying rule that grew over time.⁷⁸ Bank regulators historically construed the tying prohibition narrowly, consistent with the limited scope of a bank’s business activities under the Glass–Steagall Act. Following passage of the Gramm–Leach–Bliley Act, however, lending relationships grew in importance as a means to secure other (principally, investment banking) business.⁷⁹ For tying to occur, the regulators required some form of actual coercion by a commercial bank, such as forcing a client to purchase the tied product in order to obtain credit.⁸⁰ None of this prohibited a customer’s actions in dealing with a bank, such as demanding that the bank provide one product (a loan) in order to receive other business (an underwriting), or a bank responding to a customer’s request to bid on a package of bank and non-bank products and services (including loans, strategic advisory services, and underwriting).⁸¹ Moreover, even though a bank could not condition a loan on the award of investment banking business, it was permitted to offer more credit at lower cost in order to attract additional business.⁸² Finally, so long as they were not

⁷⁷ See id. § 1972(1)(A).
⁸¹ See Fed Tying, supra note 80, at 52,029.
⁸² See Drucker & Puri, supra note 63, at 2765–66 (finding that commercial banks are more likely to lower the cost of a loan in order to gain underwriting business, but that investment banks are more likely to discount underwriting fees); Karthik Krishnan,
coercive, banks could still consider the profitability of their total relationship with a customer when deciding whether or not, and on what terms, to extend or renew credit.\(^8^3\) Doing so was not considered to be tying so long as the customer had the option to purchase traditional (with or without non-traditional) bank products.\(^8^4\) Consequently, bank regulators found little or no evidence of illegal tying during the period,\(^8^5\) notwithstanding a chorus of

\begin{quote}
*Commercial Banks Getting Underwriting Business: Tying or Business Building?*, 66 J. ECON. & BUS. 47, 50 (2013) (“[B]anks with underwriting ability engage in business building activities using their lending as a means to attract underwriting business [rather than tying].”). But see Charles W. Calomiris & Thanavut Pornrojnangkool, *Relationship Banking and the Pricing of Financial Services*, 35 J. FIN. SERV. RES. 189, 221 (2009) (“Our results on loan pricing provide evidence against the prevalence of [tying], since matched loans that precede underwritings are charged a premium.”). Note that Sections 23A and 23B of the Federal Reserve Act prohibit national banks from charging below-market rates on credit and other products in order to benefit non-bank affiliates. Those practices are unsafe and unsound and contraveue Sections 23A and 23B of the Federal Reserve Act. See 12 U.S.C. §§ 371c, 371c-1 (2012). In general, Section 23A restricts a bank’s financial transactions with its affiliates and specifies certain collateral requirements relating to borrowings and other covered transactions. Section 23B also restricts transactions with affiliates, in particular, by prohibiting a bank from extending credit to a borrower on below-market terms where an affiliate participates in the transaction or otherwise benefits from the extension of credit. The extension of credit must be on terms and conditions that are substantially the same, or at least as favorable to the bank, as those for comparable transactions not involving an affiliate and on terms and conditions that in good faith would be offered to the borrower. See OCC TYING, supra note 80, at 30.\(^8^3\) See Fed Tying, supra note 80, at 52,029; OCC TYING, supra note 80, at 5; see also Gyöngyi Lőránth & Alan D. Morrison, *Tying in Universal Banks*, 16 REV. FIN. 481, 484 (2012) (“In centralized authority structures, lending decisions are made by a headquarters that accounts for the combined value of lending and investment banking deals and hence elects to tie the two whenever it is profitable to do so.”).

\(^8^4\) See Fed Tying, supra note 80, at 52,030. Since no single bank had the market power to force borrowers to do business with it, customers could choose to borrow from a different lender or in the public capital markets. See OCC TYING, supra note 80, at 8; see also Letter from R. Hewitt Pate, Assistant Attorney Gen., U.S. Dep’t of Justice, to Jennifer J. Johnson, Sec’y, Bd. of Governors of the Fed. Reserve Sys. 6–8 (Nov. 7, 2003), http://www.federalreserve.gov/SECRS/2005/January/20050104/OP-1158/OP-1158_50_1.pdf [http://perma.cc/JF93-NDJA] (noting that the anti-tying prohibition relates to the market power of banks, and arguing that large borrowers who are able to access the syndicated loan market, including a substantial number of bank and non-bank lenders, “are much less likely to be victims of anti-competitive ties than small business customers or individual consumers”).

complaints by borrowers that they were forced to direct additional business, beyond traditional bank products, to the commercial banks.86

C. Changes in Investment Banking—Risk-Taking and Leverage

Investment banks responded quickly to the greater competition. And they did so principally in three ways: reallocating resources to more profitable businesses; taking greater risks; and increasing their borrowing.

The investment banks reallocated resources to products and services for which they had a special reputation or expertise. For example, investment banks had developed expertise in financial advisory work87 and in providing clients with investment opportunities through new financial instruments88 and internal hedge funds.89 In much the same way, they expanded their M&A

86 See ASS’N FOR FIN. PROF’LS, 2004 CREDIT ACCESS SURVEY: LINKING CORPORATE CREDIT TO THE AWARDING OF OTHER FINANCIAL SERVICES 2 (2004), http://www.afponline.org/pub/pdf/2004_06_09_pr_creditaccess_pdf.pdf [http://perma.cc/YUH2-XX69] (“Nearly two-thirds of financial professionals from large companies report that their commercial bank credit providers denied credit or changed the terms of credit after the company did not award other financial business... One out of seven large companies report that in the past five years they have been explicitly required by a commercial bank to obtain... underwriting services from an affiliate of the bank in order to obtain a loan from the bank.”); see also Chang, supra note 78, at 873 (criticizing the regulators’ reliance on bank examination results as “a bank-oriented perspective that does little to factor in the input of borrowers”).

87 See Croft, supra note 66, at 5 (“There is no shortage of capital in the world but there is a shortage of good ideas—and if you have a good idea, finding the capital to support it is not a problem.”); Zuckerman et al., supra note 75 (“While banking rivals continue to encroach on their turf by offering loans to clients as a way to sell clients more services, Wall Street firms have largely maintained their hold on the most profitable segments of their business. Advisory work on mergers and acquisitions, for example, still is dominated by firms like Goldman Sachs Group Inc.”); see also Goldman Sachs 2007, supra note 66, at 49 (noting emphasis on growth opportunities in advising middle-market firms, as well as advising governments and investors on the sale and purchase of public infrastructure assets).

88 See Morgan Stanley Research, Brokers and Asset Managers: Europe “en Fuego”—An Update on the US Brokers in Europe 4 (Apr. 2, 2006) (noting that U.S. investment banks were more profitable in Europe than J.P. Morgan Chase and Citigroup, “primarily because their focus is on the higher margin/less commoditized products such as derivatives, securitization and structured products”); see also Lehman Brothers Holdings Inc., Annual Report (Form 10-K) 43 (Feb. 28, 2002) [hereinafter Lehman 2002]. Merrill Lynch also expanded its derivatives business in 2004, which to that point had been an underdeveloped area for the firm. See Merrill Lynch & Co., Annual Report (Form 10-K) 14–15 (Mar. 15, 2005) [hereinafter Merrill Lynch 2005].

89 Investment banks created internal hedge funds partly in order to provide investment vehicles to clients who were closed out of existing funds. See Ann Davis, Wall Street Builds The “Bionic” Hedge Fund, WALL STREET J. (Oct. 25, 2004), http://www.wsj.com/articles/SB109865904955354142 [http://perma.cc/FZ9N-WDML]
advisory, underwriting, trading, and asset management businesses by leveraging existing client relationships, as well as finding other ways to forge closer, more-rounded relationships with the same client base.

The investment banks also began to incur greater risk as one means to compensate for the loss in traditional business. As Figure 1 shows, following repeal of the Glass–Steagall Act, the investment banks’ aggregate risks—as measured by each firm’s Value at Risk (VaR)—grew substantially.

(“[Internal hedge funds] give options to clients whom the firms are having trouble placing in sought-after, independent funds closed to new investors.”). Assets under management grew significantly within those funds. See id. (stating that assets under management for five internal hedge funds at Goldman Sachs had grown to $9 billion). Firms also increased assets under management by acquiring asset management companies. For example, Morgan Stanley acquired Quilter Holdings Limited, a U.K.-based private client investment management business, in 2001, see Morgan Stanley Dean Witter & Co., Annual Report (Form 10-K) 25 (Feb. 14, 2002) [hereinafter Morgan Stanley Dean Witter 2002]; FrontPoint Partners, a provider of absolute return investment strategies, in 2006; and a minority interest in Avenue Capital Group, a New York-based investment manager with sizable assets under management, in 2006, see Morgan Stanley, Annual Report (Form 10-K) 65–66 (Feb. 12, 2007) [hereinafter Morgan Stanley 2007]. Lehman Brothers acquired Lincoln Capital Management’s fixed income asset management business in 2003, see Lehman Brothers Holdings Inc., Annual Report (Feb. 26, Form 10-K) 9 (2004) [hereinafter Lehman 2004], and Neuberger Berman Inc., another asset management company, in 2003, see id. at 8. Greater asset management capability strengthened fee-based revenues and broadened the products and services that could be offered to Lehman and Neuberger’s clients. Id. Lehman Brothers also acquired assets from The Crossroads Group, a diversified private equity fund manager. See id. at 9. In addition to growth through acquisition, investment banks expanded their existing asset management businesses. See, e.g., Morgan Stanley, Annual Report (Form 10-K) 33–34 (Feb. 10, 2005) [hereinafter Morgan Stanley 2005] (planning to grow “separately managed accounts, multi-discipline accounts and alternative investment products”).

90 See, e.g., Lehman Brothers Holdings Inc., Annual Report (Form 10-K) 5 (Feb. 28, 2003) [hereinafter Lehman 2003] (emphasizing a “customer flow” model tied to cross-selling the company’s advisory, market-making, and underwriting businesses); Morgan Stanley 2005, supra note 89, at 33 (stating that the focus of the Institutional Securities segment for 2005 was, among other things, to enhance client relationships and increase market share).

91 See Sidel et al., supra note 73 (noting that, in order to develop relationships, investment banks provide cheap loans and an array of other services including “act[ing] as liaisons between companies and bond-rating agencies, arrang[ing] seminars and conferences, ferry[ing] top executives around the world to meet institutional investors and devote[ing] countless hours to crunching numbers and pulling together reams of market-related data for demanding clients”).

92 See Enhancing Investor Protection and the Regulation of Securities Markets: Hearing Before the S. Comm. on Banking, Hous. and Urban Affairs, 111th Cong. 59 (2009) [hereinafter Coffee Testimony] (written statement of John C. CoFe’ee, Jr., Adolf A. Berle Professor of Law, Columbia University Law School) (showing a similar rise in VaR for major underwriters from 2004 to 2007).
The VaR data in Figure 1 is the daily average VaR for each annual period, in each case calculated at a ninety-nine percent confidence level. VaR data were collected from public filings by each investment bank and, if not already calculated at a ninety-nine percent confidence level on a daily average basis, were converted to that confidence level. In order to do so, VaR at a ninety-five percent confidence level was multiplied by 1.416 and, in order to adjust weekly or bi-weekly averages to daily averages (where applicable), the product was then divided by the square root of 7 or 14 (depending on whether the reported VaR data were weekly or bi-weekly). This approach to converting VaR is consistent with financial industry standards. See Alexander Campbell, The Year of Living Riskily, RISK, July 2008, at 28 (2008), [http://www.risk.net/data/risk/pdf/articles/2008/028-032_Risk_0708.pdf]. For Bear Stearns’ data, see The Bear Stearns Cos., Annual Report (Form 10-K) exhibit 13, at 51 (Sept. 28, 1999) [hereinafter Bear Stearns 1999]; The Bear Stearns Cos., Annual Report (Form 10-K) exhibit 13, at 58 (Feb. 28, 2001) [hereinafter Bear Stearns 2001]; The Bear Stearns Cos., Annual Report (Form 10-K) exhibit 13, at 47 (Feb. 28, 2003) [hereinafter Bear Stearns 2003]; The Bear Stearns Cos., Annual Report (Form 10-K) exhibit 13, at 55 (Feb. 14, 2005) [hereinafter Bear Stearns 2005]; The Bear Stearns Cos., Annual Report (Form 10-K) exhibit 13, at 70 (Feb. 13, 2007) [hereinafter Bear Stearns 2007]; and The Bear Stearns Cos., Annual Report (Form 10-K) exhibit 13, at 72 (Jan. 29, 2008) [hereinafter Bear Stearns 2008]. For Goldman Sachs, data were drawn from reports to shareholders. See The Goldman Sachs Grp., Annual Report (Form 10-K) 41 (Feb. 16, 2001) [hereinafter Goldman Sachs 2001]; The Goldman Sachs Grp., Annual Report (Form 10-K) 41 (Feb. 22, 2002) [hereinafter Goldman Sachs 2002]; The Goldman Sachs Grp., Annual Report (Form 10-K) 57 (Feb. 24, 2004) [hereinafter Goldman Sachs 2004]; Goldman Sachs 2006, supra note 33, at 86; The Goldman Sachs Grp., Annual Report (Form 10-K) 89 (Jan. 29, 2008) [hereinafter Goldman Sachs 2008]. For Lehman Brothers, see Lehman 2000, supra note 56, exhibit 13, at 56; Lehman 2002, supra note 88, exhibit 13, at 55; Lehman 2004, supra note 89, exhibit 13.01, at 60; Lehman Brothers Holdings Inc., Annual Report (Form 10-K) 57 (Feb. 13, 2006) [hereinafter
VaR estimates the maximum potential loss a portfolio can suffer over a period of time at a probability (“confidence level”) under normal circumstances. To calculate VaR, a risk manager typically considers the types of risks that are likely to affect a portfolio’s value, including historical changes in market rates and prices. She then generates pro forma estimates of value under those conditions and uses them to gauge the likelihood and magnitude of future losses. To the extent VaR is consistently applied, it

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See **KEVIN DOWD, BEYOND VALUE AT RISK: THE NEW SCIENCE OF RISK MANAGEMENT** 38–39 (1998). To use a simple illustration, suppose a risk manager is asked to estimate VaR for a $100 million portfolio of high investment-grade five-year corporate bonds over a one-month time horizon and with a ninety-nine percent confidence level. In plain English, she would be asked to determine the maximum loss the portfolio could suffer during 99 out of 100 months. To do so, she would need to first simulate prospective returns on the portfolio, typically using historical data. If data on the bonds were unavailable or insufficient, she would rely instead on data from a comparable security, such as five-year U.S. Treasury notes (for which there is a substantial history). A 50-year period would yield 600 one-month observations of when the Treasuries rose in value, declined, or stayed the same, and the magnitude of any change. For simplicity, assume that (i) the changes in monthly value ranged between minus and plus 4.2%, (ii) the two highest loss rates were 4.0% and 4.2%, and (iii) there were three separate, one-month periods when losses were 4.0% and three other one-month periods when losses were 4.2%. At a ninety-nine percent confidence level, the risk manager would need to determine the worst one percent of possible losses—which, extrapolating from the Treasury observations, would be the six occurrences (6 ÷ 600 = 1%) when losses were four percent or worse. The risk manager could then conclude that, at a ninety-nine percent confidence level, the $100 million bond portfolio would lose no more than 4.0% of its value, resulting in a VaR of $4 million (4% x $100 million). Stated differently, a VaR of $4 million would mean that the portfolio’s maximum loss was projected to exceed $4 million during only one out of 100 one-month periods. See **PHILIPPE JORION, VALUE AT RISK: THE NEW BENCHMARK FOR MANAGING FINANCIAL RISK** 17–20 (3d ed. 2006); see also Darrell Duffie & Jun Pan, *An Overview of Value at Risk*, 4 J. DERIVATIVES 7, 8–9 (1997); Markus Leippold, *Don’t Rely on VaR*, EUROMONEY, Nov. 2004, at 46 (“[V]aR as a risk measure fails theoretically; in practice it gives rise to nonsensical results; and it is against our intuition of what we would perceive as risk.”).

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See **Duffie & Pan, supra note 94, at 9–10.**

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See **3 ÖSTERREICHISCHE NATIONALBANK, GUIDELINES ON MARKET RISK—EVALUATION OF VALUE AT RISK-MODELS** 10 (Wolfditerich Grau ed., 1999) [hereinafter...
provides a measure of a firm’s relative risk over time, even though there are many versions of VaR and how VaR is calculated varies from firm to firm.\textsuperscript{97}

VaR’s special attraction is its ability to sum up a firm’s market risk—its risk of loss based on changes in the market value of its investments—in a single number.\textsuperscript{98} Nevertheless, VaR has a number of weaknesses as a risk management tool.\textsuperscript{99} For example, VaR is calculated using simplifying assumptions that can distort results.\textsuperscript{100} Chief among them, VaR assumes that market factors and portfolio returns fall along a normal distribution.\textsuperscript{101} Actual returns, however, typically do not, particularly if the market is volatile or correlations increase across a portfolio’s assets.\textsuperscript{102} VaR’s reliance on historical


\textsuperscript{101} See 5 GRAU, VAR-MODELS, supra note 96, at 4.

data can also impair its accuracy. For instance, understating risk is particularly likely when VaR is based on data from a period when market volatility was unusually low or when it is calculated at higher confidence intervals. In addition, VaR can understate risk if market conditions have changed or the portfolio’s assets have only a limited performance history. Extreme events—like the 2007 financial crisis—are sufficiently rare that they are unlikely to be reflected in historical data or a normal distribution. Finally, VaR fails to predict the magnitude of likely losses that can occur outside the specified confidence level, known as the “tail” of the distribution. For example, at a ninety-nine percent confidence level, VaR predicts the likely maximum loss a firm will sustain ninety-nine percent of the time. It does not predict loss levels during the remaining one percent, and those losses could be considerably higher.

Still, on the whole, the firm-by-firm increase in VaR during 1998–2007, as illustrated by Figure 1, reflects a rise in aggregate risk over the period. This would make sense if each firm’s balance sheet was also growing. An increase in assets implies a greater risk of loss if those assets decline in value (assuming, for the moment, there are no benefits from diversification), but not necessarily an increase in the riskiness of the investments the firm has made. To illustrate, suppose a firm holds one asset valued at $100,000 with a

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103 See DOWD, supra note 94, at 22.
104 See Linsmeier & Pearson, supra note 96, at 59–60. UBS (a large, multinational financial services firm) relied on VaR to manage its structured investments, including instruments tied to the subprime mortgage market. Following substantial losses, its investigation revealed that VaR had been based on data during a period of positive growth that did not adequately reflect its portfolio’s risks. See UBS AG, SHAREHOLDER REPORT ON UBS’S WRITE-DOWNS 38 (2008), http://www.ubs.com/l/e/investors/releases?newsId=140339 [http://perma.cc/NTJ7-8LRR].
105 See Pafka & Kondor, supra note 102, at 309 (“[F]or higher significance levels fat tails in the distribution of returns will make the simple RiskMetrics rule of calculating VaR to underestimate risk.”).
108 See Wilmarth, supra note 9, at 73 (questioning the value of diversification in consolidated financial firms, in particular, in light of the new risks that may be incurred).
daily average VaR of $5,000 calculated at a ninety-nine percent confidence level. If that firm doubled its investment in the same asset—purchasing another asset also valued at $100,000—its total VaR would increase to $10,000 ($5,000 for the first asset and $5,000 for the second). VaR, however, would remain the same in relation to the firm’s total assets. That is because the riskiness of the firm’s investments would not have increased. If riskiness had increased—for example, if the second asset had a daily average VaR of $10,000—then VaR relative to assets would have risen as well.

Figure 2 below sets out each firm’s VaR relative to assets during 1998–2007. What is particularly interesting is that, except for Bear Stearns, VaR relative to assets remained largely constant over the period.

Figure 2: Value at Risk Relative to Total Assets of Investment Banks, 1998–2007

For Bear Stearns, aggregate VaR and, more importantly, VaR/total assets (reflecting the riskiness of Bear Stearns’ investments on a per-dollar-of-assets basis) increased significantly after 2004. Based on the rapid rise in VaR/total assets, it is unsurprising that Bear Stearns was the first investment bank to fall into trouble.

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109 The VaR data in Figure 2 are derived from the VaR data in Figure 1. See supra note 93. Data on total assets are drawn from the same sources as the data in Figure 3. See infra note 141.

110 See supra Figure 1.

For the remaining investment banks, VaR/total assets remained largely constant, indicating that on average the riskiness of the firms’ businesses remained unchanged on a per-dollar-of-assets basis.\textsuperscript{112} The increase would still represent an overall rise in risk—a greater likelihood of bankruptcy—to the extent there was a growth in leverage relative to equity capital in order to fund the larger balance sheet. That risk is discussed in more detail below.\textsuperscript{113}

More likely, however, the investment banks were less familiar with the nature of the new risks they assumed, resulting in VaR being understated.\textsuperscript{114} For example, declines in the equity markets and a slowdown in M&A activity caused firms to begin to focus on other, higher-margin activities.\textsuperscript{115} When the markets recovered in 2003, firms increased trading—in many cases, using their own capital—in order to take advantage of improving conditions.\textsuperscript{116} For

\begin{footnotes}
\textsuperscript{112} Cf. Tobias Adrian & Hyun Song Shin, Fed. Reserve Bank of N.Y., Procyclical Leverage and Value-at-Risk 10, 12 (2008), http://www.newyorkfed.org/research/staff_reports/sr338.pdf [http://perma.cc/786X-EQ8E] (noting that unit VaR, VaR per dollar of assets, for eight large commercial and investment banks “fluctuat[ed] sharply”). Part of the difference may reflect the addition of J.P. Morgan Chase, Citibank, and Bank of America to the group of five investment banks reflected in Figure 2. See id. at 10 n.5. Part of it may also reflect differences in time periods. The Adrian and Shin calculations extended beyond 2007, when the most significant fluctuations occurred. See id. at 10 fig.4. From December 2001 to December 2007, the VaR/total assets fluctuations are noticeably less significant. See id.

\textsuperscript{113} See infra notes 139–74 and accompanying text.

\textsuperscript{114} See supra notes 106–07 and infra notes 157–64 and accompanying text.

\textsuperscript{115} See supra note 32 and accompanying text. For example, Merrill Lynch explored growth opportunities in derivatives, portfolio trading, secured financing, municipal bond trading, foreign exchange, and prime brokerage. See Merrill Lynch & Co., Annual Report (Form 10-K) 4 (Mar. 9, 2004) [hereinafter Merrill Lynch 2004].

\textsuperscript{116} See Susanne Craig & Gregory Zuckerman, Risky Business: Brokerage Firms Place More Bets, WALL STREET J. (Mar. 24, 2004), http://www.wsj.com/articles/SB10800817588063350 [http://perma.cc/VM9-KBA2] (“Wall Street’s biggest investment banks, riding a wave of strong stock markets and low interest rates, are taking increasing risks with their own cash to boost profits. . . . The appetite for more risk is one popular strategy aimed at lifting profits as other businesses face stiff competition and thinning margins.”). For example, Goldman Sachs increased market risk from 2003 to 2005 in order to capitalize on trading and investment opportunities. See The Goldman Sachs Grp., Annual Report (Form 10-K) 78 (Feb. 8, 2005) [hereinafter Goldman Sachs 2005]; Goldman Sachs 2006, supra note 33, at 86; Goldman Sachs 2007, supra note 66, at 91; see also Lynn Cowan, Goldman Sachs Net Jumps 23% on Strength in Trading Profits, WALL STREET J. (June 26, 2003), http://www.wsj.com/articles/SB105654416276319300 [http://perma.cc/7R7Z-M62U] (noting that “[t]he company’s trading revenue was the sole driver of its earnings” and that it “took on more trading risk during the quarter than at any time since it first went public in 1999”); Jason Singer & Mitchell Pacelle, Citigroup to Bet Its Own Chips, WALL STREET J. (Nov. 19, 2003), http://www.wsj.com/articles/SB106919889771407600 [http://perma.cc/4JJ3-FL42] (noting that Goldman Sachs, Lehman, and Morgan Stanley were among the firms that notched significant profits from proprietary trading in stocks, bonds, derivatives, and currencies). Morgan Stanley increased its allocation of economic capital to the Institutional Securities business, from $18 billion in 2006 to $23.9 billion in 2007, in order to support the greater risks incurred in trading and
many firms, non-investment-grade and highly-leveraged positions remained steady or had only moderate growth from 1999 to 2002, but spiked upward from 2003 to 2007, including greater participation in syndicated loan facilities that financed highly-leveraged (and risky) private equity deals. At the extreme, Lehman Brothers’ non-investment-grade positions grew almost ten-fold from 2003 to 2007.

In addition, virtually all investment banks increased their principal investment and private equity activities. Some also expanded their block-


119 The size of Lehman’s high-yield positions (excluding hedges) ranged between $3 billion to $12.8 billion from 1999 and 2006, jumping to $30.4 billion in 2007 (including hedges). See Lehman 2000, supra note 56, exhibit 13, at 45; Lehman 2002, supra note 88, exhibit 13, at 49; Lehman 2003, supra note 90, at 7; Lehman 2004, supra note 89, exhibit 13.01, at 63; Lehman 2006, supra note 93, at 63; Lehman 2008, supra note 93, at 62.

120 For example, Goldman Sachs showed strong growth in principal investment from 2003 to 2007. See The Goldman Sachs Grp., Annual Report (Form 10-K) exhibit 13.1, at 34 (Feb. 27, 2003); Goldman Sachs 2005, supra note 120, at 49; Goldman Sachs 2006, supra note 33, at 53; The Goldman Sachs Grp., Annual Report (Form 10-K) 67 (Jan. 27, 2009). In 2006, Morgan Stanley announced plans to double the size of its principal investment activity in order to improve financial performance, from $1.2 billion in 2005 to approximately $2.5 billion. See Morgan Stanley 2006, supra note 33, at 88. Merrill Lynch’s substantial increase in earnings from asset-based lending and principal investment activities in 2003 led the firm to increase its risk profile the next year. See Merrill Lynch 2005, supra note 88, exhibit 13, at 23, 39. Merrill Lynch also had a large and increasing amount of proprietary trading and investment positions, which included proprietary trading positions in fixed income, currency, commodities, and equity securities, as well as in real estate, private equity, and other investments. See Merrill Lynch 2007, supra note 93, exhibit 13, at 16. Bear Stearns’ merchant bank and private equity investments fluctuated from 1999 to 2003, but grew significantly between 2003 and 2006. See Bear Stearns 1999,
trading business—buying a large amount of stock from a single seller and then re-selling the shares, often in the public market—taking on greater concentrations of risk around the positions they held. Moreover, as investment banks grew their mortgage securitization businesses, some also acquired residential mortgage loan originators and servicers. By doing so, they could source loan products at a lower cost, but at the risk of a drop in the value of those assets before they were repackaged as part of a securitization and sold to investors.

Credit risk also increased. Firms entered into swap and loan agreements for longer periods with lower-credit firms, accepted less liquid collateral, and realized lower profits relative to the credit risk they assumed. Some also expanded their universe of counterparties to include lower-credit, middle-market firms.

Each of the new business lines involved new or different risks, which may not have been properly considered in calculating each bank’s VaR. Of course, one cannot rule out the possibility that the firms or their employees

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supra note 93, exhibit 13, at 43; Bear Stearns 2001, supra note 93, exhibit 13, at 52; The Bear Stearns Cos., Annual Report (Form 10-K) 35 (Feb. 28, 2002); Bear Stearns 2003, supra note 93, exhibit 13, at 38–39; The Bear Stearns Cos., Annual Report (Form 10-K) exhibit 13, at 38 (Feb. 27, 2004); Bear Stearns 2005, supra note 93, exhibit 13, at 43–45; The Bear Stearns Cos., Annual Report (Form 10-K) exhibit 13, at 54, 56 (Feb. 22, 2006); Bear Stearns 2007, supra note 93, at 55, 57.

121 See THE BUCKINGHAM RESEARCH GRP., BROKERS, MONEY CENTER AND TRUST BANKS 15 (2003) (noting the increased use of “bought” deals to enhance equity underwriting profits, where the investment bank buys stock from a client as principal, with a view to reselling it in the public markets at a higher price); Sidel et al., supra note 73 (noting investment banks’ “aggressive” move into block trades, leaving some banks “nursing substantial losses when a sudden stock-price decline left them holding large blocks of stock purchased at above-market levels”); see also Goldman Sachs 2007, supra note 66, at 53; Morgan Stanley 2007, supra note 89, at 16.


123 See, e.g., Lehman 2008, supra note 93, at 37 (stating that the firm may transact with new clients, deal in new asset classes, and enter new markets, even in the face of possible credit concerns); Morgan Stanley 2006, supra note 33, at 18–19 (acknowledging that the amount, duration, and range of credit risks had been increasing and could continue to do so).

124 See Goldman Sachs 2007, supra note 66, at 49 (stating the firm’s intention to provide services to middle-market companies). Merrill Lynch increased its middle-market exposure in 2004, see Merrill Lynch 2005, supra note 88, exhibit 13, at 19, but sold its wholly-owned middle-market commercial financing business in 2007 when the firm decided to slash its non-core assets, see Merrill Lynch & Co., Annual Report (Form 10-K) 23 (Feb. 25, 2008).

125 See supra notes 102–07 and accompanying text.
manipulated VaR in order to understate the amount of risk they actually incurred. J.P. Morgan provides a recent, well-known example of the ability of an inaccurate VaR model to mask risk-taking. Bruno Iksil, nicknamed the “London Whale” for the size of his trading portfolio, was a proprietary trader in J.P. Morgan’s chief investment office (CIO) who realized losses of up to $6.2 billion in 2012.\(^{126}\) J.P. Morgan had implemented a new VaR model that failed to properly reflect the risks the CIO incurred. After returning to the old model, average daily VaR almost doubled, from $67 million during the first quarter of 2011 to $129 million during the first quarter of 2012 (rising to $186 million by the end of the quarter).\(^{127}\) The decision to adopt an alternative VaR model had been motivated by the CIO’s interest in manipulating VaR in order to continue trading without exceeding J.P. Morgan’s internal risk limits.\(^{128}\)

Finally, investment banks responded to the greater competition from commercial banks by increasing their borrowings, as illustrated in Figure 3 below. Greater leverage enabled investment banks to enhance profitability by investing in and trading more assets.\(^{129}\) Leverage among investment banks generally was on the decline until 2004, when the Securities and Exchange Commission (SEC) amended the net capital requirements\(^{130}\) applicable to


\(^{128}\) See JPMorgan Chase Whale Trades: A Case History of Derivatives Risks and Abuses: Hearing Before the Permanent Subcomm. on Investigations of the S. Comm. on Homeland Sec. & Gov’t Affairs, 113th Cong. 14 (2013), http://www.hsgac.senate.gov/subcommittees/investigations/hearings/chase-whale-trades-a-case-history-of-derivatives-risks-and-abuses [http://perma.cc/7DER-ACCB] (“Previously undisclosed evidence also showed that CIO personnel deliberately tried to lower the CIO’s risk results and, as a result, lower its capital requirements, not by reducing its risky assets, but by manipulating the mathematical models used to calculate its VaR . . . . results.”).


\(^{130}\) The Securities Exchange Act of 1934 contains provisions that are designed to assure the financial responsibility of investment banks, including Section 15(c)(3), 15 U.S.C. § 78o(c)(3) (2012). Rule 15c3-1, 17 C.F.R. § 240.15c3-1 (2015), does so, in part,
them. Introduction of the amendment is marked in Figure 3 as “Net Capital Rule Amendment.” Prior to the amendment, net capital was calculated using fixed percentage deductions (referred to as “haircuts”) in the value of a firm’s securities holdings, reflecting the risk of each type of security. As amended, securities firms within a group that consented to SEC supervision were eligible to compute net capital using an alternative formula. On that basis, the five largest broker-dealers began to calculate net capital using internally-generated VaR models rather than preset deductions. In order to ensure that

by limiting the amount of indebtedness an investment bank can incur relative to its net capital. “Net capital” is defined in Rule 15c3-1(c)(2), 17 C.F.R. § 240.15c3-1(c)(2) (2015), as the investment bank’s net worth (the excess of total assets over total liabilities), adjusted by adding unrealized profits and deducting unrealized losses, and by making certain specified additional deductions.


133 See 17 C.F.R. §§ 240.15c3-1(a)(7), 240.15c3-1(e); see also Alternative Net Capital Requirements for Broker-Dealers that Are Part of Consolidated Supervised Entities, 69 Fed. Reg. 34,428, 34,472 (June 21, 2004) (codified at 17 C.F.R. § 240.15c3-1) [hereinafter Alternative Net Capital].

134 The five firms that adopted the alternative calculation (Bear Stearns, Goldman Sachs, Lehman Brothers, Merrill Lynch, and Morgan Stanley) are no longer independent companies or have become bank holding companies subject to Federal Reserve oversight. See John C. Coffee, Jr., Analyzing the Credit Crisis: Was the SEC Missing in Action?, CORP. COUNS. (Dec. 5, 2008), http://www.corpcounsel.com/id=1202426495544 [http://perma.cc/4MHR-BELJ]. All five or their successors, however, continue to rely on Rule 15c3-1e to compute regulatory capital for SEC purposes. See, e.g., The Goldman Sachs Grp., Quarterly Report for the Period Ended Mar. 31, 2010 (Form 10-Q) 73 (May 7, 2010); JPMorgan Chase & Co., Quarterly Report for the Period Ended June 30, 2010 (Form 10-Q) 63 (Aug. 6, 2010) (after acquiring Bear Stearns); Merrill Lynch & Co., Quarterly Report for the Period Ended June 30, 2010 (Form 10-Q) 77 (Aug. 6, 2010) (after being acquired by Bank of America); Morgan Stanley, Quarterly Report for the Period Ended Mar. 31, 2010 (Form 10-Q) 64 (May 7, 2010). Lehman Brothers was acquired by Barclays Capital, a non-U.S. financial services firm, which obtained temporary relief from the SEC to continue to calculate capital charges pursuant to Rule 15c3-1e for the Lehman Brothers positions it purchased. See Order Granting Temporary, Conditional Relief from the Net Capital Rule for Barclays Capital, Inc., 73 Fed. Reg. 55,571 (Sept. 25, 2008).

135 This new approach to regulation—relying, in part, on models to assess a portfolio’s riskiness—was being adopted by both commercial and investment bank regulators at roughly the same time. See LOWENSTEIN, supra note 19, at 21–22; Coffee Testimony, supra note 92, at 60–61. The SEC intended for its program to be broadly consistent with the Federal Reserve’s oversight over bank holding companies. See id at 60.
net capital did not decline, the SEC required firms that elected the alternative formula to file an early warning notice if net capital fell below $5 billion, an amount comparable to the capital they maintained prior to the 2004 amendment. The ability to more flexibly calculate net capital, however, gave investment banks the opportunity to increase their borrowings, even though leverage caps remained unchanged.

As indicated in Figure 3 below, investment bank leverage increased significantly, with some estimates showing debt-to-equity ratios on average jumping from 22:1 to 33:1 within three years following adoption of the new requirements. Firms increased leverage in response to changes in the financial industry and new business opportunities. Greater borrowing meant that an investment bank could purchase and hold additional assets, potentially increasing its profitability.

136 See, e.g., GAO REPORT, supra note 131, at 39; Sirri Remarks, supra note 132.
137 See Coffee Testimony, supra note 92, at 57–58; Lee A Pickard, SEC Exemption That Fanned Crisis Remains on the Books, AM. BANKER, Oct. 3, 2012, at 4 (stating that, under the alternative formula, broker-dealers “were relieved from . . . very important capital charges found in the traditional net capital rule,” including a shift away from prescribed haircuts to a reliance on internal models to calculate haircuts). This was, in fact, what the SEC expected would occur under the alternative formula. See Alternative Net Capital, supra note 133, at 34,428 (“These amendments are intended to reduce regulatory costs for broker-dealers by allowing very highly capitalized firms that have developed robust internal risk management practices to use those risk management practices, such as mathematical risk measurement models, for regulatory purposes. A broker-dealer’s deductions for market and credit risk probably will be lower under the alternative method of computing net capital than under the standard net capital rule.”).
138 See Sirri Remarks, supra note 132.
139 See Viral V. Acharya et al., Capital, Contingent Capital, and Liquidity Requirements, in REGULATING WALL STREET 143, 149 (Viral V. Acharya et al. eds., 2011). I am reluctant to argue that the 2004 amendment caused the increase in leverage levels. As this article illustrates, a number of factors encouraged greater risk-taking and leverage by the investment banks. The change in net capital requirements, however, made it possible for investment banks to increase their leverage in response to those factors.
140 See GAO REPORT, supra note 131, at 39–40 (“To the extent that the use of their internal models . . . enabled them to reduce the amount of their haircuts, they could take on larger proprietary positions . . . .”). Investment banks may have been able to increase leverage partly due to the limited oversight by SEC staff. Although firms that adopted the alternative formula were expected to be subject to greater and more tailored scrutiny, see id. at 41–42, the limited number of SEC staff, the absence of formal authority to limit an investment bank’s leverage, and the alternative formula’s reliance on each firm’s individualized VaR model made effective oversight difficult, see Coffee Testimony, supra note 92, at 61; see also Stephen Labaton, Agency’ ’04 Rule Let Banks Pile Up New Debt, N.Y. TIMES, Oct. 3, 2008, at A1 (“The supervisory program . . . was a low priority.”).
Figure 3: Debt-to-Equity Ratios of Investment Banks, 1998–2007

Debt-to-Equity Ratio

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141 Debt-to-equity ratios typically are used to assess a firm’s riskiness. The ratio indicates the margin for error that exists if assets are liquidated to satisfy creditors’ claims. See, e.g., John K. Ford, Credit Analysis: The Debt-to-Equity Ratio and Firm Performance, 10 COM. LENDING REV. 88, 88 (1995). Due to its importance, the debt-to-equity ratio is one of the most closely-watched financial health indicators for creditors and investors. See STEVEN M. BRAGG, BUSINESS RATIOS AND FORMULAS: A COMPREHENSIVE GUIDE 110–11 (3d ed. 2012). The debt-to-equity ratios in Figure 3 are calculated as the remainder that results from dividing an investment bank’s total liabilities by its stockholders’ equity. Data used to calculate the debt-to-equity ratios were collected from public filings by each investment bank. For Bear Stearns, see Bear Stearns 1999, supra note 93, exhibit 13, at 56; Bear Stearns 2001, supra note 93, at 64; Bear Stearns 2003, supra note 93, at 53; Bear Stearns 2005, supra note 93, exhibit 13, at 65; Bear Stearns 2007, supra note 93, at 80; and Bear Stearns 2008, supra note 93, exhibit 13, at 82. For Goldman Sachs, see Goldman Sachs 2001, supra note 93, exhibit 13.1, at 48; Goldman Sachs 2002, supra note 93, at 48; Goldman Sachs 2004, supra note 93, exhibit 13.1, at 69; Goldman Sachs 2006, supra note 33, at F-3; and Goldman Sachs 2008, supra note 93, at 110. For Lehman Brothers, see Lehman 2000, supra note 56, exhibit 13, at F-3; Lehman 2002, supra note 88, exhibit 13, at 60–61; Lehman 2004, supra note 89, exhibit 13.01, at 69; Lehman 2006, supra note 93, at 72–73; and Lehman 2008, supra note 93, at 86–87. For Merrill Lynch, see Merrill Lynch 1999, supra note 93, exhibit 13, at 58–59; Merrill Lynch 2001, supra note 93, at 56–57; Merrill Lynch 2003, supra note 93, at 44–45; Merrill Lynch 2005, supra note 88, exhibit 13, at 50–51; Merrill Lynch 2007, supra note 93, at 72–73; and Merrill Lynch 2009, supra note 93, at 53–54. For Morgan Stanley, see Morgan Stanley Dean Witter 2000, supra note 56, exhibit 13.5, at 55–56; Morgan Stanley, Annual Report (Form 10-K) 74–75 (Feb. 19, 2003); Morgan Stanley 2004, supra note 63, at 82–83; Morgan Stanley 2006, supra note 33, at 107–08; and Morgan Stanley 2008, supra note 93, at 101–02.
Although borrowing increased after 2004, some have argued that leverage was not a significant factor leading to the 2007 financial crisis, partly because average leverage ratios were substantially higher in the 1980s and 1990s. Nevertheless, leverage for the largest investment banks was significant. Assume, for illustration, that the debt-to-equity ratio of an investment bank was 30 to 1. As Figure 3 indicates, all of the large investment banks, except Goldman Sachs, reached that level within three years after 2004. That would mean, for every $30 in assets a firm held, only $1 in equity was available to cover losses. Consequently, a less than four percent drop in the value of a firm’s total assets would deplete the firm’s equity—causing liabilities to exceed assets, and wiping the firm out.

Moreover, a focus only on leverage ratios understates the risks that investment banks incurred during the period. First, in hindsight, it is clear that the published leverage ratios failed to fully reflect the amount of borrowings by investment banks and their affiliates. Investment banks relied on off-balance-sheet special purpose vehicles in order to hold and finance substantial asset positions. For example, as a percentage of total assets, off-balance-sheet assets held by Bear Stearns nearly tripled, from 3.46% to

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143 See, e.g., Bruce Mizrach, Accounting for the Crisis 3 (May 2011) (unpublished manuscript), http://ssrn.com/abstract=1894805. The same was true for the largest commercial banks, although the difference in leverage ratios was generally less than for investment banks. See id. at 4.
144 Among other reasons to understate leverage, hiding the total amount that has been borrowed enables a debtor to borrow at more attractive rates. See Franco Modigliani & Merton H. Miller, The Cost of Capital, Corporation Finance and the Theory of Investment, 48 AM. ECON. REV. 261, 273 (1958) (“Economic theory and market experience both suggest that the yields demanded by lenders tend to increase with the debt-equity ratio of the borrowing firm (or individual).”); see also Aaron Unterman, Innovative Destruction—Structured Finance and Credit Market Reform in the Bubble Era, 5 HASTINGS BUS. L.J. 53, 59 (2009) (illustrating lower borrowing costs). Moving assets off the balance sheet to structured investment vehicles and other financing conduits may also minimize regulatory costs. See Floyd Norris, High and Low Finance; No Way To Make A Loan, N.Y. TIMES (Oct. 19, 2007), http://query.nytimes.com/gst/fullpage.html?res=9F0CEEDF143 CF93E20C810800A826096C0A78B63 [http://perma.cc/BGT5-N58W].
145 “Special purpose vehicles” (SPVs) are often used to finance the purchase and holding of assets. They are usually created by the firm that transfers those assets to the SPV, often for a specific purpose or transaction. Among their characteristics, SPVs typically are thinly capitalized, have no independent management or employees, may be administered by a trustee who follows pre-specified rules, and are structured to minimize the likelihood of bankruptcy. See Gary Gorton & Nicholas S. Souleles, Special Purpose Vehicles and Securitization 1–2 (Fed. Reserve Bank of Phila., Working Paper No. 05-21, 2005), http://ssrn.com/abstract=713782.
146 See Coffee Testimony, supra note 92, at 72.
11.32%, between February 2005 and May 2007. The SEC’s net capital rule applied only to broker-dealers and did not extend to investment bank activities—such as originating, warehousing, and financing real estate mortgages—that took place outside the broker-dealer entity. In addition, Lehman Brothers’ leverage ratio is likely to have been understated due to its reliance on repo transactions it believed could move assets off its balance sheet.

Second, consolidation within the financial services industry resulted in growing concentrations of risk as commercial banks combined with investment banks and investment banks combined with mortgage originators and servicers. Greater scale was a natural outcome of growing

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147 See Bruce Mizrach, Comment on Jon Danielsson et al., Endogenous and Systemic Risk, in QUANTIFYING SYSTEMIC RISK 94, 99 (Joseph G. Haubrich & Andrew W. Lo eds., 2013).

148 See Sirri Remarks, supra note 132 (“[T]he aggregate indebtedness standard does not limit the amount of assets the broker-dealer could take on through financing transactions. Substantial portions of the balance sheets of the [largest investment banks] were comprised of these types of financing transactions.”).

149 See infra notes 165–69 and accompanying text.

150 Lehman Brothers used “Repo 105” (also referred to as “Repo 108”) contracts to temporarily remove securities from its balance sheet, usually for seven to ten days. See ANTON R. VALUKAS, LEHMAN BROTHERS HOLDINGS INC. CHAPTER 11 PROCEEDINGS EXAMINER’S REPORT, 3 Repo 105, 732, 744 (2010), http://jenner.com/lehman [http://perma.cc/WL7P-M2RJ]. Although Lehman Brothers agreed to repurchase the assets from the counterparty, the transactions were treated as sales (rather than financing transactions) based on the amount of over-collateralization. See id. at 732. Under Repo 105/108, securities sold were valued at a minimum of 105% (for fixed-income securities) or 108% (for equity securities) of market value, which was significantly greater than the normal market rate of 102%. See id. at 732, 767, 777. The greater discount (or haircut) permitted Lehman Brothers to treat the transaction as a sale of the underlying securities. See id. at 779–80. Lehman Brothers had a particular interest in keeping its leverage ratio low. It had purchased substantial amounts of residential mortgage-backed securities, and in the face of potential concerns by creditors over their value, Lehman Brothers wanted to maintain as low a leverage ratio as possible. See Charles Hines et al., An Analysis of Lehman Brothers Bankruptcy and Repo 105 Transactions, 26 AM. J. BUS. 40, 40–41 (2011).

151 See GROUP OF TEN, BANK FOR INT’L SETTLEMENTS, CONSOLIDATION IN THE FINANCIAL SECTOR 144 (Jan. 2001) [hereinafter BIS REPORT], http://www.bis.org/publ/gten05.htm [http://perma.cc/4X7P-FVZF] (noting that “the evolution of non-bank financial institutions in the United States, including their increasing ability to affiliate with banks, has reached the point where the scale and level of participation in financial markets of a number of these institutions is sufficient to make their financial impairment a potentially systemic event”); Wilmarth, supra note 9, at 77.

152 See supra notes 57–58 and accompanying text.

153 See supra note 122 and accompanying text.
competition in the marketplace. Scale economies permitted larger financial institutions to lower costs and enhance profitability.\footnote{See Robert DeYoung & William C. Hunter, Deregulation, the Internet, and the Competitive Viability of Large Banks and Community Banks, in THE FUTURE OF BANKING 173, 193–94 (Benton E. Gup ed., 2003).}

Third, as Figure 4 below illustrates, the investment banks (except Bear Stearns after 2006) appear to have managed their risk-taking by reference to the amount of equity capital they held.\footnote{Adrian and Shin also find that VaR/equity is a “good approximation” of the way in which financial firms manage risk. See Adrian & Shin, supra note 112, at 12. Their conclusion is based on a review of VaR/equity for the five investment banks plus J.P. Morgan Chase, Citibank, and Bank of America. See id. at 10 n.5, 12. Credit rating agencies also use VaR/capital as one factor in assessing an investment bank’s credit quality, which reinforces the firms’ interest in monitoring VaR relative to equity capital. See, e.g., FITCH RATINGS, SECURITIES FIRM CRITERIA 17 (2014), http://www.fitchratings.co.jp/ja/images/RC_20140131_Securities%20Firms%20Criteria_EN.pdf [http://perma.cc/9CPB-QRQV] (stating that average VaR/“Fitch Core Capital” is a “key ratio”).} Except for Bear Stearns, the ratios remained relatively constant over the period, suggesting that the investment banks moderated the amount of risk they incurred relative to equity capital or adjusted equity capital to reflect changes in risk-taking. Greater risk-taking raised the risk of insolvency. Consequently, it was important for the investment banks to understand the nature and extent of the new risks they assumed.

Figure 4: VaR-to-Equity Ratios of Investment Banks, 1998–2007\footnote{The VaR data in Figure 4 are derived from the VaR data in Figure 1. See supra note 93. Data on equity are drawn from the same sources as the data in Figure 3. See supra note 141.}
Nevertheless, the nature of those risks had evolved with change in the financial markets and may not have been fully captured by VaR. Consolidation in the financial industry and higher levels of interdependency across financial firms through, for example, greater reliance on short-term interbank lending and derivatives trading, increased the likelihood that the failure of one large firm would disrupt others. That risk was not reflected in VaR. Competitive pressures also caused investment banks to enter new business lines, sometimes recklessly. For example, investment banks moved quickly into the mortgage securitization business, and in the process, significantly increased their exposure to the risk of a downturn in the real estate market and a slowdown in credit available to finance their mortgage assets. Those risks were either new to investment banks or different in kind from the risks they incurred before, raising the likelihood that they were also not fully reflected in VaR.

Finally, the investment banks increasingly relied on short-term sale and repurchase (also known as “repo”) transactions in order to finance their holdings. In a typical repo trade, a securities dealer (the “repo seller”) sells securities to an investor (the “repo buyer”) for cash. The repo buyer’s objective is not to invest in the securities; rather, the repo buyer expects to receive a return from the repo seller for the use of the repo buyer’s cash. Consequently, as part of the transaction, the repo seller also agrees with the repo buyer to repurchase the same or equivalent securities at some future time. The repurchase is frequently overnight at a price above the repo buyer’s original purchase price. Economically, the trade is equivalent to a secured loan—with the repo buyer lending cash to the repo seller against collateral that

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157 See FIN. CRISIS INQUIRY COMM’N, THE FINANCIAL CRISIS INQUIRY REPORT, at xx (2011), http://www.gpo.gov/fdsys/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf [http://perma.cc/6DU9-H28N] (“The heavy debt taken on by some financial institutions was exacerbated by the risky assets they were acquiring with that debt. As the mortgage and real estate markets churned out riskier and riskier loans and securities, many financial institutions loaded up on them.”).

158 See supra note 114 and accompanying text.

159 See BIS REPORT, supra note 151, at 140.

160 See Wilmarth, supra note 9, at 71.

161 See supra notes 114–24 and accompanying text; see also Coffee Testimony, supra note 92, at 62–63.

162 See Coffee Testimony, supra note 92, at 62.

163 See LOWENSTEIN, supra note 19, at 51–52.

164 See supra notes 114–24 and accompanying text; see also Coffee Testimony, supra note 92, at 63 (“Their common goal was to assure themselves a continuing course of supply of subprime mortgages to securitize, but in pursuit of this goal, both Merrill Lynch and Lehman made risky acquisitions, in effect vertically integrating into the mortgage loan origination field.”).


it discounts (a “haircut”) below market value.\textsuperscript{167} Using a simple example, if a haircut is three percent, a firm can borrow $97 million for each $100 million of collateral it pledges; the remaining $3 million must be financed using some other source of capital.

Repo financing as a fraction of investment bank total assets grew significantly after 1999, largely due to an increase in overnight repo which roughly doubled from 2000 to 2007.\textsuperscript{168} The investment banks’ greater reliance on overnight repo required them to roll-over a large portion of their funding each day, exposing them to the risk of a shortfall in the event lenders refused to re-extend credit the next day.\textsuperscript{169}

Problems arose from the investment banks’ use of repo transactions to fund their mortgage-related investments. Beginning in 2007, the value of those assets began to drop as investors came to believe that loan quality had eroded.\textsuperscript{170} As asset prices declined, lenders became unwilling to roll-over existing or to extend new credit, or required the investment bank to post additional collateral—tantamount, in any case, to depositors withdrawing money from a bank.\textsuperscript{171} The result was a sudden drop in lending to the investment banks\textsuperscript{172}—equivalent to a “bank run,” but rather than a run by depositors on a bank, it was a run by repo creditors on the investment banks.\textsuperscript{173} In order to repay its lenders, each investment bank was forced to quickly sell assets, often at discounted fire-sale prices, causing asset prices to

\textsuperscript{169} See id.
\textsuperscript{171} See Gorton, supra note 167, at 33–34; see also Ana Fostel & John Geanakoplos, Leverage Cycles and the Anxious Economy, 98 AM. ECON. REV. 1211, 1238 (2008) (describing the “flight to collateral,” where investors sell assets that cannot be used as collateral and buy assets that can be pledged to lenders at lower cost (emphasis omitted)).
\textsuperscript{173} See Gorton, supra note 167, at 31–38.
drop further. The drop in value affected the price of similar assets held by others, causing the firms’ balance sheet problems to be transmitted across the market.\footnote{See id. at 4–5, 31–35; see also Tobias Adrian & Hyun Song Shin, Liquidity and Financial Contagion, 11 Fin. Stability Rev. (Special Issue) 1, 2–3 (2008), http://www.fednewyork.org/research/economist800drianan/Liquidity_Contagion_BdeF022008.pdf [http://perma.cc/BU2X-MEJ4].}

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Commercial banks were able to fully enter the capital markets following passage of the Gramm–Leach–Bliley Act in 1999. The result—in large part due to the banks’ sizeable balance sheets, their ability to use credit to win investment bank mandates, and their push into traditional investment bank services—was to cause investment banks to assume greater risk and higher leverage in order to offset lost revenues, eventually precipitating the financial crisis. Specifically:

1. Commercial banks used their balance sheets—their ability to extend credit to potential clients—in order to win traditional investment bank mandates, such as debt and equity underwriting.\footnote{See supra notes 59–75 and accompanying text.} The restrictions on tying were ineffective, largely due to the relaxed interpretation by bank regulators.\footnote{See supra notes 76–86 and accompanying text.}

2. The greater competition and declining profits forced investment banks into new business lines, increasing existing risks or creating new ones.\footnote{See supra notes 87–125 and accompanying text.}

3. Aggregate risk also increased, consistent with growth in the investment banks’ balance sheets and greater leverage,\footnote{See supra Figures 1 & 3, notes 92–97, 108, 131–43 and accompanying text.} even though, for most banks, relative risk (VaR/total assets) appears to have remained roughly the same\footnote{See supra Figure 2 and notes 109–11 and accompanying text.} and risk also appears to have been managed relative to the equity capital available to cover losses (VaR/equity).\footnote{See supra Figure 4 and notes 155–56 and accompanying text.}

4. Greater leverage and higher aggregate risk meant that the investment banks had to be particularly accurate in their VaR calculations. That was difficult to do in light of VaR’s reliance on historical data and the relative newness of the businesses and risks to
5. Greater risk-taking and leverage among the investment banks were significant factors leading to the meltdown in 2007, first evidenced by Bear Stearns’ collapse and then by Lehman Brothers’ failure.

In effect, as commercial banks began to capture greater amounts of investment banking business, investment banks began to mimic commercial bank operations. In some cases, they did so directly by building their own commercial bank capabilities. Investment banks provided loans to private wealth management and corporate clients, as well as allying with third-party commercial banks in order to extend credit. In other cases, they increased their longer-term principal investments using short-term financing—for banks, by balancing loans and deposits, and for investment banks, by balancing loans and other principal investments that were financed using repo and other short-term funding.

The next Part addresses the regulatory divide—between commercial and investment banking regulators—that enabled the greater risk-taking and leverage among investment banks leading up to the financial crisis. At one level, concerns over the regulatory divide may simply be of historical concern, since the major investment banks are now all commercial banks. At a more basic level, however, the story of what occurred after passage of the Gramm–Leach–Bliley Act serves as a cautionary tale—what can happen when “silod” financial regulators, for legitimate reasons, pursue policy initiatives that spill over to other parts of the market. It evidences an ongoing need for greater

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181 See supra notes 114–25 and accompanying text.
182 See supra notes 126–28 and accompanying text.
183 See supra notes 18–19 and accompanying text.
184 See supra note 111 and accompanying text.
185 See supra note 11 and accompanying text.
186 See, e.g., Goldman Sachs 2007, supra note 66, at 48.
187 See McGeehan, supra note 66, at C1 (describing Merrill Lynch’s efforts to sweep brokerage customer cash into the accounts of small banks it owned in order to lend to corporate clients); see also Goldman Sachs 2004, supra note 93, at 14 (describing the creation of the William Street subsidiaries to lend primarily to investment-grade clients); Lehman 2003, supra note 90, at 7. Some banks managed the incremental credit risk through, for example, loan syndication and derivatives. See, e.g., Morgan Stanley 2004, supra note 63, at 28.
188 See Deals & Deal Makers: Bids & Offers, WALL STREET J., Jan. 31, 2003, at C4 (describing Goldman Sachs’s investment in Sumitomo Mitsui Financial Group as “increasing the amount of credit Goldman can extend to its clients”).
189 See supra notes 162–63, 165–74 and infra notes 205–09 and accompanying text.
190 See Stephen Labaton, S.E.C. Concedes Oversight Flaws Fueled Collapse, N.Y. TIMES, Sept. 27, 2008, at A1 (noting that “the five biggest independent Wall Street firms have all disappeared”); see also supra note 134.
coordination among regulators in light of continued convergence—a breaking down of “walls”—within the financial markets themselves.

III. SILOS AND WALLS

To this point, I have focused on changes in investment banking that occurred following passage of the Gramm–Leach–Bliley Act. Those changes were significant—a shift in market share, away from investment banks toward commercial banks,\(^\text{191}\) with a resulting rise in risk-taking\(^\text{192}\) (in all likelihood, inaccurately measured\(^\text{193}\)) and leverage by the investment banks.\(^\text{194}\)

What the changes suggest is that, as a competitive matter, it may be difficult for commercial and investment banks to independently work side-by-side even though (or, perhaps, because) both perform similar functions. In general, financial intermediaries bridge the gap between suppliers and consumers of capital. They collect capital from diverse investors and transfer it to end-users at lower cost than the investors could do themselves.\(^\text{195}\) Those financial intermediaries also act as informational middlemen, for example, by conveying information about a consumer’s financial situation through changes in stock price (in the capital markets)\(^\text{196}\) or using quasi-public information about consumers, based on low-cost monitoring and long-term relationships\(^\text{197}\) to decide whether to invest and on what terms (in a commercial bank).\(^\text{198}\)

Commercial and investment banks also help smooth the transfer of capital. Bank depositors typically can access money quickly, favoring short-term

\(^{191}\) See supra notes 69–72 and accompanying text.

\(^{192}\) See supra notes 92–111 and accompanying text.

\(^{193}\) See supra note 114 and accompanying text.

\(^{194}\) See supra notes 129–41 and accompanying text.


\(^{197}\) See Fischer Black, *Bank Funds Management in an Efficient Market*, 2 J. FIN. ECON. 323, 323–24 (1975) (noting that the inefficiency of bank markets permits banks to profitably exploit quasi-public information); George G. Triantis & Ronald J. Daniels, *The Role of Debt in Interactive Corporate Governance*, 83 CALIF. L. REV. 1073, 1083–84 (1995) (attributing the monitoring advantage enjoyed by banks to special characteristics of the bank sector, including the banks’ ability to cross-benchmark different borrowers and press borrowers for more information).

investments (bank deposits) that can be turned into cash on demand. Borrowers, by contrast, require a source of longer-term capital (bank loans). One thing that makes banks special is their ability to balance the two—managing a loan portfolio against the obligation to make depositors whole, using loan proceeds to repay depositors, and compensating for any shortfall with liquid reserves. Market-making provides a parallel function in the capital markets. Many 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—it is both a buyer and seller of the same assets. 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. Like banks, market-makers span the maturity gap between capital providers (who, as investors, expect liquidity) and capital users (who require longer-term stability). Both commercial and investment banks facilitate capital-raising by providing investors with liquidity—the ability to raise cash quickly—without interrupting the end-user’s longer-term employment of capital.

There is, however, a significant difference between the two. Investment banks typically fund themselves through short-term borrowing, such as

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205 See Adrian & Shin, supra note 129, at 7.
overnight repo transactions. Commercial banks also rely on short-term borrowing, but a substantial portion of their funding comes from deposits, which are relatively stable in light of Federal Deposit Insurance Corporation (FDIC) support, as well as longer-term borrowing. Consequently, in the ordinary course, a commercial bank’s ability to grow its balance sheet—its ability to make loans and other investments—is likely to be less volatile and less affected by change in capital markets conditions than an investment bank. This access to stable, low-cost funding provided commercial banks with a substantial competitive advantage over their investment bank rivals—and so, as one might expect, commercial banks made substantial inroads into the traditional investment bank business.

But at what cost? It is too early to fully assess the impact of those changes, but it is fair to say, even if the financial crisis had not occurred, that the effects of the Gramm–Leach–Bliley Act on the capital markets would have been substantial. For example, a principal goal of bank regulation has been to prevent individual banks from obtaining substantial economic power outside the financial markets, in particular, through control over non-financial businesses. Passage of the Gramm–Leach–Bliley Act permitted banks to enter new business lines. Among those businesses, commercial banks began to

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206 See supra notes 165–74 and accompanying text.
207 See Kevin Buehler et al., Between Deluge and Drought: The Future of US Bank Liquidity and Funding 1 (McKinsey & Co., Working Paper on Risk No. 48, 2013) (noting that, for banks, deposits constitute forty-nine percent of liabilities, repo financing has declined, and debt maturity has increased); see also Adrian & Shin, supra note 129, at 7.
208 See Whitehead, supra note 165, at 14 (noting that, in response to the financial crisis, the maximum insurable amount for each deposit account was raised from $100,000 to $250,000). Banks can also access Federal Reserve funds to temporarily cover shortfalls in liquidity in the event of substantial withdrawals. See Mark E. Van Der Weide & Satish M. Kini, Subordinated Debt: A Capital Markets Approach to Bank Regulation, 41 B.C. L. REV. 195, 204–05 (2000). More recently, in light of the financial crisis, some of the nation’s largest securities firms (including Goldman Sachs and Morgan Stanley) elected to become bank holding companies subject to federal bank regulation. Among other benefits, those firms can now access funding that has historically been made available by the Federal Reserve to commercial banks. See Patrice Hill, Treasury to Try to Keep Owners in Their Homes; Goldman, Morgan Cleared to Acquire Banks, WASH. TIMES, Sept. 22, 2008, at A1.
209 See Buehler et al., supra note 207, at 1.
211 See supra notes 57–58 and accompanying text.
buy and sell physical commodities—in some cases, requiring them to take ownership and delivery of the commodity itself.213 The result was a concentration of power within, and the assumption of new risks by, commercial banks.214 It also raised the risk of a change in the commodities markets themselves—with banks using their financial strength to influence non-bank participants and, potentially, changing the way in which the commodities markets function.215

In addition, commercial and investment banks had competed with each other for decades before passage of the Gramm–Leach–Bliley Act. Many capital markets innovations were driven by that competition as investment banks searched for new ways to replicate bank functions through the capital markets.216 With growing consolidation,217 it is less clear that the capital markets would have continued to innovate at the same pace as before.218 Moreover, with consolidation, there is a risk of less liquidity in the capital markets. Fewer participants may mean there are fewer entities to buy and sell

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213 In 2003, for example, following its acquisition of Salomon Brothers, Citigroup became the first bank holding company to obtain bank regulatory approval of its commodity-trading unit’s buying and selling of physical commodities. That approval included trading in commodities on the spot market, as well as taking and making physical delivery of commodities to settle commodity derivatives. See Dietrich Domanski & Alexandra Heath, Financial Investors and Commodity Markets, BIS Q. Rev., Mar. 2007, at 53, 65–66, http://ssrn.com/abstract=1600058 (describing the rise of financial investors in the commodities market). Banks had traded commodity derivatives since the 1980s, but, following passage of the Gramm–Leach–Bliley Act, they began to trade in the underlying physical commodities as an activity that was “complementary” to their derivatives business. See Saule T. Omarova, The Merchants of Wall Street: Banking, Commerce, and Commodities, 98 Minn. L. Rev. 265, 293–94, 297–307 (2014) (describing the growth of bank trading in commodities).

214 See id. at 269–71.

215 See id. at 346–48, 355.

216 See supra notes 41–49 and accompanying text.

217 See supra notes 57–58 and accompanying text.

It may also mean a decline in the number of venues through which small, start-up companies can access the public capital markets. Finally, even before commercial banks entered the capital markets, investment banks faced conflicts of interest as underwriters, on the one hand, and as research analysts, brokers, and asset managers, on the other. Combining commercial and investment banks is likely to have raised new conflicts. Perhaps the best example is the recent London Interbank Offered Rate (LIBOR) scandal. LIBOR is a benchmark interest rate—used as a reference for $300 trillion in loans, derivatives, and other financial products—that is derived from the rates that major banks charge each other for loans in the London interbank market. Barclays, a U.K. bank, and fifteen other financial institutions, including J.P. Morgan and Citigroup, have been fined or are being investigated for manipulating LIBOR between 2005 and 2008. Among the allegations, traders at several banks are accused of conspiring to influence LIBOR by causing commercial bank colleagues to submit rates that were higher or lower than the rates the bank would actually pay. Doing so permitted the traders to profit on derivatives whose value was tied to LIBOR—meaning that, rather than reflecting a bank’s actual borrowing rates, LIBOR began to reflect the traders’ derivatives positions.

Of course, it is possible that some or all of those changes would have arisen even without passage of the Gramm–Leach–Bliley Act. But I am skeptical, largely because they arose or became more acute as a result of consolidation in the financial markets—an outcome of the collapse of the wall.

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219 See Luigi Zingales, Why I Was Won Over by Glass–Steagall, Fin. Times (June 10, 2012), http://www.ft.com/cms/s/0/cb3e52be-b08d-11e1-8b36-00144feabdc0.html#axzz3FIOoPKRZ [http://perma.cc/CE24-WJ3Y] (“I realised it was not simply coincidence that we witnessed a prospering of securities markets and the blossoming of new ones (options and futures markets) while Glass–Steagall was in place, but since its repeal have seen a demise of public equity markets and an explosion of opaque over-the-counter ones.”).

220 See David Weild & Edward Kim, Grant Thornton, Market Structure is Causing the IPO Crisis—and More 15 (2010), http://www.grantthornton.com/staticfiles/GTCom/Public%20companies%20and%20capital%20markets/Files/IPO%20crisis%20%20June%202010%20%20FINAL.pdf [http://perma.cc/5B3H-SNCD] (stating that the investment banks that had supported the IPO market had not survived, and “[f]irms [that] have attempted to fill the void . . . have found that the economic model . . . no longer works”).

221 See Papaioannou, supra note 64, at 99.


separating commercial banks from other businesses following the Gramm–Leach–Bliley Act’s passage.\textsuperscript{226} More to the point, they all arose from changes in bank regulation that affect the capital markets. The bank regulators’ principal focus was on commercial bank stability and, to that end, improving bank profitability, as well as diversifying sources of revenue.\textsuperscript{227} Prior to the 2007 financial crisis,\textsuperscript{228} those regulators were not charged with overseeing investment banks,\textsuperscript{229} nor did they have access to investment bank information in order to do so.\textsuperscript{230} As a result, when relaxing the Glass–Steagall Act’s restrictions\textsuperscript{231} and, later, when analyzing the anti-tying prohibitions,\textsuperscript{232} the bank regulators focused on commercial bank stability, not on the potential for changes in regulation to negatively affect non-banks and the capital markets. Even today, the regulators continue to operate within separate silos—the principal capital markets regulators are the SEC and the Commodity Futures Trading Commission, and the principal commercial bank regulators are the Federal Reserve, the Comptroller of the Currency, and the Federal Deposit Insurance Corporation.\textsuperscript{233}

One solution may simply be to reinstate the Glass–Steagall Act. There certainly are advocates to do so, perhaps most notably a bipartisan Congressional proposal in 2013.\textsuperscript{234} It is less certain whether the banks’

\textsuperscript{226}See supra notes 57–58 and accompanying text.  

\textsuperscript{227}See supra notes 50–55 and accompanying text.  

\textsuperscript{228}Recall that, today, the largest investment banks are no longer independent companies or have become bank holding companies subject to Federal Reserve oversight. See supra note 134.  

\textsuperscript{229}See Onnig H. Dombalagian, Requiem for the Bulge Bracket?: Revisiting Investment Bank Regulation, 85 Ind. L.J. 777, 782–84 (2010).  

\textsuperscript{230}The SEC failed to acquire that information as well. See Labaton, supra note 140, at A1 (quoting former SEC Commissioner Harvey Goldschmid, “In retrospect, the tragedy is that . . . [the SEC had] the ability to get information that would have been critical to sensible monitoring, and yet the S.E.C. didn’t oversee well enough . . . .”).  

\textsuperscript{231}See supra notes 50–53 and accompanying text.  

\textsuperscript{232}See supra notes 76–86 and accompanying text.  

\textsuperscript{233}The Financial Stability Oversight Council (FSOC), created in July 2010, provides for some coordination among financial regulators. See Dodd–Frank Wall Street Reform and Consumer Protection Act § 111, 12 U.S.C. § 5321 (2012). Its principal charge is to identify risks to U.S. financial stability arising from activities in or outside the financial markets. See 12 U.S.C. § 5322. The FSOC must “identify gaps in regulation that could pose risks to” U.S. financial stability, § 5322(a)(2)(G), 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, § 5322(a)(2)(K). The Council is chaired by the Treasury Secretary and is comprised of ten voting members and five non-voting members. See § 5321(b)(1).  

\textsuperscript{234}See S. 1282, 113th Cong. (2013) (“To reduce risks to the financial system by limiting banks’ ability to engage in certain risky activities and limiting conflicts of interest, to reinstate certain Glass–Steagall Act protections that were repealed by the Gramm–Leach–Bliley Act, and for other purposes.”); H.R. 3711, 113th Cong. (2013) (same).
regulators would favor a return to the Glass–Steagall era,\(^\text{235}\) in particular in light of the pressures that caused deregulation in the first place.\(^\text{236}\) As I have argued elsewhere,\(^\text{237}\) fixed barriers like those in the Glass–Steagall Act may simply be fixtures of the past—a financial Maginot Line\(^\text{238}\) within an evolving financial system.\(^\text{239}\) This is particularly true to the extent new products fall outside the bounds of established regulation. Innovation may require more flexible regulation\(^\text{240}\) and more flexibility among regulators to the extent a new product or service is not squarely within the responsibility of any one agency.\(^\text{241}\)

The response may be to create a single regulator that is responsible for the financial markets as a whole, rather than a particular function or segment.\(^\text{242}\) Such a regulator could balance the costs and benefits of regulatory change across the marketplace, without the “pushmi-pullyu”\(^\text{243}\) tension that characterized commercial and investment bank regulation before and after

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\(^\text{236}\) See supra notes 38–53 and accompanying text.


\(^\text{238}\) 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. MOD. HIST. 130, 141–46 (1945).

\(^\text{239}\) See Whitehead, supra note 165, at 2–5 (describing broad changes in the financial markets, relating to market participants and financial instruments); see also supra notes 39–49 and accompanying text.


\(^\text{241}\) See id. at 9.

\(^\text{242}\) See John C. Coffee, Jr. & Hillary A. Sale, Redesigning the SEC: Does the Treasury Have a Better Idea?, 95 VA. L. REV. 707, 726 (2009) (moving to a central regulator proceeds “on the premise that, as the lines between banks, securities dealers, and insurers blur, so regulators should similarly converge. That idea should remain at the heart of the U.S. debate . . . ”).

\(^\text{243}\) Readers of The Story of Doctor Dolittle will recall that the pushmi-pullyu (pronounced “push-me—pull-you”) was a gazelle-unicorn cross that had two heads, one each at opposite ends of its body. When it tried to move, each head tried to go in the opposite direction. See HUGH LOFTING, THE STORY OF DOCTOR DOLITTLE 68 (1997).
passage of the Gramm–Leach–Bliley Act. Commercial bank regulators would no longer pursue siloed policies that, as this Article has illustrated, had the effect of increasing investment bank risk-taking and leverage, in turn, spilling over to the commercial banks themselves.

The concern is more than historical, notwithstanding more recent consolidation among commercial and investment banks. Consider, for example, the relationship between hedge funds, regulated by the SEC, and commercial bank holding companies, regulated by the Federal Reserve. Dislocation in one industry is likely to create problems in the other, with aggregate bank returns to date appearing to have had a more significant impact on hedge funds rather than vice versa. Part of the effect may be due to banks engaging in proprietary trading that previously competed with hedge funds. Another part may result from banks providing fee-based services to hedge funds that declined when the hedge fund industry slowed. A third part may be the ability of banks to transfer credit risk to hedge fund managers, who can then trade that risk with other market participants. The result, in

244 See supra Parts II.B. and C.
245 Note that the Dodd–Frank Act authorizes the FSOC, with the vote of seven of its ten members, to designate systemically important non-bank financial institutions (SIFIs) 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.” 12 U.S.C. § 5323 (2012); see also Authority to Require Supervision and Regulation of Certain Nonbank Financial Companies, 76 Fed. Reg. 4555, 4559–60 (Jan. 26, 2011) (codified at 12 C.F.R. pt. 1310) (describing proposed criteria to be used in determining whether to subject a nonbank financial firm to Federal Reserve Board supervision and standards). Consequently, it is possible today for a SIFI to fall under a single regulator. Of course, not all entities are SIFIs, nor does the new requirement extend to industry-wide risks that may result from new or amended regulation. SIFI-based regulation, for example, would not address the industry-wide conflicts that may have caused the LIBOR scandal. See supra notes 221–25 and accompanying text. The FSOC is also charged with “identify[ing] gaps in regulation that could pose risks to” U.S. financial stability, 12 U.S.C. § 5322(a)(2)(G) (2012), as well as making 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, § 5322(a)(2)(K). If used, those provisions could provide a basis for additional coordination among regulators.

246 See supra notes 134, 190 and accompanying text.
247 See Nicholas Chan et al., Systemic Risk and Hedge Funds, in THE RISKS OF FINANCIAL INSTITUTIONS 235, 318, 326 (Mark Carey & René M. Stulz eds., 2006).
249 See Chan et al., supra note 247, at 309; Billio et al., supra note 248, at 3.
250 See Chan et al., supra note 247, at 309.
251 See Whitehead, supra note 237, at 45–46.
any case, is the potential for a downturn among commercial banks if there is a
disruption in the hedge fund industry, and vice versa.252 Commercial banks are
largely prohibited from entering the hedge fund business by Section 619 of the
Dodd–Frank Act, commonly known as the “Volcker Rule.” That Rule
prohibits a banking entity253 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,”254 subject to certain
exceptions.255 As with the Glass–Steagall Act, the concern is whether change
in the Volcker Rule, subject to oversight by one regulator, will affect markets
and institutions subject to oversight by another. Experience to date suggests
those changes are likely to occur.256 To the extent they do, recent history tells

252 There is, in fact, a real risk of 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. See Tomas Garbaravicius & Frank Dierick, Hedge Funds
and Their Implications for Financial Stability 43–45 (European Cent. Bank, Working
perma.cc/RKF6-J7G9]. 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 SEC. See Dodd–Frank Wall Street Reform and Consumer Protection Act
§ 403, 15 U.S.C. § 80b-3(b) (2012); see also Exemptions for Advisers to Venture Capital
Funds, Private Fund Advisers With Less Than $150 Million in Assets Under Management,
pt. 275); Rules Implementing Amendments to the Investment Advisers Act of 1940, 75
matter, however, the new requirements are likely to do little to affect the hedge fund
industry, since about seventy percent of hedge fund assets were ostensibly 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 [http://perma.cc/CA6A-
A3AW] (noting that many hedge funds were willing to voluntarily register with the SEC in
order to attract institutional investor funds). Moreover, based on current resources, the SEC
has estimated it will not be able to audit a registered investment adviser more than once in
every eleven years. See Div. of Inv. Mgmt., SEC, STUDY ON ENHANCING INVESTMENT
[http://perma.cc/M5HA-ZF89].

253 “Banking entity” is defined in section 13(h)(1) of the Bank Holding Company Act
(2012). 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, 12 U.S.C. § 3106 (2012), and any affiliate of any of the
foregoing.

254 Dodd–Frank Act § 619 (amending the Bank Holding Company Act of 1956, 12
U.S.C. § 1851 (2012)).

255 See Whitehead, supra note 237, at 40. The Rule also limits similar activities by
certain systemically important non-bank financial institutions. See id.

256 See supra notes 235–41 and accompanying text.
us that the ability of regulators to assess the effect of those changes across the financial markets is imperative, but also imperfect.

IV. CONCLUSION

In Rashomon, a film directed by Akira Kurosawa, four characters relate their (sometimes self-serving) account of a horrific crime and what may or may not have taken place. The film is perhaps best-known for a plot device involving characters who provide alternative and often contradictory versions of the same incident.

One might recall Rashomon when assessing the conventional story around financial regulatory reform and the Gramm–Leach–Bliley Act. That story offers an account based on the relationship between the Act and greater risk-taking by commercial banks, resulting in (or fueling) the 2007 financial crisis. No doubt, passage of the Act prompted change in how banks conducted business, including new or additional risks beyond those the banks traditionally encountered. But another version of the story is set out in this Article. Here, the focus has been on the effect of the Gramm–Leach–Bliley Act on the capital markets and investment banks. That effect was a consequence of policies that failed to consider the risk-taking and leverage that would result as commercial banks diversified their revenue sources.

This Article’s account is a critical part of the story, because the effects are ongoing. And, very likely, the story will be repeated when existing regulation—much like what occurred around the Glass–Steagall Act—is modified to reflect future change in the marketplace. Acknowledging the role that bank regulation (and de-regulation) played in reshaping the capital markets and its participants is a key step in the right direction.

257 See RASHOMON (Daiei Motion Picture Company 1950).