



# **The Decline of Investment Banking: Preliminary Thoughts on the Evolution of the Industry 1966-2008**

**Robert J. Rhee**

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# The Decline of Investment Banking: Preliminary Thoughts on the Evolution of the Industry 1996–2008

DURING THE ROUNDTABLE DISCUSSION ON THE financial crisis,<sup>1</sup> I noted that it was important to understand finance and the financial industry as a part of legal discourse and education. This paper is a continuation of that thought. The financial crisis of 2008–2009 was shocking in many ways. For me, a major shock was the sudden collapse of three “bulge bracket” investment banks from the competitive landscape in an industry that was already starting to look like an oligopoly. From time to time, investment banks implode due to poor risk management and/or malfeasance. The last such collapses were Drexel Burnham Lambert in the United States in 1990 and Baring Brothers in the U.K. in 1995. These occasional implusions are not surprising. But the collapse of Bear Stearns, Lehman Brothers, and Merrill Lynch within a matter of a few months in 2008, resulting in the disappearance of a large part of Wall Street as we knew it, was inconceivable. In my prior professional life, I worked on Wall Street and the City (London’s financial sector) as an investment banker from 1996 to 2001.<sup>2</sup> This was only a few years before the crisis, and yet the industry that nearly collapsed in 2008 seems very different to me as I update myself on the industry. This was more an intuition based on anecdotal media accounts than a developed thought confirmed by empirical evidence.

In this paper, I provide a preliminary financial analysis of the five major independent investment banks that existed before the crisis: Goldman Sachs, Morgan Stanley, Merrill Lynch, Lehman Brothers, and Bear Stearns. The period examined here is 1996 to 2008. There is nothing particularly significant about 1996 other than this is the year that I started my investment banking career and, as a result, the

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\* Associate Professor of Law, University of Maryland School of Law; J.D., George Washington University; M.B.A., University of Pennsylvania (Wharton); B.A., University of Chicago. I thank my former colleague Lisa Fairfax for organizing this Roundtable and symposium issue. I also thank the editors and staff of our fine law journal for their hard work, dedication, and service.

1. The University of Maryland School of Law hosted a roundtable discussion, “Corporate Governance and Securities Law Responses to the Financial Crisis,” on April 17, 2009.

2. During this period, I worked as an investment banker at Citicorp International Securities (summer associate, Seoul), UBS Warburg (London), Deutschebank Alex. Brown (Baltimore), and Fox-Pitt, Kelton (New York). I mostly worked in corporate finance and mergers and acquisitions.

year I actively observed the industry as an insider. The year also marks the mid-1990s, a decade of economic boom, the Internet technology bubble, which ultimately crashed in 2000, and rapid consolidation of the investment banking industry. I provide the following basic data: (1) segmentation of net revenue by products and services, (2) return-on-average-equity ratio, (3) leverage ratio, and (4) debt-to-equity ratio.<sup>3</sup> Although the data analysis here is basic, it still tells an interesting narrative of the evolution and business cycle of the investment banking industry.

The investment banking industry evolved significantly in the twelve-year period from 1996 to 2008. In the mid-1990s, banks had a balanced mix of the three major product and service lines of full-service investment banks: trading, asset management, and investment banking. In the past few years, trading overshadowed the other product lines and became the primary business activity of major investment banks. The title of this article, the “decline of investment banking,” refers not to the marginalization of investment banking *qua* the firms. The surviving investment and universal banks have benefitted from the unprecedented cheap public capital being pumped into the financial system, and they will benefit in the long-term from the unexpected, crisis-caused consolidation of the industry, which has resulted in fewer competitors in an industry that already underwent significant consolidation in the 1990s and the years following the repeal of Glass-Steagall.<sup>4</sup> Rather, the decline refers to investment banking *qua* the products and services, primarily securities underwriting and corporate finance advisory services. During this period, investment banks changed their business model toward highly leveraged proprietary trading as the principal means of revenue and profit. The investment banking industry was primed to take a big risk. The managers at these firms in essence made “bet the company” type decisions; to boost revenue and profitability, they relied heavily on proprietary trading coupled with a highly levered balance sheet. In hindsight, we see that pure investment banks were especially vulnerable in a way that they were not only a few years ago. The evolution of the industry and the strategic choices ultimately proved to be a witches’ brew for a majority of the independent investment banks.

## I.

For those unfamiliar with the organization of Wall Street investment banks, I provide a rough sketch of the broad industry organization.<sup>5</sup> Before the crisis, there

3. The data analysis and outputs are on file in an Excel spreadsheet with the author.

4. The industry sector got smaller in terms of the number of competitors. Merrill Lynch, Bear Stearns and certain assets of Lehman Brothers were absorbed by their competitors. See *infra* note 12. The sector also got smaller in terms of lost market capitalization, not counting any equity contribution through the Troubled Asset Relief Program or other federal bailout measures. See Kevin Quealy & Dylan Loeb McClain, *A Year of Heavy Losses*, N.Y. TIMES, Sept. 15, 2008, <http://www.nytimes.com/interactive/2008/09/15/business/20080916-treemap-graphic.html>.

5. See generally ALAN D. MORRISON & WILLIAM J. WILHELM, JR., *INVESTMENT BANKING: INSTITUTIONS, POLITICS, AND LAW* (2007) (discussing the business of investment banking and historical industry trends).

were only five major, pure investment banks, sometimes called “bulge bracket” banks, as a result of the consolidation that took place in the 1990s: Goldman Sachs, Morgan Stanley, Merrill Lynch, Lehman Brothers, and Bear Stearns, the last two being somewhat smaller than the three larger competitors. These firms provided a full array of products and services to primarily institutional clients and had large-scale operations extending to various degrees internationally. They were “pure” investment banks because they were not affiliated with larger financial institutions, typically commercial banks. The combination of commercial and investment banking was made possible with the gradual demise and repeal of the Glass-Steagall Act.<sup>6</sup> Before the financial crisis, major investment banks acquired by and affiliated with larger commercial banks were the securities unit of Citigroup (formerly Salomon Smith Barney), UBS Warburg, Credit Suisse First Boston, and J.P. Morgan. In addition to these major investment banking firms, several other large financial institutions have also built large-scale, global investment banking operations through smaller acquisitions and internal growth. These firms include Deutsche Bank, Barclays, CIBC, Bank of America, and Société Générale. Additionally, the industry has numerous niche players that specialize in certain products or industry groups, for example Lazard, which specializes in mergers and acquisitions (M&A) advisory services, and Blackstone, which specializes in private equity investment.<sup>7</sup>

I analyze here the data for the five independent investment banks that were regulated as broker-dealers by the Securities and Exchange Commission (SEC). These firms were selected because they are or were unaffiliated with a larger commercial bank. Their financial data provide a pure look at the business of investment banking. Obviously, Goldman Sachs and Morgan Stanley survived the financial crisis, and Bear Stearns, Lehman Brothers, and Merrill Lynch became the most identifiable victims of the financial crisis (arguably, AIG and Citigroup also fall into this list of victims as well, although they continue to operate today). Since Goldman Sachs and Morgan Stanley converted to bank holding companies in 2008,<sup>8</sup> one can plausibly argue that the era of pure investment banking ended with these conversions. However, it is clear that these firms are pure investment banks irrespective of the regulatory scheme they choose to fall under.

With respect to products and services, the activities of full-service investment banks can be broadly categorized into three: (1) investment banking, which is primarily mergers and acquisitions advisory services, and securities underwriting (“investment banking”); (2) asset management and other securities services (“asset management”); and (3) trading and principal investments, including broker/dealer activities and proprietary trading (“trading”). The 10-Ks of these firms roughly

6. See Gramm-Leach-Bliley Act, Pub. L. No. 106-102, 113 Stat. 1338 (1999) (codified in scattered sections of 12 U.S.C.).

7. See MORRISON & WILHELM, *supra* note 5, at 304–08, 311–14.

8. The Goldman Sachs Group, Inc., Annual Report (Form 10-K), at 1–2 (Jan. 26, 2008); Morgan Stanley, Annual Report (Form 10-K), at 1 (Jan. 28, 2008).

break out net revenue into these categories.<sup>9</sup> Investment banking and asset management are primarily fee-based businesses. The activity of investment banking can be risky, such as when a bank agrees to a firm commitment underwriting. Generally speaking, however, the risk is commensurate with the return. M&A advisory work requires minimal capital, and the risks of underwriting can be managed through syndication and pricing. With respect to trading, an investment bank generates revenue in two primary ways: first, it charges commissions on trades executed for clients in its capacity as a broker; second, it takes proprietary trading positions as a dealer and principal in investments. The latter constitutes a large portion of net revenues from trading, and its activity is only possible with substantial support from the firm's capital and therefore puts that capital at risk. Proprietary trading and principal investment are the primary activities that directly led to the distress of major Wall Street firms.

The data are from each firm's 10-K, or the initial public offering (IPO) prospectus in the case of Goldman Sachs for the period when it was a private partnership (the firm went public in 1999<sup>10</sup>). Four measures were calculated. First, I provide the net revenues by the three major product lines: investment banking, trading and principal investment, and asset management and securities services. Net revenue is net of interest revenue and expense attributable to trading activities. The financial statements provide segmentation of net revenues by product lines. Second, I provide the return-on-average-equity ("ROE") ratio, which is calculated as the net income divided by the average of the prior and current year's shareholder equity. Third, I provide the leverage ratio, which is simply calculated as the ratio of total assets to shareholder equity. Last, I provide the debt-to-equity ratio, which is calculated as the ratio of long-term debt to shareholder equity. As evident, the analysis here is rather basic and not much manipulation or calculation was required.

Based on the data from individual firms, I created composite data. The five firms were combined, creating a weighted average of the financial data. Goldman Sachs and Morgan Stanley<sup>11</sup> were combined as the "surviving firms" of the financial crisis. Bear Stearns, Lehman Brothers, and Merrill Lynch were combined as the "failing

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9. Any miscellaneous revenues or costs not specifically identified as trading, investment banking, or asset management were included in the asset management category for convenience. Generally, these other sources of revenue or cost were minor compared to the three major products. See, e.g., The Goldman Sachs Group, Inc., Annual Report (Form 10-K), at 56 (Jan. 26, 2009) (identifying investment banking, trading and principal investments, and asset management and securities services as Goldman Sachs' only three segments).

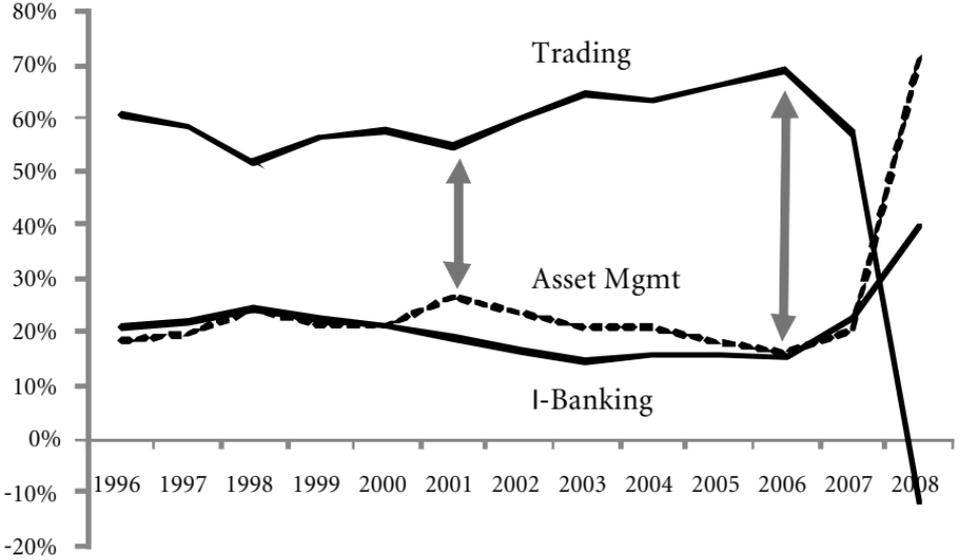
10. See The Goldman Sachs Group, Inc., Prospectus (Form 424B4) (May 4, 1999) (detailing Goldman Sachs' initial public offering of common stock shares in the United States, Canada, and the Asia/Pacific region); see also Charles Gasparino, *Goldman's Results Hits a Record—Firm Discloses Details of Its Planned IPO*, WALL ST. J., Mar. 17, 1999, at C1.

11. Morgan Stanley restated its 2008 financial statements in an 8-K filing dated August 24, 2009. Morgan Stanley, Current Report (Form 8-K), at 1 (Aug. 24, 2009).

firms.”<sup>12</sup> A comparison of the two composites, “surviving” and “failing” firms, provide interesting insights.

Charts 1 through 4 provide the composite data for the five investment banks. These composites do not incorporate 2008 data for Bear Stearns and Lehman Brothers because these two firms were acquired or filed for insolvency before they could file their 2008 10-Ks. Thus, 2008 data include only Goldman Sachs, Morgan Stanley, and Merrill Lynch.

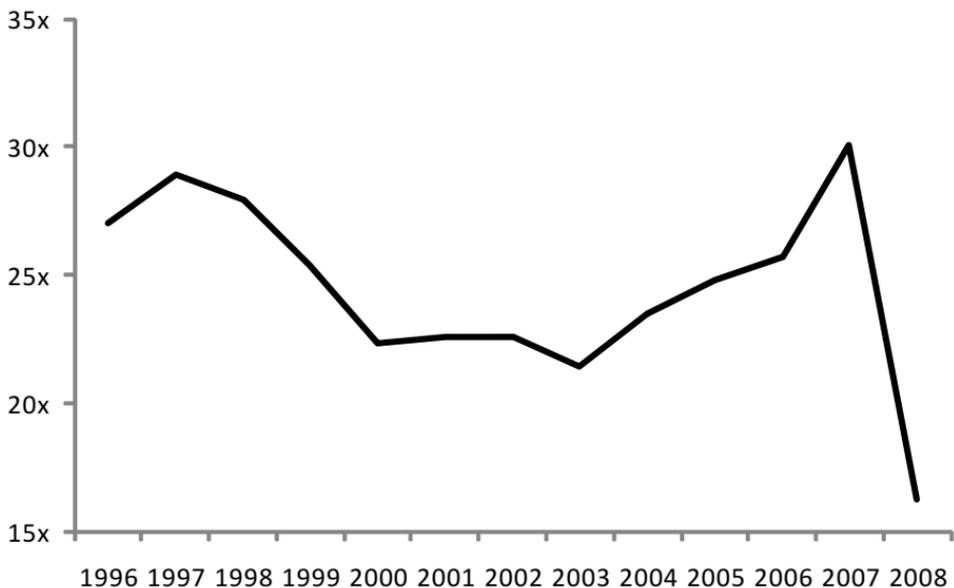
CHART 1: NET REVENUE SEGMENTATION OF ALL BANKS



12. Only Lehman Brothers actually filed for bankruptcy, and certain of its assets were sold to Barclays. Bear Stearns and Merrill Lynch were acquired by JPMorgan Chase and Bank of America respectively. Bear Stearns was sold to JPMorgan Chase in a fire sale. See Marcel Kahan & Edward Rock, *How to Prevent Hard Cases from Making Bad Law: Bear Stearns, Delaware, and the Strategic Use of Comity*, 58 EMORY L.J. 713, 716–21 (2009) (describing the circumstances of the sale). Merrill Lynch survived to merge with Bank of America. It surely would have failed had it not been rescued by Bank of America as prompted by the federal government. See Robert J. Rhee, *Nationalization of Corporate Governance and Purpose During Crisis*, 17 GEO. MASON L. REV. (forthcoming 2010) (manuscript at 4–21, available at <http://ssrn.com/abstract=1447050>) (recounting the events surrounding the merger of the two companies and the government’s role in ensuring its consummation). Both Bear Stearns and Merrill Lynch would most likely have collapsed like Lehman Brothers but for these rescuing transactions.

# THE DECLINE OF INVESTMENT BANKING

## CHART 2: LEVERAGE RATIO OF ALL BANKS



## CHART 3: DEBT-TO-EQUITY RATIO OF ALL BANKS

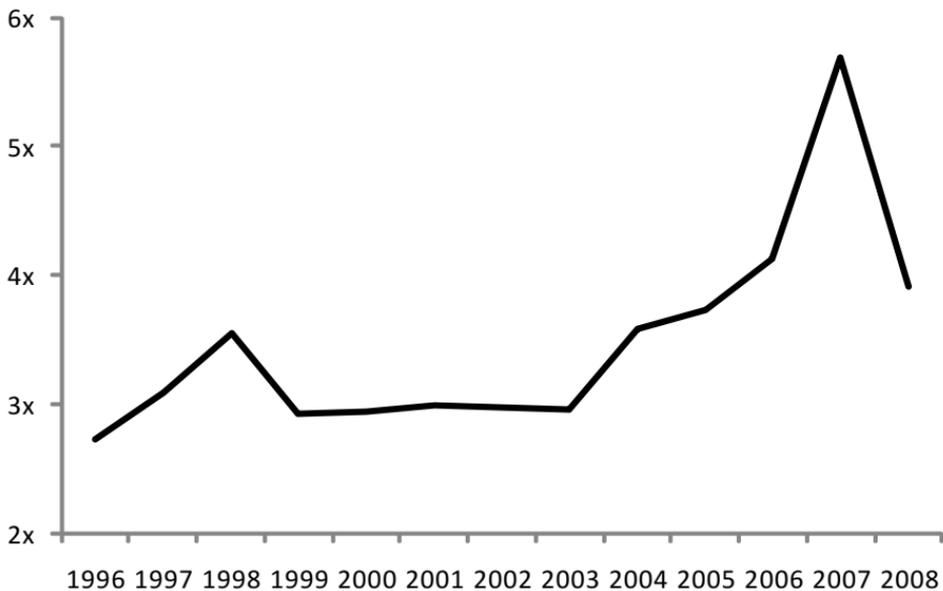
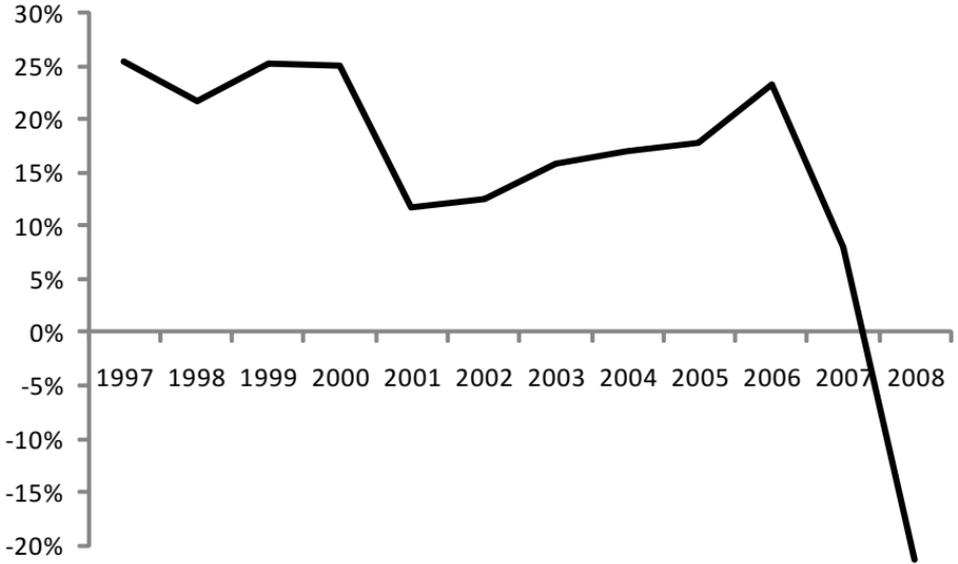


CHART 4: RETURN-ON-AVERAGE EQUITY OF ALL BANKS



These data tell a compelling story. The business model of investment banks significantly evolved as the industry underwent a business cycle. Chart 1 shows that from 1996 to 2000, the business mix of investment banking, asset management, and trading was relatively stable. These years marked a period of economic growth and the run up to the Internet technology bubble. As expected, investment banks were highly profitable during this period as seen in the ROE in the range of 25%. During this period, there were also two major events in the industry. First was the 1998 merger of Citicorp and Travelers, which provided the model of post-Glass-Steagall universal financial services and cross-selling of various financial products under a single firm umbrella.<sup>13</sup> Second was the 1999 conversion of Goldman Sachs from a private partnership to a public company.<sup>14</sup> After the Internet bubble burst in 2000 and the September 11, 2001 terrorist attacks, profitability significantly declined as a result of the recession, and ROE hovered in the range of low teens, resembling the profitability levels of commercial banks. We also see investment banking and asset management steadily decline as measured in terms of net revenue contribution in response to the slowing of investment activities during the recession, and trading start to become the prominent business activity of investment banks. This trend reached its apex in 2006 when trading contributed 69% of

13. Mitchell Martin, *Citicorp and Travelers Plan to Merge in Record \$70 Billion Deal: A New No. 1: Financial Giants Unite*, N.Y. TIMES, Apr. 7, 1998, <http://www.nytimes.com/1998/04/07/news/07iht-citi.t.html>; see Eric Dash, *Citi's Stormy First Decade*, N.Y. TIMES, Apr. 3, 2008, at C1, available at <http://www.nytimes.com/2008/04/03/business/03citi.html> (recounting ten-year history of the merger).

14. See *supra* note 10.

net revenue, as compared to 15% for investment banking and 16% for asset management.<sup>15</sup>

The focus on trading coincided with dramatically increasing leverage. Charts 2 and 3 show that investment banks were not always so highly levered. The banks were seeking greater funding with short-term debt, as seen in the leverage ratios, as well as funding long-term capital with greater leverage, as seen in debt-to-equity ratios. From 2003 to 2007, the leverage ratio increased from approximately 21x to 30x, and the debt-to-equity increased from approximately 3x to just under 6x. Although the leverage ratios were high in the 1990s as well,<sup>16</sup> investment banks had diversified portfolios of business activities, with much of the net revenue coming from fees and commissions from investment banking and asset management, reducing the volatility of revenues and earnings from trading. Extreme leverage to fund primarily proprietary trading was a recent phenomenon. When a firm is highly leveraged and successful, its ROE tends to be higher. Chart 4 shows the influence of increasing leverage on ROE, which dramatically increased from the doldrums of the dot-com crash, the terrorist attacks of September 11, 2001, and subsequent recession—that is, until the industry collapsed under the weight of its leverage.

The increase in leverage was made possible by a crucial change in SEC regulation. Before 2004, the net capital requirement imposed by the SEC required that “[n]o broker or dealer . . . shall permit its aggregate indebtedness to all other persons to exceed 1500 percent of its net capital.”<sup>17</sup> This provided a definite, tangible limit on leverage. In 2004, the SEC changed the net capital rule and allowed investment banks to opt out of this restriction. The agency established a voluntary, alternative method of computing deductions to net capital for investment banks based on mathematical models to calculate net capital requirements for market and derivatives-related credit risk.<sup>18</sup> Given that these models were held by the firms themselves and the agency merely approves them for use,<sup>19</sup> the change in the rule

15. Morrison and Wilhelm provide data showing trading revenue exponentially increasing in the 1990s. MORRISON & WILHELM, *supra* note 5, at 13 fig. 1.4 (showing that by 2000 trading revenue as a percent of capitalization was approximately 80%). This trend continued in the twenty-first century. Chart 1, *supra*, shows that trading revenue increased substantially from 2001 to 2008.

16. See Chart 1, *supra*.

17. 17 C.F.R. § 240.15c3-1(a)(1)(i) (2003). The rule also allows an alternative standard. *Id.* § 240.15c3-1(a)(1)(ii). Aggregate indebtedness was defined as “the total money liabilities,” subject to certain exclusions including collateralized indebtedness. *Id.* § 240.15c3-1(c)(1). Net capital is net worth adjusted by certain items. *Id.* § 240.15c3-1(c)(2).

18. Alternative Net Capital Requirements for Broker-Dealers That Are Part of Consolidated Supervised Entities, Exchange Act Release No. 49,830, 69 Fed. Reg. 34,428, 34,428 (June 21, 2004) (to be codified at 17 C.F.R. pts. 200 and 240) [hereinafter Alternative Net Capital Requirements]; see Net Capital Requirements for Brokers or Dealers, 17 C.F.R. § 240.15c3-1 (2008).

19. One seriously questions whether the agency had the capacity to pass judgment on these mathematical models given that it is clear that the firms themselves did not. See John C. Coffee, Jr., *What Went Wrong? A Tragedy in Three Acts*, 6 U. ST. THOMAS L.J. 403, 414–15 (2009) (noting that the SEC assigned three staff members to each bank to monitor the implementation of net capital per the firm’s mathematical models, and

allowed great leeway and discretion in setting the net capital levels. A significant consequence is, as the SEC noted, that a “broker-dealer’s deductions for market and credit risk probably will be lower under the alternative method of computing net capital than under the standard net capital rule.”<sup>20</sup> This change in the rule, allowing investment banks to opt out of the fixed net capital restriction, allowed greater leverage.

Chart 2 shows that the leverage ratio of investment banks began to increase during 2004 and thereafter. During this time, the firms were also increasingly trading exotic securities, such as credit derivatives and collateralized debt obligations of asset-backed securities, for which there was no liquid market. In this regard, the mathematical models could also be allowed to compute deductions for illiquid securities.<sup>21</sup> The agency changed the rule so that it “may monitor better, and act more quickly in response to, any risks . . . to the broker-dealer.”<sup>22</sup> The validity of these mathematical models depends on the underlying assumptions regarding expected cashflow and variance (the old adage “garbage in, garbage out”), and these inputs must have been based on human judgment for we now know that there were no reliable inputs. In hindsight, this agency view was terribly misguided because it delegated the regulation of leverage to the investment banks themselves.<sup>23</sup>

In addition to the change in regulation, high leverage was facilitated by cheaper cost of debt. Since the beginning of the new century, rates have trended downwards. Chart 5 provides historic yields on Treasuries, which provide the benchmark risk-free rates (higher yielding securities are longer-term instruments).<sup>24</sup>

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concluding that “[i]t was, from the outset, a mismatch. Three young staffers against all the financial economists Merrill Lynch wished to use to design a model that would reach the conclusions that its CEO needed to reach”).

20. Alternative Net Capital Requirements, 69 Fed. Reg. at 34,428; *see id.* at 34,429 (“One commentator, however, questioned the use of models to the extent that it would lower broker-dealer capital requirements . . .”).

21. *Id.* at 34,435.

22. *Id.* at 34,428.

23. See Stephen Labaton, *Agency’s ’04 Rule Let Banks Pile Up New Debt*, N.Y. TIMES, Oct. 2, 2008, at A1 (describing the events surrounding the change in the agency rule and the subsequent effects).

24. The Treasury Department’s website provides the data. U.S. TREASURY, DAILY TREASURY RATE YIELD CURVES, <http://www.ustreas.gov/offices/domestic-finance/debt-management/interest-rate/yield.shtml> (last visited Oct. 30, 2009).

CHART 5: YIELDS ON ONE-, FIVE-, AND TWENTY-YEAR TREASURIES

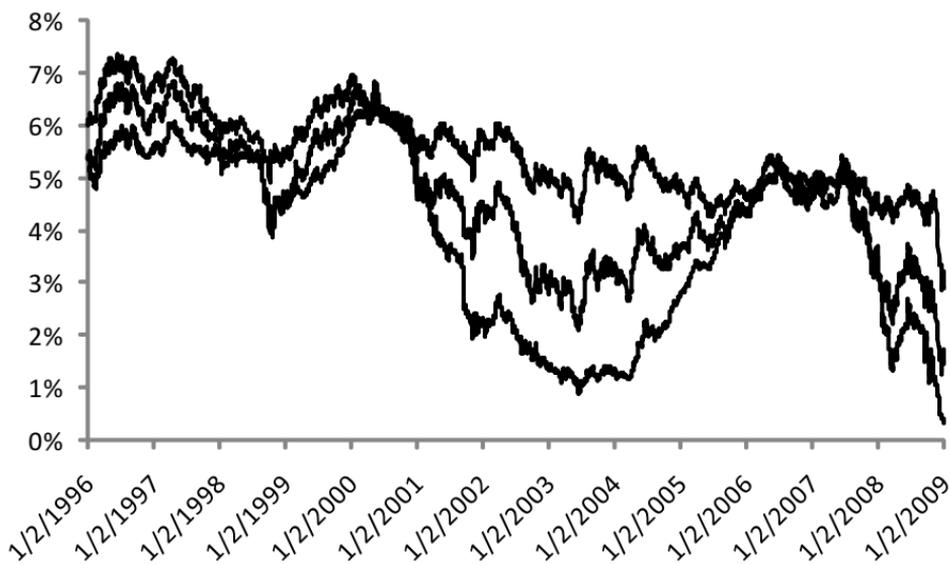


Chart 5 shows that yields on long-term securities declined steadily, and the yields on shorter-term instruments fell sharply in the period 2000 to 2004. Among other things, cheap cost of debt fueled the housing bubble. It also fueled Wall Street's dependence on leverage to boost profitability.

The data here is not surprising with respect to increasing leverage and reliance on debt to boost profitability, a common theme in the current account of the financial crisis. However, the account must be considered in the broader context of the evolutionary changes on Wall Street that took place over the past several decades. We see a business cycle: the economic boom of the 1990s, the technology crash of 2000, the September 11, 2001 terrorist attacks, and the economic slowdown of 2000 to 2002. The decline in the general economy at the turn of the century naturally led to a decline in revenue from asset management and investment banking. Profitability declined sharply in the period 2000 to 2002. The ROE was reaching levels of commercial banks and insurance companies, not the high flying levels investment banks saw in the 1990s. At the same time, we also see that the capital markets were experiencing a period of declining yields on credit. Cheaper cost of credit incentivized leverage, which Wall Street firms took advantage of to boost profitability. The factors converged and in the subsequent years we experienced the evolution of the Wall Street business model.

An examination of Goldman Sachs, the premier Wall Street investment bank, reflects this narrative. Charts 6 through 9 provide the essential data.

CHART 6: NET REVENUE SEGMENTATION OF GOLDMAN SACHS

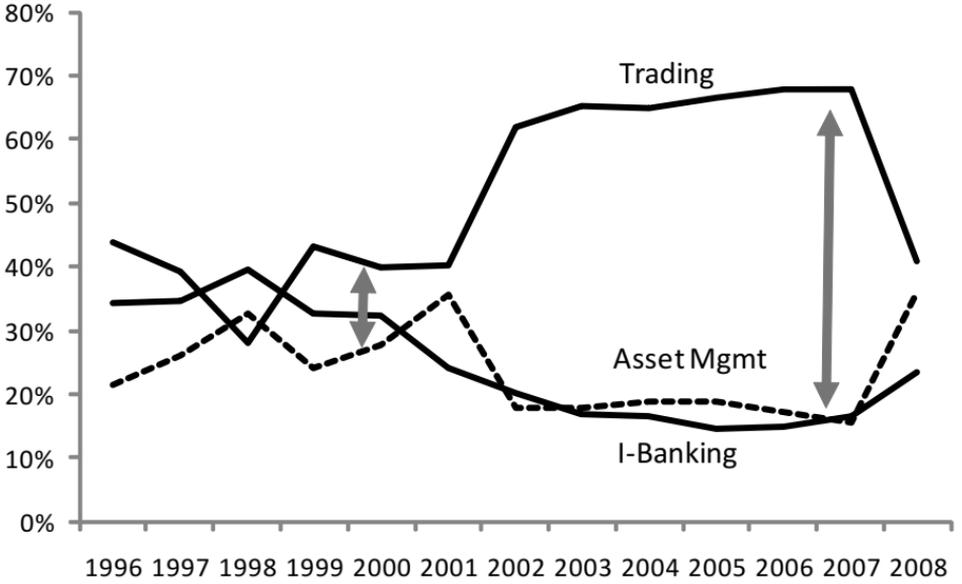


CHART 7: LEVERAGE RATIO OF GOLDMAN SACHS

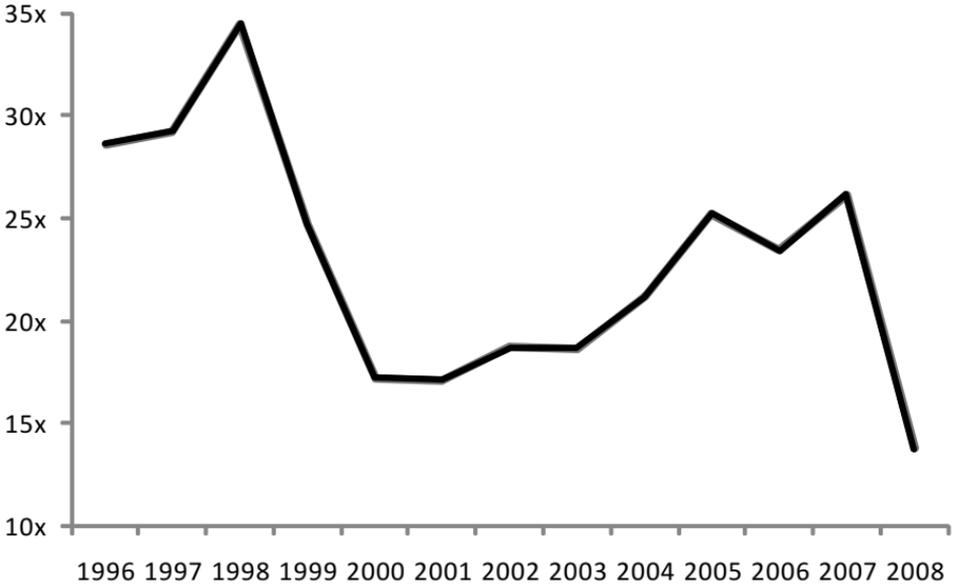


CHART 8: DEBT-TO-EQUITY RATIO OF GOLDMAN SACHS

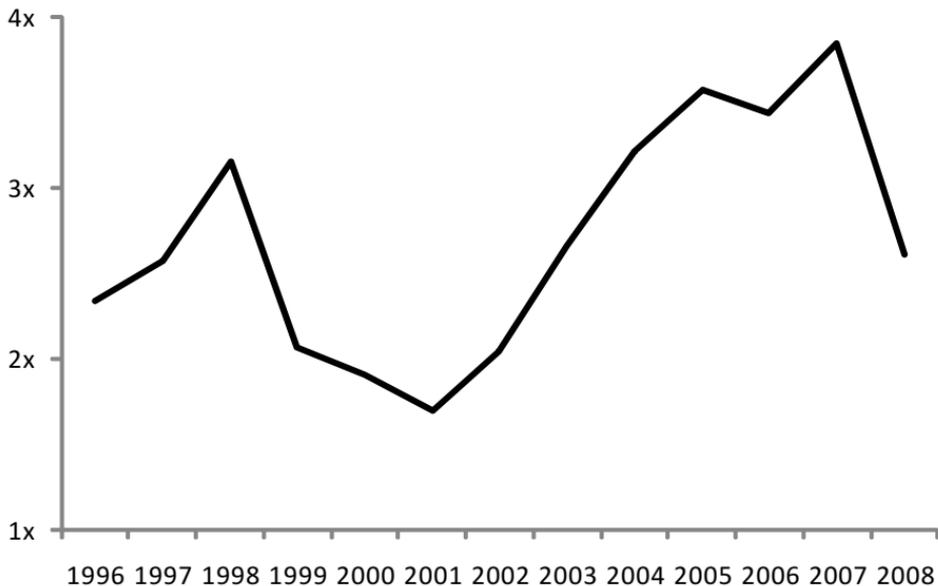
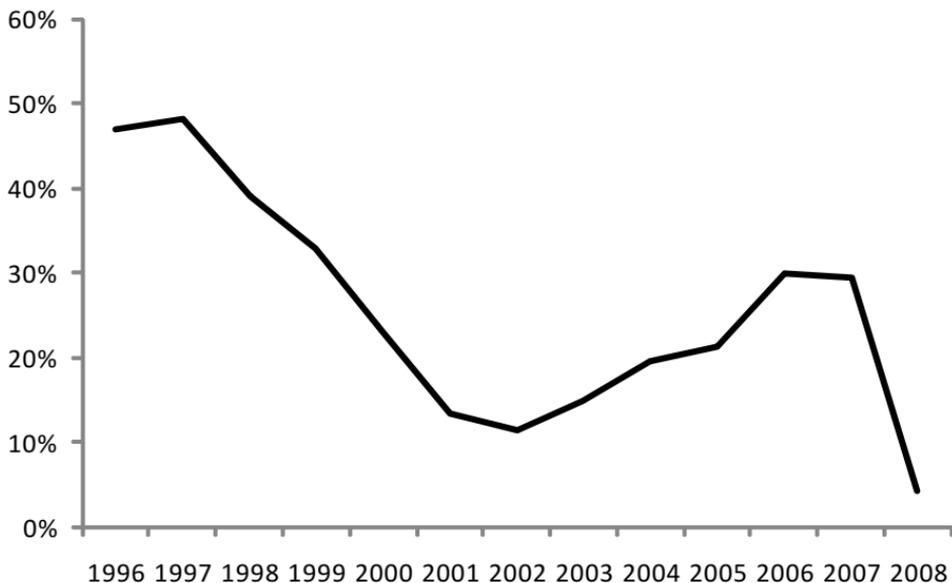


CHART 9: RETURN-ON-AVERAGE EQUITY OF GOLDMAN SACHS

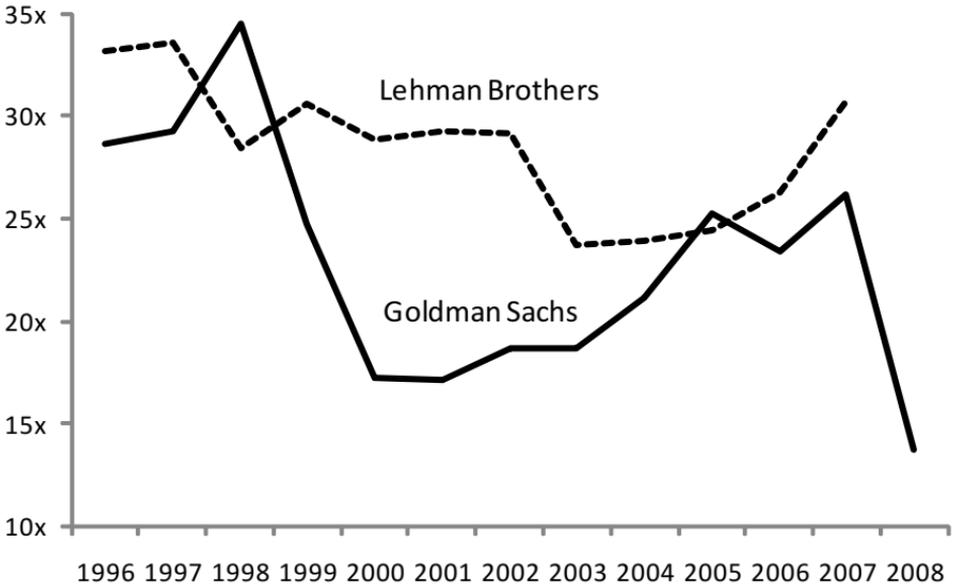


The trends shown in these data mirror the broader trends in Wall Street. I note a few additional observations. The move away from a balanced business mix to trading is even more pronounced for Goldman Sachs. When it was a private partner-

ship before 1999, we see that it was highly levered, but the business mix was diversified among three main lines of products and services. The result was an extraordinarily profitable firm as seen in the ROE figures hovering around 50%. Around the time of its IPO in 1999, the leverage ratio, debt-to-equity ratio, and ROE declined. A return to higher profitability was achieved by greater leverage and reliance on trading, which came to constitute approximately 70% of Goldman Sachs' net revenue.

Another aspect that is worth noting is that as the crisis was unfolding in 2008, Goldman Sachs was able to delever quickly. In 2008, it raised \$10.75 billion in equity capital and received \$10 billion in capital injection through the Troubled Asset Relief Program (TARP) to shore up its balance sheet.<sup>25</sup> Despite the market crash in 2008, it also earned net income of \$2.3 billion.<sup>26</sup> The net effect was that Goldman Sachs raised substantial equity capital to protect its balance sheet. Compare Goldman Sachs' leverage and debt-to-equity ratios with those of Lehman Brothers.

CHART 10: COMPARATIVE LEVERAGE RATIOS

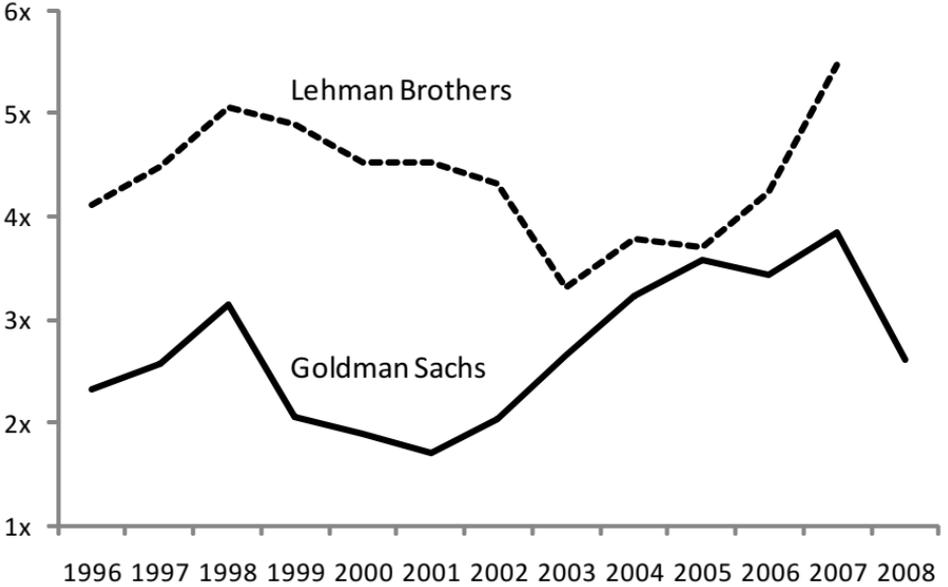


25. The Goldman Sachs Group, Inc., Annual Report (Form 10-K), at 179 (Jan. 26, 2009).

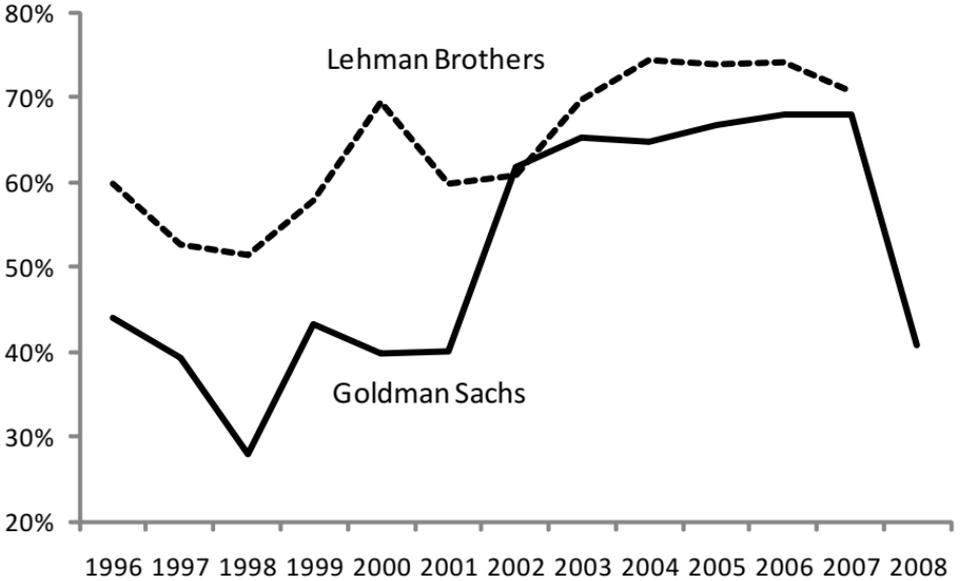
26. *Id.* at 3.

# THE DECLINE OF INVESTMENT BANKING

## CHART 11: COMPARATIVE DEBT-TO-EQUITY RATIOS



## CHART 12: COMPARATIVE TRADING CONTRIBUTION TO NET REVENUES



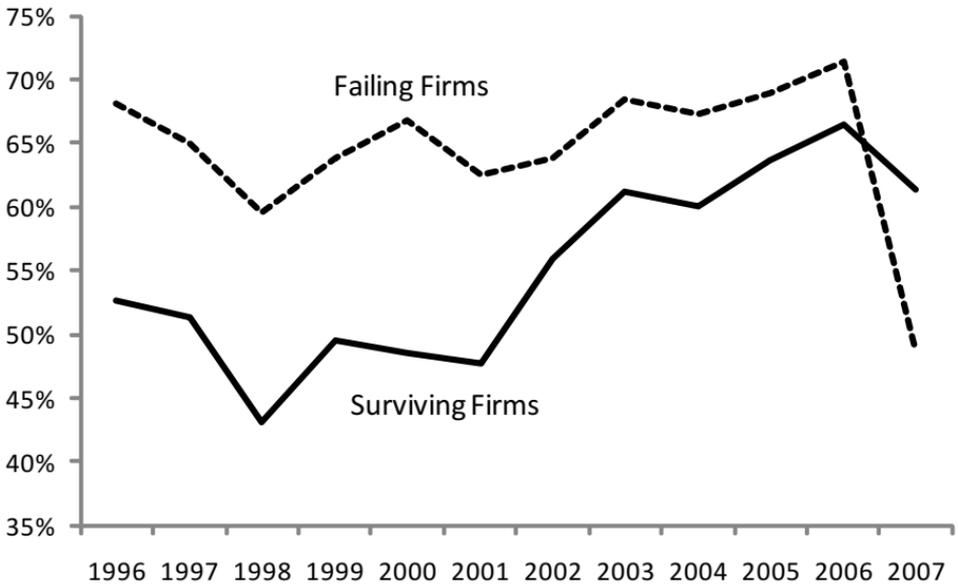
The comparison between Goldman Sachs, a success story in crisis management, and Lehman Brothers, an obvious failure, is interesting. Obviously, any cross-comparison of firms, even competitors in the same industry group, is tricky business.

Goldman Sachs and Lehman Brothers were different firms, with different business models and cultures. We see that Lehman Brothers had always relied more heavily on trading, and it had always been more levered. In the crucial 2006 to 2007 period leading up to the market crash of 2008, we see that the leverage and debt-to-equity ratios for Lehman Brothers increase substantially. This suggests that the firm was taking on more risk as the market was heading toward calamity. At the same time, Goldman Sachs was leveling off, and in 2008, it quickly delevered its balance sheet.

## II.

Why did Morgan Stanley and Goldman Sachs survive the financial crisis while Bear Stearns, Lehman Brothers, and Merrill Lynch did not?<sup>27</sup> The above comparison between Goldman Sachs and Lehman Brothers provides a hint. We can get a broader perspective by examining the composite data from the two surviving firms and the three failed firms. Charts 13 through 16 provide comparative data.

CHART 13: TRADING CONTRIBUTION TO NET REVENUE



Data for 2008 are skewed because heavy losses in trading results in negative percentages and dramatic increases in the percentages for investment banking and

27. They almost did not survive the crisis. During the crisis, both firms were in peril, and they were struggling to survive. See generally ANDREW ROSS SORKIN, *TOO BIG TO FAIL: THE INSIDE STORY OF HOW WALL STREET AND WASHINGTON FOUGHT TO SAVE THE FINANCIAL SYSTEM—AND THEMSELVES* (2009) (describing how both firms were in peril during the crisis).

asset management resulting from trading losses. Thus, 2008 data are not included in Chart 13.

CHART 14: LEVERAGE RATIOS

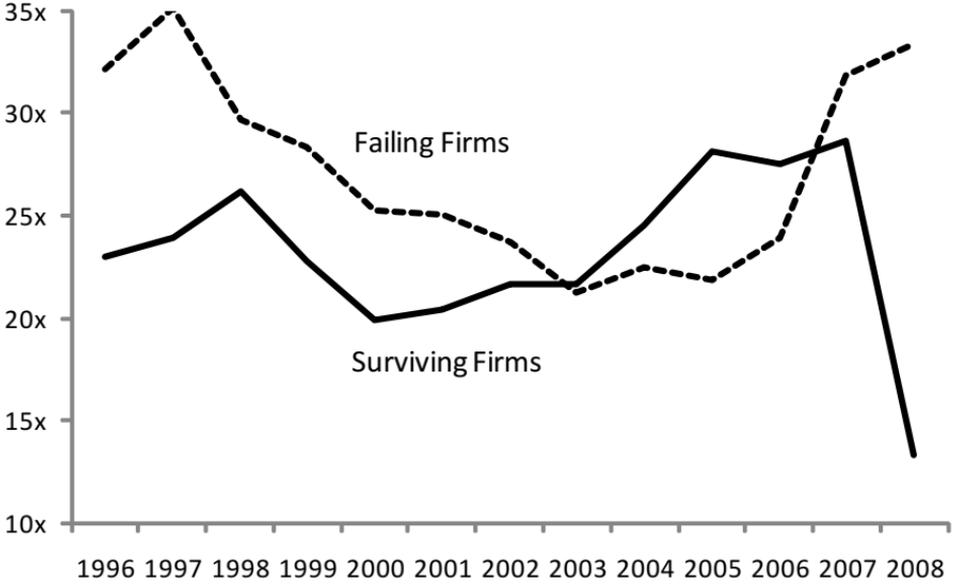
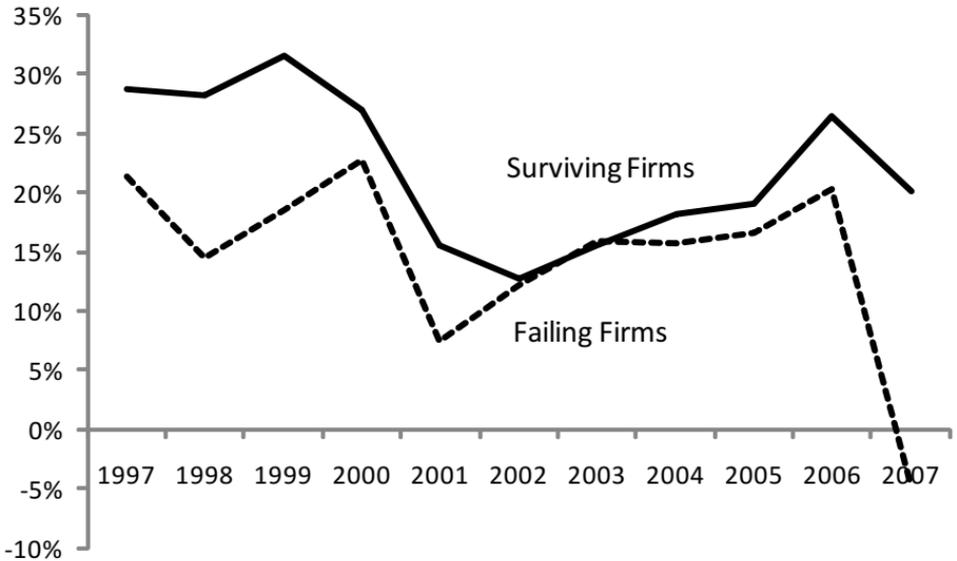


CHART 15: DEBT-TO-EQUITY RATIOS



CHART 16: RETURN-ON-AVERAGE EQUITY<sup>28</sup>

A composite comparison provides a few interesting observations. First, Chart 13 shows that the failing firms historically relied more heavily on trading, as was the case in the comparison between Goldman Sachs and Lehman Brothers. Chart 16 shows that the surviving firms were more profitable as measured by ROE.<sup>29</sup> The failing firms had greater leverage. Debt-to-equity ratio was always higher, and the leverage ratio was generally higher. The most interesting observation here is one that is also seen in the comparison of Goldman Sachs and Lehman Brothers: during the period of 2006 to 2008, these firms were taking greater risk through dramatic increase in leverage. In proverbial gambling parlance, the failing firms were doubling down on their bets at precisely the time that the probability heavily favored the house. This executive decision and the failure of risk management exhibited by it were the efficient proximate cause of the failure of the three investment banks.

28. Data for 2008 was not included because the losses of the failing banks were so enormous they were off the scale of the graph. Their combined ROE was -131% whereas that of the surviving banks was approximately 4%.

29. ROE is a measurement based on net income. The largest expense of these firms is professional salaries and bonuses, and thus net income may be affected by how much employees take from the firm's revenue. See, e.g., The Goldman Sachs Group, Inc., Annual Report (Form 10-K), at 131 (Jan. 26, 2009). With that said, it is doubtful that the professionals at Goldman Sachs and Morgan Stanley were paid any less than their competitors.

## III.

The basic data in the above sections confirms two major observations about the death of the investment banks. First, perhaps the single most important factor in bringing down three major investment banks was a leveraged balance sheet, triggering a crisis in confidence in the firm's credit and illiquidity of the assets when the housing market started to collapse.<sup>30</sup> In the postmortem on the financial crisis, there has been much talk about how Wall Street created ever more exotic financial instruments. It is now fashionable to criticize credit default swaps, collateralized debt obligation, mortgage securitization, and over-the-counter derivatives. But insofar as the death of the investment banks is concerned, the culprit was a rather ordinary one—leverage and failure of risk management—something the firms and the SEC thought could be managed by sophisticated mathematical modeling. This story was told before in the saga of Long-Term Capital Management, and a decade later it is told again with the demise of Bear Stearns, Lehman Brothers, and Merrill Lynch.

The relationship between the demise of these investment banks and complex financial instruments requires some clarification. It is important to distinguish the inherent rationale and function of the securities, and financial engineering for that matter, from the underwriting, marketing, and use or abuse of these securities. The three failed investment banks did not meet their demise at the hands of complex financial instruments. To the extent that these securities could not be adequately valued during turbulent market conditions, they were a factor in the causality just as a bullet can be a link in the causality of a homicide. However, financial instruments such as securitization and derivatives were not the primary cause of the financial crisis. If a stock market bubble bursts with terrible effects, as we last saw in 2000 with the crash of the technology market or, more severely, the stock market crash of 1929, should we blame the concept of the common stock or the process of venture capital investment? No one questions that complex instruments were collectively abused by an entire industry. The complexity and aggregate volume of transactions resulting therefrom disguised risk and made risk management far more onerous, imposing a terrible secondary effect of the collapse of the housing and credit markets. In this regard, no one disputes that the government could have far better regulated the instruments and the industry.

Insofar as the instruments themselves, however, we should put it in the context of the fact that the economy experienced the largest asset bubble in the history of finance. This asset bubble was fueled by leverage. In addition to the banks, American homeowners and consumers were also heavily leveraged. In the wealthiest country in the world, one's residential home is typically the largest portion of an

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30. See MARK ZANDI, *FINANCIAL SHOCK: GLOBAL PANIC AND GOVERNMENT BAILOUTS—HOW WE GOT HERE AND WHAT MUST BE DONE TO FIX IT* 123–27 (updated ed. 2009) (arguing that leverage and illiquidity were significant factors in the financial crisis).

American household's personal wealth. The housing bubble and collapse is ground zero of the crisis. The value of plain vanilla bonds—residential mortgage-backed securities (RMBS)—were tied to the bubble. These bonds were systematically, improperly underwritten and marketed during a time of gross irrationality in both the housing and capital markets. Common sense suggests that when this entire pool of assets experiences a severe price correction across the entire nation, all other things tied to them will also adjust, including the multiple layers of complex financial instruments that wrapped around the bonds. Metaphorically, these financial instruments were like a Los Angeles-sized congested pool of cars racing down a fog-shrouded mountain, without a speed limit, at the bottom of which was a collapsing bridge over a steep gorge. These financial instruments nearly became the asteroid that killed the economy because (1) their value was tied to one of the greatest levered asset bubbles seen in financial history and accordingly their write-downs must reflect this, and (2) in mass quantities their complexity injected additional risk into the financial system by making the task of assessing risk far more difficult for the market and regulators, which had highly adverse *secondary* effects on liquidity, perceptions of counterparty risk, and confidence in the overall market, particularly the credit market. The notion, however, that somehow financial instruments, like a deadly virus, can wreak destruction through their inherent nature is one that should be discounted in the public dialogue.

The second observation about the demise of the investment banks is that they have fundamentally pivoted their business away from providing client services and intermediating functions of the capital markets.<sup>31</sup> Unlike the issue of leverage, this aspect of the evolution of the investment banking industry has not been prominently publicized. The business segment of investment banking—M&A and underwriting, functions traditionally considered to be the prime domain of investment banks—have become ancillary activities. It is ironic that investment banks no longer depend much on their core, traditional investment banking activities. These activities are fee-based services with moderate risks associated with them, and they have historically provided a diversification effect on the entire business mix of investment banks. In the past several years, investment banks became more like publicly traded hedge funds taking massive proprietary bets on the market rather than privately capitalized investment banks harkening back to the time when Goldman Sachs was a private partnership and independent “bulge bracket” investment banks dominated the servicing of the global capital markets.

Lehman Brothers, Bear Stearns, and Merrill Lynch fell because of poor risk management in trading and business strategy of betting the firm on the success of one product or activity, a fairly ordinary explanation in an extraordinary historical episode. Standard corporate finance theory informs that leverage can boost profitabil-

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31. See MORRISON & WILHELM, *supra* note 5, at 301–03 (discussing the decline of investment banking requiring reputational capital as compared to trading requiring financial capital).

ity, but at a certain point bankruptcy risk increases the cost of capital such that leverage is value-destroying. A decade earlier, Long-Term Capital Management collapsed as a result of high leverage and sharp disruption in the bond market.<sup>32</sup> The demise of Lehman Brothers, Bear Stearns, and Merrill Lynch are just additional examples of poor risk management. These firms were increasingly engaging in highly volatile activities, at high leverage levels permitted by the SEC, and they did not have the capital cushion in their balance sheet to withstand severe shocks of bursting housing and credit markets.

Given these missteps, what can be done about the problem? I do not envision the reinstatement of the Glass-Steagall Act. Regardless of the merit of Glass-Steagall's prohibition against the combination of commercial and investment banking, and I believe the statute had merit, the issue now seems academic. One supposes that legislation can simply re-erect the wall, but the politics of reinstatement would be insurmountably complex. It took European firms several decades to establish prime positions in the top tier of investment banking. These firms include Credit Suisse, UBS, Barclays, and Deutsche Bank. Likewise, several large American commercial banks, such as JPMorgan Chase and Bank of America, confronted the same obstacles in building their substantial franchises. Divesting these universal banks of their investment banking businesses would be no small political and regulatory feat. Any movement toward divestiture would no longer be a matter of mostly domestic policy, but would be something that must now be coordinated internationally, absent unilateral divestiture of investment banking by American firms only.

In the past several decades, the financial industry has undergone a transformational period of globalization. Globalized finance may require substantial capital and infrastructure under a one firm umbrella. Banks have gotten bigger not only in the United States, but also internationally. Not that long ago, New York and London were the primary centers of finance and American investment banks reigned supreme in the capital markets. This is no longer the case. Much of the consolidation that took place in the 1990s among investment banks resulted from international financial institutions buying up American investment banking business.<sup>33</sup> A globalized economy may be better served by universal banking, a model

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32. See WILLIAM W. BRATTON, *CORPORATE FINANCE: CASES AND MATERIALS* 200 (6th ed. 2008) (noting that at one time Long-Term Capital Management was levered by as much as 100x, and at the time of its collapse it was levered 54x).

33. See MORRISON & WILHELM, *supra* note 5, at 294–300 & fig. 10.1 (describing the consolidation of the 1990s and the trend toward larger investment banks). Among others, these American and British investment banks were acquired by foreign or non-U.K. banks: Bankers Trust, Alex. Brown, First Boston, Donaldson Lufkin & Jenrette, PaineWebber, Cowen, SG Warburg, Kleinwort Benson, Morgan Grenfell, Baring Brothers, and Wasserstein Perella. These firms were generally smaller- or medium-sized firms. Recently, Barclays bought the investment banking and capital markets operations of Lehman Brothers. Julia Werdigier & Landon Thomas Jr., *Barclays Agrees to Buy Some Lehman Assets*, N.Y. TIMES, Sept. 16, 2008, <http://www.nytimes.com/2008/09/17/business/worldbusiness/17barclays.html>.

based on providing a broad array of banking services and products available across various geographic areas under a one firm umbrella.

On a practical level, the full service, independent investment banks, in the mold of the “bulge bracket” firms of the 1990s, are a dying breed. The financial crisis killed three such banks, and only Goldman Sachs and Morgan Stanley stand as independent investment banks, their bank holding company status notwithstanding. This is significant because the reinstatement of Glass-Steagall would not be imposing a prohibition as was the case before its repeal, but it would require divestitures of fully integrated operations of many universal banks, an onerous burden on financial institutions. Consider the following changes in the leagues tables for two key investment banking services, mergers and acquisitions advisory services and equity underwriting from 1990 to 2003.<sup>34</sup> *Italicized* firms in 2003 are firms that are now affiliated with larger commercial banks, including Merrill Lynch (Bank of America), Bear Stearns (JPMorgan Chase), and the investment banking assets of Lehman Brothers (Barclays), and **bold** firms are banks affiliated with foreign banks. The “2003 Adjusted” figures do a pro forma adjustment taking into account the 2008 consolidation of these investment banks into their new parents.

TABLE 1: TOP 10 EQUITY UNDERWRITERS (\$ MILLION)<sup>35</sup>

1990		2003		2003 Adjusted	
Alex. Brown	2,975	<i>Merrill Lynch</i>	20,184	<i>Bank of America</i>	24,253
Goldman Sachs	2,634	<i>Citigroup</i>	19,526	<i>Citigroup</i>	19,526
Salomon Brothers	1,756	Goldman Sachs	14,554	Goldman Sachs	14,554
Merrill Lynch	1,596	Morgan Stanley	12,116	Morgan Stanley	12,116
Lehman Brothers	1,013	<b>UBS</b>	10,273	<b>UBS</b>	10,273
First Boston	929	<b>CS First Boston</b>	7,355	<b>CS First Boston</b>	7,355
Paine Webber	911	<b>Lehman Brothers</b>	6,575	<b>Barclays</b>	6,575
Morgan Stanley	911	<i>JP Morgan</i>	6,031	<i>JP Morgan</i>	6,031
Smith Barney	807	<i>Bank of America</i>	4,069	AG Edwards	2,708
Dean Witter	759	AG Edwards	2,708		

34. MORRISON & WILHELM, *supra* note 5, at 17–18.

35. Morrison and Wilhelm indicate that these figures are in thousands of U.S. dollars, but this is clearly a typographical error. The figures must be in millions of U.S. dollars.

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TABLE 2: TOP 10 M&A ADVISERS (\$ MILLION)

1990		2003		2003 Adjusted	
Goldman Sachs	48,223	Goldman Sachs	60,377	Goldman Sachs	60,377
Morgan Stanley	45,820	<i>JP Morgan</i>	30,143	<i>JP Morgan</i>	40,429
First Boston	41,009	<i>Merrill Lynch</i>	29,838	<i>Bank of America</i>	29,838
Salomon Brothers	33,163	<i>Citigroup</i>	26,773	<b><i>CS First Boston</i></b>	34,281
Lazard Freres	25,181	<b><i>Lehman Brothers</i></b>	22,143	<b><i>Barclays</i></b>	22,143
Dillon Read	22,239	<b><i>CS First Boston In</i></b>	20,449	Morgan Stanley	15,549
Morgan Guaranty	15,840	Morgan Stanley	15,549	<b><i>Deutsche Bank</i></b>	13,222
Merrill Lynch	15,218	<b><i>CS First Boston</i></b>	13,832		
Shearson Lehman	12,430	<b><i>Deutsche Bank</i></b>	13,222		
Lehman Brothers	10,903	<i>Bear Stearns</i>	10,286		

These league tables show the striking transformation of the investment banking industry. These two periods represent the Glass-Steagall and post-repeal eras. In 1990, the activity of investment banking was performed by independent investment banks. Tables 1 and 2, as adjusted for the events of 2008, show that only Goldman Sachs and Morgan Stanley remain independent. They also show that the business of investment banking has been truly globalized and that foreign firms have also become market leaders. The landscape of investment banking has changed permanently.

It remains a question whether even Goldman Sachs and Morgan Stanley, patri- cians of investment banking, can maintain their independence, and one would not be surprised to see them be acquired once valuations are sufficiently high to incen- tivize a voluntary sale.<sup>36</sup> In an era of increasing volatility in the markets, the next financial storm could be the last for a thinly capitalized investment bank, absent regulatory mandates on minimum capital and perhaps other safeguards. Soon enough, the pure securities firm may be a thing of the past, either because they meet their demise or because they combine with a larger financial institution. Given the level of market consolidation, the internationalization of investment banking, and the globalization of finance, the practical hurdles of reinstating a wall between commercial and investment banking may be too high. It seems that the genie is out of the bottle.

36. One can speculate that there are only a few natural acquirers. The marriage of commercial and invest- ment banking is tricky. I would not be surprised to see Deutsche Bank acquire one of these firms in the future, more likely Morgan Stanley. Like Bank of America, Deutsche Bank has long coveted a prime investment bank- ing franchise, and it has a history of acquiring investment banks such as Morgan Grenfell and Bankers Trust (including Alex. Brown). It is big enough to make such an acquisition, and because it conducts major invest- ment banking activities already, integration would be less of an issue than it would be for some other commer- cial banks.

Obviously, the industry must be better regulated. This topic is best left for another day, except to suggest that, as we have seen, leverage is clearly an issue. It is measurable and, as such, susceptible to bright-line limits. The most prominent failure of government regulation with respect to the demise of the investment banks was the SEC's decision to loosen limits on capital for pure investment banks. This regulatory decision had disastrous consequences on the industry, and the SEC must bear a large share of the blame for its failure to regulate properly the investment banking industry and its misguided belief that mathematical models of investment banks could be the basis for regulating their capital limits.<sup>37</sup> The agency removed the capital safeguard, the external limitation that could have tamed the urgency of bubble psychology and self-destructive behavior. For example, just eye-balling Charts 2, 3, 14, and 15, without any other analysis, it seems that a leverage ratio exceeding 30x and a debt-to-equity ratio at or exceeding 3x may place the firm in a zone of danger upon a stressful event. Certain firms are systemically important to the financial markets. No one will seriously argue that firms like Goldman Sachs and Morgan Stanley, the two firms left standing after the carnage of 2008, are not systemically important firms. The collapse of these types of firms would impose greater risk of secondary and tertiary effects. It is possible to make these kinds of firms less risky by regulating capital structure.

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This paper presents some preliminary thoughts as I consider the evolution of the investment banking industry to its current form. My thoughts here concern the investment banking industry, and not the broader causes of the financial crisis. I stress the preliminary nature of the inquiry here, which is based on rather elementary information. Nevertheless, my conclusions are fairly consistent with the prevailing narrative on the financial crisis. This paper provides a broader perspective on the demise of the majority of the pure, full-service investment banks. A historical perspective showing the business cycle of investment banks is needed to understand more completely why major investment banking houses fell so suddenly and collectively in the dark months of summer and fall of 2008.

The basic analysis presented here suggests that one such cause is the way Wall Street organized itself in the 1990s and at the turn of the new century, and the way the industry attempted to reverse the adverse fortunes associated with the economic downturn in 2000 to 2002. With declining profitability and an erosion of investment banking business, the firms increasingly relied on trading as a source of revenue and profit. In doing this, they also lobbied the SEC to change the rules of leverage and minimum capital requirements. A compliant SEC loosened the regula-

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37. See Coffee, *supra* note 19, at 416 ("In combination then, the investment banks were motivated to raise their leverage levels and abandon diversification at the same time as the SEC was inclined to pursue deregulation. The combination was deadly.").

tory constraints. By 2007, some of these banks were essentially public hedge funds, taking massive, highly levered bets on the housing market. They were susceptible to a volatile market in a way that they were not only a few years ago.

Knowing the past and the present is essential for formulating the policy prescriptions for the future. We will never know whether limits on leverage would have saved Bear Stearns, Lehman Brothers, or Merrill Lynch, but an alternative outcome is certainly plausible and perhaps even probable. What would have happened had the SEC not lifted the capital requirements in 2004? These firms may have been saved had they not doubled down on their bets or had they been precluded from doing so by appropriate regulatory limits on leverage. In thinking about regulation, we should weigh the profitability concerns of the firms and their right to freely engage in financial enterprise against the dangers posed to the greater public and the capital market from the realization of systemic risk. Lastly, it is good habit to institute counterfactual regulations to retrofit law with the goal of preventing the last crisis, but we should also be humble and recognize that we lack the foresight to predict the next catastrophe or crash. A conservative philosophy of prudential limits on “bet the firm” type financial risk-taking may be needed for some financial institutions that are systemically integrated into the fabric of the capital markets.