THE REMAKING OF WALL STREET

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This Article critically examines the transformation of the financial services industry during and since the financial crisis of 2007–2009. This transformation has been marked by the demise of the major investment banks and the related rise of a set of powerful players known as private equity firms. First, this Article argues that private equity firms now mirror investment banks in their mix of activities; ethos of entrepreneurialism, innovation, and risk-taking; role as "shadow banks"; and overall power and influence.

These similarities might suggest that private equity firms pose financial risks similar to those caused by their now-defunct predecessors. But this Article suggests that private equity firms, as currently structured, are more financially stable and pose less systemic risk to the global economy. These firms are structured and funded in ways that may address the basic shortcoming that led to investment banks' downfall—specifically, the use of short-term debt to fund longer-duration assets. It thus argues that, in the face of onerous post-crisis reforms, Wall Street has evolved to displace investment banks with more financially resilient institutions. Importantly, however, this Article cautions that ongoing changes in private equity firms' broker-dealer activities raise systemic concerns that require active regulatory monitoring. The Article also identifies systemic and financial stability concerns arising from the funds that these firms manage, particularly their hedge and credit funds, about which little detailed information is publicly available.

Finally, this Article explores other implications of these developments, including for the effectiveness of post-Crisis regulation, the popular backlash against Wall Street, the incidence of misconduct, and the evolution of financial institutions.

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INTRODUCTION

At the dawn of the financial crisis of 2007–2009 (Financial Crisis or Crisis), major investment banks stood as the elite of Wall Street. They were large-scale, publicly listed corporations providing myriad financial products and services across the globe. Located at the crossroads of the capital markets, investment banks acted in an entrepreneurial, innovative, and risk-loving fashion. They were unconstrained by the strict regulatory requirements imposed on other major financial conglomerates, notably bank holding companies (BHCs).[1] As Wall Street's dominant players, investment banks recruited the best and brightest, paid the biggest bonuses, and wielded outsized influence over the global economy.

But investment banks' reliance on short-term funding and exposure to mortgage-related securities left them financially vulnerable and created system-wide financial risks. As their lending sources dried up during the depths of the Crisis, the major investment banks received government assistance designed to avert catastrophic system-wide harms. Those banks that survived

[1] In this Article, the terms "bank holding company" and "commercial bank" are used interchangeably. They refer to a financial conglomerate that is structured as a bank holding company (BHC) and therefore controls at least one conventional bank. *See generally* Bank Holding Company Act of 1956, Pub. L. No. 84-511, 70 Stat. 133 (codified as amended at 12 U.S.C. § 1841(a)(1) (2012)). Investment banks may also be financial conglomerates but, unlike BHCs, they do not control conventional banks. *Id.*

became BHCs, by either conversion or acquisition. These events wiped out major investment banks in the United States, prompting *The Wall Street Journal* to declare "an end" to "the era of the independent investment bank" and to assert that "Wall Street as we've known it for decades has ceased to exist."[2] BHCs emerged as the vanguard of investment banking.

The *Journal* had it right: since the Financial Crisis, Wall Street has transformed dramatically. Constrained by congressional and other post-Crisis regulatory action, investment banks surviving as BHCs have curtailed their investment banking and other activities. However, this Article argues that, at the same time, firms traditionally focused on private equity investing have grown to mirror the former investment banks in fundamental respects. These private equity firms—essentially massive pools of assets funded by institutional investors—today engage in a diversified mix of securities and asset management activities. The firms adopt the ethos of entrepreneurialism, innovation, and aggressive risk-taking that was the hallmark of independent investment banking. They act as "shadow banks" because of the bank-like functions they perform, despite falling outside the traditional banking system.[3] The employer of choice for aspiring financial professionals,[4] these firms have become the new titans of finance.

Scholars have paid little attention to this reshaping of the industry and its potential consequences. Important strands of recent scholarship seek to understand the causes of the Crisis.[5] These studies evaluate reforms and reg-

[2] Editorial, *The End of Wall Street*, WALL ST. J. (Sept. 23, 2008, 12:01 AM), https://www.wsj.com/articles/SB122212648830465179.

[3] The term "shadow bank" resists precise definition, but is generally understood by reference to the shadow banking system, which is defined in terms of its position outside traditional banking regulation and its function of transforming risky, illiquid long-term assets into less-risky, liquid short-term liabilities. *See, e.g.*, ZOLTAN POZSAR ET AL., FED. RESERVE BANK OF N.Y., STAFF REPORT NO. 458, SHADOW BANKING (2010), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr458.pdf (article abstract: "Shadow banks are financial intermediaries that conduct maturity, credit, and liquidity transformation without explicit access to central bank liquidity or public sector credit guarantees."); *id.* at 11–12 ("[T]he shadow banking system transforms risky, long-term loans . . . into seemingly credit-risk free, short-term, money-like instruments."); Kathryn Judge, *Information Gaps and Shadow Banking*, 103 VA. L. REV. 411, 414 (2017) (describing the shadow banking system as "an intermediation regime that resides in the capital markets while serving many of the economic functions traditionally fulfilled by banks."); Daniel K. Tarullo, Shadow Banking After the Financial Crisis, Speech at the Federal Reserve Bank of San Francisco Conference on Challenges in Global Finance: The Role of Asia (June 12, 2012) (describing shadow banking as "credit intermediation involving leverage and maturity transformation that is partly or wholly outside the traditional banking system"). For a detailed discussion of the uncertain contours of the term, see Steven L. Schwarcz, *Inaugural Address for the Inaugural Symposium of the Review of Banking and Financial Law*, 31 REV. BANKING & FIN. L. 619, 620–26 (2012).

[4] William Alden & Sydney Ember, *Private Equity Firms in a Frenzied Race to Hire Young Investment Bankers*, N.Y. TIMES: DEALBOOK (Feb. 10, 2015, 8:29 PM), https://dealbook.nytimes.com/2015/02/10/private-equity-firms-in-a-frenzied-race-to-hire-young-investment-bankers/?_r=0 (referencing research that suggested "private equity was the single most popular destination for Wall Street's junior workers.").

[5] This literature is vast and growing. For useful reviews and critiques of the literature, see, for example, Andrew W. Lo, *Reading About the Financial Crisis: A Twenty-One-Book Review*, 50 J. ECON. LITERATURE 151 (2012); Annelise Riles, *New Approaches to International Finan-*

ulatory approaches, often suggesting ambitious strategies to avert future crises.[6] But researchers have neglected the reemergence of investment banking practices, activities, and ethos in a new institutional form, as well as the associated risks.[7]

This Article assesses this industry transformation, focusing on its primary economic consequences and its implications for financial regulatory reform and scholarship. I focus in particular on whether private equity firms pose a risk of systemic harm similar to that created by their now-defunct predecessors—risk that materialized during the Crisis, contributing to its severity. This question of systemic risk warrants attention as regulators seek to identify hazards in the shadow banking system.[8]

The Article suggests that, despite their similarities with the former investment banks, private equity firms, as currently structured, are *more* financially stable than investment banks were and pose *less* systemic risk to the global economy. The Article contends specifically that the structure and funding of these firms largely overcomes the basic shortcoming that led to investment banks' downfall—the use of short-term debt to fund longer-duration assets. Private equity firms lock in funding sources for longer, isolate

cial Regulation (Cornell Law School Legal Studies Research Paper Series, Research Paper No. 15-03, 2014), http://ssrn.com/abstract=2524384. Other important contributions to diagnosing causes include Markus K. Brunnermeier, *Deciphering the Liquidity and Credit Crunch 2007–2008*, 23 J. ECON. PERSPECTIVES 77 (2009); ERIK F. GERDING, LAW, BUBBLES, AND FINANCIAL REGULATION (2014); Gary Gorton, *The Subprime Panic*, 15 EUR. FIN. MGMT. 10 (2009); Kathryn Judge, *The First Year: The Role of a Modern Lender of Last Resort*, 116 COLUM. L. REV. 843 (2016); Lynn A. Stout, *Derivatives and the Legal Origin of the 2008 Credit Crisis*, 1 HARV. BUS. L. REV. 1 (2011); 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 (2009).

[6] *See, e.g.*, Cheryl D. Block, *A Continuum Approach to Systemic Risk and Too-Big-To-Fail*, 6 BROOK. J. CORP. FIN. & COM. L. 289 (2012) (assessing reforms for the prudential regulation and resolution of distressed financial institutions); John Crawford, *Predicting Failure*, 7 VA. L. & BUS. REV. 171 (2012) (proposing a mechanism for predicting the failure of systemically important financial institutions); Gary Gorton & Andrew Metrick, *Regulating the Shadow Banking System*, 41 BROOKINGS PAPERS ON ECONOMIC ACTIVITY, no. 2, Fall 2010, at 261 (outlining proposals to regulate the usage of repurchase agreements and securitization); Robert Hockett, *The Macroprudential Turn: From Institutional "Safety and Soundness" to Systematic "Financial Stability" in Financial Supervision*, 9 VA. L. & BUS. REV. 201 (2015) (examining the "perspective" and instruments of macroprudential regulation and the reasons for reformers' post-Crisis focus on such regulation); Prasad Krishnamurthy, *Regulating Capital*, 4 HARV. BUS. L. REV. 1 (2014) (critiquing current strategies for regulating bank capital); Saule T. Omarova, *License to Deal: Mandatory Approval of Complex Financial Products*, 90 WASH. U. L. REV. 63 (2012) (proposing pre-market government licensing of complex financial instruments to address systemic risk).

[7] The possibility of this industry transformation was suggested by Professors Brian Cheffins and John Armour, who observed before the Crisis that private equity firms could become "broadly based financial groups akin to elite investment banks." Brian Cheffins & John Armour, *The Eclipse of Private Equity*, 33 DEL. J. CORP. L. 1, 8 (2008). They did not, however, explore this insight in detail.

[8] *See, e.g.*, Liz Moyer, *SEC Releases Data on Fund Advisors*, N.Y. TIMES: DEALBOOK (Oct. 16, 2015), http://www.nytimes.com/2015/10/17/business/dealbook/sec-releases-data-on-fund-advisers.html ("Now their [regulators'] attention is turning to whether there should be more protections from the possible risks the funds pose to the financial system.").

themselves from the funds they sponsor, limit their financial exposure to their funds, and limit leverage at the firm level. The Article thus suggests that, in the face of onerous post-Crisis reforms, Wall Street has so far evolved to displace investment banks with more financially resilient institutions.

However, the message here is largely cautionary. The Article argues that ongoing changes in firms' broker-dealer activities raise systemic and financial stability concerns that require active monitoring.[9] Though firms' broker-dealer subsidiaries are currently modest in size and scope, firms face strong incentives and opportunities to grow them. Unconstrained by new regulations imposed on BHCs, these firms have broad freedom to do so.[10] They would then more closely replicate the mismatch in asset-liability maturity that dogged investment banks, making them more institutionally fragile. Private equity firms would also then increasingly operate at cross purposes from their clients and have greater opportunities to exploit nonpublic information, exacerbating the risk of misconduct. Additionally, this Article shows how the funds managed by firms—in particular, their hedge and credit funds—may pose systemic and financial stability concerns and discusses why more public data about them is needed.[11]

In assessing this reconfiguration of the financial services industry, this Article draws extensively on information from public regulatory filings. These filings provide information about private equity firms,[12] but significantly less about the funds these firms manage. Firms structure these funds as private funds, under exemptions to the Investment Company Act.[13] The funds do not make public disclosures.[14] Accordingly, this Article draws on other sources, including the financial media, for information about firms' funds. Analysis of the funds is therefore necessarily more tentative than that of the firms themselves.

In Parts I and II, this Article traces the growth and diversification of investment banks beginning in the late nineteenth century and concluding with their sudden decline and demise during the Financial Crisis. Investment banks relied on short-term funding sources to make investments in longer-

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[9] *See infra* Part IV.B–C.

[10] *See infra* note 335 and accompanying text.

[11] *See infra* Part IV.B–C.

[12] *See, e.g.*, Blackstone Group L.P., Annual Report (Form 10-K) (Feb. 24, 2017).

[13] *See, e.g.*, *id.* at 11–12. The primary exemptions are sections 3(c)(1), 3(c)(7) and 7(d) of the Investment Company Act of 1940. *See* 15 U.S.C. §§ 80a-3(c)(1), (7), 80-7(d) (2012). Firms may nevertheless be required to register with the SEC as advisers to private funds. *See* Investment Advisers Act § 203, 15 U.S.C. § 80b-3 (2012).

[14] The advisers to such funds must generally provide information on Form ADV to the SEC, which makes that information publicly available. However, to the extent the required information concerns funds, it is generally aggregated. Advisers must also submit data on Form PF to the SEC. Such data would be relevant to the inquiry in this Article but are not publicly available except in aggregated form intended to mask individual filers. *See infra* notes 331–333. Advisors may also need to disclose securities holdings to the SEC on Form 13F but only long positions in equity securities on a quarterly basis.

term assets, producing a mismatch between the maturities of their assets and liabilities and exposing them to liquidity risk.[15] They were also highly leveraged and weakly capitalized, and their significant holdings of mortgage-related securities left them vulnerable to drops in housing prices. When housing prices weakened significantly in 2007, investment banks experienced "runs" on their funds and were unable to meet their obligations. Due to interdependencies among market actors, the failure or near-failure of investment banks disrupted trading and funding markets and threatened the financial stability of other market actors, risking a cascade of insolvencies. Those investment banks that survived either converted to or were bought by BHCs, firms that enjoyed greater access to government financial support but also faced more onerous capital requirements and other regulation. As BHCs, the former investment banks now labor under additional regulatory burdens that have increased their cost of capital, narrowed their range of permissible activities, and undermined their entrepreneurialism. They take fewer risks and are less innovative than they were in their earlier lives.[16]

In Part III, this Article shows that private equity firms have increased in scale and scope in the wake of the Crisis, to the point where they now closely resemble the major investment banks of old. They have broadened their asset-management activities. They have formed broker-dealer subsidiaries, equipping them to expand their securities activities.[17] They have developed cultures of entrepreneurialism, innovation, and risk-taking. Many have listed publicly.[18] Offering employees greater status and pay than do investment banks, they have now eclipsed investment banks as the "elite of Wall Street."[19]

And yet, like the investment banks before them, private equity firms operate outside the formal banking system, avoiding the heightened capital thresholds and other financial-soundness requirements imposed on BHCs.[20] It is possible that the Financial Stability Oversight Council (FSOC), the financial regulatory oversight body created by the Dodd-Frank Act,[21] will designate private equity firms as "systemically important" and subject them to heightened regulatory requirements.[22] But none have been so designated, and their growth has occurred with little regulatory scrutiny.

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[15] *See infra* notes 97–119 and accompanying text.

[16] *See infra* Part II.C.

[17] S*ee infra* notes 199–204 and accompanying text.

[18] *See infra* note 170 and accompanying text.

[19] *See infra* notes 175–227 and accompanying text.

[20] *See* U.S. Dep't of the Treasury, Office of Fin. Research, Asset Management and Financial Stability 19 (2013), https://financialresearch.gov/reports/files/ofr_asset_ management_and_financial_stability.pdf ("[N]onbank, non-insurance asset managers are not required by U.S. regulation to set aside liquidity or capital reserves for their asset management businesses.").

[21] Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act), Pub. L. No. 111-203, § 111, 124 Stat. 1376, 1392 (2010) (codified at 12 U.S.C. § 5321 (2012)) [hereinafter Dodd-Frank Act] (establishing the FSOC).

[22] *See infra* notes 239–242 and accompanying text.

In Part IV, this Article assesses this industry reshaping, focusing on whether private equity firms, like the former investment banks they now resemble, are financially vulnerable and pose systemic risk. Private equity firms clearly differ from investment banks in that they attract longer-term funding. They also operate largely through multiple distinct funds or pooled investment vehicles, which they manage rather than own, thus cabining the effects of financial distress. Although they might choose to rescue failing funds, private equity firms are less institutionally fragile than the former investment banks. Private equity firms are also unlikely to pose the same degree of systemic-risk concern as the former investment banks. But their broker-dealer operations may grow, posing risks akin to those of the major investment banks.

As for the risks posed by the funds that private equity firms manage, the analysis is necessarily preliminary. Because we have limited information about them,[23] these fund activities are incompletely understood, as are their connections with firms and other market actors. There are also limits on our understanding of how systemic risk arises, spreads, and amplifies in such funds, making it hard to identify and assess the systemic risk they currently pose.[24] The Article nevertheless identifies firms' hedge and credit funds as the funds most likely to pose stability and systemic-risk concerns.

Part V considers the implications of these developments in several areas: the effectiveness of regulatory reform, the concentration of economic and political power in financial firms, the incidence of financial misconduct, and the evolution of financial institutions. Among other things, this Article lends support to contentious Dodd-Frank Act reforms that give FSOC power to designate non-banks such as private equity firms "systemically important" and subject them to heightened regulatory requirements.[25] The Article also draws attention to the control that Wall Street, via private equity firms, today exerts over Main Street—a phenomenon that upsets longstanding U.S. policy of rigidly separating financial institutions from industrial enterprises.[26] It takes no position on the regulation of BHCs, focusing instead on risks posed by private equity firms and funds. A brief conclusion follows.

I. The Rise of Investment Banks and Investment Banking

Investment banks of the late 19th century were small and narrowly focused partnerships. By 2007 they were publicly listed and diversified financial institutions. Entrepreneurial, innovative, and comfortable with risk, they

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[23] *See supra* note 14 and accompanying text.

[24] *See* John Armour et al., Principles of Financial Regulation 504 (referring to "the preliminary state of our understanding of the extent of systemic risks associated with asset managers"); *see also infra* note 235 and accompanying text.

[25] *See infra* Part V.A.

[26] *See infra* Part V.B.

mixed securities and asset-management activities, established themselves in the shadow banking system, and became the kings of Wall Street.

A. *Origins, Growth, and Diversification*

The term investment banking, coined in the United States and now widely used internationally, describes certain specialized securities activities: underwriting securities offerings and advising on major corporate transactions such as mergers and acquisitions (M&A).[27] Investment banking does not encompass conventional banking activities—taking deposits from and making loans to the general public. Those operations are the province of commercial banking.

Historical accounts of the origins of investment banks in the United States typically focus on the development of investment-banking activities rather than investment banks as institutions.[28] Only when Congress passed the Glass-Steagall Act of 1933,[29] formally separating the banking institutions of the day into commercial and investment banks, did investment banks become clearly identifiable. Since many of the major players in investment banking also engaged in commercial banking, the legislation required that they either divide themselves or narrow their operations. The financial services industry was thus transformed, with investment banks structured as small-scale, narrowly focused firms, somewhat akin to traditional law partnerships.[30]

In an effort to profit from economies of scale and scope, investment banks began in the 1960s to diversify beyond their core securities activities. They started serving the needs of the emerging class of institutional investors.[31] Some firms expanded their services to retail investors.[32] For example, Morgan Stanley began to market and sell the securities it underwrote, rather

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[27] *See* Alan D. Morrison & William J. Wilhelm, Jr., Investment Banking: Institutions, Politics, and Law 22 (2007) ("Traditional investment banking relates to advisory work in securities issuance, and also in the M&A market."); *see also* James D. Cox et al., Securities Regulation: Cases and Materials 115 (7th ed. 2013) ("[I]nvestment banking includes the underwriting of securities offerings; it also refers to the wide range of financial planning and assistance services that investment banking firms render in connection with mergers, acquisitions, and recapitalizations.").

[28] *See, e.g.*, Vincent P. Carosso, Investment Banking in America: A History 79–109 (1970); Morrison & Wilhelm, Jr., *supra* note 27, at 136–54 (discussing "the evolution of investment banking").

[29] Banking Act of 1933 (Glass–Steagall Act), Pub. L. No. 73-66, 48 Stat. 162 (1933) (codified as amended in scattered sections of 12 U.S.C.), *repealed in part by* Gramm–Leach–Bliley Act, Pub. L. No. 106-02, 113 Stat. 1338 (1999).

[30] *See* Alan D. Morrison & William J. Wilhelm Jr., *Trust, Reputation, and Law: The Evolution of Commitment in Investment Banking*, 7 J. Legal Analysis 363, 384–85 (2015).

[31] *See* Charles R. Geisst, Wall Street: A History: From Its Beginnings to the Fall of Enron 297–98 (2004); Samuel L. Hayes & Philip M. Hubbard, Investment Banking: A Tale of Three Cities 106–07 (1990).

[32] *See* Morrison & Wilhelm, *supra* note 27, at 233–34.

than relying on other institutions to do so, as it had in the past.[33] Investment banks also began engaging in block trading, a practice whereby a firm acquires a large block of securities from a client and sells it off-exchange.[34] They took part in foreign-exchange trading and in the growing derivatives markets.[35]

In the 1970s investment banks diversified further in response to technological improvements and competition. They imported European ideas for new financial instruments.[36] They used advances in computer technology and corporate financial theories to develop new ways of doing business and new securities products and services.[37] They also diversified geographically in response to competitive pressures, initially from London, where a new Eurobond market was developing.[38] To compete with capital-rich European universal banks, U.S. investment banks sought greater reservoirs of capital,[39] leading them to abandon their partnership status and sell their own securities to public investors for the first time.[40] As their need for capital grew, scale became increasingly important, and the industry began consolidating.[41] Investment banks were gradually evolving into "full-service" or "integrated" capital-rich financial institutions, offering myriad financial products and services.

During the 1980s and 1990s, investment banks ventured still farther afield.[42] As the retreat from fixed trading commissions undercut revenues from securities operations, the banks moved beyond securities and into asset

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[33] *See* Hayes & Hubbard, *supra* note 31, at 107.

[34] *See* 2 Jerry W. Markham, A Financial History of the United States 347 (2002) (describing block-trading by broker-dealers, a practice said to have been introduced by Goldman Sachs in the 1960s); *see also* Geisst, *supra* note 31, at 298.

[35] *See* Geisst, *supra* note 31, at 307–08, 327.

[36] *See id.* at 310–12 (describing greater variation in financial instruments offered in Europe and how banks' participation in Europe "served as a mechanism for importing new ideas into the United States").

[37] For example, firms relied increasingly on computers to price and trade securities as well as to manage risks from trading positions. *See* Morrison & Wilhelm, *supra* note 27, at 244 ("Pricing, trading, and risk-management practices that previously had relied upon judgment exercised by individual traders were increasingly computerized."). Firms began offering money-market mutual funds. *See* Arthur E. Wilmarth, Jr., *The Transformation of the Financial Services Industry, 1975–2000: Competition, Consolidation, and Increased Risks*, 2002 U. Ill. L. Rev. 215, 239.

[38] This market allowed domestic and foreign companies to sell securities without SEC registration, a time-consuming and expensive process. *See* Geisst, *supra* note 31, at 310–12.

[39] *See id.*

[40] Thanks to 1970 rule changes, the New York Stock Exchange no longer required exchange members to operate as partnerships and permitted them to list publicly. Fin. Crisis Inquiry Comm'n, The Financial Crisis Inquiry Report 61 (2011) [hereinafter FCIC Report]; *see also* 3 Markham, *supra* note 34, at 25 (describing the public listings of investment banks, or broker-dealers, beginning in 1970).

[41] *See* 1 Melanie L. Fein, Banking and Financial Services: Banking, Securities, and Insurance Regulatory Guide, § 1.02[B], at 1-28–30 (2006) (describing consolidation in the investment banking industry).

[42] *See, e.g.*, 3 Markham, *supra* note 34, at 100 (describing Merrill Lynch as "particularly aggressive in its efforts to diversify and become a financial supermarket . . . .").

management.[43] They would now manage large pools of funds contributed by investors—and their own treasuries. They would also take part in private equity investing,[44] using pooled capital to buy businesses for later resale.[45] Investment banks began trading more of their own capital in securities and other financial instruments than they did their clients', a practice known as proprietary trading or principal investing.[46] They took advantage of their reputations for financial strength to expand into lines of business demanding dependability.[47] And they began lending through facilities such as "bridge loans," which assist acquirers in M&A transactions.[48]

In the 1980s, investment banks also began securitizing assets,[49] a process that produced financial instruments akin to bank deposits. Firms formed bankruptcy-remote vehicles to purchase assets and then issue debt securities to investors, giving those investors rights to the revenue generated by those assets.[50] The resulting securities were designed to be safe and highly liquid and thus to function in a way similar to bank deposits.[51] Because they performed bank-like functions but were outside conventional banking regulation, investment banks became so-called shadow banks.[52]

In the 1990s, the U.S. economy boomed, and the growth of investment banks accelerated. Between 1997 and 2007, leading investment banks Morgan Stanley and Goldman Sachs increased their assets three-fold and five-fold, respectively.[53] Major investment banks expanded their securities opera-

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[43] Hayes & Hubbard, *supra* note 31, at 129 ("As the complexion of business changed, . . . securities firms searched for other activities that could feed off their central core" and "[m]oney management fit that criterion.").

[44] *See* 3 Markham, *supra* note 34, at 112 (describing investment banks' role in private equity deals beginning in the mid-1980s).

[45] Private equity operations typically involve a firm using its funds (to which private investors may have contributed), acting alone or as part of a consortium of private equity investors, to acquire publicly traded companies. These companies are then made private, reorganized, and sold, potentially to the public.

[46] *See, e.g.*, 3 Markham, *supra* note 34, at 182 (discussing industry shifts in the 1980s and asserting "[o]ne area of growth was proprietary trading").

[47] As to banks' reputations for financial strength in settings such as syndicated lending and securities and derivatives trading, see Wilmarth, *supra* note 37, at 283.

[48] *See* 3 Markham, *supra* note 34, at 112 ("Investment bankers . . . were issuing 'bridge loans' that were used in takeover battles as interim financing until more permanent loans could be put in place.").

[49] *See* Hayes & Hubbard, *supra* note 31, at 118–19.

[50] *See* Asset-Backed Securities, Securities Act Release No. 33-8518, Exchange Act Release No. 34-50905, 70 Fed. Reg. 1506, 1508 (Jan. 7, 2005) (defining securitization or asset-backed securitization as "a financing technique in which financial assets . . . are pooled and converted into instruments that may be offered and sold in the capital markets" as securities); *see* Jonathan C. Lipson, *Re: Defining Securitization*, 85 S. Cal. L. Rev. 1229, 1239–41 (2012) (identifying the "essential elements" of securitization as payment rights, bankruptcy-proof legal isolation, and securities).

[51] *See* Adam J. Levitin, *Safe Banking: Finance and Democracy*, 83 U. Chi. L. Rev. 357, 388–407 (2016) (discussing shadow banking and how financial instruments may function as deposit substitutes).

[52] *See supra* note 3.

[53] *See* Simon Johnson & James Kwak, 13 Bankers: The Wall Street Takeover and the Next Financial Meltdown 213 (2010).

tions by forming prime-brokerage units to serve the needs of increasingly important hedge-fund clients, often lending to them.[54] Investment banks plunged further into asset management, investing and trading for their clients.[55] They focused even more on trading and investing using their own funds,[56] which often blurred the lines between banks' securities and asset-management operations because banks co-invested with their clients. Investment banks' income statements reflected this pronounced shift toward proprietary trading and principal investing. For example, at Lehman Brothers, trading and principal investing generated 32 percent of the bank's pre-tax earnings in 1997, rising to 80 percent by 2006.[57] At Goldman Sachs, the same activities generated 39 percent of total revenues in 1997, increasing to 68 percent by 2007.[58]

While these changes since the 1960s can be explained as a quest by investment banks for economies of scale and scope and as a response to technological change, they also likely stemmed from fierce competition with BHCs. After the passage of the Gramm-Leach-Bliley Act of 1999, BHCs were permitted to engage in securities activities formerly permissible only for investment banks,[59] ratcheting up competition.[60]

Investment banks' growth and diversification may also have been propelled by efforts to diversify their income sources to even out peaks and

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[54] *See Share-cropping*, ECONOMIST (May 19, 2007), http://www.economist.com/node/9141656.

[55] For example, they expanded their private equity funds. *See* GEISST, *supra* note 31, at 367–68 (discussing Morgan Stanley's merchant banking activities).

[56] Philip Augar, Opinion, *Do Not Exaggerate Investment Banking's Death*, FIN. TIMES (Sept. 22, 2008), https://www.ft.com/content/daae00b6-88bc-11dd-a179-0000779fd18c (in the decade before the Crisis, "advising clients on corporate finance and investment matters [was] subsumed in a dash for profit involving principal investing and proprietary trading").

[57] FCIC REPORT, *supra* note 40, at 66.

[58] *Id.*

[59] The GLBA relieved BHCs of restrictions on their securities activities by providing a mechanism for them to become financial holding companies, entities conditionally permitted to engage in any activity that is financial in nature or incidental or complementary to a financial activity. *See* Gramm-Leach-Bliley Act §§ 102–03, 107, 12 U.S.C. § 1843(k)–(o) (2012). The distinction between investment banks and commercial banks had become increasingly blurred since the 1970s, with commercial banks then moving into traditional investment banking territory. For a more detailed discussion, see Wilmarth, *supra* note 37, at 219–26, 318–20.

[60] *See* Charles K. Whitehead, *Size Matters: Commercial Banks and the Capital Markets*, 76 OHIO ST. L.J. 765, 781–801 (2015) (arguing that the repeal of Glass-Steagall barriers by the Gramm-Leach-Bliley Act exposed investment banks to more vigorous competition in securities markets by commercial banks, leading investment banks to seek new and riskier revenue streams).

troughs in their earnings.[61] Managerial self-interest and hubris likely also played roles.[62]

Whatever the drivers of this institutional change, by 2007 investment banks were complex global financial institutions that traded, invested, lent, advised, and otherwise facilitated client transactions across their diverse securities and asset-management operations. Figure 1 depicts their mix of activities. In the securities realm, they advised on M&A, underwrote securities offerings, provided credit, acted as broker-dealers by executing client trades and making markets, engaged in proprietary trading, and conducted related activities. As asset managers, they managed pools of funds for outside investors (and for themselves) and invested and traded according to particular strategies (as in hedge funds and private equity funds) or in particular asset classes (such as property and credit).

Securities	*Asset Management*[63]
Investment Banking • M&A advice • Securities underwriting • Corporate lending	Asset Management • Hedge funds • Private equity funds • Mutual funds • Venture capital funds • Property funds • Credit funds • Infrastructure funds
Sales and Trading • Brokerage • Dealing • Proprietary trading and investing • Research analysis	

Fig. 1. Range of activities in which investment banks typically engaged

[61] Drawing on insights from modern portfolio theory, a firm may hope to dampen the adverse effects of poor performance in individual product lines and thus reduce variability in its earnings. However, empirical evidence of the risk reduction through diversification is mixed. *See* Kevin J. Stiroh, *Diversification in Banking*, *in* THE OXFORD HANDBOOK OF BANKING 146, 157–64 (Allen N. Berger et al., eds., 2010). The theoretical case is also vulnerable to attack: diversification may be more cost effective for stockholders than firms. *See, e.g.*, RICHARD A. BREALEY ET AL., PRINCIPLES OF CORPORATE FINANCE 888 (9th ed. 2008).

[62] For example, managers might have increased firms' scale to better insulate them from takeover. *See* Wilmarth, *supra* note 37, at 288–93 (discussing managerial self-interest and hubris in the context of universal banking).

[63] Asset-management activities are also often referred to as "investment-management" or "funds-management" activities.

B. Ethos

Investment banks were entrepreneurial, innovative, and risk-loving. Their asset-securitization activities reflected an ethos that prized chasing emergent financial opportunities, often ones far removed from traditional operations. Early in the twenty-first century, investment banks recognized opportunities to create securities based on subprime mortgages. Until then, Fannie Mae and Freddie Mac had been the primary issuers of mortgage-backed securities. By 2004, alert to these opportunities, investment banks and other firms had drawn level with Freddie and Fannie in securitizing home loans.[64] By 2006, they had pulled ahead by a clear margin.[65] Many investment banks ensured their supply of mortgages to securitize by integrating vertically, going so far as to buy the brokers that issued mortgages to retail borrowers.[66] Then, to create a new source of demand for hard-to-sell tranches of their mortgage-backed securities, investment banks devised a new security, the collateralized debt obligation. Collectively, CDOs "became the engine that powered the mortgage supply chain."[67] Investment banks' CDO machine "kept humming through 2006 and into 2007," with investment banks continuing to issue CDOs despite weakening investor demand.[68] Banks then moved into synthetic CDOs, which were even further removed from the underlying mortgages, all the while earning fees for issuing these instruments.[69] Their practices continued shifting and evolving as they sought out new revenue streams.

Banks' shift toward trading and principal investing also reflected this ethos of entrepreneurialism and risk-taking. During the 2000s, they borrowed large sums, increasing their risk levels in order to magnify their returns on their trading and other investment positions.[70] Morgan Stanley's leverage ratio increased sixty-seven percent between 2000 and 2007. For

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[64] *See* FCIC Report, *supra* note 40, at 102.

[65] *Id.* ("By 2005 and 2006, Wall Street was securitizing one-third more loans than Fannie and Freddie . . . .").

[66] *See* Michael Hudson, *How Wall Street Stoked The Mortgage Meltdown; Lehman and Others Transformed the Market For Riskiest Borrowers*, Wall St. J. (June 27, 2007), https://www.wsj.com/articles/SB118288752469648903 (reporting that investment banks sometimes purchased lenders outright, becoming lenders directly to consumers). For instance, in 2006 Merrill Lynch paid $1.3 billion for First Franklin, a large originator of subprime residential mortgages. *See* Karen Ho, Liquidated: An Ethnography of Wall Street 319 (2009); *see also* FCIC Report, *supra* note 40, at 204. Other investment banks followed suit. FCIC Report, *supra* note 40, at 176–77.

[67] FCIC Report, *supra* note 40, at 129.

[68] *Id.* at 188–89.

[69] *See id.* (regarding banks' role in creating synthetic CDOs); *id.* at 117–18 (regarding fees generated by investment banks).

[70] Their greater risk was reflected in the "value at risk" statistic disclosed by many investment banks. *See, e.g.*, *Goldman Sachs: Behind the Brass Plate*, Economist (Apr. 29, 2006), http://www.economist.com/node/6850300; *see also* Andrew Tuch, *Investment Banking: Immediate Challenges and Future Directions*, 20 Com. L.Q. 37, 40 (2006) (describing the risky activities undertaken by investment banks in the lead-up to the Crisis).

every $40 the firm invested, it contributed $1 of its own funds and borrowed the rest.[71] During the same period, Goldman Sachs' leverage ratio increased from 17:1 to 32:1.[72] Perhaps unfairly, Goldman was famously described as "a great vampire squid wrapped around the face of humanity, relentlessly jamming its blood funnel into anything that smells like money."[73] According to anthropologist Karen Ho, investment banks adopted a "presentist strategy of no strategy"—they engaged in "the milking of the present."[74] Another commentator characterized bank activities during this period as "the biggest game of risk ever to play out on Wall Street."[75]

C. Status and Influence

Investment banks were the financial sector's dominant institutions. According to popular narrative, these firms largely financed America's growth[76]; they "became the thread holding together many of the various parts of American industry."[77] Though the Glass-Steagall Act weakened them for a time, by World War II investment bankers were "more powerful than ever, dominating American life as never before."[78] Many were newly among the wealthiest people in the country.[79] As investment banks expanded in the 1970s, evolving into major public companies with international influence, they consolidated their position. Investment bankers were "the elite of

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[71] FCIC Report, *supra* note 40, at 32–33, 65. In sharp contrast, other evidence suggests that leverage levels for three major investment banks were higher in 1998 than in 2006, on the eve of the Crisis. U.S. Gov't Accountability Office, GAO-09-739, Financial Markets Regulation: Financial Crisis Highlights Need to Improve Oversight of Leverage at Financial Institutions and across System 40–41 (2009). For discussion of this conflicting evidence, see Lo, *supra* note 5, at 175–77.

[72] FCIC Report, *supra* note 40, at 65. The FCIC suggests these figures may understate banks' leverage because "[s]everal investment banks artificially lowered [their] leverage ratios . . . ."). *Id.*

[73] Matt Taibbi, *The Great American Bubble Machine*, Rolling Stone (Apr. 5, 2010), http://www.rollingstone.com/politics/news/the-great-american-bubble-machine-20100405. Though made post-Crisis, Taibbi's description most accurately reflects Goldman's pre-Crisis activities, before it faced new Dodd-Frank restrictions.

[74] *See* Ho, *supra* note 66, at 322.

[75] Emily Thornton et al., *Inside Wall Street's Culture of Risk*, Bloomberg Bus. Week (June 12, 2006, 12:00 AM), https://www.bloomberg.com/news/articles/2006-06-11/inside-wall-streets-culture-of-risk.

[76] *See* Ho, *supra* note 66, at 27 ("[Investment banks] financed the very creation of the US corporate system and [had] throughout history been the primary suppliers of fresh capital to maintain and expand it.").

[77] Geisst, *supra* note 31, at 109.

[78] *See id.* at 125. Though this reference is to "bankers," the context makes clear that the author is referring to investment bankers specifically.

[79] *See, e.g.*, *id.* at 281.

Wall Street" and "the richest wage earners in the world."[80] In industry parlance, they were the "masters of the universe."[81]

Major investment banks also recruited the most talented students from the best universities.[82] By the 1980s, they were recruiting from top universities "on a grand scale."[83] The *New York Times* described "a fundamental shift in attitudes among the nation's brightest young people."[84] The most promising graduates increasingly favored investment banking—described as "the job with the most cachet"—over other professions, notably law.[85] The shift was thought to reflect in part, "society's increasing preoccupation with wealth as a measure of achievement."[86] Investment banks came to "naturalize[ ] themselves as the primary destinations for elite graduates."[87] They were still said to be hiring "the most talented graduates" when crisis struck in 2007.[88]

Investment banks also enjoyed vast economic power. Between 2004 and 2007, the combined assets of the country's five major investment banks increased from $2.5 trillion to $4.3 trillion.[89] From 2003 to 2006, their annual profits more than doubled to $43 billion.[90] The aggregate compensation they paid over this period increased from $34 billion to $61 billion.[91] The average annual compensation across Goldman Sachs' entire workforce immediately before the Crisis exceeded $434,000 per employee.[92]

These firms also wielded tremendous influence over corporate America. Because they dominated securities underwriting, they held captive corporate managers who needed access to the country's capital markets.[93]

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[80] MICHAEL C. JENSEN, THE FINANCIERS: THE WORLD OF THE GREAT WALL STREET INVESTMENT BANKING HOUSES 1–2 (1976); *see also* HO, *supra* note 66, at 258 (referring to investment bankers as "arguably the most highly compensated workers in the world[.]").

[81] The phrase is generally attributed to Tom Wolfe. *See generally* TOM WOLFE, THE BONFIRE OF THE VANITIES (1987).

[82] *See Goldman and Junior Bankers: Interview With the Vampire*, FIN. TIMES: LEX (Nov. 6, 2015, 5:47 PM), https://www.ft.com/content/14cd2d68-849a-11e5-8e80-1574112844fd ("Bulge-bracket investment banks have long had their pick of the best students from America's best schools.").

[83] *See* HO, *supra* note 66, at 59–60.

[84] *See* Tamar Lewin, *Leaving the Law for Wall Street: The Faster Track*, N.Y. TIMES MAG. (Aug. 10, 1986), http://www.nytimes.com/1986/08/10/magazine/leaving-the-law-for-wall-street-the-faster-track.html.

[85] *Id.*

[86] *Id.*

[87] HO, *supra* note 66, at 59.

[88] *See Banks? No, Thanks!*, ECONOMIST (Oct. 11, 2014), http://www.economist.com/news/business/21623673-graduates-worlds-leading-business-schools-investment-banking-out-and-consulting.

[89] FCIC REPORT, *supra* note 40, at 150.

[90] *Id.* at 132 (referring to their pretax profits).

[91] *Id.*

[92] *See* Christine Harper, *Goldman Sachs Average Pay Slides 9.5% to $392,617*, OTTAWA CITIZEN (June 14, 2007), https://www.pressreader.com/canada/ottawa-citizen/20070615/282441344670380.

[93] *See* GEISST, *supra* note 31, at 123 ("[M]any clients became captive to their investment bankers.").

Their research analysts also enjoyed sway over corporate managers because analysts' recommendations moved stock prices and thus managerial compensation. Corporate managers relied on investment banks for advice on M&A deals that ensure a corporation's demise or renewal.[94] As architects of these deals, investment banks also had influence over ordinary investors and common workers, who are often affected by major corporate transactions. Investment banks' position at the crossroads of capital markets, with clients spanning the globe, gave them access to sensitive non-public information. They could use this information to benefit or harm clients and counterparties and even to shift market prices. Describing the pre-Crisis environment, Karen Ho explains, "Wall Street achieved dominance over corporate America and global influence."[95] She goes so far as to suggest that market events, such as "merger crazes, Internet bubbles, highly leveraged housing meltdowns, and subprime debacles" were misunderstood as the natural results of market cycles, when they in fact stemmed from "Wall Street financial institutions (investment banks in particular) or the specific and personal experiences of those who work for them."[96]

II. The Decline: Investment Banks and the Financial Crisis of 2007–2009

A. Crisis

The state of affairs shifted suddenly in 2007. As investment banks borrowed more and more in order to securitize mortgages, particularly subprime mortgages, they saddled their balance sheets with risky assets.[97] They became increasingly reliant on two sources of short-term funding: sale and repurchase agreements (or "repos") and commercial paper. Repos allowed investment banks to borrow, typically on an overnight basis, using their securities as collateral. They would sell their securities to counterparties and then unwind that transaction the following morning by repurchasing those securities at the sale price plus interest.[98] Investment banks also issued investors commercial paper, a form of short-term unsecured debt.[99]

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[94] *See* Andrew F. Tuch, *Banker Loyalty in Mergers and Acquisitions*, 94 Tex. L. Rev. 1079, 1093–98 (2016).

[95] Ho, *supra* note 66, at 11.

[96] *Id.* at 10–11.

[97] *See* FCIC Report, *supra* note 40, at 155 ("Many of these risky assets ended up on the balance sheets of systemically important institutions and contributed to their failure or near failure in the Financial Crisis.").

[98] *See* Adam Copeland et al., Fed. Res. Bank of N.Y., Staff Report No. 506, Repo Runs: Evidence from the Tri-Party Repo Market 1–10, 46–28 (2014), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr506.pdf (describing repo transactions); Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, 104 J. Fin. Econ. 425, 426–27, 431 (2012) (same).

[99] *See* FCIC Report, *supra* note 40, at 29–33, 113.

Investment banks adopted a conventional bank-like funding structure in that they used short-term liabilities to fund longer-term assets or to provide longer-term credit. This practice mirrored the mismatch in the maturities of assets and liabilities that conventional banks face by virtue of relying on short-term demand deposits (liabilities) to fund longer-maturity loans (assets).[100] In the absence of deposit insurance, that mismatch makes banks fragile. If depositors were to simultaneously withdraw their funds on a large scale, banks would be unable to liquidate their longer-duration assets quickly enough, producing a liquidity shortfall.[101] Aware of this risk, depositors who hear plausible rumors of a bank's insolvency may rationally withdraw their funds, even though it may be in their collective interest not to do so, for example if the rumors are groundless.[102] A bank run may result, leading an otherwise viable bank to fail.[103]

Investment banks also had weak capital and liquidity positions and poor regulatory oversight and were highly leveraged.[104] In retrospect, these problems were foreseeable, but investment banks pressed on, apparently slow to appreciate the risks they faced.[105]

The flattening and decline of housing prices, beginning in 2006, set in motion a fatal chain of events.[106] The Financial Crisis Inquiry Commission later observed that, because of their high leverage, inadequate capital, and reliance on short-term funding, investment banks were "extraordinarily vulnerable" to a collapse in housing prices.[107] Ratings agencies began downgrading mortgage-related securities, and "[a]larmed investors sent prices

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[100] *See* John Armour et al., Principles of Financial Regulation 440–42 (2016).

[101] This potential illiquidity is a consequence of so-called fractional reserve banking, a system in which a bank keeps a small fraction of its deposits as liquid reserves and converts the balance of its deposits into illiquid assets by making long-term loans.

[102] For an explanation of this collective action problem, see Hockett, *supra* note 6, at 208. For a theoretical exposition of the inherent fragility of banks and their vulnerability, in the absence of deposit insurance, to runs, see Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. Pol. Econ. 401 (1983).

[103] Credible deposit insurance would reduce depositors' incentives to participate in bank runs, but banks' funding structures nevertheless make them institutionally fragile.

[104] *See* FCIC Report, *supra* note 40, at 155 ("The [SEC's] poor oversight of the five largest investment banks failed to restrict their risky activities and did not require them to hold adequate capital and liquidity for their activities, contributing to the failure or need for government bailouts of all five of the supervised investment banks during the financial crisis."). As to banks' high leverage, see *supra* notes 71–72 and accompanying text.

[105] Banks' conduct may be explained in part by the divergence of bankers' interests from those of their firms. *See* Lucian A. Bebchuk & Holger Spamann, *Regulating Bankers' Pay*, 98 Geo. L. J. 247, 255–64 (2010) (discussing the role of compensation in distorting bank executives' risk-taking incentives). Banks' status as "too big to fail"—implicitly guaranteed federal protection because of the perception that regulators would prevent their failure in order to avert systemic harms—might also help explain their conduct. *See* Wilmarth, *supra* note 37, at 300–08 (discussing this factor in the context of universal banking).

[106] Professor Gary Gorton regards these events as beginning with a "shock" to housing prices that occurred in 2007. *See* Gary B. Gorton, Slapped by the Invisible Hand: The Panic of 2007 52 (2010) ("[T]he Panic of 2007 was caused by a shock, in this case, to housing prices. The panic started in August 2007.").

[107] FCIC Report, *supra* note 40, at 230.

[of these securities] plummeting."[108] Because investment banks' balance sheets were significantly exposed to housing-market conditions, such banks suffered major write-downs on the values of the mortgage-backed securities and CDOs they held.[109] As banks' mortgage-related assets lost value, creditors and counterparties withdrew funds en masse. Repo lenders required higher returns and even refused to renew their loans.[110] Prime-brokerage clients fled.[111] Derivatives counterparties reduced their exposure to the increasingly troubled investment banks,[112] draining them of cash.[113] Investment banks were experiencing the equivalent of runs on their funds.[114]

In need of cash, investment banks turned to their short-term funding sources, but repo and commercial-paper markets were drying up. Lenders were concerned about banks' exposure to housing markets and became virtually unwilling to lend. "There was huge fear about the investment banking model at that time," one government official later said.[115] Investment banks had inadequate capital cushions.[116] They faced a liquidity crunch. Their operations were unraveling.

Every major investment bank needed rescuing. In March 2008 Bear Stearns was acquired by J.P. Morgan, a BHC, in a government-assisted rescue transaction.[117] In September Merrill Lynch was acquired by Bank of America, also a BHC, in another government-assisted rescue. The next day, after feverish regulatory efforts failed to find a buyer for Lehman Brothers, the firm declared bankruptcy. The following weekend, Goldman Sachs and Morgan Stanley both successfully applied to the Federal Reserve to become BHCs.[118] In the space of six months, every major investment bank had faced collapse, exposing weaknesses in their business models and provoking unprecedented public financial support. One source estimated losses tied to the failure of investment banks at $1 trillion.[119]

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[108] *Id.* at 213.

[109] *Id.*

[110] *See* Gorton & Metrick, *supra* note 98, at 425–26, 436–48.

[111] *See* Darrell Duffie, *The Failure Mechanics of Dealer Banks*, 24 J. Econ. Persp. 51, 54 (2010).

[112] *See* FCIC Report, *supra* note 40, at 287 (describing the experience of Bear Stearns leading to its failure).

[113] Duffie, *supra* note 111, at 60 (referring to "cash-draining actions by derivatives counterparties").

[114] *See* Gorton, *supra* note 106, at 6 ("The events of 2007 are essentially a repeat of the problem of the 19th-century bank runs, only in 2007 some firms ran on other firms.").

[115] FCIC Report, *supra* note 40, at 291 (quoting former Treasury Secretary Henry Paulson).

[116] *See id.* at 427–29.

[117] *See generally id.* at 233–389 (Part IV of the FCIC Report which details the events leading to the collapse, sale, or conversion of the major U.S. investment banks in 2008).

[118] *See id.* at 363.

[119] Megan Murphy et al., *How Investment Banks Shape Up After the Crisis*, Fin. Times (Dec. 20, 2010), https://www.ft.com/content/d69bacb8-0c58-11e0-8408-00144feabdc0 ("Some $1,000bn in losses and thousands of job cuts later, that [investment banking] model has been exposed as a costly disaster. Along with profits and jobs, the financial crisis wiped out investment banks' faulty strategies.").

B. Regulatory Reform

A vast regulatory response followed, "sounding the death knell for Wall Street's old ways"[120] and making the regulatory burdens of BHCs more onerous. The Dodd-Frank Act, rulemaking under it, and other reforms enabled new limits on BHCs' activities, greater supervision, and heightened capital, leverage, and liquidity requirements. While aspects of these reforms await final rule-making, together they constrained the investment banking activities of BHCs.

1. Activities Restrictions. Provisions of the Dodd-Frank Act referred to as the "Volcker Rule" ban federally insured depository institutions, including BHCs, and their affiliates from proprietary trading and having certain affiliations with hedge and private equity funds, subject to specified exceptions and exclusions.[121] The rules effectively ban BHCs from trading on their own accounts and contributing more than a de minimis amount to their hedge and private equity funds. BHCs may soon face further restrictions on their activities. The Federal Reserve recently recommended that Congress strip BHCs of their authority under the Gramm-Leach-Bliley Act to engage in merchant banking activities, and thus effectively to repeal their well-used powers to make large investments in nonfinancial companies.[122]

2. Capital and Liquidity Standards. Federal regulators, including the Federal Reserve and the Office of the Comptroller of the Currency (OCC), complied with the Dodd-Frank Act by implementing a capital framework based largely on Basel III, the most recent capital framework developed by the Basel Committee on Banking Supervision. This framework imposed risk-based capital requirements on BHCs and their subsidiary banks. Regulators have also implemented a version of liquidity standards adopted by the Basel Committee. Pursuant to these reforms, banks must fund themselves with more equity and relatively less debt, hold higher quality capital, and take less risk.

3. Other Enhanced Prudential Standards. Large BHCs face enhanced prudential standards with respect to capital, leverage, liquidity, and risk management. They are also subject to oversight by FSOC. And large BHCs must meet enhanced disclosure rules per the Dodd-Frank Act.

4. Stress Tests and Capital Planning. Under the Dodd-Frank Act, the Federal Reserve requires large BHCs to conduct supervisory stress tests semi-annually and submit capital plans annually. Stress tests estimate the

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[120] Francesco Guerrera et al., *Finance: A Sparser Future*, Fin. Times (Dec. 19, 2010), https://www.ft.com/content/0c9cf776-0b97-11e0-a313-00144feabdc0.

[121] Dodd-Frank Act § 619, 12 U.S.C. § 1851 (2012).

[122] *See* Bd. of Governors of the Fed. Reserve Sys., Fed. Deposit Ins. Corp. & Off. of the Comptroller of the Currency, Report to the Congress and the Financial Stability Oversight Council Pursuant to Section 620 of the Dodd-Frank Act 28 (2016), https://www.occ.gov/news-issuances/news-releases/2016/nr-ia-2016-107a.pdf. Specifically, the recommendations apply to financial holding companies, as to which see *supra* note 59. The major BHCs are financial holding companies.

losses a BHC would suffer under adverse economic conditions. Capital plans, among other things, explain how a BHC will maintain capital reserves above the required minimum. BHCs cannot make distributions such as paying dividends until they receive a notice of non-objection from the Federal Reserve. The Federal Reserve and OCC have issued rules requiring depository institutions to perform similar annual stress tests.

5. Resolution Plans. As required by the Dodd-Frank Act, large BHCs must submit to the Federal Reserve and Federal Deposit Insurance Corporation an annual plan for their orderly resolution under the Bankruptcy Code if they fail or experience material distress. Insured depository institutions with assets of more than $50 billion must also submit resolution plans under the Federal Deposit Insurance Act. If these plans are not credible, federal regulators may impose more stringent capital, leverage or liquidity requirements on BHCs or restrict their activities. Federal banking regulators have proposed a rule imposing capital surcharges on those BHCs identified as globally systemically important banks intended to address the possibility or perception that large BHCs may be "too big to fail."[123] The Federal Reserve also recently adopted total loss-absorbency requirements for U.S. BHCs considered globally systemically important. The hope is that, should these banks fail, their debts may be resolved without extraordinary government support.[124] One commentator describes these requirements as "among the most potentially significant and impactful [post-Crisis] regulations."[125]

6. Compensation. Finally, the Dodd-Frank Act provided for federal regulators to issue regulations requiring "covered financial institutions," which include many BHCs, to report their incentive-based compensation arrangements and prohibiting any such arrangements that encourage inappropriate risks. BHCs' compensation practices are thus now reviewed by federal regulators, including the Federal Reserve.

C. Post-Reform Landscape

These reforms in combination have crimped the investment banking operations of BHCs, creating space for other market participants to fill. The Basel framework "more than tripled the broad capital reserves that banks must maintain," limiting their leverage and leading them to exit some busi-

[123] *See* Risk-Based Capital Guidelines: Implementation of Capital Requirements for Globally Systemic Important Bank Holding Companies, 81 Fed. Reg. 20579 (proposed Apr. 8, 2016) (to be codified 12 C.F.R. pt. 217), https://www.gpo.gov/fdsys/pkg/FR-2016-04-08/pdf/2016-08015.pdf.

[124] External Long–Term Debt Requirement, External Total Loss–Absorbing Capacity Requirement and Buffer, and Restrictions on Corporate Practices for U.S. Global Systemically Important Banking Organizations, 12 C.F.R. §§ 252.60–.65 (2017).

[125] Sullivan & Cromwell LLP, Loss Absorbency Requirements 1 (2015), https://perma.cc/GV66-TDAY.

nesses.[126] The largest banks collectively have been forced to raise hundreds of billions of dollars in capital since the Crisis,[127] and they will be required to raise still more.[128] Goldman Sachs, for example, has doubled its equity capital under post-Crisis regulations.[129] Firms expect the new capital requirements to increase over time.[130]

The Volcker Rule has "radically reshaped the [banking] industry"[131] by banning what were among the most lucrative activities in which investment banks engaged.[132] At some banks, proprietary trading and affiliating with hedge and private equity funds produced up to 10 percent of profits.[133] The rule was estimated to reduce the annual revenue of one leading investment bank by at least $3.7 billion.[134] Trading revenue at BHCs is expected to remain depressed.[135]

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[126] *See* Guerrera, *supra* note 120 ("The Basel III international agreement on capital standards more than triples the broad capital reserves that banks must maintain, limits leverage and provides strong incentives to move out of certain businesses. In spite of a painfully slow implementation, Basel will have a profound impact on trading businesses.").

[127] *See* Stephanie Armour & Ryan Tracey, *Big Banks to Get Higher Capital Requirement*, WALL ST. J. (Apr. 8, 2014), https://www.wsj.com/articles/SB10001424052702303456104579489643124383708 (citing a Federal Reserve representative for the claim that the 18 largest U.S. banks have raised over $500 million in 'high quality' capital since the Crisis).

[128] *See, e.g.*, John Glover & Ilya Arkhipov, *End of 'Too-Big-to-Fail' Banking Era Endorsed by World Leaders*, BLOOMBERG (Nov. 15, 2015, 7:53 AM) (referring to new loss-absorbency rules that will force the world's largest banks to raise "as much as $1.2 trillion" in capital, in addition to new capital under other post-crisis measures).

[129] *See* Ben McLannahan, *Goldman Sachs: A Play For the 99%*, FIN. TIMES (Aug. 17, 2016), https://www.ft.com/content/5372d3cc-62cc-11e6-a08a-c7ac04ef00aa.

[130] *See, e.g.*, The Goldman Sachs Group, Inc., Annual Report (Form 10-K) 10 (Feb. 23, 2015) ("We expect Group Inc., GS Bank USA, GS&Co., GSI and other regulated subsidiaries to become subject to increased capital requirements over time."); Bank of America Corp., Annual Report (Form 10-K) 4 (Feb. 25, 2015) ("These evolving capital and liquidity rules are likely to . . . require additional capital and liquidity . . . .").

[131] Ben McLannahan, *Old Engine of Wall Street is Sputtering*, FIN. TIMES (Oct. 2, 2015), https://www.ft.com/content/be194ffc-688c-11e5-a57f-21b88f7d973f.

[132] *See* DAVID SKEEL, THE NEW FINANCIAL DEAL: UNDERSTANDING THE DODD-FRANK ACT AND ITS (UNINTENDED) CONSEQUENCES 87 (2010) (when the Volcker Rule was adopted, proprietary trading was "the most lucrative investment banking business . . . .").

[133] *See* Guerrera, *supra* note 120 ("The banks' plight has been deepened by the Dodd-Frank legislation in the US, which bans them from placing trading bets on their own account and limits other 'proprietary investments' in private equity and hedge funds, which in good years have accounted for up to 10 per cent of the profits of banks such as Goldman.").

[134] *See* Lauren Tara LaCapra, *Goldman Lobbying Hard To Weaken Volcker Rule*, REUTERS (May 4 2011), http://www.reuters.com/article/2011/05/04/us-goldman-volcker-idUSTRE7434PZ20110504 ("The [Volcker] rule . . . will cost Goldman at least $3.7 billion in annual revenue, by one [research analyst] estimate. And billions more could be at stake if regulations now being drawn up are extra-tough.").

[135] *See* Nathaniel Popper, *Empty Floor at Goldman Puts Change on Display*, N.Y. TIMES: DEALBOOK (Sept. 21, 2015), https://www.nytimes.com/2015/09/22/business/dealbook/empty-floor-at-goldman-puts-change-on-display.html?_r=0 (referring to industry expectations of lower trading revenues).

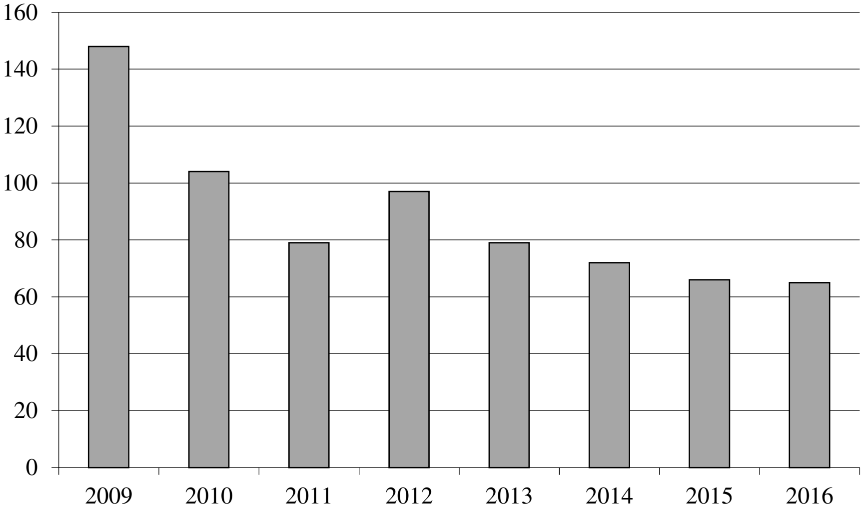

Fig. 2. Revenue ($ billions) from trading fixed income, currencies, and commodities (FICC) for the 12 largest investment banks globally. Source: Coalition Analytics.

Economic indicators reflect the impact of new regulations. As shown in Figure 2, above, revenues from trading fixed income, currencies, and commodities (FICC), a primary driver of investment banking earnings pre-Crisis, have diminished significantly. According to separate data provided by McKinsey & Company, FICC as a proportion of total investment banking revenue fell from 66 percent in 2009 to 46 percent in 2015.[136] Additionally, the expenses that banks incurred in trading FICC have remained steady since the Crisis,[137] suggesting that their profits have also declined significantly over this period. And, in response to new capital requirements, banks have reportedly reduced their lending to small and medium-sized enterprises.[138] According to the *Financial Times*:

> Tough new rules, coupled with tightened regulatory scrutiny and increased mistrust on the part of investors, are driving radical changes in business models and behavior. The masters of the financial universe are scrambling to find new ways of making money against a regulatory and economic backdrop that prevents

[136] McKinsey & Company, Capital Markets and Investment Banking 2016: Time for Tough Choices and Bold Actions 8 (2016), https://perma.cc/ZC2Y-VCRC (the data relates to the largest ten global investment banks).

[137] *See id.* at 43.

[138] *See* Gert Wehinger, *Bank Deleveraging, the Move From Bank to Market-Based Financing, and SME Financing*, OECD J. Fin. Mkt. Trends, No. 1, at 1, 4–6 (2012), http://www.oecd.org/finance/financial-markets/Bank_deleveraging-Wehinger.pdf.

them from placing the high-risk, high-reward bets of years gone by.[139]

In this new environment, the former investment banks have struggled. At Goldman, pay has roughly halved.[140] No longer the free-wheeling bank it once was, Goldman has recently been selling Main Street customers a more conservative product line. The bank's strategy has been attributed to tighter post-Crisis regulation.[141] Other BHCs have responded by "undergo[ing] more radical surgery" than even Goldman, "selling assets worth tens of billions of dollars while shutting entire business units."[142]

The larger BHCs have also shed investment banking jobs. The five largest global banks that disclose figures cut 40,000 such jobs, or about 30 percent of their investment banking workforces, between the end of the Crisis and mid-2015.[143] Even senior bankers, "[f]rustrated by post-crisis regulations," are leaving BHCs, often for less heavily regulated boutique advisory firms.[144] According to one commentator, "[a]fter years of job cuts and reorganisations, most of the world's biggest investment banks do very little investment banking today."[145]

In sum, major standalone investment banks, once the dominant force on Wall Street, no longer exist.[146] Their downfall risked imposing significant third-party harms and prompted massive government intervention. They have been absorbed into BHCs[147]—more heavily regulated institutions that

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[139] Guerrera, *supra* note 120; *see also Goldman Sachs: Entry Level*, FIN. TIMES (July 19, 2016), https://www.ft.com/content/d23728ce-4dce-11e6-8172-e39ecd3b86fc.

[140] *See* McLannahan, *supra* note 129 (comparing compensation data for 2016 and 2006).

[141] *See id.* ("Once-powerful business lines such as fixed-income sales and trading have been struggling with tighter regulation and a shift to electronic platforms . . . . Even Goldman's investing and lending segment . . . has been hemmed in by new restrictions on proprietary trading."). The article also cites other factors explaining the firm's new strategy).

[142] *Id.*

[143] *See* Laura Noonan, *Investment Banking: Titans Retreat*, FIN. TIMES (Aug. 25, 2015), https://www.ft.com/content/c68c681c-4a42-11e5-9b5d-89a026fda5c9 ("Big US banks, facing regulatory pressures and losses of their own, have also curtailed their operations in this sector and since the crisis staff numbers have fallen by 40,000 or almost 30 percent, in the investment banking units of the five global banks that disclose figures.").

[144] Sujeet Indap et al., *Investment Banking: Walking Away From Wall Street*, FIN. TIMES (Sept. 8, 2015), https://www.ft.com/content/d99d271c-5545-11e5-8642-453585f2cfcd ("Frustrated by post-crisis regulations . . . they have decided to give up the relative safety of working at a big bank.").

[145] Noonan, *supra* note 143 ("Of the 10 largest global banks only two—Goldman Sachs and Morgan Stanley—still make most of their revenue from their investment banking operations, compared with six before the global financial crisis.").

[146] *See The End of Wall Street*, *supra* note 2 ("[T]he era of the independent investment bank has ended. Wall Street as we've known it for decades has ceased to exist.").

[147] MELANIE L. FEIN, SECURITIES ACTIVITIES OF BANKS § 2.01 at 2-9–2-10 (4th ed. 2017) ("Most major banking organizations in the United States are controlled by bank holding companies."); *see also* Dafna Avraham et al., *A Structural View of U.S. Bank Holding Companies*, 18 FED. RES. BANK OF N.Y. ECON. POL'Y REV. 65, 65 (2012) ("Large banking organizations in the United States are generally organized according to a bank holding company [BHC] structure.").

face even stricter regulation under post-Crisis reforms.[148] Smaller independent investment banks survived the Crisis but they are relative minnows on Wall Street.[149] BHCs have been hit by reforms, quashing the investment banking ethos of entrepreneurialism, innovation, and risk-taking. These BHCs have retreated in many areas, leaving space for other market participants to fill.

III. The Contenders: Private Equity Firms

Major private equity firms have stepped into this space. Since the Crisis, they have transformed from businesses focused primarily on buyouts into major diversified financial institutions. They broadly mirror the former investment banks in their range of activities; ethos of entrepreneurialism, innovation and risk-taking; role as shadow banks; and status as Wall Street's dominant market participants.

A. Pre-Crisis

Private equity firms take their name from their traditional focus on private equity deals or buyouts. Firms raised capital from sophisticated investors with which they acquire, monitor, and restructure businesses, with the goal of selling them.[150] Major private equity firms include The Blackstone Group, KKR & Co., Apollo Global Management, and The Carlyle Group. Although these firms engaged in other activities before the Financial Crisis, their focus was private equity investing.[151]

Private equity firms act as advisors to and investors in "funds," which are distinct legal entities that acquire assets using cash contributed by institutional investors. The funds are regarded as private because they are exempt from registration under the Investment Company Act of 1940.[152] Funds are typically organized for a fixed period of around ten years, during which time they are to acquire and improve the financial condition of businesses that are eventually sold, generating returns for the private equity investors.[153] For this

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[148] The Dodd-Frank Act includes a "Hotel California" rule designed to prevent major BHCs that received federal financial assistance during the Crisis from avoiding the heightened regulatory requirements imposed on BHCs by "de-banking." *See* Dodd-Frank Act § 117, 12 U.S.C. § 5327 (2012).

[149] The largest is Lazard, a firm specializing in M&A advice and asset management.

[150] For a fuller description, *see* Cheffins & Armour, *supra* note 7, at 8–12; *see also* Josh Lerner et al., Venture Capital and Private Equity: A Casebook 1–5 (3d ed. 2004).

[151] *See* Eileen Appelbaum & Rosemary Batt, Private Equity at Work: When Wall Street Managers Main Street 121 (2014) (explaining that some firms engaged in activities other than private equity investing in the early 2000s, but that "[t]oday, many PE firms—especially the top-tier players—are reinventing themselves as multi-platform alternative investment companies").

[152] *See supra* note 13 and accompanying text.

[153] *See* KKR & Co. L.P., Annual Report (Form 10-K) 11–14 (Feb. 26, 2016).

service, private equity firms are remunerated with a management fee and a share of profits.

Private equity funds' acquisitions are typically highly leveraged. Funds commit only a relatively small percentage of the purchase price and borrow the balance. The loans are secured not against a fund's assets or those of its private equity advisor (the firm) but rather against the assets of the target company (also known as a portfolio company of the private equity firm and its fund).[154]

Buyouts were a prominent feature of the mergers boom in the 1980s.[155] They were larger and more frequent in the years immediately preceding the Financial Crisis. Taking advantage of cheap and plentiful loans,[156] and sometimes "clubbing together" with other funds to make joint acquisitions, private equity funds made major acquisitions. In 2006 and 2007, for example, many of their major acquisitions were valued in the tens of billions of dollars.[157]

B. Crisis

When the credit markets froze in April 2007, cheap and plentiful funds were no longer available, significantly dampening private equity operations. Unlike investment banks, however, private equity firms did not rely on short-term funding sources, but rather on capital routinely committed for periods of ten years.[158] They received management fees throughout this period. Moreover, though portfolio companies were highly leveraged and experienced economic stress, their loans were secured against the portfolio companies' assets, putting those companies—rather than the private funds or

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[154] *See* David P. Stowell, Investment Banks, Hedge Funds, and Private Equity 393 (2nd ed. 2013) (describing the structure of private equity funds); Letter from Private Equity Growth Capital Council & European Private Equity and Venture Capital Association to Secretariat of the Financial Stability Board Re: "Proposed Assessment Methodologies for Identifying Non-Bank Non-Insurer Global Systemically Important Financial Institutions" (May 29, 2015) [hereinafter Letter from PEGCC], http://www.financialstabilityboard.org/wp-content/uploads/Private-Equity-Growth-Capital-Council-PEGCC-and-European-Private-Equity-and-Venture-Capital-Association-EVCA.pdf ("[P]rivate equity funds generally have limited or no borrowing at the fund level.").

[155] *See, e.g.*, 3 Markham, *supra* note 40, at 113 ("Another feature of the merger mania in the 1980s was the 'leveraged buyout' . . . [a]lmost 2,400 leveraged buyouts were conducted in the 1980s.").

[156] *See* Henny Sender, *Questions the Private Equity Titans Must Now Answer*, Fin. Times (Oct. 25, 2008, 3:00 AM), http://www.ft.com/cms/s/0/5620be34-a22e-11dd-a32f-000077b07658.html?ft_site=falcon&desktop=true#axzz4chK6OesB (referring to private equity firms as "big beneficiaries of the quantities of cheap debt that were on offer until 18 months ago").

[157] *See Clear Channel Accepts $18.7 Billion Takeover Bid*, N.Y. Times: DealBook (Nov. 16, 2006, 3:16PM), https://dealbook.nytimes.com/2006/11/16/clear-channel-accepts-185-billion-takeover-bid/; *The Top 10 Buyouts*, N.Y. Times: DealBook (Feb. 26, 2007, 10:06 AM), https://dealbook.nytimes.com/2007/02/26/the-top-10-buyouts/?_r=0.

[158] *See* Sender, *supra* note 156 (explaining the nature of private equity funds' funding sources).

the private equity firms themselves—at risk of default.[159] Private equity firms' investments in portfolio companies lost value, with some of those companies experiencing financial distress and insolvency during and after the Crisis.[160] But no major private equity firm became insolvent during the Crisis, although funds did record losses.[161]

Many private equity firms responded entrepreneurially to the deteriorating financial condition of their portfolio companies. The firms bought debt issued by portfolio companies, often at heavily discounted prices reflecting the financial difficulties of those companies. When prices eventually rebounded, the private equity firms would benefit.[162] The firm Apollo, for example, was able to use this strategy to offset declines in its investments.[163]

C. Post-Crisis Transformation

In the wake of the Crisis, private equity firms have significantly expanded and diversified their activities, in a manner reminiscent of the pre-Crisis expansion and diversification of investment banks described above.[164] Private equity firms have grown their asset-management activities by operating hedge and property funds.[165] In doing so, they have engaged in significantly more trading and investing. They have expanded their credit funds, in the process both increasing their trading activities and becoming major lenders, especially to small- and medium-sized businesses. Most notably, many

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[159] *See supra* note 154.

[160] *See* Appelbaum & Batt, *supra* note 151, at 97–98.

[161] Stowell, *supra* note 154, at 413. These losses, though similar to those of hedge funds, were significantly lower than those of U.S. stock market indices. *Id.*

[162] *See* Sender, *supra* note 156 ("Private equity firms including Apollo, Blackstone, KKR and TPG spent tens of billions of dollars buying up the debt of their own and each other's deals at substantial discounts all the way down."). For a description of this investment strategy and study of the conflicts of interest it creates, see William A. Birdthistle & M. Todd Henderson, *One Hat Too Many? Investment Desegregation in Private Equity*, 76 U. Chi. L. Rev. 45 (2009).

[163] Henny Sender, *Private Equity: Uncertain Prospects*, Fin. Times (Apr. 17, 2014), https://www.ft.com/content/c1350dbc-6917-11e0-9040-00144feab49a ("Apollo, written off by many competitors in 2008 because it had bought aggressively into hard-hit sectors such as property, did such a good job the following year buying the debt of its own deals and those of its rivals at bargain prices on the open market that its funds were among the best performing in 2009 and 2010.").

[164] *See supra* Part I.A; *see also* David Carey & John E. Morris, King of Capital: The Remarkable Rise, Fall, and Rise Again of Steve Schwarzman and Blackstone 327 (2010) (quoting David Rubenstein, the cofounder of The Carlyle Group, in 2008 as saying, "All of these large buyout firms are now in the process of transforming themselves from being just private equity firms into alternative investment management firms"); Helen Thomas, *Carlyle Buys 55% in Credit Investor Claren Road*, Fin. Times (Dec. 6, 2010), https://www.ft.com/content/2122b882-0162-11e0-8392-00144feab49a (a commentator says, "Many of the world's biggest private equity groups are diversifying geographically and pushing into different asset classes as they seek to enlarge the range of products they can offer investors.").

[165] *See* Madison Marriage, *Private Equity Powers Surge in Fund Industry Dealmaking*, Fin. Times (Nov. 3, 2013), https://www.ft.com/content/dfb912e2-3cbe-11e3-86ef-00144feab7de ("Private equity firms are also keen to diversify their business models by acquiring expertise in alternative asset classes" according to one commentator).

private equity firms have formed broker-dealer subsidiaries, allowing them to undertake securities activities. These include the traditional investment banking tasks of advising on M&A deals and underwriting securities issues.[166] According to one commentator, "[o]ne opportunity spotted by the biggest private equity groups is to diversify into activities being vacated by investment banks under pressure from regulators, such as proprietary trading, hedge funds, and mezzanine lending."[167] Many private equity firms now generate a majority share of their earnings and revenues from these non-private equity fund activities.[168]

In light of these shifts, private equity firms increasingly refer to themselves as "alternative asset managers," a term that reflects their broad-based asset-management operations and their primary role as managers of pooled capital. However, this label overlooks their broker-dealer operations, which are not managed funds. This Article therefore uses their traditional label—private equity firms—which at least suggests firms' active involvement as dealmakers, rather than simply as managers.[169]

The parallels with the major investment banks go further than their mix of activities. Many private equity firms have abandoned their partnership status and, for the first time, gone public.[170] Like the former investment banks, they remain outside the BHC regulatory net and thus avoid the capital and liquidity requirements, activities restrictions, and other compliance burdens imposed on BHCs. As private equity firms have diversified their operations, they have also become acknowledged players in the shadow banking system.[171] The speed with which private equity firms are transforming and seizing financial opportunities is reminiscent of the investment banking "strategy of no strategy."[172] One commentator says, "Blackstone remind[s] me of Goldman Sachs in the 1990s—every time you see a new business that is growing, that is where they are."[173]

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[166] *See* Thomas, *supra* note 164 (referring to the largest private equity firms "broad[ening] their businesses into capital markets, advisory work and trading").

[167] *Private Equity Groups Diversify: Sector Turns to Investment Banking Pursuits*, FIN. TIMES (Dec. 20, 2010), https://www.ft.com/content/aa371bae-0c61-11e0-8408-00144feabdc0.

[168] *See, e.g.*, Blackstone Group L.P., Annual Report (Form 10-K) 110–26 (Feb 24, 2017); *infra* notes 203–205 and accompanying text.

[169] Private equity firms are also known as buyout firms or financial sponsors, labels that also emphasize their traditional focus on private equity investing. *See* STOWELL, *supra* note 154, at 315.

[170] *See* Thomas, *supra* note 164 (referring to the "trend" of private equity firms publicly listing their securities on exchanges). Seven private equity firms are publicly listed. *See* Ben Protess et al., *How Private Equity Firms Found Power and Profit in State Capitols*, N.Y. TIMES: DEALBOOK (July 14, 2016), https://www.nytimes.com/2016/07/15/business/dealbook/private-equity-influence-fortress-investment-group.html.

[171] *See infra* notes 190–198 and accompanying text.

[172] *See supra* note 74 and accompanying text.

[173] *See, e.g.*, Landon Thomas, *Blackstone's Deal With G.E. Highlights Its Real Estate Holdings*, N.Y. TIMES: DEALBOOK (Apr. 12, 2015), https://www.nytimes.com/2015 /04/13/business/dealbook/blackstones-deal-with-ge-highlights-its-real-estate-holdings.html.

As Figure 3 suggests, since the Financial Crisis private equity firms have ventured into areas that investment banks and BHCs vacated or deemphasized. These include hedge funds, property funds, and credit funds, as well as broker-dealer activities.

Securities

Investment Banking

- M&A advice (limited)
- Securities underwriting

Sales and Trading

- Brokerage (limited)
- Dealing (limited)
- Proprietary trading and investing (limited)

Asset Management

Asset Management

- Hedge funds
- Private equity funds
- Venture capital funds
- Property funds
- Credit funds
- Infrastructure funds

Fig. 3. Range of activities in which private equity firms now typically engage.[174]

1. Hedge Funds. Private equity firms have expanded their hedge fund businesses, described as "the next frontier for the world's largest private equity firms as they seek to become fully fledged alternative asset managers."[175] They are therefore engaging in more trading than they had as dedicated private equity firms. For example, in 2010, when Goldman Sachs was divesting its proprietary trading operations in anticipation of the Volcker Rule, KKR hired a team of the bank's US-based proprietary traders "to set up its own in-house hedge fund."[176] More recently, KKR bought a stake in Marshall Wace, a hedge fund managing $22 billion in assets, "in a bid to bulk up its presence in hedge funds."[177] Other major private equity firms have taken a similar path by either starting their own hedge funds or buying stakes in outside funds.[178] In 2010, Blackstone managed $28.5 billion of

[174] This table describes financial activities; it does not represent a group structure chart. In particular, it does not distinguish between activities of subsidiaries and of funds.

[175] *See* Miles Johnson & Joseph Cotterill, *KKR Buys Stake in Hedge Fund Marshall Wace*, Fin. Times (Sept. 9, 2015), https://www.ft.com/content/9fc74b74-56e1-11e5-9846-de406ccb37f2 (reporting KKR's acquisition).

[176] *Private Equity Groups Diversify*, *supra* note 167.

[177] *See* Johnson & Cotterill, *supra* note 175 (reporting KKR's acquisition).

[178] *See, e.g.*, Alexandra Stevenson, *Carlyle Finds Hedge Funds Hazardous as Its Private Equity Business Dominates*, N.Y. Times: DealBook (Aug. 27, 2015), https://www.nytimes

hedge funds assets.[179] By 2014, its hedge fund assets had more than doubled, and they continue to increase.[180]

2. Property Funds. Private equity firms have also made large investments in property. Recently, Blackstone acquired GE's real estate assets, cementing its position as America's largest private-sector owner of property.[181] It has also spent billions of dollars buying over 50,000 rental homes, including over 30,000 single-family homes, to rent and resell if prices improve.[182] Reflecting this growing emphasis on property, 50 percent of Blackstone's core profits over the past two years have come from its property operations.[183] Private equity firms have also increased their exposure to European property. According to the *Financial Times* in 2013, private equity groups have "stepped up their investment in European property to the highest levels since 2007 as fund managers race to disburse vast cash piles built up over the past two years."[184]

3. Credit Funds. Private equity firms have also created funds that invest in and trade debt instruments. They also originate debt instruments by lending directly to borrowers. Consider their investing and trading functions first. In 2008 Blackstone diversified into debt investing[185] when it bought credit hedge fund GSO for $930 million.[186] Other private equity firms, including Bain Capital, TPG, and Apollo Global Management, also established debt-trading businesses.[187] In August 2011 Apollo, Blackstone, and TPG purchased around $8 billion in loans to finance acquisitions by private equity firms from the Royal Bank of Scotland.[188] In October 2013 KKR announced that it would buy a credit investment fund with $8 billion in assets under management.[189]

.com/2015/08/28/business/carlyle-finds-hedge-funds-hazardous.html (referring to private equity firms taking "major stakes" in hedge funds).

[179] *Private Equity Groups Diversify*, *supra* note 167.

[180] *See* Blackstone Group L.P., Annual Report (Form 10-K) 9 (Feb. 27, 2015) (showing the firm managed $63.6 billion in hedge funds assets in 2014). This figure increased to $69.1 billion in 2015 and $71.1 billion in 2016. *See* Blackstone Group L.P., Annual Report (Form 10-K) 96 (Feb 24, 2017).

[181] *See* Thomas, *supra* note 173 (referring to Blackstone as "the largest private sector landlord in the Unites States").

[182] *See* Craig Karmin, *Blackstone to Buy Stakes in Apartment Complexes From GE Unit*, Wall St. J. (Aug. 12, 2013, 7:51 PM), https://www.wsj.com/articles/SB1000142412788732476970457900907151772942O; Thomas, *supra* note 181 (referring to Blackstone buying "50,000 rental homes across the Unites States").

[183] *See* Thomas, *supra* note 173.

[184] Ed Hammond, *Funds Seize Chance to Move Into Property*, Fin. Times (July 28, 2013), https://www.ft.com/content/88cecac2-f780-11e2-a618-00144feabdc0.

[185] *See Private Equity Groups Diversify*, *supra* note 167.

[186] *See* Justin Baer, *KKR Snaps Up Nine US Goldman Traders*, Fin. Times (Oct. 21, 2010), http://www.ft.com/content/eb4e1478-dd2a-11df-9236-00144feabdc0.

[187] *See Private Equity Groups Diversify*, *supra* note 167.

[188] Henny Sender, *Private Equity Shows New Colours by Taking Up $8bn in RBS Loans*, Fin. Times (Aug. 11, 2008), http://www.ft.com/cms/s/0/d15ff68e-673a-11dd-808f-0000779fd18c.html?ft_site=falcon&desktop=true#axzz4Z50VmFA6.

[189] *See* Marriage, *supra* note 165.

Private equity firms have also emerged as buyers of troubled mortgages held by banks and federal agencies.[190] These firms have profited from such mortgages by securitizing them—bundling them into bonds, which they sell to institutional investors.[191] Private equity firms are thus engaging in the same activities that investment banks did in the lead-up to the Crisis and are now said to be avoiding.[192]

Private equity firms have become important lenders since the Crisis. As banks have significantly cut down on lending, especially to small and medium-sized businesses, private equity firms have sought to fill the lending gap.[193] For example, in 2010, "as banks began to pull back from certain lending practices after the financial crisis hit," Carlyle formed a global market-strategies division to create and buy debt instruments including mezzanine debt and collateralized loan obligations.[194] The move was regarded as "part of a broader push, ahead of [Carlyle's] public offering in 2012, to diversify and branch out from its core buyout business."[195] Fortress Investment Group, another major private equity firm, controls the country's largest non-bank collector of mortgage payments and is a significant provider of subprime loans.[196] So great is the volume of nonbank loans made in the United States and other Western economies that "the 'non-bankers' who provide [them] now matter as much as the bankers," according to one commentator.[197] Another writes:

> "There is a fundamental change underway in [how alternative] asset managers see themselves [in relation to] companies and borrowers. Companies are now borrowing from Blackstone instead of [the bank] HSBC. It's a redefinition of the role of asset managers and banks."[198]

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[190] *See* Matthew Goldstein, *As Banks Retreat, Private Equity Rushes to Buy Troubled Home Mortgages*, N.Y. Times: DealBook (Sept. 28, 2015), http://www.nytimes.com/ 2015/ 09/29/business/dealbook/as-banks-retreat-private-equity-rushes-to-buy-troubled-home-mortgages.html?_r=0.

[191] *See id.* (describing the securitization of mortgages).

[192] *See id.* ("As the housing market nationwide recovers, this is a dark corner from which banks, stung by hefty penalties for bungling mortgage modifications and foreclosures, have retreated").

[193] *See* Hammond, *supra* note 184 (explaining that private equity firms have been lending "aggressively . . . as a way of increasing exposure to the [property] sector").

[194] *See* Stevenson, *supra* note 178.

[195] *Id.*

[196] *See* Protess, *supra* note 170 ("[Fortress] controls the nation's largest nonbank collector of mortgage payments . . . [and is] a huge provider of subprime loans . . . .").

[197] Gillian Tett, *The Real Titans of Finance Are No Longer in the Banks*, Fin. Times (Feb. 13, 2014), https://www.ft.com/content/28a6bcb0-93e6-11e3-a0e1-00144feab7de.

[198] Madison Marriage, *More Asset Managers Become Shadow Banks*, Fin. Times (June 21, 2015), https://www.ft.com/content/1ba49682-1666-11e5-b07f-00144feabdc0; *see also* Mathew Goldstein et al., *How Housing's New Players Spiraled Into Banks' Old Mistakes*, N.Y. Times: DealBook (June 26, 2016), https://www.nytimes.com/2016/06/27/business/ dealbook/ private-equity-housing-missteps.html (referring to the involvement of private equity in mortgage lending as "one of the most consequential transformations of the post-crisis American financial landscape").

Post-Crisis growth of fund activities at several of the major private equity firms is shown in Figure 4, below. Total funds (or assets) under management of several of the major private equity firms are shown below relative to those of Lehman Brothers and Bear Stearns, the weakest of the former investment banks.

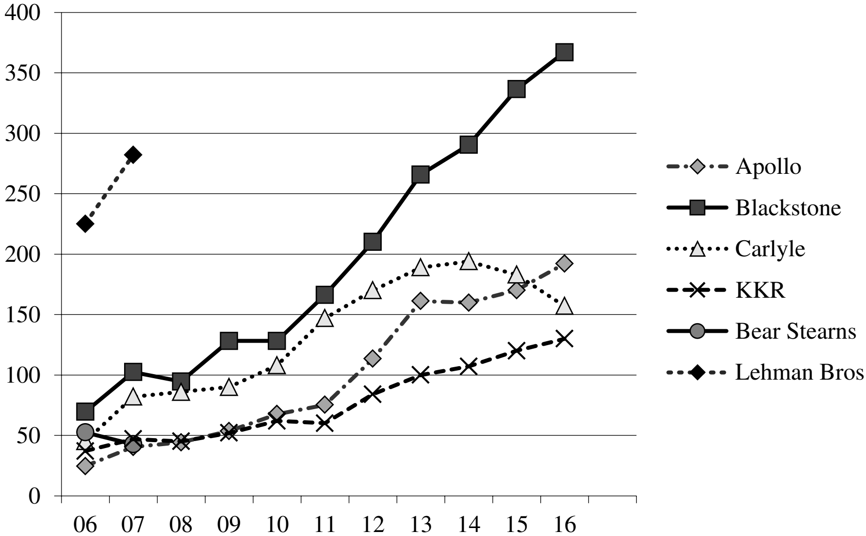

Fig. 4. Assets under management (in $ billions), 2006-16. Source: firms' SEC filings.

4. Securities (or Broker-Dealer) Activities. Large private equity firms have registered under the Securities Exchange Act as broker-dealers,[199] allowing them to venture into traditional investment banking territory, including M&A advisory and capital-markets work.[200] As BHCs retreated from investment banking, "private equity firms [pushed] further onto what had

[199] The Securities Exchange Act requires brokers or dealers that effect transactions in securities or induce or attempt to induce the purchase or sale of securities to register with the SEC. *See* Securities Exchange Act of 1934 § 15(a), 15 U.S.C. § 78o(a)(1) (2012). For definitions of broker and dealer, see *id.* § 3(a)(4)(A)–(5)(A), 15 U.S.C. § 78c(a)(4)(A)–(5)(A) (2012), respectively. While many firms have registered as broker-dealers, others controversially perform broker-dealer activities without registering. *See* Gretchen Morgenson, *Private Equity's Free Pass*, N.Y. Times (July 26, 2014), https://www.nytimes.com/2014/07/27/business/private-equitys-free-pass.html ("But while private equity firms often operate like Goldman and Morgan Stanley, they are not uniformly subject to the same broker-dealer regulatory regime.").

[200] *See* Miles Weiss, *Black's Apollo Strengthens Drexel Ties in Push Into Brokerages*, Bloomberg (Apr. 12, 2011), http://www.bloomberg.com/news/articles/2011-04-12/leon-black-s-apollo-starts-broker-dealer-with-drexel-tie-to-recapture-fees (discussing the decisions of major private equity firms, including Apollo, Blackstone, KKR, and TPG, to obtain broker-dealer licenses). In 2015 Blackstone spun off its financial advisory, fund-placement, and related businesses but retained a broker-dealer subsidiary. *See* The Blackstone Group L.P., Annual Report (Form 10-K) 17, 26 (Feb. 26, 2016).

been the banks' exclusive territory."[201] For example, in 2010, KKR was seen as "challeng[ing] the likes of Goldman . . . in capital markets advisory work."[202] In 2013 Blackstone followed its rivals Apollo and KKR by securing a securities underwriting license to expand its capital-markets operations.[203] According to the *Financial Times*, the license marked "the latest stage in the transformation of the listed private equity groups as they become more broadly based alternative asset managers."[204]

All of these developments have radically altered private equity firms. For example, credit now constitutes one-quarter of Blackstone's and KKR's portfolios. It is said that "they are shifting focus" by extending more credit than in the past.[205] Meanwhile, Apollo's private equity activities constitute less than one-quarter of its assets under management.[206] Since the onset of the Crisis, though, its investments in credit products have "exploded,"[207] from \$10.1 billion in 2007[208] to \$136.6 billion in 2016.[209] Figure 5 shows the dramatic extent to which the firm has shifted focus from private equity funds.

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[201] *See* Carey & Morris, *supra* note 164, at 327.

[202] *See Private Equity Groups Diversify*, *supra* note 167 ("Other areas where KKR has started to challenge the likes of Goldman are in capital markets advisory work and mezzanine debt lending.").

[203] *See* Henny Sender, *Blackstone Secures Securities Underwriting License*, Fin. Times (Feb. 3, 2013), https://www.ft.com/content/a060bbe8-6b01-11e2-8017-00144feab49a (observing "[p]rivate equity group follows rivals into investment banking territory").

[204] *Id.*

[205] *Id.* Further illustrating the trend, the value of Blackstone's private equity assets under management (\$100.2 billion) is rivaled by that of its credit assets under management (\$93.3 billion) and exceeded by the value of its real estate assets under management (\$102 billion). *See* Blackstone Group L.P., Annual Report (Form 10-K) 96 (Feb. 24, 2017). Blackstone's private equity funds under management (valued at \$100.2 billion) represent approximately 27 percent of its total funds under management, valued at \$366.6 billion. *See id.*

[206] *See* Apollo Glob. Mgmt., LLC, Annual Report (Form 10-K) 9 (Feb. 13, 2017).

[207] *See* Tett, *supra* note 197.

[208] *See* Apollo Glob. Mgmt., LLC, Registration Statement (Form S-1) 3 (April 8, 2008).

[209] *See* Apollo Glob. Mgmt., LLC, Annual Report (Form 10-K) 9 (Feb. 13, 2017).

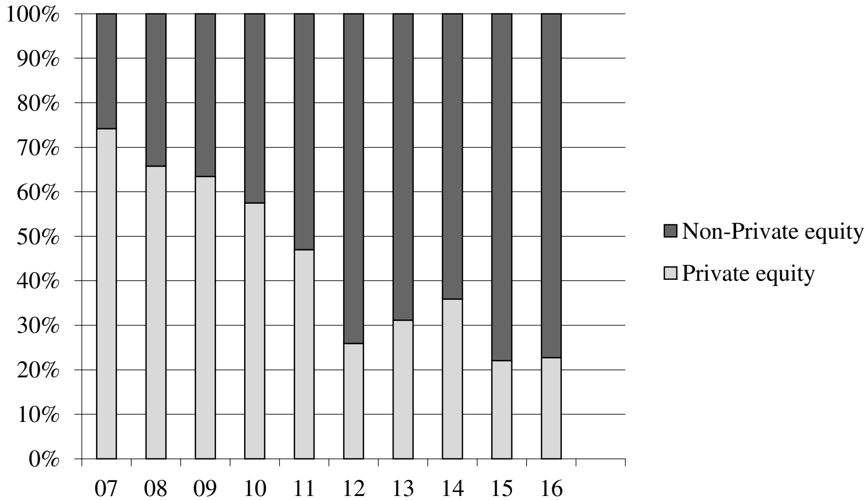

Fig. 5. Composition of Apollo Global Management's assets under management, 2007-16. Source: firm SEC filings

This transformation of the financial services industry is ongoing. Regulations continue to crimp the activities of BHCs. Cash-rich institutional and other investors, in the United States and abroad, are seeking relatively safe and liquid investments on a scale that traditional banks have been unable to meet.[210] Public investors continue to focus on returns, creating incentives for private equity firms to pursue lucrative new opportunities. The plentiful supply of cheap credit that fueled firms' private equity operations is no longer available,[211] leading them to raise funds to invest in other areas. As they seek returns, they have incentives to take more risk. The *Financial Times* recently captured their position, observing that a "wave of challenges from regulators, investors, competitors and indeed mortality is forcing the biggest buyout firms to diversify into new businesses and new markets and take on more risk."[212]

D. Status and Influence

Today private equity firms are frequently involved in the largest-scale corporate transactions, raising their profiles like never before. In 2015, when

[210] *See* Judge, *supra* note 3, at 21 (referring to the shadow banking system generally, rather than to private equity firms in particular, and observing that "there are indicia that the system has grown in part to satisfy demands [for money claims] that the banking system cannot address.").

[211] *See* Apollo Glob. Mgmt., LLC, Annual Report (Form 10-K) 46 (Feb. 13, 2017) (explaining that banks have been less willing and able to lend to highly leveraged companies since the Financial Crisis, most recently as a result of regulatory limits).

[212] Sender, *supra* note 163.

Blackstone acquired a significant stake of General Electric's real estate holdings, the *New York Times* said the transaction "signifies how the real power on Wall Street has shifted since the financial crisis from risk-averse investment banks to asset managers."[213]

In a major reversal for investment banks, private equity firms now offer the most prized jobs in finance.[214] As the *Times* noted in 2014, "[a] battle . . . raging on Wall Street as never before, with powerful factions scrambling for control of a precious resource."[215] It explained:

> On the one side are the giant investment banks, with names like Morgan Stanley and Goldman Sachs. Lined up against them, but also warring among themselves, are the giants of private equity—Kohlberg Kravis Roberts, Apollo Global Management and the Blackstone Group, to name just three . . . . The prize they are fighting for is young talent.[216]

According to the *Times*, private equity firms are "seen by many young strivers as the next rung on the elite career ladder, promising higher status and more pay[.]"[217] More seasoned professionals also prefer jobs in private equity to other areas of finance.[218]

Banks have responded with innovative strategies to lure and retain employees. Some "now pitch themselves to prospective hires as gateways to an eventual private-equity job."[219] But they have been burdened by negative publicity.[220] "Banker bashing" has become *de rigueur*.[221] Regulation has

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[213] *See* Thomas, *supra* note 173.

[214] *The Barbarian Establishment*, ECONOMIST (Oct. 22, 2016), http://www.economist.com/news/briefing/21709007-private-equity-has-prospered-while-almost-every-other-approach-business-has-stumbled ("Private equity's vitality has seen it replace investment banking as the most sought-after job in finance."). Even before the Crisis, some regarded private equity firms as being at the "centre of the capitalist action." *See, e.g.*, *The New Kings of Capitalism*, ECONOMIST (Nov. 25, 2004), http://www.economist.com/node/3398496.

[215] William Alden, *A Mad Scramble for Young Bankers: Wall Street Banks and Private Equity Firms Compete for Young Talent*, N.Y. TIMES (July 5, 2014), https://www.nytimes.com/2014/07/06/business/wall-street-banks-and-private-equity-firms-compete-for-young-talent.html; *see also Goldman and Junior Bankers: Interview with the Vampire*, *supra* note 82 (referring to the "brain drain" from investment banks to private equity firms and other employers).

[216] Alden, *supra* note 215.

[217] *Id.*; *see also Banks? No, Thanks!*, *supra* note 88 ("[S]tudents see [investment banks] as 'a stepping stone into private equity or a hedge fund.'").

[218] *See The Barbarian Establishment*, *supra* note 214.

[219] *Id.*

[220] Alden, *supra* note 215; *see also* William Alden & Sydney Ember, *Wall Street Banks Dig Deeper to Keep Best and Brightest*, N.Y. TIMES: DEALBOOK (Aug. 21, 2014 08:15 PM), https://dealbook.nytimes.com/2014/08/21/wall-street-banks-dig-deeper-to-keep-best-and-brightest/ ("[T]he top banks, after decades of easily attracting the best and brightest from Ivy League campuses, are now worried about losing their favored status. . . .").

[221] *See, e.g.*, Martin Arnold, *Q&A: Vickers Opens Fire on BoE*, FIN. TIMES (Feb. 16, 2016), https://www.ft.com/content/d5cfbf64-d4d4-11e5-8887-98e7feb46f27 (referring to the "era of 'banker bashing'"); Patrick Jenkins, *Analysis: FCA Must Now Look at its Governance*, FIN. TIMES (Jan. 26, 2016), https://www.ft.com/content/5630ef64-c456-11e5-808f-8231cd71622e (referring to the "politically popular practice of banker-bashing" after the Crisis); Gillian

stunted their profits, reducing the bonuses they can pay.[222] Even their chiefs earn significantly less than their private equity counterparts.[223] They continue "fighting an uphill battle to stem the flow of their younger talent" to industries such as private equity "seen as more lucrative or fulfilling."[224] According to one study, graduates of leading business schools are forty percent less likely to go into investment banking than in 2008.[225]

Thus, as investment banks have faltered and private equity firms attracted top talent, personnel have left the former for the latter. According to the Capital IQ database, which tracks employment backgrounds of financial professionals, 18 percent of Blackstone's current professionals previously worked at Goldman Sachs, Morgan Stanley, or their affiliates. At KKR, the figure is 28 percent.[226] In stark contrast, at Goldman Sachs and Morgan Stanley, less than 1 percent of current professionals previously worked at Blackstone, KKR or their affiliates.[227]

Finally, private equity firms have arguably displaced investment banks in terms of economic and political clout. Since the Crisis, the funds private equity firms manage have swelled more than four-fold, to a combined total

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Tett, *Prepare for Fireworks from America's Populist Left*, FIN. TIMES (June 25, 2015), https://www.ft.com/content/bc2fbca2-1a86-11e5-8201-cbdb03d71480 (referring to "populist" criticism of "Wall Street Bankers" and suggesting it is increasingly focusing on wealth inequality).

[222] *See Banks? No, Thanks!*, *supra* note 88 (providing data for MBA graduates of Harvard Business School and stating that "regulation has stunted bankers' bonuses").

[223] *See, e.g.*, Ryan Dezember & Matt Jarzemsky, *Blackstone's Stephen Schwarzman Sees Windfall*, WALL ST. J. (Feb. 26, 2016, 10:11 PM), https://www.wsj.com/ articles/blackstones-stephen-schwarzman-sees-windfall-1456530727 (describing remuneration of chief executives and founders of major private equity firms, including Blackstone, whose CEO took home $799.2 million in 2015, up from $689.3 million in 2014. These amounts included dividends and fund payouts); Christina Rexrode & Peter Rudegeair, *Bank of America CEO Brian Moynihan Gets $3 Million Pay Raise*, WALL ST. J. (Feb. 12, 2016 6:10 PM), https://www.wsj.com/articles/bank-of-america-ceo-brian-moynihan-gets-3-million-pay-raise-1455316217 (describing pay earned by chief executives of BHCs, including Goldman Sachs, whose CEO's pay package fell 4 percent in 2015, to $23 million).

[224] *See* Laura Noonan, *Goldman Sachs to Drop On-Campus Interviews*, FIN. TIMES (June 23, 2016), https://www.ft.com/content/5183ff92-3945-11e6-a780-b48ed7b6126f (referencing hedge funds and technology in addition to private equity as industries with more lucrative or fulfilling positions than investment banks).

[225] Laura Noonan & Ben McLannahan, *Beyond Banking: Popularity of Industry Plummets Among MBAs*, FIN. TIMES (Nov. 11, 2015), https://www.ft.com/ content/51e2d8ec-78d8-11e5-933d-efcdc3c11c89 ("Graduates from the world's top 10 business schools are 40 per cent less likely to choose a career in banking than they were [in 2008]."); *see also Banks? No, Thanks!*, *supra* note 88 (providing data for MBA graduates of Harvard Business School and asserting "[t]he trend [away from investment banking] is the same at other elite business schools.").

[226] Data on file with editors as of April 9, 2017. This database monitors personnel changes for public and private businesses and includes individual profiles that detail current and former positions for over 4.5 million professionals. *See Capital IQ*, HARVARD BUS. SCH., https://www.library.hbs.edu/Find/Databases/Capital-IQ (last visited Aug. 7, 2017) (describing this resource at Harvard Business School's Baker Library and noting that the database does not purport to be comprehensive). The author thanks Ken Okamura for suggesting this data source and comparison.

[227] Data on file with editors as of April 28, 2017. At each of Goldman and Morgan Stanley, two financial professionals previously worked at Blackstone, KKR, or their affiliates; by contrast, at Blackstone and KKR, 68 and 88 professionals, respectively, previously worked at Goldman, Morgan Stanley, or their affiliates.

value of more than $4.3 trillion.[228] Their private equity operations alone, though a diminishing proportion of their overall activities, are enormously influential: the businesses their funds own employ over 11 million Americans and invest pension funds for "millions more."[229] And private equity firms now directly compete with banks in importance as lenders.[230]

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In important respects, private equity firms mirror the now-defunct investment banks. Through their private equity, hedge, and property funds, they actively invest and trade. Through their credit funds, they lend. Through their broker-dealer operations, they trade, advise, and otherwise facilitate client transactions. They are entrepreneurial and respond nimbly to market conditions, aggressively chasing financial opportunities as they arise. Many have gone public. Because they perform banking functions, notably lending and securitizing assets, and yet stand outside the formal bank regulatory perimeter, they are now part of the shadow banking system. Private equity firms also rival and perhaps even surpass the investment banking segments of BHCs in status and influence.

IV. Assessment of Industry Transformation

These similarities to pre-Crisis investment banks raise the prospect that private equity firms and the funds they manage pose risk to the stability of the broader financial system, much as the former investment banks did.

A. *Analytical Framework*

A financial firm whose distress or failure will harm unrelated actors, ultimately impairing the financial system's operation, is said to pose systemic risk.[231] Distress or failure may cause systemic harm in several ways. There could be irrational runs on other financial firms, potentially causing even viable ones to fail. Capital markets and clearing systems may be dis-

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[228] *See* Danielle Ivory et al., *When You Dial 911 and Wall Street Answers*, N.Y. Times: DealBook (June 25, 2016), https://www.nytimes.com/2016/06/26/business/dealbook/ when-you-dial-911-and-wall-street-answers.html (citing figures from the advisory firm Triago).

[229] *See id.* (quoting a spokesperson for the American Investment Council). Individual private equity firms also exert significant influence. For example, KKR's private equity portfolio includes over 100 companies across 19 general industries generating revenues of around $200 billion annually. *See* KKR & Co. L.P., Annual Report (Form 10-K) 12 (Feb. 24, 2017).

[230] *See* Marriage, *supra* note 198.

[231] For a fuller discussion of systemic risk, see Rosa M. Lastra, *Systemic Risk and Macro-Prudential Supervision*, *in* Oxford Handbook of Fin. Reg. 309, 311–13 (Niamh Moloney et al. eds., 2015); Steven L. Schwarcz, *Systemic Risk*, 97 Geo. L.J. 193, 193–204 (2008).

rupted. And core functions of the financial system—such as making payments, providing credit, and transferring risk—may be impaired.[232]

While there is little doubt that a financial firm's failure may create systemic risk, the precise mechanisms by which harm spreads are less clear.[233] What is more, risk is difficult to quantify:[234] epistemic and informational gaps hamper regulators' ability even to identify systemic risk.[235] There is also no consensus on what regulatory approaches are best suited to dealing with systemic risk, once it is identified. Rescuing failing firms may prevent systemic harm, and yet expectations of rescue may encourage risk-taking and higher leverage by firms during good times.[236] Nevertheless, policymakers generally agree that systemic risk should be contained even as some firms are allowed to fail.[237] For such containment purposes, there is broad agreement that those firms posing such risk need macroprudential regulation, which includes imposing capital, lending, and investment standards along the lines of those imposed on BHCs.[238]

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[232] For an examination of the effects of bank failure or distress on other unrelated actors, see Adam Ashcraft, *Are Banks Really Special?*, 95 AM. ECON. REV. 1712 (2005); Ben S. Bernanke, *Nonmonetary Effectives of the Financial Crisis in the Propagation of the Great Depression*, 73 AM. ECON. REV. 257, 267–68 (1983); Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POL. ECON. 401, 401–03 (1983). Although this literature generally focuses on bank failures, its results have been generalized to financial intermediaries more broadly. *See* ZOLTAN POZSAR ET AL., *supra* note 3, at 1–2. As to the financial system's "core" functions or services, see Paul Tucker, Deputy Governor for Fin. Stability at the Bank of Eng., Speech at the International Council of Securities Associations (May 23, 2011), http://www.bis.org/review/ r110525a.pdf (describing these functions as "the transfer of payments; the provision of credit and equity; and risk transfer or insurance."). For overviews of the literature, see MICHAEL S. BARR, HOWELL E. JACKSON, & MARGARET E. TAHYAR, FINANCIAL REGULATION: LAW AND POLICY 73–74 (2016); John Armour & Jeffrey Gordon, *Systemic Harms & Shareholder Value*, 6 J. LEGAL ANALYSIS 35, 40–44 (2014).

[233] Ashcraft, *supra* note 232, at 1712 ("[T]here is some disagreement in the literature over the precise mechanism through which failure affects real activity."); *see also* Diamond & Dybvig, *supra* note 232, at 403 (suggesting lack of consensus as to mechanisms).

[234] JOHN ARMOUR ET AL., *supra* note 100, at 504 (referring to the quantification of systemic risk as "a work in progress").

[235] Indeed, the FSOC, the interagency body created by the Dodd-Frank Act, recently acknowledged that regulators lack the data needed to fully understand systemic risk. *See* Jacob J. Lew, Opinion, *Why We're Reviewing Asset Management*, WALL ST. J. (Apr. 19, 2016), https://www.wsj.com/articles/why-were-reviewing-asset-managers-1461087431 ("[I]ndividual regulators lack access to the data necessary to develop a comprehensive understanding of the risk such leverage may pose [at larger hedge funds].").

[236] *See* Viral V. Acharya et al., *Measuring Systemic Risk*, *in* REGULATING WALL STREET: THE DODD-FRANK ACT AND THE NEW ARCHITECTURE OF GLOBAL FINANCE 87 (Viral V. Acharya et al. eds., 2010) ("The anticipation that . . . bailouts will occur compromises market discipline in good times, encouraging excessive leverage and risk-taking.").

[237] *Id.* ("It is widely accepted that systemic risk needs to be contained by making it possible for [financial] institutions to fail, thus restraining their incentives to take excessive risks in good times.").

[238] *See* Hockett, *supra* note 6 (discussing the justifications for regulating systemic financial stability and the "toolkit" that may be used to do so). On macroprudential instruments designed to mitigate systemic financial instability, see *id.* at 219–28; Kristin N. Johnson, *Macroprudential Regulation: A Sustainable Approach to Regulating Financial Markets*, 2013 U. ILL. L. REV. 881, 914–18.

As a first step toward assessing the extent of systemic risk posed by private equity firms and their funds, the financial stability or vulnerability of these entities must be examined. The more financially stable a firm, the less likely it is to experience financial distress and the less likely it is that systemic harm will occur because such harm is contingent on a firm's financial distress. FSOC uses this assessment-first approach when exercising its power under the Dodd-Frank Act to designate a nonbank financial company—a category including private equity firms[239]—a "systemically important financial institution," or SIFI. Any firm so designated faces bank-like regulation by the Federal Reserve.[240] Under the Dodd-Frank Act, FSOC must determine whether any nonbank financial company, when financially distressed, could pose a threat to the financial stability of the United States.[241] FSOC considers, first, a firm's vulnerability to financial distress and, second, the risk created by failure or distress. Rather than assess whether particular private equity firms should be designated as SIFIs, this Article draws on FSOC's guidance to assess the financial risks posed by private equity firms and their funds generally and to evaluate how those risks compare with risks posed by investment banks in their heyday.[242]

B. Financial Vulnerability

In considering the first question—the vulnerability of private equity firms to financial distress—the FSOC examines three factors: a firm's liquidity risk and maturity mismatch; its leverage; and the effectiveness of its regulatory regime.[243] The first factor, liquidity risk and maturity mismatch, is best understood in the context of banks, as it renders these institutions inherently fragile. The condition arises where a firm's liabilities—the deposits it accepts—may be withdrawn on demand, while its assets, which include the loans it makes, have a longer-term duration. If enough depositors simultane-

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[239] The class is defined to include institutions "predominantly engaged in financial activities." Dodd-Frank Act § 102(a)(4)(B), 12 U.S.C. § 5311(a)(4)(B) (2012).

[240] *See* 12 C.F.R. § 1310.10 (2017).

[241] Under Section 113(a)(1) of the Dodd-Frank Act, FSOC may make either or both of two determinations. 12 U.S.C. § 5323(a)(1) (2012). It may determine that the "material financial distress at the U.S. nonbank financial company, or the nature, scope, size, scale, concentration, interconnectedness, or mix of the activities of the U.S. nonbank financial company, could pose a threat to the financial stability of the United States." *Id.*

[242] The approach taken here attempts to avoid treating systemic risk as a binary concept (either existing or not) and instead regards it as a continuum. As Professor Cheryl Block has observed, the binary approach employed in the Dodd-Frank Act—in which SIFIs and non-SIFI's fall on either side of a "magic line"—treats the concept of systemic risk as if it were definitively identifiable, when in fact it is "not a precise term, but a concept embodying several distinct dimensions more usefully analyzed along a continuum." *See* Block, *supra* note 6, at 318–27.

[243] *See* Authority to Require Supervision and Regulation of Certain Nonbank Financial Companies, 77 Fed. Reg. 21,637, 21,637, 21,641 (Apr. 11, 2012) (to be codified at 12 C.F.R. pt. 1310) [hereinafter FSOC, *Supervision of NBFCs*].

ously withdraw their funds, banks will face a liquidity shortfall.[244] The resulting bank run may lead an otherwise-viable bank to fail.

Leverage, the FSOC's second factor, refers to the firm's borrowing from other market participants (balance-sheet leverage) as well as to exposure arising from the use of derivatives, such as options, futures, forwards, and swaps (synthetic leverage).[245] The greater a firm's leverage, the more likely that its total exposure will exceed its capital and the greater its dependence on creditors for funding.[246]

As for regulatory scrutiny, the FSOC's final factor, robust supervision by regulators can diminish a firm's financial vulnerability, as can regulation that limits the extent to which a firm might experience significant, simultaneous draws on its liquidity.

Using these factors, this Part considers the vulnerability of private equity firms and their funds. I examine firm and fund separately and then consider possible interactions between them.[247] Because analysis of the firm depends on analysis of the fund, the discussion begins at the fund-level.

1. Fund-level Analysis

Private Equity Funds. While private equity funds are not closely supervised by prudential regulators,[248] they would seem significantly less financially vulnerable than the former investment banks. First, they attract long-term funding.[249] They are typically established for fixed terms of up to ten years, during which time investors, or limited partners, "are usually subject to a 'lock-up' provision precluding them from redeeming or transferring their stake until all holdings have been successfully divested."[250] Such limited

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[244] *See supra* notes 100–103 and accompanying text.

[245] For a useful discussion of leverage, see FIN. STABILITY BD. & IOSCO, ASSESSMENT METHODOLOGIES FOR IDENTIFYING NON-BANK NON-INSURER GLOBALLY SYSTEMICALLY IMPORTANT FINANCIAL INSTITUTIONS: PROPOSED HIGH-LEVEL FRAMEWORK AND SPECIFIC METHODOLOGIES, CONSULTATIVE DOCUMENT 32 (2015), http://www.financialstabilityboard.org/wp-content/uploads/2nd-Con-Doc-on-NBNI-G-SIFI-methodologies.pdf; *see also* FSOC, *Supervision of NBFCs*, 77 Fed. Reg. at 21,659.

[246] *See* FSOC, *Supervision of NBFCs*, 77 Fed. Reg. at 21,659 ("[B]y increasing a company's exposure relative to capital, leverage raises the likelihood that a company will suffer losses exceeding its capital. Second, by increasing the size of a company's liabilities, leverage raises a company's dependence on its creditors' willingness and ability to fund its balance sheet.").

[247] *See* U.S. DEP'T OF THE TREASURY, OFFICE OF FIN. RESEARCH, *supra* note 20, at 7 (distinguishing the "firm level" of asset managers from the "fund level").

[248] *See* John Crawford, *Memorandum on the Asset Management Industry* 48 (Volcker All. Working Paper No. 228, 2016) ("Private funds do not face regulatory limits on leverage or derivatives exposure.").

[249] *See* John Morley, *The Separation of Funds and Managers: A Theory of Investment Fund Structure and Regulation*, 123 YALE L.J. 1128, 1254 (2014) ("Private equity investors cannot redeem. Instead they must wait for the funds to liquidate, typically every five to ten years.").

[250] Cheffins & Armour, *supra* note 7, at 11; *see also* Letter from PEGCC, *supra* note 154 ("Private equity funds attract long-term investors, who do not have the ability to redeem in the ordinary course of business . . . .").

redemption rights for investors reduce the extent of potential mismatches in asset-liability maturity.

Second, private equity funds generally have low leverage.[251] Borrowing for buyouts typically occurs at the level of portfolio companies, exposing those entities—rather than the relevant funds or the sponsoring firm—to liability for repayment of debts.[252]

Hedge Funds. Private equity firms' hedge funds are more vulnerable than their private equity funds. Hedge funds typically have looser redemption limits than private equity funds,[253] permitting periodic withdrawals on, say, a monthly or quarterly basis.[254] In periods of stress, when hedge funds might be expected to face large-scale withdrawals by investors, the combination of illiquid assets and permissive redemption rules could yield liquidity crunches.[255] Hedge funds frequently borrow to magnify their gains and losses; leverage is one of their hallmarks.[256] These funds also fall outside the banking regulatory net; weak prudential supervisory oversight could also lead to financial instability.

But other factors complicate the analysis. First, according to some scholars, hedge funds are less leveraged than banks.[257] Second, many hedge funds limit investors' ability to redeem their funds, in turn limiting the risk that the funds will face runs. Hedge funds typically require investors to maintain a minimum investment and otherwise restrict the amount and fre-

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[251] *See* Letter from PEGCC, *supra* note 154 ("Private equity firms and funds [with narrow exceptions] typically engage in limited or no borrowing."); *see also* Risk & Examinations Office of the Div. of Inv. Mgmt., U.S. Sec. & Exch. Comm'n, Private Funds Statistics: Second Calendar Quarter 2016 7 (2017), https://www.sec.gov/divisions/investment/private-funds-statistics/private-funds-statistics-2016-q2.pdf (showing at Table 5 the aggregate borrowings for private equity funds of less than 5 percent over a two-year period ending June 30, 2016).

[252] *See* Letter from PEGCC, *supra* note 154; *see also supra* note 154 and accompanying text.

[253] *See* U.S. Dep't of the Treasury, Office of Fin. Research, *supra* note 20, at 13 (Fig. 6) (referring to "hedge funds with less tight redemption options" and distinguishing them from "private equity" and "hedge funds with tight redemption rules").

[254] *See* Barr, Jackson, & Tahyar, *supra* note 232, at 1252 ("[H]edge funds do not allow redemption every day; they allow it instead only once every month or quarter.").

[255] Governor Daniel K. Tarullo, Advancing Macroprudential Policy Objectives, Remarks at the Office of Financial Research and Financial Stability Oversight Council's 4th Annual Conference on Evaluating Macroprudential Tools: Complementarities and Conflicts (Jan. 30, 2015), http://www.federalreserve.gov/newsevents/speech/ tarullo20150130a.htm ("To the extent that asset management vehicles hold relatively less liquid assets but provide investors the right to redeem their interests on short notice, there is a risk that in periods of stress, investor redemptions could exhaust available liquidity."). While hedge funds have typically limited their holdings of illiquid assets, "many hedge funds have increasingly invested in illiquid assets in an effort to augment returns." Stowell, *supra* note 154, at 235. This state of affairs has created a mismatch between hedge fund assets and liabilities, producing problems when investors withdraw their funds. *See id.* at 236.

[256] Stowell, *supra* note 154, at 237. They borrow using margin loans from banks and by entering into repurchase agreements with various market participants. *Id.* at 220–21. They also create synthetic leverage. *Id.*

[257] John Armour et al., *supra* note 100, at 490.

quency of redemptions.[258] And hedge funds also often reserve the right to reduce, or "gate," and even suspend redemptions.[259] While these arrangements are more permissive than those of private equity funds, they are still closer to "locked" (long-term) capital than to "redeemable" capital, on a spectrum of liquidity, according to the U.S. Department of the Treasury's Office of Financial Research.[260] In general, the arrangements are more stringent than those for the former investment banks, which essentially relied on overnight capital that was immediately callable.[261] These limits are also becoming stricter—part of a push by some prominent hedge funds to rely more on longer-term capital.[262] Thus, hedge funds would seem not to face an asset-liability mismatch to the same extent as the former investment banks.

Property Funds. Like private equity funds, property funds generally attract long-term investment. Some have investment periods of around six years.[263] Unlike hedge funds, they face little risk of early redemption.[264] While property funds borrow[265] and face little prudential oversight, they would seem to pose risks similar to those of private equity funds. In fact, some scholars treat private equity and property funds without distinction.[266]

Credit Funds. Credit funds borrow, but the extent of their borrowing is difficult to ascertain.[267] Credit also fall outside the banking regulatory net, so they cannot turn to the Federal Reserve to backstop their operations if they experience major large-scale fund outflows. Many such funds are subject to

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[258] *See* KKR & Co. L.P., Annual Report (Form 10-K) 77 (Feb. 24, 2017); Morley, *supra* note 249, at 1256. Many firms also contribute their own capital to their hedge funds, ensuring that these funds have at least some locked-in capital. Other funds may have permanent sources of capital from vehicles listed on trading exchanges.

[259] *See* KKR & Co. L.P., Annual Report (Form 10-K) 77 (Feb. 24, 2017). Firms also satisfy redemptions by making "in-kind" distributions and may use "side pockets" to reserve capital redeemable only under certain conditions. *Id.*

[260] *See* U.S. Dep't of the Treasury, Office of Fin. Research, *supra* note 20, at 13 (Fig. 6).

[261] On investment banks' short-term funding sources, see *supra* notes 97–99 and accompanying text.

[262] *See* Stephen Foley, *Hedge Funds to Investors: Give Us Permanent Capital, Please*, Fin. Times (May 16, 2016), https://www.ft.com/content/6f9cadb6-1b32-11e6-a7bc-ee846770ec15 ("Some famed managers are raising capital for new funds that will lock in investors for much longer periods, so they can make private equity-style investments or more complex trades in illiquid markets, according to private comments."). Firms are also reportedly forming funds with permanently locked-in capital, thus avoiding the asset-liability maturity mismatch. *See* Henny Sender & Stephen Foley, *Permanent Capital: Perpetual Cash Machines*, Fin. Times (Jan. 4, 2015), https://www.ft.com/content/ 0b6272c2-91ae-11e4-afd2-00144feabdc0 (referring to "permanent" or locked-in capital as "the new holy grail" for hedge fund and private equity fund managers).

[263] *See, e.g.*, KKR & Co. L.P., Annual Report (Form 10-K) 14 (Feb. 24, 2017).

[264] *See, e.g.*, The Blackstone Group L.P., Annual Report (Form 10-K) 50 (Feb. 24, 2017) (warning about investor redemptions from hedge funds, but not property funds).

[265] *See, e.g.*, Letter from PEGCC, *supra* note 154 (noting that real estate and credit funds borrow).

[266] *See* Morley, *supra* note 249, at 1236 (observing that private equity funds invest in various asset classes, including real estate); *id.* at 1254 (discussing private equity funds, without distinguishing between the assets classes in which they invest).

[267] *See supra* note 265.

investor redemptions,[268] but with limits that parallel those for hedge funds.[269] Some commentators express concern that credit fund managers lack the expertise to judge the creditworthiness of potential borrowers and thus extend risky loans.[270] Still, there is little evidence to suggest that these funds face the degree of asset-liability mismatch that afflicted investment banks. We may thus tentatively conclude, on the basis of necessarily poor data,[271] that these funds are less financially vulnerable than the former investment banks.

2. *Firm-level Analysis*

Firms themselves do not appear to face the asset liability-maturity mismatch that afflicted the investment banks. They are more modestly leveraged. They "typically engage in limited or no borrowing" other than short-term borrowing used to finance investments in the period between when funds call and receive capital committed from investors.[272] Firms' borrowings typically consist of term loan and revolving credit facilities as well as long-term notes[273] and are thus not immediately callable. As Table 1 shows, the short-term obligations of the four major firms are remarkably modest. So are their leverage ratios.

[268] *See, e.g.*, KKR & Co. L.P., Annual Report (Form 10-K) 23 (Feb. 24, 2017).

[269] *See, e.g.*, The Blackstone Group L.P., Annual Report (Form 10-K) 142 (Feb. 24, 2017).

[270] Marriage, *supra* note 198 (quoting an industry observer asking, "Do fund managers know the companies they are lending to? Or are they buying packaged debt, and do they understand what lies behind it? [Should] this not be the job of recapitalised banks, who have the expertise and money to lend?"). Reflecting this concern, "[t]he US Comptroller of the Currency recently warned that the activities of nonbanks ha[ve] fueled a boom in risky corporate loans." Tett, *supra* note 197.

[271] *See supra* notes 12–13 and accompanying text.

[272] *See* Letter from PEGCC, *supra* note 154, at 5 (stating that "[p]rivate equity firms typically engage in limited or no borrowing," except taking on "short-term debt used to bridge capital calls and otherwise backed by capital commitments . . . .").

[273] *See, e.g.*, Apollo Glob. Mgmt., LLC, Annual Report (Form 10-K) 173–75 (Feb. 13, 2017); KKR & Co. L.P., Annual Report (Form 10-K) 219–223 (Feb. 24, 2017). Although KKR has debt obligations apart from revolving credit facilities and notes, these obligations generally have longer-term maturities, over 12 months. *See* KKR & Co. L.P., Annual Report (Form 10-K) 223 (Feb. 24, 2017).

	Apollo	**Blackstone**	**Carlyle**	**KKR**
Short-term debt ratio	2016: 0.02 2015: 0.02 2014: 0.01	2016: 0.02 2015: 0.02 2014: 0.01	2016: 0.04 2015: 0.02 2014: 0.01	2016: 0.05 2015: 0.04 2014: 0.03
Total short-term debt	2016: $104 m 2015: $78 m 2014: $77 m	2016: $416.6 m 2015: $542.3 m 2014: $605.7 m	2016: $434.7 m 2015: $552.8 m 2014: $456 m	2016: $2,090 m 2015: $2,924 m 2014: $1,989 m
Total debt	2016: $3,762 m 2015: $3,171 m 2014: $17,235 m	2016: $13,888 m 2015: $10,296 m 2014: $14,164 m	2016: $8,519 m 2015: $23,268 m 2014: $23,138 m	2016: 21,884 m 2015: 21,590 m 2014: 14,168 m
Leverage ratio	2016: 2.01 2015: 2.28 2014: 2.89	2016: 1.13 2015: 0.85 2014: 0.95	2016: 5.86 2015: 2.61 2014: 1.80	2016: 1.33 2015: 0.44 2014: 0.28

Table 1. Metrics used to assess leverage of major private equity firms. Source: firm Form 10-K filings; figures are calculated for firms (on a consolidated basis).[274]

Firms are also insulated from the debts of the funds they manage. As Professor John Morley has observed, they are legally separated from their funds, which limits the spillover of risk.[275] They also rarely guarantee or provide collateral for their funds' debts.[276] Accordingly, if a firm's funds suffered significant losses or failed, the firm's management fees would dry up, cutting off its primary revenue source. It would lose its (typically modest) investments in those funds, but the bulk of the funds' losses would be borne by outside investors and creditors, rather than by the firm.[277] Though investors might nevertheless seek to hold firms liable for the failure of their

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[274] The short-term debt ratio is calculated by the author as total consolidated debt with a maturity less than 12 months divided by total consolidated assets. Total consolidated debt with a maturity less than 12 months represents obligations on a consolidated basis due within 12 months including debt payment and interest obligations; underwriting, lending and other commitments; lease obligations; repurchase agreements; and "securities sold, not yet purchased." Total short-term debt represents total consolidated debt with a maturity less than 12 months. The leverage ratio is calculated by the author as total consolidated debt divided by total consolidated equity.

[275] *See* Morley, *supra* note 249, at 1260.

[276] *See* Letter from PEGCC, *supra* note 154, at 3 ("Because the funds that a firm manages are separate legal entities with no cross-collateralization or cross-guarantees between different funds, the manager should not be a focus of designations."); KKR & Co. L.P., Annual Report (Form 10-K) 219 (Feb. 24, 2017) ("KKR's obligations with respect to these financing arrangements are generally limited to KKR's pro-rata equity interest in such funds.").

[277] *See* U.S. Dep't of the Treasury, Office of Fin. Research, *supra* note 20, at 1 ("Asset managers act primarily as agents . . . . Losses are borne by—and gains accrue to—clients rather than asset management firms.").

funds,[278] firms are simply not as closely tied to the health of their funds as they are to that of their subsidiaries.[279]

Private equity firms' securities operations—which they conduct through broker-dealer subsidiaries—raise concerns. Unlike fund activities, broker-dealer activities are owned, rather than managed, and must therefore be treated as *firm* activities. Firms bear their losses in full. Accordingly, the failure of a broker-dealer is more likely to lead to a firm's failure than is the failure of one of its funds. At issue, then, is how the FSOC's factors—liquidity risk and maturity mismatch, leverage, and regulatory supervision—apply to firm's broker-dealer subsidiaries.

Regulatory filings suggest that firms' broker-dealer operations are modestly sized and limited to M&A advising, securities underwriting, and other unspecified capital-markets activities. At KKR, for example, broker-dealer operations contribute around five percent of the firm's revenues;[280] at Apollo Global Management, they primarily support the firm's portfolio companies;[281] at Carlyle, they generally consist of securities underwriting;[282] at Blackstone, broker-dealer operations are smaller than they were before 2015, when the firm spun off its sizable broker-dealer operations to form an independent, publicly-traded company.[283] Firms rarely break out their broker-dealer operations separately in regulatory disclosure documents, so the precise scale and scope of their operations is not easily discerned.[284] Still, even

[278] For a rare example, see Margot Patrick, *Burned Carlyle Investor Backs Suit Against Private-Equity Firm*, Wall St. J. (Dec. 6, 2016, 5:35 PM), https://www.wsj.com/ articles/ burned-carlyle-investor-backs-suit-against-private-equity-firm-1481051623 (describing a lawsuit in Guernsey, the English Channel island, in which investors seek over $1 billion in compensation and damages from a private equity firm whose executives allegedly breached fiduciary duties they owed to investors in the failed fund).

[279] Firms typically provide staff and "core services" to the funds they manage, but firms are not therefore considered liable for their funds' debts. *See* U.S. Dep't of the Treasury, Office of Fin. Research, *supra* note 20, at 7.

[280] *See* KKR & Co. L.P., Annual Report (Form 10-K) 121 (Feb. 24, 2017) (allocating expenses in proportion to past revenues and inferring the firm's "Capital Markets," or broker-dealer, operations produced approximately five percent to six percent of revenue in recent years). The firm's broker-dealer subsidiary primarily works for affiliates. In 2016, third-party companies contributed only 28 percent of the subsidiary's fees, compared with 24 percent in 2015. *See id.* at 142. The firm's broker-dealer operations consist primarily of arranging financing and underwriting securities—but not, it would seem, proprietary trading. *See id.* at 23.

[281] *See* Apollo Glob. Mgmt., LLC, Annual Report (Form 10-K) 50 (Feb. 26, 2016). The firm's broker-dealer operations currently consist primarily of underwriting. *See id.* at 49–50, 194.

[282] Specifically, the firm's broker-dealer affiliate undertook "fundraising" for the firm and acted as a placement agent. *See* Carlyle Group L.P., Annual Report (Form 10-K) 21 (Feb. 16, 2017).

[283] *See* Blackstone Group L.P., Annual Report (Form 10-K) 26, 76 (Feb. 26, 2016). The firm retained broker-dealer operations, apparently at smaller scale. *See id.* at 17 (discussing the firm's remaining broker-dealer operations).

[284] For example, Blackstone claims that "we conduct our capital markets services business and certain of our fund marketing and distribution" through a broker-dealer subsidiary. Further detail, such as what "capital markets services" comprise, is lacking. *See id.* at 17. Apollo Global Management's broker-dealer activities do not receive separate mention in a graphical summary of the firm's business. *See* Apollo Glob. Mgmt., LLC, Annual Report (Form 10-K) 9

taking into account their broker-dealer activities, firms do not appear to rely on short-term funding or have significant leverage—a conclusion that follows from the discussion of firm-level funding above.[285] More fundamentally, their broker-dealer operations do not appear to encompass the "dealer-bank" activities of making markets and proprietary trading.[286] This is significant given that these activities relied on short-term funding and contributed to the failure of the major investment banks.[287]

FSOC's third factor—regulatory oversight—weighs in the opposite direction. Like the former investment banks, private equity firms lack the safety net provided by banking regulation. Their broker-dealer activities are regulated by the SEC at the subsidiary level, which probably makes for weaker oversight because of the SEC's traditional focus on business conduct and safeguarding clients' funds rather than ensuring financial stability.[288] Nevertheless, private equity firms face the threat of SIFI-designation by the FSOC, potentially mitigating the general lack of regulatory oversight.[289]

3. Connections Between Firms and Funds and Among Funds

Though firms themselves face no obvious vulnerabilities beyond those posed by broker-dealer activities, they may nevertheless be exposed to weaknesses in their managed funds. Private equity firms might choose to inject capital into their funds to make good on those funds' commitments to third parties. Firms might do this for reputational reasons, such as to maintain relationships with creditors and investors or to allay concerns about their financial health.[290] Firms have rejected these pressures in the past, refusing to

(Feb. 13, 2017). Of the major firms, it seems that only KKR discloses its broker-dealer operations as a separate reporting segment. *See* KKR & Co. L.P., Annual Report (Form 10-K) 23 (Feb. 24, 2017).

[285] *See supra* notes 272–273 and accompanying text (discussing firm-level debt); *see also* KKR & Co. L.P., Annual Report (Form 10-K) 36 (Feb. 24, 2017) (disclosing that the firm's underwriting commitments are funded through a revolving credit facility).

[286] *See* Armour et al., *supra* note 100, at 440 n.15 ("Dealer banks . . . can be regarded as the market-making and proprietary trading part of an investment bank."). *But see* Duffie, *supra* note 111, at 53–54 (defining dealer bank activities as including securities underwriting and asset management).

[287] *See* Duffie, *supra* note 111, at 51 (attributing the failures of Bear Stearns and Lehman Brothers to runs on their dealer banks).

[288] Comparing investment banks to BHCs, the FCIC explained in its final report that "[b]y comparison, Wall Street investment banks could employ far greater leverage, unhindered by oversight of their safety and soundness or by capital requirements outside of their broker-dealer subsidiaries . . . ." FCIC Report, *supra* note 40, at 33. Investment banks later faced capital and liquidity supervision by the SEC under the Consolidated Supervision Entity program, although this program was regarded as a failure. The FCIC concluded that "the new shadow banks [investment banks] had few constraints on raising and investing money." *Id.*

[289] For further discussion, see *infra* Part V.A.

[290] Bear Stearns' position during the Financial Crisis is instructive. Faced with the potential failure of two of its hedge funds, the firm chose to make good the funds' commitments to repo lenders even though it had no legal obligation to do so. The FCIC noted that those repo lenders "were the same large investment banks Bear Stearns dealt with every day" and that "any failure of entities related to Bear Stearns could raise investors' concerns about the firm itself."

bail out their troubled funds.[291] Whether they will follow this practice in the future will depend on the circumstances, although it seems unlikely that a firm would face failure itself in order to prevent one of its funds from failing, unless the fund's failure would adversely affect the firm itself or perhaps its other funds.[292]

* * *

In sum, the funding structure of private equity firms differs materially from that of investment banks. They generally avoid high leverage and the asset-liability mismatch that afflicted investment banks. They largely operate through multiple distinct funds which they manage rather than own, thus cabining the effects of financial distress. But they could face harm from connections to their funds. Their broker-dealer operations also pose risks, especially because these operations could grow significantly and come to depend on short-term funding, conditions that would create asset-liability mismatch. As for their funds, more information is required,[293] but publicly available data and existing understandings of conditions affecting financial stability[294] suggest that these funds are less financially vulnerable than were the former investment banks.

C. Systemic Effects of Firm or Fund Failure

How likely is it that a firm's financial distress or failure will pose, transmit, or amplify harm to the financial system? This is the second question suggested by the FSOC's analytical approach.[295] The FSOC considers the firm's size, its connectedness to other financial actors, and the sub-

Id. at 240; *see also* Duffie, *supra* note 111, at 59 (discussing similar capital injections by Goldman Sachs and other firms).

[291] For instance, in 2008, the private equity firm The Carlyle Group permitted its fund Carlyle Capital to fail, declining to inject cash into the fund to prevent it from defaulting on billions of dollars of debt. The fund's failure was described as "a stinging embarrassment" for the firm. *See* Thomas Heath, *Carlyle Fund's Assets Seized*, WASH. POST (Mar. 13, 2008), http://www.washingtonpost.com/wp-dyn/content/article/2008/03/13/AR2008031300 061.html. The private equity firm recently faced a lawsuit by investors seeking damages for the fund's failure. *See* Patrick, *supra* note 278.

[292] Accordingly, a firm may support a fund even without a legal obligation to do so. *See* U.S. DEP'T OF THE TREASURY, OFFICE OF FIN. RESEARCH, *supra* note 20, at 14 (suggesting that "competitive pressures or protecting firms' reputations" may lead a firm to rescue a failing fund when it has no obligation to do so). For further discussion, see *infra* notes 319–322 and accompanying text.

[293] A more detailed examination would require fund-level data for each of the funds for the major private equity firms. That data is non-public. *See supra* note 12 and accompanying text. Accordingly, this analysis relies on general descriptions of fund terms, such as redemption rights.

[294] As Governor Daniel K. Tarullo observes, "[t]here is more work to be done" to better understand the risks posed by liquidity and redemption, "including the degree to which those risks vary with the type of assets and fund structure." Tarullo, *supra* note 255.

[295] *See* Dodd-Frank Act § 113, 12 U.S.C. § 5323 (2012).

stitutability of its operations.[296] Again, this Article uses FSOC's analytical approach to compare private equity firms with the former investment banks, assessing their relative financial stability and the systemic risks they pose, rather than to determine whether they should be designated as SIFIs.

These FSOC factors concern the harms that a firm's financial distress could transmit to other financial market participants, potentially threatening U.S. financial stability. Transmission could occur through a process of contagion, with distress in one firm spreading to others and could be exacerbated by a sudden financial shock, such as a stock market crash.[297]

As to size, the FSOC's first factor, the larger the firm, the more likely that other market participants will be financially exposed to it and negatively affected by its financial distress.[298] If a financially distressed large firm were subject to a "fire sale" of assets, these assets would likely drop in price, destabilizing other market participants holding large amounts of them.[299] Such contagion is much less likely with smaller firms. Once "infected," these other participants might, in turn, need to sell their assets as prices fall, setting in motion a recursive process that amplifies price reductions and potentially imperils systemic financial stability.[300] These adverse effects are more likely to be felt by institutions whose performance is strongly correlated with overall economic conditions.[301]

The FSOC's second factor concerns connections between a firm and other market participants. The greater a firm's connections, the more likely it is to transmit harm if it experiences financial distress. Firms are typically connected through their contractual relationships,[302] such as those with lend-

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[296] *See* Supervision of NBFCs, 77 Fed. Reg. 21,637, 21,641 (Apr. 11, 2012) (codified at 12 C.F.R. pt. 1310). A firm's leverage, liquidity risk, and maturity mismatch will also be relevant to the systemic risk question.

[297] As to the process by which harms may be transmitted, see ROGER W. FERGUSON, JR. ET AL., INTERNATIONAL FINANCIAL STABILITY 5–6 (2007); COUNTERPARTY RISK MANAGEMENT POLICY GROUP II, TOWARD GREATER FINANCIAL STABILITY: A PRIVATE SECTOR PERSPECTIVE 5–10 (2005), http://www.crmpolicygroup.org/crmpg2/docs/CRMPG-II.pdf; *see also* Anna Gelpern, *Financial Crisis Containment*, 41 CONN. L. REV. 1051, 1059–60 (2009).

[298] *See, e.g.*, Supervision of NBFCs, 77 Fed. Reg. at 21,657 (discussing the channels through which a financial firm's financial distress could be transmitted to other market participants).

[299] *See id.*; *see also* Acharya et al., *supra* note 236, at 88 ("[W]hen institutions' asset risk is correlated with that of the economy, they are likely to fail when the rest of the financial sector is under stress too, and their liquidations are difficult and potentially destabilizing for other players if fire-sale asset prices lead to externalities. In this case, systemic risk propagates through the effect of firm failures on asset prices.").

[300] *See* Hockett, *supra* note 6, at 213 (describing the "recursive – or 'feedback loop' – properties" of the processes by which asset sales can compromise systemic financial instability).

[301] *See* Acharya et al., *supra* note 236, at 88 ("[W]hen institutions' asset risk is correlated with that of the economy, they are likely to fail when the rest of the financial sector is under stress too, and their liquidations are difficult and potentially destabilizing for other players if fire-sale asset prices lead to externalities. In this case, systemic risk propagates through the effect of firm failures on asset prices.").

[302] *See id.* (describing how interconnections among financial firms may lead to systemic effects of failures).

ing, trading, and derivatives counterparties.[303] The risks arising from interconnectedness increase for a firm as its relationships with other counterparties multiply, its importance to those counterparties rises, and the counterparties themselves develop connections with other firms.[304]

Finally, the factor of substitutability is implicated where a financial institution's withdrawal from a market adversely affects the financial services available in that market because rival firms cannot quickly match the price or quantity of services withdrawn.[305] The greater a firm's market share and the more likely it is that rival firms will experience distress simultaneously, the more likely that harm will spread among market participants. The more critical the service or function withdrawn without replacement, the greater the potential for systemic harm.

These factors are challenging to apply in the abstract, and the FSOC applies them on a firm-specific basis using nonpublic data. A firm's interconnectedness is also difficult to assess because connections are "somewhat opaque and their precise nature may be entirely different in a stressed scenario than under normal conditions."[306] Professor Robert Hockett notes "the proliferation and 'complexification' of interdependencies and inter-substitutabilities . . . among multiple financial institutions in recent decades, much of it, too, facilitated by complex derivative financial instruments and other forms of financial innovation."[307] The following analysis therefore draws preliminary conclusions and identifies particular concerns rather than seeking to determine their magnitude.

First, broker-dealer operations seem more likely than fund activities to pose or transmit systemic harm. This is due to the extent of such operations' connections with other market participants, through over-the-counter derivatives, credit default swaps, and other financial instruments. Nevertheless, these operations are, as discussed above,[308] more modest in size and narrower in scope than those of the former investment banks and, correspondingly, less likely to create or transmit systemic risk. This conclusion is strengthened by private equity firms' current funding structure, which produces no discernable asset liability-maturity mismatch. To the extent that private equity firms are financially stronger, they would, other things being equal, seem less likely to pose systemic risk than were the investment banks, since private equity firms are less likely to experience financial distress. In light of this analysis, it is unsurprising that the FSOC has not designated any

[303] *See* Supervision of NBFCs, 77 Fed. Reg. at 21,658 (discussing "interconnectedness" between financial market participants).

[304] *Id.*; *see also* Hockett, *supra* note 6, at 209–10 (explaining financial contagion).

[305] *See* Supervision of NBFCs, 77 Fed. Reg. at 21,659 (discussing "substitutability" between financial market participants).

[306] *See* Acharya et al., *supra* note 236, at 95.

[307] Hockett, *supra* note 6, at 211.

[308] *See supra* notes 280–285 and accompanying text.

private equity firms as a SIFI. Evidently, the FSOC has determined that, to date, none poses a threat to U.S. financial stability.[309]

Second, private equity firms' *fund* activities—hedge and credit funds, in particular—may pose systemic risk. Some downplay the importance of systemic risk posed by hedge funds, at least relative to other firms, but scholars recognize that hedge funds pose a unique set of risks.[310] The near failure in 1998 of the hedge fund firm Long Term Capital Management "threatened widespread market dislocation and large losses for other institutions,"[311] prompting the Federal Reserve to coordinate a private-sector rescue.[312] Regulators later expressed concern that the firm's failure could have led to a fire sale of its assets and harm to other market participants, including those not directly connected with the firm.[313]

More generally, the Financial Stability Board, the influential international policymaking body based in Switzerland, has acknowledged that the financial distress of a fund with "extensive exposures and liabilities in the financial system" could destabilize other market participants, leading to financial systemic instability.[314] In periods of stress, hedge funds with illiquid assets and permissive redemption rules might experience liquidity crunches if investors withdrew funds en masse.[315] If the funds responded by quickly

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[309] In June 2013 FSOC voted to designate four non-bank financial companies as systemically important, pursuant to section 113 of the Dodd-Frank Act. Dodd-Frank Act § 113, 12 U.S.C. § 5323 (2012). None of them were private equity firms or funds. *See Financial Stability Oversight Council: Designations*, U.S. Dep't of the Treasury, http://www.treasury.gov/initiatives/fsoc/designations/Pages/ default.aspx (last visited April 10, 2017).

[310] *See, e.g.*, Nicholas Chan et al., *Do Hedge Funds Increase Systemic Risk?*, 91 Fed. Res. Bank of Atlanta Econ. Rev. 49 (2006) (arguing that hedge funds' unique investment strategies and risk exposures create risks that are more complex than those facing other asset classes and may have significant implications for systemic risk). For useful summaries of dangers posed by hedge funds for systemic risk, see Lloyd Dixon et al., Hedge Funds and Systemic Risk 63–68 (2012), http://www.rand.org/content/dam/rand/pubs/monographs/2012/RAND_MG1236.pdf (examining ways in which hedge funds may contribute to systemic risk); Wulf A. Kaal, *The Systemic Risk of Private Funds After the Dodd-Frank Act*, 4 Mich. Bus. & Entrepreneurial L. Rev. 163, 170–75 (2015) (same). For an account downplaying hedge funds' contribution to systemic risk, see Sir John Gieve, Deputy Governor, Bank of Eng., Speech at the HEDGE 2006 Conference on Hedge Funds and Financial Stability (Oct. 17, 2006), http://www.bankofengland.co.uk/archive/Documents/historicpubs/speeches/2006/speech285.pdf.

[311] Gieve, *supra* note 310.

[312] Stowell, *supra* note 154, at 291.

[313] *Private-Sector Refinancing of the Large Hedge Fund, Long-Term Capital Management Before the H. Comm. on Banking and Fin. Servs.*, 105th Cong. 1 (1998) (statement of Alan Greenspan, Chairman, Fed. Reserve Bd. of Governors), https://www.federalreserve.gov/boarddocs/testimony/1998/19981001.htm.

[314] Fin. Stability Bd. & Int'l Org. of Secs. Comm'ns, Second Consultative Document: Assessment Methodologies for Identifying Non-Bank Non-Insurer Globally Systemically Important Fin. Insts.: Proposed High-Level Framework and Specific Methodologies 31 (2015), http://www.financialstabilityboard.org/wp-content/uploads/2nd-Con-Doc-on-NBNI-G-SIFI-methodologies.pdf.

[315] *See* Tarullo, *supra* note 255, at 11 ("To the extent that asset management vehicles hold relatively less liquid assets but provide investors the right to redeem their interests on short notice, there is a risk that in periods of stress, investor redemptions could exhaust available liquidity.").

selling assets, creating downward pressure on prices, they could harm firms holding similar assets, potentially creating redemption pressures for those firms.[316] Multiple hedge funds could thus fail simultaneously, exacerbating the contagion.[317] Their failure could also harm banks with insufficient collateral, creating another avenue for the spread of systemic risk.[318]

A financially distressed fund might also harm other funds within the same group. On the one hand, the legal separation of funds and the firms that manage them limits the spillover of risks between funds under common management.[319] Funds within a group generally do not guarantee or provide collateral for each other,[320] further limiting the risk of spillover from a failing fund. On the other hand, at a minimum, severe reputational harm to one fund may raise doubts about the liquidity of other group funds and lead investors to redeem their investments in those funds.[321] This risk would exist even in the absence of cross guarantees or collateralization. Moreover, one could expect the failure of a fund to adversely affect other group funds with similar investment profiles or strategies. This analysis suggests that the risks of separate funds managed by a single private equity firm might usefully be aggregated to determine that firm's systemic effect—an approach the FSOC has said it may take in designating nonbank financial companies systemically important.[322]

Private equity firms' credit funds also pose systemic-risk concerns. If they continue growing strongly, they may perform such an integral role in making loans that their collapse adversely affects the credit availability system-wide, because their services are not substitutable.[323] This issue warrants fund-specific analysis and would benefit from public disclosure of relevant data.

Yet, while private equity firms' fund activities may pose concerns, it is less than clear that these concerns rival those posed by the former investment banks. Major investment banks had extensive asset-management activ-

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[316] *Id.*

[317] Stowell, *supra* note 154, at 290.

[318] *Id.*; Ferguson et al., *supra* note 297, at 124.

[319] *See* Morley, *supra* note 249, at 1260.

[320] *See* Letter from PEGCC, *supra* note 154, at 3 ("Individual investment funds, even those that share the same sponsor or manager, are formed as structurally separate entities. . . and do not provide for cross-collateralization or cross-guarantees between funds."); *id.* at 6 ("[P]rivate equity firms and funds are not interconnected with each other, because they neither pledge their assets as security for, nor do they guarantee, each other's obligations.").

[321] *See* U.S. Dep't of the Treasury, Office of Fin. Research, *supra* note 20, at 13 ("As an agency business, a financial services firm that suffers damage to its reputation through an extreme event in one business or fund may suffer redemptions or creditor pull-backs in other funds or business.").

[322] *See* Supervision of NBFCs, 77 Fed. Reg. 21,637, 21,660 n.6 (Apr. 11, 2012) (to be codified at 12 C.F.R. pt. 1310) (interpreting Dodd-Frank Act § 113, 12 U.S.C. § 5323 (2012)).

[323] *See* John Armour et al., *supra* note 100, at 491 (the failure of credit funds may disrupt the availability of credit).

ities,[324] although it was their broker-dealer operations, and the manner of their funding, that primarily contributed to their financial distress.[325] Still, our knowledge of fund activities and how they may create and transmit systemic risk is still developing, making it impossible to draw firm conclusions.

The third preliminary conclusion concerns connections between firms and their funds.[326] It is uncertain precisely how, in firms as complex as major private equity firms, the combination of broad-ranging asset management and broker-dealer activities affect systemic risk in the event that one or more units experiences financial distress. The financial distress of a firm's funds could sufficiently damage confidence in the firm enough to create a run on the firm's broker-dealer subsidiary.[327] Similarly, according to the U.S. Department of the Treasury's Office of Financial Research, the failure of a firm, perhaps due to its broker-dealer subsidiary's activities, could prompt investors to redeem their investments in that firm's funds, "possibly aggravating market contagion or contributing to a broader loss of confidence in markets."[328] Risks created in one market sector could migrate to another market and be amplified there.[329]

Finally, as is apparent from this analysis, further information about the funding structure of the funds of private equity firms would allow a more conclusive assessment of their financial stability and systematic threats. Among other things, we need better information about counterparty credit exposures and the correlation between the activities of funds sponsored by single firms. FSOC has recognized "that less data are generally available about [private equity firms and hedge funds] than about certain other types of nonbank financial companies."[330] Since 2012, advisors to private equity firms that have at least $150 million in assets under management have been required to file Form PF with the SEC.[331] Filed forms, which remain nonpublic, provide data about funds to allow the FSOC to designate nonbank financial companies as SIFIs.[332] Nevertheless, there are concerns about precisely

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[324] For example, Goldman Sachs' "Asset Management and Securities Services" segment contributed 17 percent of the firm's 2006 net revenues and pre-tax earnings, more than that contributed by the firm's investment banking segment. *See* Goldman Sachs Group, Inc., Annual Report (Form 10-K) 3 (Nov. 24, 2006).

[325] *See supra* notes 286–287 and accompanying text.

[326] *See supra* notes 276–279, 290–292 and accompanying text.

[327] *See supra* note 321 and accompanying text.

[328] U.S. Dep't of the Treasury, Office of Fin. Research, *supra* note 20, at 19.

[329] *See id.* ("Connections between asset management activities and other market activities could contribute to the transmission or amplification of risks from one market sector to another, irrespective of whether those risks originated from asset managers.").

[330] Supervision of NBFCs, 77 Fed. Reg. 21,637, 21,643 (Apr. 11, 2012) (to be codified at 12 C.F.R. pt. 1310).

[331] *See* Reporting by Investment Advisers to Private Funds and Certain Commodity Pool Operators and Commodity Trading Advisors on Form PF, 76 Fed. Reg. 71,128, 71,132 (Nov. 16, 2011) (to be codified at 17 C.F.R. pts. 4, 275, 279). The data is available in aggregated form that prevents readers identifying individual filers. *See, e.g.*, Risk & Examinations Office of the Div. of Inv. Mgmt., U.S. Sec. & Exch. Comm'n, *supra* note 251.

[332] *See* Supervision of NBFCs, 77 Fed. Reg, at 21,644.

how the required Form PF data captures reporting funds' risk exposures,[333] and the Office of Financial Research has acknowledged that "data gaps" hinder regulators' "ability to fully analyze the nature and extent of financial stability risks relating to the asset management industry."[334]

D. Future Risks

As private equity firms themselves observe, their broker-dealer activities may continue to expand in scale and scope.[335] Private equity firms may, like the former investment banks, become dealer banks by engaging in the broker-dealer activities of market-making and proprietary trading.[336] As dealer banks, private equity firms would likely fund their operations with short-term debt,[337] creating an asset liability-maturity mismatch that could undermine their financial strength. If these broker-dealer activities grew significantly, firms' size and connectedness might portend Lehman-like consequences in the event of financial distress.

Though private equity firms risk SIFI designation if they further expand their broker-dealer activities,[338] they have powerful incentives and good opportunities to do so. They already hold broker-dealer licenses and thus are equipped to grow and diversify broker-dealer operations. Many private equity firms also possess the expertise needed to expand. For example, they recruited proprietary trading teams from BHCs that downsized in anticipa-

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[333] *See* Mark D. Flood et al., *Gauging Form PF: Data Tolerances in Regulatory Reporting on Hedge Fund Risk Exposures* 26 (Office of Fin. Research, Working Paper No. 15-13, 2015), https://www.financialresearch.gov/working-papers/files/OFRwp-2015-13_ Gauging-Form-PF .pdf (finding "significant measurement tolerances in Form PF as a risk-measurement instrument" that "may obscure reporting funds' actual risks").

[334] *See* U.S. Dep't of the Treasury, Office of Fin. Research, *supra* note 20, at 24.

[335] Apollo, for example, notes it may "enter[ ] into new lines of [broker-dealer] businesses." *See* Apollo Glob. Mgmt., LLC, Annual Report (Form 10-K) 53 (Feb. 13, 2017) (noting also that the firm may expand into the insurance and financial advisory industries and that "it is possible that in the future, [its broker-dealer subsidiary] may also provide services (including financing, capital market and advisory services) to third parties."); *see also* KKR & Co. L.P., Annual Report (Form 10-K) 46–47 (Feb. 24, 2017) (disclosing the firm may expand into new lines of business); The Blackstone Group L.P., Annual Report (Form 10-K) 24–25 (Feb. 24, 2017) (same).

[336] Private equity firms do not seriously risk becoming investment companies if they venture further into broker-dealing for the same reason that, say, Goldman Sachs was not an investment company despite its extensive broker-dealer and asset-management activities. Under §3(c)(2) of the Investment Company Act, broker-dealers are excluded from the definition of "investment company." 15 U.S.C. § 80a-3(c)(2) (2012). As to the activities of dealer banks, see *supra* note 286 and accompanying text.

[337] John Armour et al., *supra* note 100, at 440 (describing dealer-banks as holding "long-term debt securities financed with short-term liabilities").

[338] Unless declared systemically important by FSOC, private equity firms would not be subject to macroprudential supervision by the Federal Reserve. Rather, their broker-dealer affiliates would be subject to SEC supervision as broker-dealers are regulated by the SEC. *See* U.S. Dep't of the Treasury, Blueprint for a Modernized Financial Regulatory Structure 59 (2008), https://www.treasury.gov/press-center/press-releases/Documents/Blueprint .pdf (describing the regulation of broker-dealers).

tion of the Volcker Rule's ban on engaging in proprietary trading.[339] In the wake of that ban, private equity firms have greater opportunities to occupy the proprietary trading space vacated by BHCs. Private equity firms that undertake proprietary trading might have incentives to expand into market-making, perhaps foreseeing synergies in doing so. Because of their reputations for financial strength, private equity firms could expand their broker-dealer operations more successfully than could many other market participants. Finally, as reservoirs of nonpublic information, such as M&A deal flow, major firms could enjoy a trading advantage over other market participants, further incentivizing expansion.

In addition to creating systemic risks, the growth of private equity firms could exacerbate the conflicts of interest these firms face, threatening harm to their clients and other market actors. Firms would face legal difficulties; like financial conglomerates, they would more often be faced with irreconcilable fiduciary or other obligations to their clients, requiring them to rely increasingly on structural devices such as information barriers that may fail in their intended design of staunching information flows.[340] Firms will face the challenge of cabining information flows in order to discharge their duties of confidence to clients and comply with insider trading laws.[341]

In short, ongoing changes in firms' broker-dealer activities raise systemic-risk concerns that require active regulatory monitoring. Though these firms are not now institutionally fragile like the former investment banks, they have incentives and opportunities to further expand their operations. They may move into dealer-bank activities such as proprietary trading and market-making—activities that could make them even more difficult to distinguish from the former investment banks.

V. Implications

A. *The Effectiveness of Post-Crisis Reform*

The Article's conclusions as to risks posed by firms' broker-dealer operations and certain of their fund activities lend support to reforms that empower the FSOC to designate nonbank financial companies such as private equity firms as SIFIs and thereby subject them to heightened capital, leverage, and other regulatory standards.[342]

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[339] *See supra* note 176 and accompanying text.

[340] *See* Andrew F. Tuch, *Financial Conglomerates and Information Barriers*, 39 J. Corp. L. 563, 572–75 (2014) [hereinafter Tuch, *Information Barriers*]. For more information regarding the client and third-party harms that result from conflicts of interest and the misuse of nonpublic information, see *id.* at 578–80; Andrew F. Tuch, *Banker Loyalty in Mergers and Acquisitions*, 94 Tex. L. Rev. 1079, 1091–92 (2016).

[341] Tuch, *Information Barriers*, *supra* note 340, at 581–82.

[342] *See supra* notes 239–241 and accompanying text.

On its face, this shadow regulation creates incentives for firms to tailor their operations to avoid being designated systemically important. They might, for instance, limit market-making and proprietary trading, activities which replicate conditions that contributed to the demise of the major investment banks. Private equity firms publicly acknowledge the additional costs they would face as FSOC-designated SIFIs, saying that they would face "significantly increased levels of regulation."[343] To the extent that the threat of SIFI designation is credible, the regulation creates desirable incentives: it encourages firms to limit the risk they pose to US financial stability.

But do private equity firms regard the threat of SIFI designation as credible? Only four (non-private equity) non-bank financial institutions have been so-designated. One, an insurance company, successfully challenged its designation.[344] Moreover, federal regulators have generally been reluctant to apply prudential regulation, a practice known as regulatory forbearance,[345] further undermining the credibility of the SIFI-designation threat. The 2017 shift in executive power and reforms proposed by the Trump Administration suggests a loosening of Dodd-Frank regulations, casting further doubt on the prospect of SIFI designation. One may thus legitimately question the practical effect of this provision vis-à-vis private equity firms, even though it reflects the eminently sensible notion that firms posing systemic risk ought to face regulation intended to address that risk.

The risks attending private equity firms' broker-dealer activities also reveal a gap in post-Crisis regulatory reforms concerning securities holdings companies, entities that own or control at least one broker-dealer. The SEC regulates broker-dealers, subjecting them to a net-capital rule regulating their capital.[346] This rule is a weak substitute relative to the capital-adequacy rules imposed on BHCs[347]—reflecting the SEC's greater focus on protecting investors than ensuring financial safety and soundness. The SEC's net-capital rule also applies only at the subsidiary level and thus overlooks firm-wide activities. But one lesson from the Crisis is that financial institutions' multiple activities interact in complex ways, making firm-wide or consolidated supervision—supervision of a holding-company and all its subsidiaries—critically important. Nevertheless, the Dodd-Frank Act imposes none of the

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[343] *See* Apollo Glob. Mgmt., LLC, Annual Report (Form 10-K) 33 (Feb. 13, 2017); *see also* KKR & Co. L.P., Annual Report (Form 10-K) 50 (Feb. 24, 2017).

[344] *See* Metlife, Inc. v. Fin. Stability Oversight Council, 177 F. Supp. 3d 219 (D.D.C. 2016); Opinion, *Dodd-Frank in Retreat*, Wall St. J. (Apr. 13, 2016, 7:02 PM), https://www.wsj.com/articles/dodd-frank-in-retreat-1460588528 (describing the judicial decision to rescind FSOC's designation of insurance company MetLife as systemically risky). The Department of Justice has appealed the decision; however, a panel of judges on the U.S. Court of Appeals for the District of Columbia Circuit has decided to hold the case in abeyance. *See U.S. Court Puts MetLife 'Too Big to Fail' Case on Indefinite Pause*, Reuters (Aug. 2, 2017, 5:18 PM), https://www.reuters.com/article/us-usa-metlife-court/u-s-court-puts-metlife-too-big-to-fail-case-on-indefinite-pause-idUSKBN1AI2T6?il=0.

[345] *See* Block, *supra* note 6, at 301–06.

[346] *See* 17 C.F.R. § 240.15c3-1 (2017).

[347] *See supra* note 288.

BHCs' heightened capital and liquidity requirements on securities holding companies. Securities holding companies escape the restrictions on activities and investments imposed by the Volcker Rule. They also avoid consolidated supervision by the Federal Reserve at the holding company level,[348] unless a foreign regulator requires that they be regulated on a comprehensive, consolidated basis and they elect that form of oversight.[349]

One explanation for securities holding companies escaping holding-company-level regulation is that the major investment banks no longer existed by the time the Dodd-Frank Act was drafted, leaving no obvious targets for regulation. Congress overlooked or disregarded the prospect that other firms—like private equity firms—would step into the space investment banks left behind. That Goldman lookalikes have emerged as securities holding companies speaks to the short-sightedness of this approach. It also illustrates the importance of the FSOC's power to designate as SIFIs nonbank financial companies that endanger financial stability.

The analysis in this Article also underscores the need for detailed information about firms' funds. Although such information is lacking from the public domain, recent reforms require firms to provide it on Form PF. These forms provide regulators with information they need in order to oversee the risks posed by managed funds. This informational requirement is a sensible regulation. Recent proposals that seek to reduce the informational content of Form PF should be viewed with skepticism, given the absence otherwise of detailed information about firms' funds for regulators.[350]

Importantly, in this Article I take no position on the regulation of BHCs. The conclusion that tighter regulation of BHCs may have increased risk in other parts of the financial system might be taken as evidence against the tougher regulation of BHCs. But this conclusion should lead us to focus regulatory attention on those new risks rather than necessarily to wind back reforms that tackle existing risks.[351]

B. Concentrations of Economic and Political Power

Professor Mark Roe has described how popular mistrust of large accumulations of power led politicians to restrict major financial institutions

[348] The regime replaced supervision by the SEC under the Consolidated Supervised Entities program. Dodd-Frank Act § 617, 15 U.S.C.§78g (2012).

[349] Dodd-Frank Act § 618, 12 U.S.C. § 1850a (2012).

[350] *See* Bren Protess & Danielle Ivory, *Private Equity Tries to Chip Away at Dodd-Frank With House Bill*, N.Y. Times: DealBook (Sept. 8, 2016), https://www.nytimes.com/2016/09/09/business/dealbook/private-equity-tries-to-chip-away-at-dodd-frank-with-house-bill.html.

[351] *See* Anat Admati & Martin Hellwig, The Bankers' New Clothes 225 (2013) (arguing against the notion that "tighter regulation might cause financial activities to move from regulated banking to the so-called shadow banking sector").

from controlling industrial enterprises.[352] Writing in the 1990s, Roe explained, "none [of the major financial institutions] can readily and without legal restraint control industrial companies."[353] His focus was on the forced separation of Wall Street from Main Street. BHCs, for example, faced (and continue to face) a complex web of limits on their investments in industrial corporations.[354] Quite rightly, Roe did not count private equity firms among the major financial institutions at the time, and they were not, and never have been, subject to the limits on financial power that he described.

Private equity firms today exert massive influence over Main Street, directly undermining longstanding US policy of limiting the power of financial institutions over industry. Their private equity funds control industrial enterprises employing millions.[355] These firms represent vast concentrations of economic and political power. It is doubtful that any other type of financial institution exerts as much direct influence over industry.[356]

There are signs that public attention is turning toward private equity firms. As described above, private equity firms and their practitioners have elevated in status since the Crisis, possibly displacing investment banks as locations of the greatest influence and prestige on Wall Street.[357] The *New York Times* has noticed the "rapidly expand[ing]" post-Crisis influence of these firms and their "pervasive, if under-the-radar, role in daily American life."[358] Referring to these firms as "Wall Street," the *Times* describes the "power shift" from banks to private equity firms, warning that it happened with "relatively little scrutiny, even as federal authorities have tightened rules for banks."[359]

This greater public attention will mean greater public mistrust and regulatory scrutiny for private equity firms. In the future, the public backlash against "Wall Street" may target Blackstone and KKR rather than Goldman Sachs and Lehman Brothers. Private equity firms may well face bank-like regulation, including holding company-level regulation, in recognition of the risks their various activities represent. And policymakers may yet focus on the control that private equity exerts over Main Street and hold their funds

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[352] Mark J. Roe, Strong Managers, Weak Owners: The Political Roots of American Corporate Finance 22 (1994); *id.* at 21–22, 28–33 (discussing political and popular opposition to concentrated financial power).

[353] *Id.* at 22.

[354] *See, e.g.*, Saule T. Omarova, *The Merchants of Wall Street: Banking, Commerce, and Commodities*, 98 Minn. L. Rev. 265, 273–92 (2013) (discussing in detail these limits).

[355] *See supra* note 229.

[356] This claim refers to the financial institutions' ownership of industrial corporations. Other financial institutions influence industrial corporations through their lending power, although in this area too private equity firms exert influence over industry—they may now rival BHCs in influence as lenders. *See supra* notes 193–198 and accompanying text.

[357] See supra Part III.D.

[358] Protess, *supra* note 170.

[359] Ivory, *supra* note 228.

liable for the debts of their portfolio companies, a move that could lead firms to relax their influence over industry.[360]

C. Misconduct

Private equity firms' ethos of entrepreneurialism, innovation and risk-taking may have a darker side, making these firms scandal-prone like the firms they now mirror. Investment banks were regularly implicated in misconduct; in fact, perhaps no lawful industry is as synonymous with moral failure and deception as investment banking.[361] Scholars and regulators have linked banks' misconduct to their organizational culture, which has been described as "individualistic [and] bonus driven,"[362] as having an institutional imperative to "'milk' as much out of the present as possible, regardless of [the] consequence[s],"[363] and as "enabling corner-cutting and rule-bending."[364] That private equity firms' ethos now mirrors that of the former investment banks is hardly surprising given the large numbers of former bankers now working for these firms.[365] This shift in ethos and influx of bankers may lead to greater misconduct by private equity firms—such as disloyalty or incompetence—toward investors and others. Financial misconduct may in turn create systemic risk if it occurs on an industry-wide basis.[366]

D. Institutional Evolution

The industry transformation described here invites analysis as to the efficiency of organizational forms. Many scholars believe institutions tend to evolve toward efficiency.[367] For example, Professor Henry Hansmann, in his study of the form of contemporary firms, regards organizations as evolving to minimize total transaction costs.[368] Professors Robert Merton and Zvi

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[360] Private equity funds could be held liable for the debts of their portfolio companies when they act opportunistically or even for the pension liabilities of portfolio companies. *See* Appelbaum & Batt, *supra* note 151, at 284–86, 293–98.

[361] For a more extensive discussion of the extent of misconduct by investment banks, see Andrew F. Tuch, *The Self-Regulation of Investment Bankers*, 83 Geo. Wash. L. Rev. 101, 123–34 (2014).

[362] 2 Parliamentary Comm'n on Banking Standards, Changing Banking for Good 135–36 (2013) (quoting John Plender, *How Traders Trumped Quakers*, Fin. Times (July 7, 2012), https://www.ft.com/content/5d9b913a-c74f-11e1-8865-00144feabdc0.

[363] Ho, *supra* note 66, at 290.

[364] Donald C. Langevoort, Selling Hope, Selling Risk: Corporations, Wall Street, and the Dilemmas of Investor Protection 153 (2016).

[365] *See* text accompanying *supra* note 226.

[366] *See* Christina Parajon Skinner, *Misconduct Risk*, 84 Fordham L. Rev. 1559, 1576–86 (2016) (arguing that misconduct by financial institutions can lead to systemic harm).

[367] *See* Robert C. Ellickson, *When Civil Society Uses an Iron Fist: The Role of Private Associations in Social Control*, 18 Am. L. & Econ. Rev. 235, 251 (2016) ("Many lawyer-economists implicitly or explicitly share Demsetz's optimism that institutions tend to evolve in cost-effective fashion.").

[368] *See* Henry Hansmann, The Ownership of Enterprise 21 (1996) (presenting theory that seeks to explain the observed ownership structures of organizations).

Bodie treat the functions performed within financial systems as relatively stable but regard the institutions performing them as evolving over time toward greater efficiency.[369]

The efficiency of today's evolving nonbank financial institutions is unclear. Though private equity firms, as currently structured, are financially stronger than the former investment banks, we cannot yet tell, for example, whether they are midway through an evolutionary arc toward an investment bank model, growing riskier and more fragile in the process. On the one hand, they face both opportunities and incentives to expand their broker-dealer operations, becoming more akin to the former investment banks. On the other hand, they are pushing for longer-term capital sources,[370] a phenomenon that would avoid conditions that led to banks' downfall. It is also difficult to predict how reforms proposed by the Trump Administration to soften BHC regulation will affect the activities of BHCs and thus the competitive environment for private equity firms. While the post-Crisis shifts documented in this Article seem set to continue, we cannot tell how enduring or far-reaching they will be.

The industry transformation may be more encompassing than I have described: asset managers beyond the private equity world, such as Citadel, have also bolted on broker-dealer subsidiaries but have gone one step further by acting as dealer banks.[371] Though they have yet to diversify to the same extent as private equity firms, they seem exposed to an asset liability-maturity mismatch that makes them financially vulnerable, increasing the risk that their failure would have adverse systemic consequences.

Conclusion

Shortly after Goldman Sachs and Morgan Stanley converted to BHCs, *The Wall Street Journal* declared, "Wall Street as we've known it for decades has ceased to exist."[372] Much has changed since then. As this Article chronicles, investment banking practices, activities, and ethos have re-emerged in a new institutional form: large institutional asset pools traditionally known as private equity firms. This industry reshaping may represent Wall Street at its most Darwinian. New business models emerge to displace old ones. They adapt, overcoming the shortfalls of their predecessors. This Article suggests that the current funding structure of private equity firms in large measure overcomes the liquidity risk and maturity mismatch that afflicted the now-

[369] *See* Robert C. Merton & Zvi Bodie, *A Conceptual Framework for Analyzing the Financial Environment*, *in* The Global Financial System: A Functional Perspective 4 (Dwight B. Crane et al., eds., 1995). To Merton and Bodie, institutions included firms. *Id.*

[370] *See supra* note 262 and accompanying text.

[371] *See* Matt Levine, *Startup Values and Financial Marxism*, Bloomberg View (Sept. 2, 2016, 9:16 AM), https://www.bloomberg.com/view/articles/2016-09-02/startup-values-and-financial-marxism (discussing the market-making activities of Citadel and other hedge funds).

[372] *See The End of Wall Street*, *supra* note 2.

defunct investment banks. But it is less certain whether that structure also cabins the systemic risk that they and their funds may create. As private equity firms continue to evolve, and especially if their broker-dealer activities grow further, the parallels with the former investment banks will suggest greater danger and therefore demand a more robust regulatory response.

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