

DEPARTMENT OF ECONOMICS

Working Paper

**The Bonus-Driven “Rainmaker” Financial Firm:
How These Firms Enrich Top Employees, Destroy
Shareholder Value and Create Systemic Financial
Instability**

by

James Crotty

Working Paper 2009-13



**UNIVERSITY OF MASSACHUSETTS
AMHERST**

**The Bonus-Driven “Rainmaker” Financial Firm:
How These Firms Enrich Top Employees, Destroy Shareholder Value and Create
Systemic Financial Instability**

Second Draft

**James Crotty
University of Massachusetts, Amherst
October 2009**

I am grateful to Iren Levina and especially Jerry Epstein and Rob Parenteau for helpful comments, to Iren Levina for outstanding research assistance, and to the Economics Department’s Sheridan Scholars program for research support.

Abstract

We recently experienced a global financial crisis so severe that only massive rescue operations by governments around the world prevented a total financial market meltdown and perhaps another global Great Depression. One necessary precondition for the crisis was the perverse, bonus-driven compensation structure employed in important financial institutions such as investment banks. This structure provided the rational incentive for key decision makers in these firms (who I call “rainmakers”) to take the excessive risk and employ the excessive leverage in the bubble that created the preconditions for the crisis. This paper presents and evaluates extensive data on compensation practices in investment banks and other important financial institutions. These data show that rainmaker compensation has been rising rapidly, is very large, and has asymmetric properties that induce reckless risk-taking. Since boom-period bonuses do not have to be returned if rainmaker decisions eventually lead to losses for their firms, and since large bonuses continue to be paid even when firms in fact suffer large losses, it is rational for rainmakers to use unsustainable leverage to invest in recklessly risky assets in the bubble. A review of the modest literature on financial firm compensation practices in general and those of investment banks in particular demonstrates that the giant bonuses of the recent past are not efficient returns to human capital – they are unjustified rents. The paper discusses possible answers to the challenging questions: what is the source of rainmaker rents and how are they sustained over time? Answers to these questions can help guide debates over the appropriate regulation of financial markets. They are also necessary inputs to the development of an adequate theory of the “rainmaker” financial firm that can help us understand how these firms were able to maximize the compensation of their key employees through policies that destroyed shareholder value and created systemic financial fragility. To my knowledge, no such theory currently exists.

Key Words: bonuses; investment banks; leverage; financial crisis; perverse incentives

JEL Codes: G01; G24; G10

It is now universally agreed that the US and global economies have experienced their worst financial crisis since the 1930s, one that contributed to a severe global downturn. This financial crisis has led to massive government bailouts around the world. There is debate about the respective roles of the real and financial sectors in the creation of this crisis, but it is undeniable that financial markets were at least a major contributor to the crash. From a US-centric perspective, it is clear that the evolution of financial markets since the end of the 1970s led almost inevitably to a crisis moment such as this. In response to economic problems and political pressure in the 1970s and very early 1980s, the US government began to accelerate an ongoing process of financial market deregulation. A combination of deregulation and fast-paced financial innovation led to a series of financial crises both in the US and elsewhere. These crises were met by government bailouts, which restored vitality to financial markets, but also created severe moral hazard – an increasingly assured belief among leaders of financial institutions that the government would always intervene to limit the depth and duration of any financial downturn. Thus, it was safe for them to take increasing risk and use increasing leverage to enlarge financial market profits and maximize the compensation of their key people – hereafter known as “rainmakers” – during periods of financial market booms. As a result, crises became more threatening, bailouts bigger, and subsequent financial booms more vigorous. *The term rainmaker is usually taken to mean those who can generate high sales for the firm. I use it here to denote all key people in financial firms who are responsible for generating high revenue and profit.* It thus includes top executives, traders and sales people as well as M&A and IPO teams.

More important, these cycles were imbedded in a long term trend in which financial markets grew ever larger relative to the real economy, and global financial markets became increasingly integrated. Financial profits as a share of total corporate profits, which was about 10% in the early 1980s reached 40% in the mid 2000s. In 1981, US private debt was 123 per cent of gross domestic product; by the third quarter of 2008, it was 290 per cent. In 1981, household debt was 48 per cent of GDP; in 2007, it was 100 per cent. It is important to note that the biggest rise in indebtedness took place in the financial sector itself.

The gross debt of the financial sector rose from 22 per cent of GDP in 1981 to 117 per cent in the third quarter of 2008. This rapid rise in financial firm borrowing fueled the financial boom. Borrowed funds were used to bid up asset prices, creating higher collateral values that in turn enlarged the borrowing capacity of speculators. According to the Fed's flow of funds data, the liabilities of the investment banking sector rose from \$548 billion in 1995 to \$3 trillion in 2007, an annual growth rate of 16%. Between 2002 and 2007, liabilities grew by 138%. (In the midst of the crisis in the first quarter of 2009, liabilities fell to \$1.8 trillion.) Fast growth in borrowing led to increased leverage ratios and thus greater bank risk. Rising leverage also provided the source of funding for the spectacular increase in the compensation of top bank employees much discussed in the recent past.

The rising relative size of financial markets created structural systemic financial fragility in which the financial claims on real-sector cash flows became ever larger relative to the cash flows themselves. Financial claims also became more complex. Mortgages were rolled into mortgage backed securities, which were sliced and diced into collateralized debt obligations. Credit default swaps were then written on collateralized debt obligation tranches. The extreme complexity of structured financial products made them non-transparent or opaque, which made it easy for markets to substantially underestimate their risk in the bubble. Before 2008 it was not clear when this process would end, or what the end game would look like. But it was clear, at least to some, that the entire process had become unsustainable. (See for example Crotty 2007 or Noriel Roubini's website). By the fall of 2008 it was apparent to everyone that the global financial system was on the verge of collapse.

As this paper will show, rainmakers received huge bonuses by taking excessive risk and using dangerous levels of leverage and did not have to return these bonuses when their risk-seeking caused their firms and the entire financial system to crash. Indeed, they continued to receive exorbitant bonuses even in the downturn. The asymmetry in rainmaker compensation schemes combined with deregulation and destructive financial innovation made the outbreak of a serious crisis almost inevitable. (For an analysis of the financial causes of the recent crisis, see Crotty 2009.)

Financial institutions infected by perverse incentives include independent investment banks, large commercial-bank centered financial conglomerates (that include in-house investment banks, hedge and private equity funds), hedge funds, private equity funds, institutional investors such as mutual funds, general and monoline insurance companies and ratings agencies. Perverse compensation incentives led ratings agencies to hide the buildup of excessive risk throughout the system by giving safe ratings to extremely dangerous financial products.¹

Among the financial institutions with perverse incentives, investment banks – whether independent or part of financial conglomerates - played a crucial role in creating recent boom-bust cycles and the secular expansion of financial markets in our era. They were the source of most of the financial innovations - such as mortgage backed securities, collateralized debt obligations of various kinds and credit default swaps - that helped create the crisis. Investment banks were also at the center of the leverage creation process. Half of the spectacular rise in investment bank's return on equity in the four years leading up to the crisis was generated by higher leverage rather than smart investing, efficient innovation or even boom-induced capital gains on trading assets.

Compensation practices differ across markets, but they all share the characteristic that their rainmakers can maximize their compensation over time by taking excessive risk in the boom.² A *Financial Times* editorial put the problem as follows:

By paying huge bonuses on the basis of short-term performance when negative bonuses are impossible, banks create huge incentives to disguise risk-taking as value creation. Moreover, if bankers are rewarded for pursuing risky strategies that appear highly profitable for an extended period and then blow up, it is others who pay the costs. Given the extreme difficulty for outsiders, even top management, of monitoring the true risks being run, the result is a disaster just waiting to happen. But, of course, top management is itself part of the problem: it, too, has huge incentives to bet the bank. (“Curbing the excess of bankers’ pay,” March 7 2008)

A *Wall Street Journal* article expressed a similar understanding of the dangers of perverse incentives.

¹ In April 2007, one analyst at Standard and Poor's said their ratings model “did not capture “half” of a deal's risk... We should not be rating it.” A colleague responded: “We rate every deal. It could be structured by cows and we would rate it” (Moran 2009, p. 94).

² A detailed description of perverse incentive practices in different financial markets is provided in Crotty 2008.

Bankers' pay must be regulated. The industry's one-way incentive structures have led bankers to run amok with other people's money -- contributing to the chaos in financial markets. When their bets pay off, bankers and traders carry home massive bonuses. When the bets crater, they don't hand those bonuses back. If bankers aren't forced to face the full consequences of their folly, the current mess will be repeated. ("Why Banks Need Pay Fix Compensation Practices Lack Teeth to Penalize Traders Who Lose Big," March 11, 2008).

Alan Blinder stated the problem this way: "From the point of view of the companies' shareholders [the rainmaker compensation scheme]... is madness." Using a coin flip analogy in which heads represents a risky decision that pays off and tails one that leads to losses, he says that from the shareholders' perspective:

the gamble looks like: Heads, we get a share of the winnings; tails, we absorb almost all the losses. The conclusion is clear: Traders and managers both want to flip more coins – and at higher stakes than shareholders would if they had any control, which they don't. The source of the problem is quite simple: Give smart people go-for-broke incentives and they will go for broke. Duh. (WSJ, "Crazy Compensation and the Crisis" May 28, 2009)³

Though almost everyone acknowledges that perverse compensation incentives were a major cause of the financial crisis, there has been surprisingly little serious academic analysis of the existence and reproduction of dysfunctional compensation practices in financial institutions. Why and how did these practices evolve? What explains the premiums paid to top financial employees relative to those working in other industries? Are rainmaker compensation practices consistent with the reproduction of the firm over the long run? Are they compatible with the interests of shareholders? Are they justified by exceptional long-term creation of shareholder value? Can it be shown that rainmakers have superior human capital as compared to top earners in other industries who make much less than they do? Or are rainmaker premiums rents, achieved not as a just reward for exceptional productivity but because rainmakers have the power to extract pay far in excess of their long-term contributions to shareholder value? If so, what is the source of this power?

The answers to these questions have important implications for the theory of financial firms and of financial markets, as well as for the debate over whether financial

³ As explained below, there are good reasons to believe that shareholders would not restrain risk-taking in the boom even if they could.

markets are “efficient” with respect to the setting of financial security prices and the allocation of real resources across competing uses. Answers to these questions can also help us better understand whether the rapid rise in inequality experienced over the past two decades has been driven by widening efficiency and productivity gaps among employees or, rather, has been primarily determined by relative power relations. We need answers in order to inform the current debate about government regulation of financial firm compensation. (Not surprisingly, rainmakers do not think tighter regulation a good idea.) Strong regulation of large financial institution compensation schemes is a necessary component of effective regulation, but, by itself, it cannot force financial markets to operate in the public interest. A more complete set of proposals for regulatory reform is suggested in Crotty and Epstein 2009.

We know both the origin of, and the justification for, bonus-dominated compensation schemes in investment banking. Most investment banks began as limited partnerships. As such, the firm was solely devoted to maximizing the income of their rainmakers – the bank’s partners. Financial markets tend to be more volatile than most nonfinancial markets. The bonus system - in which a modest base salary is supplemented by a large but variable bonus whose size depends upon bank and individual performance has the distinct advantage that, if adequately elastic, it can quickly and substantially cut compensation costs in down markets to protect the integrity of the firm and shareholder profit. *This is the primary justification used to defend the bonus-based compensation scheme used in financial markets.* Though bonuses would rise substantially in financial market booms, they were supposed to also fall dramatically when markets crashed.⁴

Moreover, in recent years the practice of granting investment bank rainmakers multiple year guaranteed bonuses and retention bonuses (ostensibly designed to prevent top rainmakers from moving to other firms) has blossomed. Guaranteed and retention bonuses demonstrate that modern bonus-based compensation schemes are not used for their original purpose because they do not decline with revenue and they are paid without regard to employee or firm performance. “A guaranteed bonus might strike many people as a contradiction in terms. But on Wall Street, banks have become so eager to lure and

⁴ It was also believed that a bonus system would induce partners to work as hard as they could, since each would get a piece of the extra revenue she generated, and that it would induce cooperation among partners because each partner shared in the fruits of every other partner’s labor.

keep top deal makers and traders that they are reviving the practice of offering ironclad, multimillion-dollar payouts guaranteed, no matter how an employee performs.” Even firms kept on life support by government funds continue to engage in this practice. In early 2009 Citigroup lured senior derivatives traders, a category of employee responsible for excessive risk taking in the boom, with multimillion dollar, multiyear guarantees. Meanwhile, government owned AIG will pay \$281 million in guaranteed retention bonuses to key members of its sales force (Dash 2009).⁵

The structure of the paper is as follows. Section II presents and evaluates data on rainmaker compensation in investment banking. The data show that rainmaker compensation is very large and its asymmetric properties generate strong incentives for excessive risk taking in financial booms. Section III reviews the modest literature on financial market and investment banking compensation. It demonstrates that rainmaker premiums have been quite large in recent decades and that they can not be explained as returns to human capital – they are rents. Section IV discusses possible answers to the difficult question: where do the rainmaker rents come from and how are they sustained? The final section summarizes conclusions from this analysis.

II. Rainmaker Compensation Schemes: The Primacy of Bonuses

The most authoritative data on bank compensation practices in the recent boom and crisis were collected by New York State Attorney General Andrew Cuomo, who published a report on the subject aptly titled “No Rhyme or Reason: The ‘Heads I Win, Tails You Lose’ Bank Bonus Culture” (Cuomo 2009).

(http://www.oag.state.ny.us/media_center/2009/july/pdfs/Bonus%20Report%20Final%207.30.09.pdf) His summary of the report’s findings is so important that I quote from it extensively.

Bonuses are supposed to rise when revenues rise, but then fall quickly when revenue declines sharply in downturns in order to sustain profit and protect shareholder interests in a very volatile business. That is the rationale for paying top employees such a high percent of their compensation in bonuses rather than as fixed salaries. Top

⁵ In announcing plans to regulate bonuses, French President Sarkozy stated that “guaranteed bonuses are to be banned” (*Financial Times*, Sarkozy tightens bonus rules,” August 26, 2009).

employees on Wall Street “typically make 90% or more of their compensation in year-end bonuses (*Wall Street Journal*, “Bank Bonus Tab: \$33 Billion Nine Lenders That Got U.S. Aid Paid at Least \$1 Million Each to 5,000 Employees,” July 31, 2009, Susanne Craig and Deborah Solomon.) But Cuomo concludes that “even a cursory examination of the data suggests that in these challenging economic times, compensation for bank employees has become unmoored from the banks' financial performance. Thus, when the banks did well, their employees were paid well. When the banks did poorly, their employees were paid well. And when the banks did very poorly, they were bailed out by taxpayers and their employees were still paid well.” He continues:

Bonuses and overall compensation did not vary significantly as profits diminished. An analysis of the 2008 bonuses and earnings at the original nine TARP recipients [of \$125 billion in government bailouts] illustrates the point. Two firms, Citigroup and Merrill Lynch suffered massive losses of more than \$27 billion at each firm. Nevertheless, Citigroup paid out \$5.33 billion in bonuses and Merrill paid \$3.6 billion in bonuses. Together, they lost \$54 billion, paid out nearly \$9 billion in bonuses and then received TARP bailouts totaling \$55 billion. For three other firms -Goldman Sachs, Morgan Stanley, and JP. Morgan Chase - 2008 bonus payments were substantially greater than the banks' net income. Goldman earned \$2.3 billion, paid out \$4.8 billion in bonuses, and received \$10 billion in TARP funding. Morgan Stanley earned \$1.7 billion, paid \$4.475 billion in bonuses, and received \$10 billion in TARP funding. JP. Morgan Chase earned \$5.6 billion, paid \$8.69 billion in bonuses, and received \$25 billion in TARP funding. Combined, these three firms earned \$9.6 billion, paid bonuses of nearly \$18 billion, and received TARP taxpayer funds worth \$45 billion (Cuomo 2009, pp. 1-2).⁶

Losses reported by Merrill totaled \$35.8 billion in 2007 and 2008, enough to wipe out 11 years of earnings previously reported by the company. Yet for the 11-year period from 1997 to 2008, Merrill's board gave its chief executives alone more than \$240 million in performance-based compensation (*New York Times*, “After losses, a move to reclaim executives' pay,” February 22, 2009).

Taking a full-cycle view, Cuomo shows that while compensation did accelerate in the boom, it failed to shrink in line with revenue in the crash. Indeed, as earnings at key banks collapsed, it increased.

⁶ A major source of public frustration with the TARP program was the perception that banks who received government funds used them primarily to pay bonuses and dividends rather than to expand credit to the public as intended.

For instance, at Bank of America, compensation and benefit payments increased from more than \$10 billion to more than \$18 billion between 2003 and 2006. Yet, in 2008, when Bank of America's net income fell from \$14 billion to \$4 billion, Bank of America's compensation payments remained at the \$18 billion level ... even though 2008 performance was dismal when compared to the 2003-2006 bull market. Similar patterns are clear at Citigroup, where bull-market compensation payments increased from \$20 billion to \$30 billion. When the recession hit in 2007, Citigroup's compensation payouts remained at bull-market levels –well over \$30 billion, even though the firm faced a significant financial crisis. (Cuomo 2009, p. 2)

The collapse of Lehman Brothers destroyed \$22 billion of shareholder value as measured by the decline in the book value of equity. Yet compensation in 2008 was larger than in 2004 when the firm was profitable. “Lehman paid out \$55 billion to employees in the decade to the end of 2008. Shareholders earned cumulative profits of zero, including the loss of all of their capital when the firm failed” (*The Economist*, July 18, 2009 p 72, “Are investment banks run for employees or shareholders?”)

After defending huge bonuses for rainmakers as good for shareholders because they are supposed to evaporate when revenues crash to protect profits, when revenues plummeted in 2007, Merrill Lynch simply switched its compensation philosophy so it did not have to slash bonuses.

For example, as Merrill Lynch's performance plummeted, Merrill severed the tie between paying based on performance and set its bonus pool based on what it expected its competitors would do. Accordingly, Merrill paid out close to \$16 billion in 2007 while losing more than \$7 billion and paid close to \$15 billion in 2008 while facing near collapse. Moreover, Merrill's losses in 2007 and 2008 more than erased Merrill's earnings between 2003 and 2006. Clearly, the compensation structures in the boom years did not account for long-term risk, and huge paydays continued while the firm faced extinction (Cuomo 2009, p. 2).

Note that if all investment banks pay their rainmakers whatever competitors are expected to pay their rainmakers, there is no effective restraint on rainmaker compensation.

Cuomo concludes that the “repeated explanation from bank executives that bonuses are tied to performance in a manner designed to promote [long-term] growth does not appear to be accurate. Indeed, our investigation suggests a disconnect between compensation and bank performance that resulted in a "heads I win, tails you lose" bonus system” (Cuomo 2009, p. 2). More recent data confirm Cuomo’s findings. According to the *Wall Street Journal*:

Major U.S. banks and securities firms are on pace to pay their employees about \$140 billion this year -- a record high that shows compensation is rebounding despite regulatory scrutiny of Wall Street's pay culture. Workers at 23 top investment banks, hedge funds, asset managers and stock and commodities exchanges can expect to earn even more than they did the peak year of 2007, according to an analysis of securities filings for the first half of 2009 and revenue estimates through year-end by The Wall Street Journal. ... Total compensation and benefits at the publicly traded firms analyzed by the Journal are on track to increase 20% from last year's \$117 billion -- and to top 2007's \$130 billion payout. This year, employees at the companies will earn an estimated \$143,400 on average, up almost \$2,000 from 2007 levels. ... Average compensation per employee [at Goldman Sachs] is on pace to reach about \$743,000 this year, double last year's \$364,000 and up 12% from about \$622,000 in 2007, according to the Journal analysis. ("Wall Street On Track To Award Record Pay," October 14, 2009)

These data demonstrate that it is rational for top financial firm operatives to take excessive risk in the bubble even if they understand that their decisions are likely to cause a crash in the intermediate future. *Since they do not have to return their bubble-year bonuses when the inevitable crisis occurs, and since they continue to receive substantial bonuses even in the crisis, they have a powerful incentive to pursue high-risk, high-leverage strategies.* In recent years at least, these perverse incentives caused rainmakers to make decisions that helped create the global financial crisis.

Figure 1 allows us to take a longer view of the rainmaker-shareholder relation and changes therein, utilizing broad industry for all New York Stock Exchange firms rather than data from the Wall Street giants collected by Attorney General Cuomo. It establishes two important facts about the growth of Wall Street firms and the effects of their compensation practices on the firm and its shareholders over the period from 1985 to 2008.⁷ First, it shows the enormous growth of industry profits in this era. The Securities Industry and Financial Markets Association reports that this growth was partly driven by total revenue, which was over nine times larger in 2007 than it had been in 1985 (SIFMA 2008). Profit from 1985 to 1990 averaged about \$2.5 billion annually. From 1991 to 1994 it averaged \$5.5 billion. In the first of the two recent financial booms, from 1995-2000,

⁷ The sample of firms that generates bonus data is not identical to the one that generates profit data, but they are sufficiently compatible to ensure that the size and rates of change of the variables are essentially as presented in the graph.

annual profit averaged \$13 billion – over five times the size of average profit in 1985-90. There was a financial downturn in 2001-02 that cut profit, but at its nadir it was still about \$7 billion. The next boom began in 2003, and in terms of total revenue generated by New York Stock Exchange firms, it continued through 2007. Total revenue rose after 2003 and peaked at \$352 billion in 2007, at which point it was 44% higher than it had been in 2000 (SIFMA 2008). However, profit fell by \$9.6 billion in 2007 as bonuses and total compensation rose relentlessly, and the high-risk high-leverage strategies that drove the revenue boom crashed in 2007 and 2008, leaving large losses in their wake.

Second, it shows that the relationship between bonuses and pre-tax profit changed substantially over time. The dominance of rainmaker interests became stronger toward the end of the period. Until the latest boom, bonuses were less than profit in years when profit was rising, although the relative difference between them declined over time. Starting in 2004, bonuses exceed profit every year. From 2004 through 2006, the gap between bonuses and profit became very large. In 2005, bonuses rose by \$6.9 billion while profit fell by \$4.2 billion – a reverse elasticity. Bonuses were 170% larger than profit that year. Compensation growth was now substantially eroding profit as the bonus system was successfully used by rainmakers to capture revenue that would normally be expected to go to shareholders. In 2006 profit rose by \$11.4 billion while bonuses increased by \$8.7 billion, so the gap narrowed, but at \$13.2 billion was still very large.

The data for 2007 and 2008 reflect the bizarre character of the evolving rainmaker financial firm during the crash it helped create. In 2007 these firms collectively lost \$11.3 billion. To reward themselves for generating these losses, rainmakers paid themselves bonuses of \$32.9 billion, an amount far greater than paid in any other year, with the exception of 2006. But 2007 bonuses were only \$1.2 billion below the previous boom year. The bonus system clearly was not working as advertised. *If bonuses had declined in 2007 to their 2002 level, a year in which firms made almost \$7 billion in profit, these firms would have made \$26 billion in profit in 2007.* In 2008, the full force of the meltdown caused Wall Street to lose an estimated \$35 billion dollars. Bonuses fell substantially, but at \$18.4 billion they were about equal to the 2004 bonus total (when profit was \$13.7 billion) and exceeded every year of the late 1990s boom except 2000, when bonuses were less than \$1 billion higher. Since this sample includes a large number of smaller

brokerage firms that did not take as much risk and use as much leverage as the investment banking giants, it makes rainmakers appear less voracious in 2008 than is suggested by the data on the largest investment banks presented in Cuomo 2009. For the big firms, revenue fell by more and bonuses by much less than was the case in this large sample. Recall that Citigroup paid out more money in bonuses in 2008 when it lost \$27.6 billion than it had in 2006 when it generated profit of \$21.5 billion and revenue was \$36 billion higher. However, the implications are qualitatively similar: rainmakers, especially at dominant firms, were endangering their firms and short-changing shareholders so they could maximize their own compensation.

Figure 2 compares estimated bonuses with net earnings (or profit) for the big five independent investment banks. (Financial conglomerates Citigroup and JPMorgan Chase also have giant investment banks. These seven firms dominated the US investment banking industry.) The information is taken from the Compustat data base. Since income statement filings with the SEC do not contain bonus information, bonuses are estimated to be 60% of total compensation, a standard industry assumption. Two of the firms essentially failed in the midst of the crisis and were taken over by other banks with government assistance. Merrill Lynch was absorbed by Bank of America after the government offered to pay up for to \$29 billion of possible future losses associated with the takeover, and Bear Stearns was taken over by JPMorgan Chase.⁸ The government permitted Lehman Brothers to collapse without arranging its takeover, a decision generally believed to have severely worsened the global crisis. For this reason, there is no available data on bonuses and profit for these three banks in 2008 in the Compustat data base. Cuomo 2009, however, shows that Merrill Lynch paid \$16 billion in compensation and benefits in 2008 while suffering a loss of \$27.6 billion dollars. *The Economist* estimated that Lehman Brother's net income was minus \$22.5 billion in 2008 while total compensation was \$6 billion, higher than in the boom year of 2004 (July 18, 2009 p 72 "Are investment banks run for employees or shareholders?").

Growth in earnings and bonuses since the early 1990s is impressive. Bonuses are always larger than net earnings, often by a substantial amount. Bonuses are especially

⁸ This reorganization of the dominant section of the US investment banking industry has increased the market power of the remaining firms, with Goldman Sachs and Morgan Stanley now more powerful than ever.

large in the recent boom. More important, the data show that the bonus system failed to protect the firm and its shareholders in recent downturns. Bonuses generally fell by less than net earnings in the down years of 2001 and 2002. For Bear Stearns and Merrill Lynch, 2007 was a very bad year; the former saw net income drop by over 85%, while the latter suffered an \$8 billion loss. Yet bonuses at Bear Stearns fell by only about 20%, while bonuses at Merrill Lynch declined marginally. In 2008 both firms self-destructed. Net earnings at Morgan Stanley fell by more than half in 2007, yet bonuses rose. Goldman's net earning fell by about 80% in 2008 while bonuses declined by less than half and are on pace to hit record levels in 2009.⁹ Bonuses were higher than in 2004 and almost as high as in 2005, years in which net earnings were substantially greater than in 2008. Morgan Stanley's 2008 net earnings were significantly lower than in every year since 1997 – for example, about 60% below 2006 – yet bonuses were larger than in any year from 1997 through 2005. The shareholders in the two surviving banks were not appropriately protected by the bonus system in the crash, while the shareholders and the firms of the three banks that collapsed were destroyed by the bonus system because high bonuses squeezed profits and because the incentives associated with the system helped caused the collapse of the firms.

It is possible to compare the direct and indirect effects of the rainmaker compensation system on the shareholders and the rainmakers of the big five investment banks. Collective rainmaker bonuses can be obtained by *adding up* the bonus values in Figure 2 over time. They obviously get very large in the late 1990s boom and much larger in the boom that followed. Bonuses stayed high even in 2007 and 2008. The lion's share of the bonuses went to the top employees I refer to as rainmakers. Cuomo 2009 estimates that in the disaster year of 2008, Merrill Lynch paid bonuses over one million dollars to 696 employees (the top four recipients' average bonus was over \$30 billion),

⁹Goldman defends its high bonuses in 2009 on the basis of good performance, but in the absence of massive government intervention it too would have failed, so this defense is vapid. "In addition to the federal money it took last fall, [Goldman] benefited from the government's bailout of the American International Group, being paid 100 cents on the dollar for its \$13 billion counterparty exposure to the insurer, and it has \$28 billion in outstanding debt issued cheaply with the backing of the Federal Deposit Insurance Corporation" (*New York Times*, July 14, 2009, "For Goldman, a Swift Return to Lofty Profits"). Moreover, investment banks have made substantial profit recently trading assets with the Federal Reserve at prices generally believed to be extremely generous to the banks.

Morgan Stanley gave million-plus bonuses to 428 employees (with a top four average of \$18 million), while 953 Goldman Sachs employees received over \$1 million bonuses (with a top four average of over \$11 million). But gigantic or merely very large, the key point about rainmaker bonuses is that they never have to give them back no matter how badly the firm performs – even if it fails. Each year’s bonus gets added to those in previous years.

What about the shareholders? They receive capital gains in periods when the stock price is rising as well as dividends each year. Their returns are thus very high in years of financial exuberance such as we experienced from the mid 1990s to 2006. But they also suffer large capital losses in financial downturns. In other words, while rainmakers keep adding to their wealth in good years and in bad, shareholders have to add the gains and subtract the losses. The standard way to measure shareholder gains over time is by calculating what is called the “cumulative total return” on the stock. CTR assumes you buy a stock at one specific date and hold it until another. The total returns calculation includes capital gains or losses over time (adjusted for stock splits) and assumes dividends are used to buy more shares. Figure 3 shows the simple average annual total cumulative return of the big five independent investment banks assuming the stock was purchased on the date indicated on the horizontal axis and held until March 25, 2009. Financial market stock prices have rebounded since that time, but most analysts agree this rebound could not have taken place without the massive bailouts of financial firms that took place both in the US and in most of the rest of the world.

Without an approximately \$12 trillion dollar US financial market bailout accompanied by aggressive expansionary fiscal policy, most if not all large US financial firms would have crashed (*New York Times*, “Adding up the Government’s Total Bailout Tab,” February 4, 2009). For example, the Fed along with the Treasury and the FDIC guaranteed \$424 billion of losses on pools of Citigroup and Bank of America bad assets (*Financial Times*, “The Fed’s independence is at risk,” August 21, 2009). Even golden firm Goldman Sachs’ continued existence was in question. In mid-September 2008 Bernanke warned party leaders on capital hill that the “last two big investment banks are under siege” (Moran 2009, p. 19). The fact that even the two surviving investment banks

would have failed had the government not rushed to their rescue is so important in this discussion that it is worth considering in some detail.

The US Federal Reserve is attempting to shepherd Goldman Sachs and Morgan Stanley – the last two members of the dying breed of large US investment banks – to safety. It is throwing its arms around the two companies both as a supportive regulator and as a provider of liquidity on exceedingly flexible terms. Bankers say the Fed has also been making calls to banks telling them not to take advantage of the precarious position of Goldman and Morgan Stanley to poach business, and sharing its concerns with foreign central banks. Sunday night’s announcement that the Fed had approved their application to become bank holding companies and ensure they had full access to emergency loans during the transformation process was rushed out in time for the start of trading in Asia on Monday. The Fed is trying to help to shield them from the sudden collapse of their funding model – using short-term collateralised loans in the repo market – and help them to make the transition to another business structure. The US central bank has taken aggressive steps in recent days to backstop the repo market, which was traditionally funded in large part by money market mutual funds, which are now retreating to safe assets. Goldman and Morgan were probably the biggest single beneficiaries of these moves, including the easing of collateral rules on lending. But the Fed wanted to ensure they had a credible new funding model – which will now include much greater use of deposits. ... Analysts said the Fed moved to approve Goldman’s and Morgan’s application to become bank holding companies in record time. The US central bank – which will now be their chief regulator – has said it will allow them to phase in newly applicable regulations including those covering capital requirements rather than have to rush to comply with them immediately. By taking Goldman and Morgan into its embrace, the Fed appears to be making clear to the market that the two companies will be within the central bank’s safety net on a permanent basis and will have access for the foreseeable future to emergency liquidity. (*Financial Times*, “Fed moves to protect Goldman and Morgan Stanley,” September 22, 2008)¹⁰

In an article focused on the contribution made by the government to financial firms and markets that enabled the resurgence of profits and bonuses at big financial

¹⁰ Even former Goldman CEO Henry Paulson seems to agree with this perspective. “I have never been a proponent of [government intervention]” he said, but “there’s no way to stabilize the markets other than through government intervention” (*Wall Street Journal*, “Rescue Plan Stirs Calls for Deeper Intervention,” September 24, 2008). John Gapper, the respected *Financial Times* columnist, argues that Goldman is so politically powerful that there was never doubt that the government would come to its rescue, a situation which reinforced risk-taking. “A lot of people used to think that Goldman Sachs runs the US economy. Now we know it does. ... Goldman has been one of the prime beneficiaries of recent interventions by the Treasury and the Federal Reserve. ... Goldman got a helping hand from the government and stands to get another one while Lehman was – rightly in my view – allowed to fail and Bear Stearns’ shareholders were nearly wiped out. Would the Treasury and the Fed ever have allowed Goldman to follow and its partners to lose their wealth? I doubt it” (Gapper 2008).

firms after the first quarter of 2009, *Financial Times* columnist Francesco Guerrera explained:

Take debt guarantees. US banks (and General Electric) have issued a total of more than \$280bn in top-rated bonds backed by the government since November, according to Dealogic. The programme will end at the end of October, but most of the debt has a three-year maturity, leaving financial groups to enjoy much lower funding costs until at least 2011. And if that was not enough, the state, through Fannie Mae and Freddie Mac, is still subsidising banks by backstopping most long-term mortgages. But the biggest form of state support for the US banking sector is arguably its simplest. Near-zero interest rates allow banks to make a killing the old-fashioned way: borrowing at low rates and lending at much higher ones. Judging by the Federal Reserve's utterances and the sickly state of the real economy, that giant prop will remain in place for the foreseeable future. Capital markets have also roared back thanks to (yes, you've guessed it) massive government help. ... In this golden era, it is almost impossible for banks not to rake in profits. (Guerrera 2009)

It thus seems reasonable to examine shareholder and rainmaker returns along the path that their firms' market activities brought them, prior to the rebound caused by radical government intervention.¹¹

The top graph in Figure 3 presents nominal total cumulative return for the big investment bank shareholders. It shows that if you bought their stock in the early 1990s, you would have done very well indeed. However, if you bought the stock after 1996, you would have lost money on your investment. For example, if you purchased the stock in 1998, by early 2009 you would have lost 66% of your original investment, while the rainmakers in these firms were accumulating tens and even hundreds of millions of dollars of bonus. The lower graph presents real or inflation-adjusted total cumulative returns. *If you bought stock in the big five after 1994 you would have lost wealth. Buying in 1998 would result in a 77% loss of investment value.*

Thus, over the period of the two recent financial market booms when the rainmaker form of the big investment bank became strongly entrenched, rainmakers became phenomenally wealthy by following high-risk high-leverage strategies, while

¹¹ William Cohen, an editor at Fortune, discussed the bonanza top bank executives received as a result of government bailouts. "What is not hard to argue is that the smorgasbord of government programs and initiatives have helped insure the survival of [America's largest banks] by restoring investor confidence, in turn boosting their stock prices and the value of chief executives' stock holdings." He points out that Goldman's CEO had company stock worth \$168 million at their low point in 2008 but in late September 2009 their value had risen to \$623 million. JPMorgan's CEO saw his stock rise from \$168 million to \$503 million as the result of government support of financial markets. (*Financial Times*, "Bank chiefs owe a personal debt to taxpayers," September 22, 2009).

their stockholders were financially destroyed. “All this has reinforced the idea that banking is simply a gravy train for employees” (*The Economist*, “The bonus racket,” Jan 29th 2009). Even Alan Greenspan, the most influential cheer leader for unregulated, free-market ‘shareholder’ capitalism, eventually acknowledged that the system he championed left shareholders at the mercy of rainmakers. “I made a mistake in presuming that the self-interest of banks and others was such that they were best capable of protecting their own shareholders” (quoted in Mason 2009, pp. 118-19).

III. Do Rainmaker Premiums Exist: If so, Are They Rent?

Given the vital importance of financial firm compensation practices to both rising inequality and the creation of financial instability in the current era, it is surprising that the academic literature on this topic is so sparse. However, there are a few articles that together show that the compensation received by rainmakers in investment banks and other financial firms is higher than the compensation of seemingly equivalent workers in nonfinancial firms, and that this premium appears to be a form of unearned rent.

Sum and Tobar 2008 mine the Quarterly Census of Employment and Wages (QCEW) data set, a joint statistical program of the US Bureau of Labor Statistics and each of the fifty states, to demonstrate that the pay gap between elite Wall Street personnel and everyone else is very large and grew rapidly in the years leading up to the crisis. This data source is especially useful because it includes bonuses, stock options, commissions and profit sharing. Unfortunately, it only generates estimates of average earnings and thus sheds light on rainmaker compensation only indirectly.

The bulk of bonuses received by investment bankers appear in the first quarter of the year in the QCEW data. In the first quarter of 2007, average weekly earnings for employees in the investment banking and securities industry in Manhattan was \$16,918, which was 19.1 times higher than the average weekly earnings for the country as a whole. Price-adjusted average weekly earnings grew by 21.5% between the first quarter of 2006 and the first quarter of 2007 for Wall Street employees, compared to 2.5% for all US workers. The absolute increase in earnings was 136 times larger for investment banking. The authors note that “an industry that employed just under 5 percent of the city’s 3.5 million wage and salary workers in the first quarter of calendar 2006 generated 62

percent of all of the gains in quarterly real earnings of [New York City] workers over the year” (p. 66-7). They also show that between the first quarters of 2002 and 2007, Wall Street, which employed 2.4% of all New York State payroll workers, accounted for 58% of the total state increase in earnings. Finally, they estimate that total Wall Street bonuses in 2006 and 2007 combined exceeded the total increase in the annual wage of the 109 million production and nonsupervisory workers in the country between 2002 and 2007.

Paul Oyer 2006 provides important empirical support for the claim that highly educated employees of investment banks get paid substantially more than equally qualified people who work in other industries. His data base is several thousand graduates of Stanford’s MBA program. He assumes these MBAs have broadly equivalent human capital attributes. “The pool of potential investment bankers in a typical Stanford MBA [class] is relatively homogeneous...” (p. 23). Since investment banking is an extremely popular field among Stanford MBAs, Oyer argues that the percentage of new graduates who enter investment banking is chronically constrained by job availability or the demand side of the market. *That is, he sees a chronic excess supply of potential investment bank rainmakers, a finding that conflicts with the conventional justification of high premium discussed in section IV – a chronic excess demand for rainmakers.* During stock market booms, demand rises, so the percentage that enters Wall Street rises as well. “The data are consistent with a labor market where a large percentage of Stanford MBAs could be successful investment bankers [and] Wall Street demands more people when the stock market is doing well” (p.23). In spite of what appears to be a chronic excess supply of Stanford MBAs who wish to be investment bankers, Oyer documents that those who do get Wall Street jobs get much higher salaries than those who enter other fields. The investment banking premium is stunning.

It is clear that investment bankers earn a substantial premium relative to other GBS alumni. The [annual] premium varies from about 60% for a new MBA on Wall Street relative to one in management consulting to over 300% for investment bankers fifteen years after leaving Stanford relative to an average alumnus with the same amount of experience in any other industry. ... I estimate that a new MBA that goes to Wall Street can expect to earn between \$2 million and \$6 million in discounted lifetime income (in \$1996) relative to what he would earn if he took a job elsewhere” (p. 2).

The first year premium over those who enter consulting, a prestigious and much sought job, is \$71,000, while it is \$115,000 over entrepreneurs and \$98,000 over the catch-all ‘other’ category. In the fifteenth year the corresponding differences are \$578,000, \$1 million and \$937,000 respectively. Oyer notes that these are likely to be under-estimates of the Wall Street premium. “However, if anything, I would expect ...that the income premium for investment bankers in Table 7 is biased downward because so much investment banking income comes through bonuses” whereas the income measure is salaries (p. 29). *Since bonuses are the main form of rainmaker compensation often greatly exceeding salaries, this under-estimation must be extremely large.*

What is the nature or character of these premiums? Oyer implicitly assumes these premiums are competitive equilibrium phenomena. He thus draws the only logical conclusion consistent with his assumption: “the wage difference is a compensating differential that roughly offsets the unpleasant parts of being an investment banker” (p. 23). Though he suggests that there is *always* an excess supply of Stanford MBAs willing to work on Wall Street, investment banking nevertheless must be much more unpleasant than deep-pit mining since it takes a fifteenth year annual premium of from \$578,000 to \$1 million to get anyone to do it.

There are two important empirical papers that both document the existence of large compensation premiums received by top employees of financial firms and provide persuasive evidence that these premiums are rents rather than returns to human capital: Philippon and Reshef 2009 and Goldin and Katz 2008.

Philippon and Reshef has been widely cited in the press (a Google search turned up 950 references) both because the topic of excessive financial rainmaker compensation has received so much attention and because academics have provided little help in understanding this phenomenon. We therefore review their work in some detail.

There a number of important empirical trends unearthed in the paper. It utilizes *average* industry wages provided by the BLS Industry Accounts of the U.S. (These accounts thus provide no direct information on the pay of top earners). The authors show [figures 1 and 6] that the ratio of the average wage of financial market employees relative to the average wage in other industries was high in the 1920s through the early 1930s (an

era like our own, with light regulation, rapid financial innovation and a vigorous financial bubble), where it peaked at over 1.6. It then collapsed through the early 1950s under the much stricter regulatory regime of the period, and continued to decline modestly through the late 1970s, where it approached 1.0. At this point, there was no premium. The ratio rose again through 1990 to near 1.2 in the aftermath of the deconstruction of the previous regulatory regime. It then skyrocketed through 2006, where, at 1.7, it exceeded the peak reached after the bubble of the 1920s. The authors conclude that the relative wages of financial sector workers exhibit a long-term U-shape that needs to be explained. It is the U-shaped relative wage profile that captured the interest of many financial commentators.¹²

The paper separates financial employees into three sub-categories: credit intermediation, insurance and ‘other finance.’ ‘Other finance’ includes commodity traders, investment funds and trusts, venture capital, hedge and private equity funds, and investment banks, and thus comes closest to the financial firms and rainmakers we are interested in.¹³ All three relative wage indices behave as the aggregate relative wage did through 1980, though the ‘other finance’ index actually was below 1.0 for much of the 1950s and 1960s. After 1980, the indices for credit intermediation and insurance rise above 1.0, and eventually hit 1.5 in 2006; there were highly paid rainmakers in these sectors. *But the relative wage for “other finance” accelerates to near 4.0 by 2006 – a ratio almost four times its 1980 value and two and one-half times higher its early 1930s peak.* ‘Other finance’ clearly contained a disproportionate share of the rainmakers who gained most from the financial innovation and deregulation of the recent bubble.

The authors address the question of how to explain this U-shaped long-term trend. Using Current Population Survey data, they estimate wage regressions that include as control variables education, race, gender, marital status, urban residence, and experience. These regressions show that “individuals working in finance indeed earn more than

¹² Though the share of GDP represented by financial firm compensation accelerates after 1980, rising from just over 4% that year to just under 8% in 2005, the share of employment, which grew at about the same pace as compensation through the late 1970s, peaks in 1987 at 4.6% and remains relatively constant through 2005. The rapidly rising industry wage bill combined with slow rising employment led to the rise in the relative wage ratio. See Philippon and Reshef 2009, p. 5 and Figure 1.

¹³ In 2006, the proportion of workers with at least a college degree was 54% in “other finance” and 32% and 26% in insurance and banking respectively (p. 9).

observationally equivalent workers” in other industries (p. 24) by a percent that peaked in 2005 at 20% - about four times its value in the years from 1967 to 1980. Given the pronounced differences among the relative wages in credit intermediation, insurance and ‘other finance,’ it would be reasonable to assume that the ‘other finance’ premium is very much larger than 20%. The wage premium controlling for education alone is 40%. The use of CPS data creates a strong downward bias in these estimates because CPS incomes are top-coded – incomes above an arbitrary level are recorded as if they were equal to that level. CPS data “is not appropriate for the study of very high incomes” (Philippon and Reshef 2007, p. 3). The authors note that there are more top coded individuals in finance than in nonfinancial industries: twice as many in credit intermediation, 2.4 times as many in insurance, and *13 times as many in ‘other finance.’* Though they make a standard, modest ad hoc adjustment for this bias that is the same for all subsectors, it cannot eliminate the bias problem, especially for the top earners in ‘other finance.’

The authors also construct a “benchmark relative wage series” for the financial sector based on a number of empirical factors that should influence the movement of this series over time, and compare it to the actual relative wage series discussed above. The difference between the actual and benchmark series is called the historical excess wage series. Figure 11 shows that the historical excess wage series peaks at about 33% in the late 1920s and early 1930s, cycles around zero in the late 1950s through 1990, they explode upward to a 2006 peak of over 40%.

They conclude that relative wages rose in the post-1980s in large part because of deregulation: “the evidence points clearly towards a causal role for regulation.” An index of deregulation tightly tracks the relative wage series. ‘Anything goes’ deregulation unleashed innovation that led to the creation and trading of extraordinarily complex financial products such as mortgage backed securities, collateralized debt and loan obligations, and credit default swaps. These in turn required highly educated and highly skilled employees who could command very high compensation. “Deregulation increases creativity and innovation and increases the demand for skilled workers” (p. 4). Since these products were concentrated in ‘other finance,’ it is not surprising that this was the sector with by far the highest relative wage growth. But they also show that rainmaker-driven compensation growth was far greater than can be justified by the increased

demand for human capital in finance. “We find that 30% to 50% of the excess wage can be explained by factors other than individual ability,” and “conclude that a large part of the excess wages in [historical excess wage series] is due to rent” (p. 29). The *Economist* states their conclusion this way: “30-50% of the wage gap between financial and non-financial workers between the mid-1990s and 2006 was the fruit of what they judge to be rent-seeking rather than genuine wealth-creation” (“Surviving the slump,” May 30, 2009, p. 17). The authors note that large rents “explain the large flow of talent into the industry,” but *they do not explain what caused or sustained the rents* (p.31). Since they find that “financial creativity” has been over compensated and believe that regulation is likely to be more restrictive in the future, they argue that the excess relative wage of the recent past is not sustainable.

From the mid-1920s to the mid-1930s, and from the mid-1990s to 2006, however, the compensation of employees in the financial industry appears to be too high to be consistent with labor market equilibrium. Moreover, in the recent period, we show that this result remains even if we control for unobserved individual heterogeneity. This finding is *prima facie* evidence that the financial sector is not in a sustainable labor market equilibrium, and that short term rents area likely to diminish. (p. 5)

Thus, the academic study most relevant to the questions we have asked demonstrates that financial workers get paid much more than equivalent non-financial workers and that much of outsize rainmaker compensation is rent. But the source of these rents remains a mystery.

The data used by Philippon and Reshef are average compensation from the BLS Industry Accounts of the U.S. and CPS data that is top coded. This data thus do not permit an examination of the compensation of Wall Street rainmakers. To get information about the top earners in finance, they suggest we consult Kaplan and Rauh 2007, who examine compensation for investment bank high-earning ‘managing directors’ and other Wall Street rainmakers. They estimate that there are about 10,000 managing directors in the US, of which 6000 work for the top ten investment banks. They estimate that the minimum compensation inclusive of bonuses for managing directors was \$500,000 in 2004 and that the distribution of compensation is highly unequal. Total managing director compensation is between \$19 billion and \$28 billion, generating an average compensation in 2004 between \$1.9 million and \$2.8 million. We know that top traders

were making up to \$50 million in 2006 and that some CEOs of the big firms at times made more than that. They conclude “that the managing directors and top executives of the top investment firms comprise a larger percentage of those individuals in the top 0.01% [of AGI or adjusted gross income] ... than the top executives of non-financial public companies” (p. 2).

If we combine the fact that some 10,000 investment bankers receive average compensation of more than \$2 million annually with information about the pool of investment bank recruits, we can gain substantial insight into the character of their bonuses. Both contacts on Wall Street and acquaintances who teach at elite colleges that send large portions of their graduate to Wall Street tell me that *investment banks do not generally recruit those students with the most impressive academic credentials*. Rather, they look for students with acceptable grade point averages (perhaps B or B+) who have demonstrated exceptional aggressiveness or competitiveness. They want dominating type-A people, not exceptionally smart or well-informed people. For example, they frequently recruit lacrosse or hockey players.¹⁴

Though such hires may work hard and for long hours and compete aggressively, there is nothing in mainstream labor market theory that would lead one to expect that there would be 10,000 of them in investment banks who average over \$2 million a year in compensation in 2004 – far more than those with equivalent and even superior human capital endowments who do not work on Wall Street and thus are not able to create asset bubbles. This situation thus can not be fully explained by the “Pavarotti effect” discussed in the “economics of super stars” or “winner take all” literature. This literature tries to understand professions in which a few super talented people earn huge salaries while everyone else is paid poorly. But tens of thousands of investment bankers receive very high compensation – at least a half million dollars annually - even as a small subset of them earn tens of millions or more. These premiums do seem to be primarily rents, and associated more with the positions themselves rather than the individuals who occupy them.

¹⁴ When the top investment banks were crumbling in the fall of 2008, the *New York Times* ran a story that asked whether the ultra-competitive investment bank lacrosse teams that played against each other on a regular basis might be forced to disband.

Kaplan and Rauh 2007 show that the top earners in hedge and private equity funds make even more than their counterparts in investment banks. These firms had the same ability to ride the bubble as investment banks, and did not have to share the gains from this ride with shareholders. For example, the top 25 hedge fund managers received a cumulative \$9 billion in 2005, an astonishing \$360 million apiece. Stephen Scharzman, the major partner at Blackstone private equity fund, made \$785 million in 2003 and 2004 combined. The highest paid people in investment banks, venture capital, hedge and private equity funds constitute “at least 9.1% of those in the top 0.5% AGI bracket, about 20% of those in the top 0.01% bracket, and approximately 26.5% of those in the very top 0.0001% of the AGI distribution.” This represents a higher percent of the 0.01% bracket, a similar fraction of the 0.001% bracket and “a substantially greater fraction of the top 0.0001% bracket than the top main street individuals” that control non-financial companies (p. 33). Using less conservative assumptions, the authors estimate that financial rainmakers could comprise up to 40% of the top category. I assume that data from the peak of the financial bubble in 2006 would yield even higher estimates. *This means that financial firm rainmaker compensation policy was a significant cause of the spectacular rise in inequality that occurred in this era because most of this increase involves the very top of the income distribution running away from the rest of society.* What makes this quite remarkable is that, as we show in section V, in the period from the middle 1990s until early 2009, financial firm rainmakers actually destroyed shareholder value.

Goldin and Katz 2008 provide information on the careers of groups of Harvard graduates with Bachelor’s degrees organized into three cohorts: those who graduated around 1970, 1980 and 1990. Their data shows a striking increase in the percent of graduates who took jobs in finance. While just 5% of the 1970 cohort entered finance, 15% of the 1990 cohort did. Additional work by the authors show that the percent of graduates who entered finance hit “23% or so in recent years” (Lohr 2009). *Perhaps the most interesting results of this study for our purposes is that it presents additional evidence that a substantial portion of the ultra high compensation of rainmakers in finance is not a return to any identifiable human capital.* The authors regress annual earnings of 6,207 Harvard graduates in 2005 against an impressively large set of

variables. Control variables include grade point average, SAT math and verbal scores, college major, missing variable indicators for GAP and SAT scores, dummy variables for a number of advanced degrees, three full-time full-year work status dummies, and 19 different occupation dummies. They find the “the highest earnings by occupation are garnered by those in finance, for which the earnings premium relative to all other occupations is an *astounding* 1.08 log points, or *195 percent*” (p. 367, emphasis added). Highly educated employees working in finance receive a huge compensation premium relative to *seemingly identical employees* working elsewhere. *The near 200% premium certainly appears to be rent.*¹⁵

A related paper, Bertrand, Goldin and Katz 2009, examines the careers of University of Chicago MBAs who graduated between 1990 and 2006. The data are from a web-based survey done in late 2006 to mid 2007. Mean starting compensation (in 2006 dollars, inclusive of bonuses) for all survey respondents (including investment bankers) was \$126,356, but for those who started in investment banking it was \$173,740. After five years, mean compensation was \$500,979 for investment bankers and \$307,451 for all respondents. Ten year or more after graduation, it was \$815,914 for investment bankers and \$400,715 for all respondents – *a premium in excess of 100%* (Table 2, p. 31). This estimate may be biased downward because everyone who began their career in investment banking was treated as if they stayed in that category even though many were no longer in this field when the survey was done.¹⁶

IV. How Are Rainmaker Rents Created and Sustained Over Time: Preliminary Thoughts

¹⁵ Barry Bosworth and Aaron Flaaen of the Brookings Institution argue that the huge payouts on Wall Street are “tremendous rents” (Bosworth and Flaaen 2009). http://www.brookings.edu/~media/Files/rc/papers/2009/0414_financial_crisis_bosworth/0414_financial_crisis_bosworth.pdf.

¹⁶ The survey also showed that investment bankers reported an average work week of 74 hours a week, whereas those in other occupations reported hours in the high 50s to low 60s (Table A4, p. 49). This suggests that a part of their premium might legitimately be considered a compensating differential. However, given the enormity of the premiums, the implied cost of inducing the extra hours of work is far too large to be primarily a compensation differential. Since this was a voluntary internet survey and since investment bankers are known to be unusually competitive individuals, it may be that, without being conscious of their motivation, they exaggerated the length of their workweek to show how hard-driving they are.

How can such high rents for rainmakers in investment banks and other financial corporations be sustained over long periods? This important question for theory and regulatory policy has not been adequately addressed in the academic literature. This section presents some preliminary thoughts about the issue.

To answer the key question of how rainmaker rents can exist, be so large and sustain themselves over time, we have to address two sub-questions. *First, why are investment bank and other financial firm revenues per employee so large in booms? Second, why are rainmakers able to capture such an exceptionally large share of revenues in good times and bad?*

IVa. Rents and ‘False Value’ in the Boom

The standard mainstream answer to the first question is that bonuses are not rents at all. At least in financial booms, employee productivity is exceptionally high and since rainmakers are the most productive workers, their huge bonuses are justified by the revenue they generate. Since the market capitalization, value added and profits of most financial institutions rose spectacularly after the early 1990s, while employment grew much more slowly, employee productivity as typically measured did rise dramatically. The spectacular rise over several decades in the absolute and relative size of financial markets, financial asset values and financial market profit were seen as macro evidence that supported this explanation. Francois Meunier nicely stated the problem associated with this standard explanation of investment bank compensation. Defenders of financial compensation practices claim that:

Employees are handsomely paid because they are extremely qualified and operate in a sector of the economy that is both rapidly growing and indispensable to the economy. Employees receive compensation equal to their productivity, which is extremely high. But this explanation does not hold. Other sectors beside finance show equally strong growth, are big consumers of technology and technical know-how, but their employees are not as highly paid as investment bankers. Pharmaceutical laboratories, aeronautics and the automobile and electronic sectors are examples... (Meunier 2007, pp. 53-54).¹⁷

There are several major weaknesses in the mainstream explanation. First, in spite of the fact that almost everyone now acknowledges that rainmakers took excessive risk

¹⁷ I am grateful to Grace Chang for translating Meunier’s article from French to English.

with their firms' capital in the boom, *their contributions to revenue or profit were not reduced by an appropriate risk-adjusted cost of capital before setting their bonuses.* Indeed, most rainmakers were charged no capital cost at all for purposes of bonus determination. "The overwhelming majority of banks used fairly basic profit numbers and did not adjust for risk at all" (Hughes and Masters 2008). *The Economist* noted that compensation in "the securities industry was based on revenue, not risk-adjusted returns." This practice continued even as the crisis unfolded: "According to a survey of industry practices published by the Institute of International Finance in March [2009], many banks still fail to use risk-adjusted measures either to calculate the size of the bonus pool or to allocate it (*The Economist*, "Rebuilding the banks," May 14, 2009, pp. 19 and 23). One of the central planks in French President Sarkozy's model for the regulation of compensation in banking is: "the cost of risk must be included" in the determination of bonuses (*Financial Times*, "Sarkozy tightens bonus rules," August 26, 2009).¹⁸ The *Wall Street Journal* reports that "the Financial Stability Forum has set out new principles, already adopted by the U.K. and France, requiring banks to base bonuses on risk-adjusted profits rather than revenue, defer awards for up to three years and allow for clawbacks" ("A Capital Idea for Bank Bonuses, August 28, 2009). Note that these principles not only require risk-adjustment, but also demand that *profits*, not revenues, be the foundation on which bonuses are determined. Had this principle been in place during the recent crash, Merrill Lynch would not have paid \$16 billion in bonuses in 2007 while the firm lost \$7 billion. Matthew Richardson, France's Minister for the economy, industry and employment argued that: "We should scrap this system for financial institutions and make it more risk-based - consider illiquidity risk, credit risk, funding risk, market risk. If these risks were taken into account, these trades would not show profits, putting an end to unjust bonuses" (*Financial Times*, "A curb on bank bonuses misses the point," September 9, 2009). Even the Fed agrees. It:

¹⁸President Sarkozy admitted that his proposals to regulate rainmaker compensation would be unsustainable if other important countries declined to follow his example because this would trigger "an exodus of bankers"- regulatory race to the bottom. The reaction of US financial economists was predictable. A finance professor at Dartmouth said the proposals were nonstarters, because they are "so fundamentally antithetical to the Anglo-American notion that compensation has to be a function of failure and profit" (*Wall Street Journal*, "France Will Police Pay, Bonuses of Traders," August 26, 2009. Perhaps the professor was not familiar with the data on rainmaker compensation and bonuses in the crisis.

“proposed that pay of traders be linked to the risks taken to achieve returns. So if two people generate \$1 million in revenues each, the one who took more chances would be paid less. Analysts noted that one sure-fire sign of risk – bets that use a lot of borrowed money - could stay out of style if the Fed uses risk-adjusted returns to assess how employees should get paid. (*Wall Street Journal*, “Fed Hits Banks With Sweeping Pay Limits,” October 23, 2009)

Since rainmakers used large amounts of their firms’ capital to support their operations in an exceptionally high-risk era, an appropriate risk-adjusted capital charge would have been substantial, sharply lowering bonuses. No acceptable theory of appropriate compensation policies would justify this practice; it is a license to loot the shareholders.

The main problem with the proposition that rainmakers deserve or earn their large bonuses in boom years because they create high value in those years is that it fails to take into account the ephemeral character of these revenues. I do not dispute the assertion that rainmakers create market value during the bubble. They are paid to identify, exploit and create serial financial asset bubbles that produce the escalating capital gains that are the source of their firm’s revenue and profit, and thus the ultimate source of their bonuses. They do these jobs brilliantly. However, to use this as a defense of the legitimacy of the bonus system, one must assume that the value of financial assets and the market capitalization of financial firms during the boom accurately measure the discounted *future* cash flows associated with them, or that the value rainmakers create is long-term rather than transitory value. A central tenet of the efficient financial market hypothesis is that financial market prices are always in rational-expectations equilibrium. But history demonstrates that financial markets move through time in boom-bust cycles around some variable trend. Financial assets are grossly over-valued in the late boom, as demonstrated by the subsequent bust, and under-valued in much of the bust, as demonstrated by the subsequent boom. So except when the cycle passes through the trend in one direction or the other, financial asset values and market capitalizations are not consistent with long-term trends in cash flows. *Thus, the only reasonable way to measure the long-term value creation that should be the determinant of bonuses in speculative financial booms is ex post, after the excesses of the boom have been eliminated.* Note that since the government

has consistently bailed out financial markets in recent downturns, even measuring value creation by rainmakers via longer term trends grossly exaggerates their contribution.

We have already examined the total returns to shareholders in the big investment banks over this period. Floyd Norris, a financial market columnist for the *New York Times* recently showed that an investor who held the stocks in the S&P 500 stock market index and reinvested all dividends received would have earned a nominal average annual return over a 10 year period ending in January 2009 of *minus* 2.6%. Adjusted for inflation, the average annual return was minus 5.1% (Norris 2009). These data suggest that investment banks and other financial firms were crucial parts of an economic system that *massively destroyed shareholder value over the past decade or more. There was thus no financial or non-financial long-term value creation that could possibly justify the huge bonuses and stock options of the era.* Compustat calculates a five year cumulative annual growth rate (CAGR) for its S&P 500 stock price index and key component sectors of that index. For the five years ending in early March 2009, the broad index has a CAGR of minus 9.5%, while the financials sub-section has a CAGR of minus 27.1%. In this period at least, owners of financial firm stock did much worse than owners of other sectors or of the broad index.

The belief that financial rainmakers destroyed value is widely shared. Paul Krugman recently wrote: “The financial services industry has claimed an ever-growing share of the nation’s income over the past generation, making the people who run the industry incredibly rich. Yet, at this point, it looks as if much of the industry has been destroying value, not creating it” (Krugman 2008). Fellow Nobel Prize winner Joseph Stiglitz made a similar observation.

Even in the heyday of finance, there was a huge gap between private rewards and social returns. The bank managers have taken home huge paychecks, even though, over the past five years, the net profits of many of the banks have (in total) been negative. And the social returns have even been less - the financial sector is supposed to allocate capital and manage risk, and it did neither well. Our economy is paying the price for these failures - to the tune of hundreds of billions of dollars” (Stiglitz 2009).

Veteran *Financial Times* columnist John Plender noted that “it is hard to argue with the proposition that the manic pursuit of ... personal profit by bankers operating within

flawed incentive structures has been extraordinarily damaging for the economy and society at large” (Plender 2009).¹⁹

The recognition that the bonus system led to excessive risk-taking that was value destroying is the main reason why so many commentators, including the influential Financial Stability Forum, have called for annual bonuses to be held for long periods in escrow accounts, and reduced over time if the firm losses value in subsequent years as a result of excess risk seeking (Financial Stability Forum 2009, p. 12).²⁰ Even Goldman Sachs CEO Lloyd Blankfein acknowledges that bonuses based on short-term value creation are undeserved and dangerous to the firm and the system. To prevent this problem, he suggests that:

An individual’s performance should be evaluated over time so as to avoid excessive risk-taking. To ensure this, all equity awards need to be subject to future delivery and/or deferred exercise. Senior executives should be required to retain most of the equity they receive at least until they retire... (Blankfein 2009)

The theory that best explains why it is that boom-bust cycles inevitably take place in capitalist financial markets can be found in the work of Keynes, Minsky and Marx.²¹ Keynes’s theory is built on the core assumption of fundamental uncertainty: the future is not knowable in the present because it does not yet exist and it has not yet been determined. Agents can only guess where markets will go in the future and make choices accordingly. But these choices, made in ignorance, affect the system’s future trajectory in a dynamic path-dependent process. “Rational expectations” are not possible because the “fundamentals” of future states do not yet exist and thus cannot be known

In a Keynesian world, expectations are formed “conventionally,” normally via extrapolation from the recent past. The longer these expectations lead to decisions that generate satisfactory outcomes, as they do in booms, the greater the confidence agents place in them. When a financial boom lasts for some time, agents begin to project its

¹⁹ McKinsey consultants agree. In a recent report it notes that: “The world’s equities lost almost half their value in 2008, declining by \$28 trillion.” “Much of the rise in assets in mature markets did not reflect capital being channeled into economically productive activities; rather, it reflected growing asset bubbles.” (McKinsey 2009, pp. 10 and 21).

²⁰ Rob Parenteau suggested that such escrow accounts could be used to bail out these firms when crises threaten their solvency.

²¹ See Crotty 1994 for a careful explanation of Keynes’s theory of financial volatility. For a defense of the proposition that Marx’s theory of financial market behavior has a great deal in common with the financial market theories of Keynes and Minsky, see Crotty 1985.

continuance. Given optimistic expectations of future prices, buying securities seems like a reasonable decision. As the boom proceeds and optimistic expectations are shown to be justified, buying securities with borrowed money also seems like a reasonable decision because optimistic expectations are held with increasing confidence or subjective sense of certainty. This drives the financial boom forward, raising leverage while raining capital gains on investors. The heaviest rain falls on the most aggressive investors. Objectively risky strategies are eventually considered safe.²² Since every long-term financial boom is accompanied by the widespread belief that we have entered a “new era” in which this boom will be permanent, eventually there is a near universal belief that high yields previously achievable only by accepting high risk can now be gained safely.²³

The system eventually becomes, to use Minsky’s famous phrase, “financially fragile.” Expected future cash flows are increasingly contractually committed by household and financial and nonfinancial firms to financial institutions, while increased reliance on short-term financing makes financial firms especially vulnerable when crisis conditions erupt. Financial booms end when real-sector cash flows, whose growth is constrained by resource availability and technology, can no longer sustain boom-elevated security prices and dangerous leverage positions and/or when intra-financial-sector commitments cannot be met. The crisis can be triggered by any disappointing outcome in the real or financial sectors.

The central point is that from the perspective of the most realistic theories of financial market dynamics, the value created by boom euphoria, excessive leverage and dangerous risk-taking is “false value.” It cannot be permanently sustained by real sector cash flows and must disappear after the boom ends. *Since ‘false value’ is the main source*

²² Amromin and Sharpe show that the description of the Keynesian process of conventional expectation and confidence formation is the way investors in fact behave. “In forming expectations of future returns, household investors appear to extrapolate from recent-years’ realized returns. ... [E]xpected returns appear to be procyclical” (Amromin and Sharpe 2009, p. 28). Boldrin and Peralta-Alva demonstrate that forecasting future dividends using past data as input to a distributed lag forecast – a forecasting method consistent with Keynes’s theory but incompatible with neoclassical theory – is far more accurate in predicting future stock price movement than using mainstream financial economics assumptions. “This assumption... can go along way in accounting for the secular trends of the U.S. stock market” (Boldrin and Peralta-Alva 2009).

²³ The importance of the “new era” syndrome in the generation of recurrent financial crises is stressed in Reinhart and Rogoff 2009.

of excessive rainmaker bonuses, they cannot be justified as payment for contributions to increased economic efficiency and/or long-term economic growth. They are rents.

Britain's Financial Services Authority makes the same point in its overall assessment of the causes of the crisis and appropriate regulatory responses. It argues that the increase in the relative size of financial markets relative to the rest of the economy "over the last ten to fifteen years, has also been driven by unnecessary and undesirable factors." One is "illusory and the other harmful."

The *illusory affect* can arise from mark-to-market profits in a rising market. ... If irrational exuberance pushes the prices of assets to irrationally high levels, mark-to-market accounting will swell declared profit in an unsustainable way. A significant element of trading book profits recorded in the years running up to the crisis proved in retrospect illusory. *These illusory profits were however used as the basis for bonus decisions, and created incentives for traders and management to take further risk. ... The possible harmful effect is rent extractions.* For it seems that some and perhaps much of the structuring and trading activity involved in the complex version of securitized credit, was not required to deliver credit intermediation efficiently. ... Wholesale financial services, and in particular that element devoted to securitized credit intermediation and the trading of securitized instruments, grew to a size unjustified by the value of its services to the real sector. (Financial Services Authority 2009, pp. 47 and 49, emphasis added)

1b. Rents and Oligopoly Power

There has been a substantial increase in the market share held by a small number of the largest firms in important financial markets in the last quarter century that has enabled these firms to use substantial market power to increase revenue, profit and rainmaker bonuses. While speculative "false value" is the main source of money for bonuses, oligopoly-based market power is also a significant contributor to the money pool that feeds excessive rainmaker compensation.

The system-shaking problems in commercial banking in the 1980s and early 1990s drove many firms out of that industry. From the end of WWII through 1979 there were only a few years in which the number of failures exceeded single digits. But between 1984 and 2003, 2700 banks failed. As shown in Figure 4, as late as 1995, the top 3 commercial banks owned about 12% of industry assets. A frantic merger process raised that figure to over 20% by 1998. By 2008, the top-3 banks owned about 36% of industry

assets. In 1995, the largest seven commercial banks in the US had about 22% of industry assets; their share exceeded 45% by 2008.

Figure 5 shows that in 2001, the top five investment banks held an impressive 50% of the assets of US brokers and dealers. By 2007 this ratio had risen to about 67%.²⁴ The share in total industry revenue of the top ten investment banks stayed within a range of 48 to 59 percent from 1980 to 2003, but hits 74% in 2007 (SIFMA 2008, p. 36) (The rise in concentration that took place in the aftermath of the crisis and subsequent government bailout is discussed below.)

The US Census Bureau publishes information on concentration every five years. Consider four firm revenue - not asset - concentration ratios for 1992 and 2002. (Unfortunately, the results of the 2007 survey are not yet available.) For savings institutions it was 12% in 1992, but rose to 31% by 2002. For investment banking and securities dealing, it was 32% in 1992 and 41% in 2002. Several life insurance categories showed similarly high concentration. Concentration ratios in wholesale commercial banking and in important segments of investment banking are higher yet. Such high concentration ratios clearly make corespective or collusive behavior in key financial markets possible.

Inter-firm relations in these concentrated markets vary, with intense competition in some products and services, but corespective behavior in others. For example, there is fierce competition among investment banks for brokerage business narrowly defined – the buying and selling of financial assets for clients. Fees were fixed at a high level by agreement among large investment banks in the US prior to 1974, but thereafter conditions became more competitive and profit margins declined secularly. By 2006 it was widely claimed that investment banks were breaking even or losing money on their narrowly defined brokerage business. Other competitive markets include exchange traded derivatives and, in the recent boom, bank loans to hedge and private equity funds.

Conversely, the opulent fee structures of hedge and private equity funds suggest the absence of price competition. The general partners in private equity funds normally charge an annual management fee of about two percent of assets under management and

²⁴ The size of the investment bank industry is taken from SIFMA, but this data base may not contain holding company investment banks and thus these concentration ratios may be biased upward. This would not materially affect the concentration trends.

receive a 20 percent share of the profits of the fund. They also charge firms they own considerable ‘fees.’ In a *Financial Times* article written to defend the efficiency of private equity funds, a former president and CEO of Morgan Stanley notes that “private equity’s notoriously high “friction costs” increase the spread between the rate of return on the fund’s assets and the return investors receive at 11 percent a year – a huge margin (“Private equity’s halcyon days are not yet threatened,” March 8, 2007, p. 11). According to Froud and Williams 2007, there is “little evidence of any competition on fee levels,” a view that seems widely accepted (p. 10). Such consistently high fees that earn fund general partners fabulous fortunes (that are taxed at low capital gains rate in the US) are simply incompatible with the assumption of intense competition. An identical argument can be made about lucrative fee structures in the hedge fund industry – also normally 2 percent of assets and 20 percent of profits.

In 2007, the top three commercial banks in the syndicated corporate loan market controlled at least half the business. JPMorgan Chase had 29%, Bank of America had 18%, and Citibank had 15%. (Berlin 2007, p. 2). In early 2009, the largest seven commercial banks wrote 98% of commercial bank originated derivatives (FDIC 2009). It is also clear that the sustained existence of numerous shockingly high ‘fees’ to commercial bank customers reflects corespective behavior. Service charges on deposit accounts are the largest single source of identified non-interest income for commercial banks, while non-interest income now generates more than half of bank revenue.

“Bounced-check and ATM fees are setting records. Consumers are paying higher service charges on interest-bearing accounts, Bankrate.com says. And banks that issue credit cards are increasing fees for late payments and over-the-limit charges to as much as \$39 per violations. Make this mistake once or twice and your interest rate could hit 30%. ‘These are not things that are subject to price competition,’ says Greg McBride of Bankrate.com.” (*USA Today*, “Rising bank fees hit customers,” October 4, 2005).

Big investment banks do not use price competition in traditionally lucrative investment banking businesses like M&As and IPOs, where fee structures are well established. They can sustain profit margins because the three firm concentration ratio in global IPOs is 41% and the five firm ratio is 65%. Concentration is also high in the global M&A market (*S&P Industry Surveys* 2009). US investment banks face less intense competition than their European counterparts. The *Financial Times* reports that M&A

activity in Europe exceeded that in the US for 2006, yet cumulative fees for M&A work were almost twice as high in the US. “Despite the fragmentation of the European market, pricing pressures actually appear to be fiercer than in the US... In the US market, indigenous banks have held on to high fees, partly by fending off foreign interlopers... Higher fee rates mean American deals remain more lucrative.” (“Land of the Fee,” December 21, 2006, p. 14). Moreover, the lack of transparency in the lucrative over-the-counter derivative market as well as the extreme asymmetry of information between banks who create and sell these instruments and the institutions that purchase them enabled banks to set very high profit margins on these profits.

Pricing power based on oligopolistic financial market structures and practices has added substantially to the pool of funds created by boom-induced ‘false value’ that are the main source of rainmaker compensation. A *Financial Times* editorial argued that: “inadequate competition failed to whittle away large profits – as enormous returns on equity showed – and therefore [failed to reduce] outside compensation, unlike in other industries” (Public needs more bank for its bucks,” October 16, 2009).

2a. Setting the Rainmaker Share of Revenue: why are rainmakers able to capture such an exceptionally large share of revenues in good times and bad?

In the rainmaker financial firm, compensation is at least 50% of net revenue (gross revenue minus interest costs) in the bubble and often much higher in the downturn. For example, compensation at Morgan Stanley was 72% of net revenue in the second quarter of 2009, as revenues plummeted while bonuses did not fall by much (Barker 2009). This is much higher than in nonfinancial firms and represents a capture by rainmakers of revenue that could have gone to shareholders.

One can easily understand how a partnership culture in which rainmakers believe that the goal of the firm should continue to be maximization of rainmaker compensation might carry over to the public firm from the partnership. But there is a crucial difference in the way pursuit of this goal affects performance in partnerships and public investment banks. *Private investment banks have an incentive to limit risk and leverage even in the boom, because when risky decisions lead to large losses, it is the partners themselves who absorb all the losses.* Before it went public in 1999, Goldman Sachs was a private

partnership. Most of the partners' money "was tied up in the firm until they retired." Not surprisingly, this restrained risk-taking; partners "took good care of their pot of gold" (*Financial Times*, "Goldman should be allowed to fail," October 23, 2009).²⁵ But when risk-seeking in pursuit of large bonuses in public investment firms eventuates in a collapse in revenue, rainmakers can deflect revenue losses onto shareholders because they control firm policy. In today's public investment banks, rainmakers get large bonuses and shareholders get large capital gains in the boom. However, when the crisis hits, rainmakers still get substantial new bonuses and retain boom-era bonuses while shareholders are hit with large capital losses, wiping out much if not all of their boom-era gains.²⁶ A *Financial Times* article captured the essence of the situation: "the crisis is a timely reminder that investment banking is a business where investors are engaged in a joint venture with employees. Shareholders should never forget that they are very much the junior partners" (Larson 2008, p 19).

The new asymmetry in rainmaker compensation led to a substantial increase in the portion of bank revenues and profits that came from gambling with the firm's own capital as opposed to fee generation for the provision of client services, even though fees rose as well. Goldman Sachs is a good example of this transformation. From 1996 to 1998, traditional investment banking activity generated about 40% of the firm's revenue, but in 2007, its best year, this source was responsible for just 16%, while gambling – trading and principal investing – generated 68% of revenue (*New York Times*, "Wall Street, R.I.P.; The End of an Era, Even at Goldman," September 28, 2008). This shift to gambling substantially raised the risk associated with firm revenues. Indeed, one of the main reasons banks went public in this era was to be able to maximize the capital available for proprietary risk-taking.

The key question to be answered here is: given that this compensation system was a serious threat to the interests of shareholders as well as to the survival of the big investment banks, why were rainmakers allowed to maintain it?

²⁵ The article notes that risky trading operations generated only a third of Goldman's revenue in 1999, but this increased to two-thirds in 2006-07 and 78% in the first three-quarters of 1999.

²⁶ Even in cases in which bonuses were paid in company stock with time restrictions on resale, financial innovation created transactions such as total returns swaps that allowed rainmakers to effectively convert these shares into other assets without actually selling them.

It is clear that this system was a disaster for financial institutions. The big five investment banks all lost their independence. Bear Stearns and Lehman Brothers failed; Merrill Lynch became mortally ill and was taken over by Bank of America; and Goldman and Morgan Stanley opted for financial conglomerate status to gain access to insured deposits, obtain substantial tax breaks, have the government guarantee their debt, and be eligible for government bailouts. It is now clear that only massive government intervention, estimated as high as \$12 trillion or more if we include loans, capital infusions, debt guarantees and purchases of damaged financial assets at excessive prices prevented the entire financial system from collapsing. *There are four sets of agents and one market process that had the potential ability to force a more appropriate compensation system on the firm: shareholders, top executives, capital markets, government regulators and market competition.* Yet none of them did so. Why not?

Shareholders: Why didn't shareholders prevent the use of a compensation scheme that threatened their interests? Mainstream financial market theory cannot explain the reproduction over a long period of time of a compensation system structured to allow rainmakers to loot shareholders and threaten the existence of the firm itself. Of course, there are many papers that discuss principal-agent conflict in financial firms. But they conclude that these lead only to minor imperfections that prevent financial markets from fully attaining perfect efficiency. I know of no paper in a respected mainstream journal that concludes that the rainmaker-shareholder conflict is so severe that it destroys any claim to financial market efficiency, and thereby negates the core claim of canonical neoclassical theories of financial markets such as the capital asset pricing model and options pricing theory. A rainmaker-run system will generate lower risk-adjusted long-term shareholder returns and higher systemic risk than in idealized mainstream models of financial markets because there will be too much leverage, credit will be misallocated, and financial markets will suffer from excessive volatility. And financial markets will utilize more resources than can be justified on efficiency grounds. Yet even the behavioral financial theory critics of efficient financial market theory fail to acknowledge the severity of these problems. "The behavioral finance literature... simply adopts the neoclassical view with biases added (e.g., overshooting, undershooting, framing, etc.)" (Findlay and Williams 2008-09, p. 224).

Keynesian theory can help solve the puzzle represented by the existence of the rainmaker financial firm because it has no paradigmatic commitment to demonstrate that financial markets are efficient. Though the data clearly show that existing compensation schemes induce behavior that is inconsistent with objective shareholder interests, *Keynesian theory suggests that in financial booms, shareholders are likely to believe that rainmaker compensation practice are consistent with their perceived or subjective interests.* During the boom, most shareholders, relying on conventionally-determined optimistic expectations, believe that the spectacular capital gains of the period are realistic reflections of buoyant future economic conditions. They therefore may be perfectly happy with investment bank risk-taking practices even though these practices are *objectively* counter to their longer term interests. In the midst of boom euphoria most people fail to understand that their banks are taking excessive risk. Thus, from a Keynesian perspective, the question of why and how rainmaker financial corporations are able to act against objective shareholder interests for years or even decades need not arise: shareholders are usually happy with their banks in the bubble. If you bought Merrill Lynch stock at \$6.50 at the end of 1994, or even at its cycle-peak price of \$14 at the end of 2000, you would have been thrilled in late 2006 when the stock reached \$47 (<http://finance.yahoo.com/q/hp?s=BAC&a=04&b=29&c=1986&d=07&e=11&f=2009&g=m&z=66&y=66>).²⁷

The overwhelming majority of shareholders probably did not want the firm to change compensation or any other policies in 2006. And the near universal belief of the business press, financial advisors, government regulators, and economists at the time was that the boom was based on sound fundamentals. Of course, a Keynesian perspective also implies that free financial markets are inherently unstable and dangerous to the economy and society. They therefore need to be tightly regulated by the government at all times, a decidedly non-mainstream conclusion.

A complete answer to the question of why shareholders did not restrain rainmaker greed must include the fact that most of the equity in US firms is held by financial intermediaries assumed to be acting in the interest of individual investors. In the

²⁷ The price is adjusted for stock splits and dividends. It thus shows how much the value of an initial stock purchase changes over time.

immediate post WWII era, households owned most stock and were long-term owners concerned with long-term returns. In the 1950s households owned 90% of stocks and held their stock for about a decade. Moreover “up until the mid-1960s, when the mutual fund business first exploded, [even] the average holding period in a professionally managed fund was seven years” (Fox 2009, p. 280). As recently as 1996, the household share was 50% (SIFMA 2008, p. 72). By 2007, financial institutions held 75% of US stock and held their stock for a short time. The turnover rate on the New York Stock Exchange exceeded 100% in five of the six years between 2002 and 2007, hitting 123% in the final year (SIFMA 2008, p. 49). This implies that the time horizon of intermediaries is very short. Thus, as long as they believe the boom may last for another year or more, institutions will keep buying stock. Hedge funds are notoriously short-term traders and it was recently reported that “high-frequency trading” – computer executed trades that are usually reversed in milliseconds - “accounts for as much as 73 per cent of US daily equity volume, up from 30 per cent in 2005” (Mackenzie 2009). Yet objective shareholder interests and economic efficiency require that financial firms have a longer term planning horizon.

Crotty 2008 explains that key decision makers in institutional investors such as mutual funds have perverse incentives similar to those of investment bank rainmakers that lead them to buy and hold rainmaker financial firm stock in booms - whether their own expectations are optimistic or pessimistic. They are not only short-term shareholders, but risk-loving shareholders as well, at least in boom periods. Compensation for those who run institutional investment companies rises with assets under management. This encourages firms to seek maximum growth, which in turn requires that they seek a maximum rate of return on assets. Since high returns induce investors to put their money in the firm, which increases the size of assets under management, there are strong reasons to pursue high-risk high-return stocks in the boom. This is especially the case in periods in which financial asset prices have been rising for some time, because the longer the boom, the more likely it is that investors will believe that high-return-chasing is not a risky strategy. Their own incentive structure thus leads institutional investors to buy rather than sell stock in rainmaker financial corporations in the boom, reinforcing the risk-taking embedded in the rainmaker bonus system.

The positive incentives for intuitional investors to support rainmaker policies are reinforced by competitive pressures facing these firms. Institutional investment management is a very competitive business. Contracts to manage pension fund assets are awarded to those firms with above-average returns on assets. Contracts may be withdrawn from any firm whose returns are below average for a period as short as six to nine months. Thus, even if a mutual fund understood that holding shares of rainmaker financial corporations in the boom was likely to lead to large losses in the intermediate run, it would be rational to hold these shares anyway in order to protect against the loss of large contracts. When financial markets crash and all such firms lose money, no individual firm will see their contracts removed as long as their losses are not substantially above the industry average. Rajan 2005 cites empirical evidence that mutual firms gain more from above-average returns in the boom, then they lose from below-average returns in the bust. Eric Tymoigne argues that institutional investors “behave rationally in the sense that stiff competition and short-term incentives to reach money-return targets push them to do *whatever* is legally (and sometimes illegally) possible to maintain market share” (Tymoigne 2009, p. 16, emphasis in original).

We conclude that shareholders cannot restrain the excesses of rainmaker compensation schemes. There is, however, an additional problem. The relatively short time horizon of the typical rainmaker, who can maximize expected discounted compensation by riding the boom even if this crashes the firm, combined with the very short time horizon of the ‘average’ shareholder, minimizes the probability that the firm will reproduce itself over time. Short-term owners will support short term speculative investment decisions that would – in the absence of recurrent government rescue efforts – threaten the survival of the firm over the long term. (Keep in mind that *all* the big investment banks would have failed in the recent crisis if governments around the world had not engaged in extraordinary rescue efforts.) They will also oppose investments that only bear fruit in the intermediate and long run – investments that are crucial for long-term economic efficiency. Alex Edmunds and Xavier Gabaix 2009 put the problem of short-term rainmaker horizons this way:

Existing schemes have two main problems. First, stock and options typically have short vesting periods, allowing executives to “cash out” early. For example, Angelo Mozilo, the former CEO of Countrywide Financial, made \$129 million

from stock sales in the twelve months prior to the start of the subprime crisis. This encourages managers to pump up the short-term stock price at the expense of long-run value – for instance by originating risky loans, scrapping investment projects, or manipulating earnings – because they can liquidate their holdings before the long-run damage appears.

Top Executives: In textbook descriptions of firm governance, the CEO and other top executives are directly responsible for the long-term health of the firm and are supposed to make sure that the interests of the owners are paramount. Everyone who paid attention to the accounting scandals of the late 1990s understands that the textbook story is a fable. Top executives in firms such as Enron, Tyco and WorldCom made decisions that enriched them, but led to the destruction of their firms and the collapse in the value of their stock. Aided and abetted by their bankers (who created nontransparent special purpose entities to hide risk) and accountants (who lied about their financial health), these executives deliberately kept from shareholders information needed to anticipate the coming disaster.

The compensation practices of rainmaker financial firms align the material interests of top executives with those of rainmakers. It was noted above that Lehman Brothers CEO Richard Fuld received almost half a billion dollars in compensation in the long financial expansion from 1993 to 2007. Even if they run their firms into the ground and are fired, top CEOs often get huge payoffs. Stan O’Neill at Merrill Lynch received \$166 million as a going away present, Charles Prince, the CEO of Citigroup, was paid \$68 million upon his release after the firm’s collapse, and CountryWide offered CEO Angelo Mozilo \$115 million after the firm failed and was taken over by Bank of America.²⁸ Mozilo had been paid \$471 million in his five year reign as CountryWide CEO.

Indeed, it has been argued persuasively that the main job of a CEO is to keep the firm’s rainmakers, not its shareholders, happy.²⁹ Michael Lewis, an insightful critic of Wall Street with a great sense of humor, offered the following qualifications for a Wall Street CEO.

²⁸ Mozilo’s payoff was lowered due to pressure from Congress.

²⁹ It is also true that when individual bonuses are being determined, most rainmakers fight with top executives and each other over the size of their bonuses. Nevertheless, top executives have to keep their key rainmakers happy to achieve their own goals.

The Wall Street CEO must possess an extraordinary ability to be paid huge sums of money each year without losing composure. This isn't as easy as it sounds, especially when the firm is losing billions. ... The Wall Street CEO must quickly see where his interests, and those of his most ambitious underlings, differ from those of his shareholders. He must then navigate a tricky course: maximizing his own interests, and the interests of his most ambitious -- and thus to him most dangerous -- underlings, without attracting shareholders' attention. ... [CEOs must gamble] big time with shareholders' capital. If the gamble pays off, the CEO and his underlings take home giant bonuses at the end of the year. If the gamble fails, the CEO takes home his nine-figure severance package and five years use of the corporate jet. His underlings move up in the firm, or get reassigned, or leave and join other firms -- where, if they're working for a CEO who knows the game, they get to make the gamble all over again. Sooner or later, it's going to pay. (Lewis 2007)

The CEOs of giant financial firms generally have no detailed knowledge of how their employees make money for the firm and most have no knowledge at all about the complex products such as mortgage backed securities, collateralized debt obligations and credit default swaps that generated much of the firm's revenue in the recent boom. They also do not know how the company's statistical risk management techniques operate and normally have little if any contact with corporate risk-management officers.³⁰ Their positions change so rapidly and the financial instruments they hold are so complex and opaque that not even the best Chief Financial Officers have more than a vague assessment of risk at any point in time. Michael Lewis made this point forcefully.

There is, of course, a reason that the market doesn't understand Wall Street firms: The people who run Wall Street firms, and who convey news of their inner workings to the outside world, don't understand them either. Jimmy Cayne [CEO of Bear Stearns] plays bridge, and Stan O'Neill [CEO of Merrill Lynch] golfs while their firms collapse, not because they don't care their firms are collapsing, but because they don't know that their firms are collapsing. Across Wall Street, CEOs have made this little leap of faith about the manner in which their traders are making money, because they don't fully understand what their traders are doing. Late last November, in a superb account of the demise of Citigroup CEO Charles Prince, Carol Loomis of *Fortune* magazine revealed that Prince resigned

³⁰ Banks have risk managers whose job is to measure risk and warn top management whenever rainmakers are making decisions that involve what the manager believes to be excessive risk. However, if risk managers repeatedly warn of excessive risk in the heat of the boom, threatening to kill the geese laying Golden Eggs, they are sure to be ignored and likely to be demoted or fired. Former IMF chief economist Simon Johnson and a colleague put the matter this way. "Imagine the situation of the chief risk manager of a bank in, say, 2004." If he "tried to reduce his bank's exposure to structured securities such as collateralized debt obligations, he would be out of a job" (Simon Johnson and James Kwak, "Seduced by a Model," *New York Times*, October 1, 2009).

after he was informed of the consequences of liquidity puts -- options that allowed buyers of complex and presumably safe mortgage securities to hand them back to Citigroup at par if they became hard to finance.³¹ Liquidity puts were about to make Citigroup the new owner of \$25 billion of crappy mortgage securities at par, cost Prince his job, and put the company into the hands of Robert Rubin. Rubin is an extremely smart man with keen instincts of self-preservation, and he sat closer to Prince than anyone else at Citigroup. Rubin said he had never heard of liquidity puts. To both their investors and their bosses, Wall Street firms have become shockingly opaque. (Lewis 2009)

Lewis then argues that the inability of CEOs to understand what their rainmakers do, even though their own compensation depends on the success of how well rainmakers perform, began in the dawn of the new era on banking.

But the problem isn't new. It dates back at least to the early 1980s when one firm, Salomon Brothers, suddenly began to make more money than all the other firms combined. (Go look at the numbers: They're incredible.) The profits came from financial innovation -- mainly in mortgage securities and interest-rate arbitrage. But its CEO, [John Gutfreund](#), had only a vague idea what the bright young things dreaming up clever new securities were doing. Some of it was very smart, some of it was not so smart, but all of it was beyond his capacity to understand. Ever since then, when extremely smart people have found extremely complicated ways to make huge sums of money, the typical Wall Street boss has seldom bothered to fully understand the matter, to challenge and question and argue. This isn't because Wall Street CEOs are lazy, or stupid. It's because they are trapped. The Wall Street CEO can't interfere with the new new thing on Wall Street because the new new thing is the profit center, and the people who create it are mobile. Anything he does to slow them down increases the risk that his most lucrative employees will quit and join another big firm, or start their own hedge fund. He isn't a boss in the conventional sense. He's a hostage of his cleverest employees" (Lewis 2009).

Thus, the only way CEOs can keep the revenue and profit flowing in the boom, thereby maximizing their compensation, is by giving the firm's rainmakers, the people who do know how to make money, large enough bonuses to retain their loyalty to the firms.

³¹ These liquidity puts are an excellent example of the perverse nature of the bonus system. When buyers of structured financial products such as CDOs became concerned that their short-term financing mechanisms might dry up, originating investment banks offered to buy them back in the event this happened. This allowed the banks to sell the CDOs even in difficult times. The bank rainmakers received their bonuses for selling the CDOs even as the likelihood they would have to take them back at a loss increased. When this happened, the rainmakers kept the bonuses even though there was no revenue gain for the firm.

Banks do have risk managers whose job is to measure risk and warn top management whenever rainmakers are making decisions that involve what the manager believes to be excessive risk. However, if risk managers repeatedly warn of excessive risk in the heat of the boom, threatening to kill the geese laying Golden Eggs, they are sure to be ignored and likely to be demoted or fired. Former IMF chief economist Simon Johnson and a colleague put the matter this way. “Imagine the situation of the chief risk manager of a bank in, say, 2004.” If he “tried to reduce his bank’s exposure to structured securities such as collateralized debt obligations, he would be out of a job” (Simon Johnson and James Kwak, “Seduced by a Model,” *New York Times*, October 1, 2009).

In 2008, *The Economist* published an article called “Confessions of a risk manager” in which a risk manager at a major financial institution explained why those in his position were unable to restrain excessive risk-taking by their firm’s rainmakers during the bubble. Some of the problems seemed to be a combination of incompetence, naiveté and disingenuousness. “Our risk-management response [to excessive risk-taking] was half-hearted,” he said. We “left the trading desks to their own devices.” “We also trusted the ratings agencies. ... It was assumed the ratings agencies simply know best.” But the main problem was structural – tremendous pressure by the firm’s rainmakers not to interfere with the risk-taking that generated the money for their giant bonuses. “*The pressure on the risk department to keep up and approve transactions was immense.*” In the eyes of the rainmakers:

we were not earning money for the bank. Worse, we had the power to say no and therefore prevent business from being done. Traders saw us as obstructive and a hindrance to their ability to earn higher bonuses. They did not take kindly to this. ... Most of the time the business line would simply not take no for an answer, especially if the profits were big enough. (*The Economist* 2008)

Boards of Directors: The Board of Directors is the body legally obligated to ensure that the corporation operates in the interests of its stockholders. But in fact they are controlled by top management. Board members are generally appointed by the CEO, who is not likely to appoint people who oppose his policies and is likely to get rid of those who do. Boards meet infrequently and Board members have limited information about the inner workings of the firm. Board members responsible for overseeing top executive compensation normally rely on outside consultants who are most likely to be rehired if

they make compensation awards that please the CEO. It is always assumed that the firm has above-average top executives, so consultants suggest above industry average compensation, the effect of which is to constantly ratchet up average CEO compensation.³² Moreover, Boards failed to prevent the widespread practice of allowing top executives to ‘backdate’ their stock options, changing the date at which they were originally granted to a prior date when the stock price was substantially below the current price, putting their options ‘in the money.’³³ There is no realistic hope that Boards of Directors will be the agents who restrain rainmaker compensation, thereby reducing their incentive to take excessive risk.

Capital Markets: We have seen that neither institutional nor individual holders of equity capital restrain the compensation schemes of rainmaker financial firms. However, the financial firms we have been analyzing are highly leveraged institutions. Thus, their ability to grow over time is strongly influenced by those individuals and institutions that provide debt capital to the firm and thereby codetermine the quantity of borrowed funds available to the firm and the cost of this capital.

The main forms of borrowed funds that fueled the spectacular growth of investment banks in the past two decades were ‘repos’ (sale and repurchase agreements) and ‘security credit from households’ – both short-term sources of finance. A repo is a transaction in which the borrower sells a security to the lender with the promise to repurchase it in the near future at a price above the sale price. This price differential generates an interest yield on the loan. It is, in effect, a collateralized loan, with the security as the collateral. In 2007, according to Federal Reserve flow of funds data, net

³² There is a substantial literature on dysfunctional compensation schemes for top executives of nonfinancial firms that induced them to maximize short-term stock price increases to the detriment of the long term health of the firm because pay was dominated by stock options. CEOs are rewarded with opulent pay packages when their firms generate high revenues and profit in expansions and, like rainmakers, are still paid handsomely when markets crash. When stock prices fall, wiping out the value of recently granted stock options, top executives simply backdated their options to a time when stock prices were even lower, thus making their options valuable once again. Of course, this was illegal. As a result of increasingly generous pay schemes for top executive centered on stock options since the late 1980s, and the secular rise of stock prices over the past two decades, top executive pay has skyrocketed. The ratio of average CEO compensation to the pay of the average worker was in the mid-20s in the 1960s, in the mid-30s in the late 1970s. It accelerated rapidly after 1980, hitting 299 in 1998 and was still 275 in 2006 (Bernstein, Mischel and Shierholz 2009, p. 221).

³³ See for example “Backdating Likely More Widespread,” *Wall Street Journal*, August 18, 2009. This article discusses a recent study that identified “141 companies with such advantageous options-granting practices that the researchers concluded they were highly likely to have been involved in backdating.”

repos were 38% of total investment bank liabilities. Other estimates are higher. “The former top US investment banks funded roughly half of their assets using repo markets...” (Gorton and Metrick 2009, p. 10).

Lenders in the repo market are primarily institutional investors such as mutual funds, pension funds, banks and large nonfinancial firms. They often have substantial sums of money that they do not intend to invest in longer term assets in the immediate future. Since there is a limit on the size of bank deposits that are insured by the government, large institutions need a safe, short-term interest-bearing form in which to hold their money. In normal times, repos are safe because they are collateralized, and often over-collateralized, with safe securities. A \$40 million dollar repo loan may involve \$50 million worth of securities as collateral: the difference is called the “haircut.” Lenders were quite content to get an attractive interest rate on the seemingly well-collateralized overnight use of their funds in the boom, and therefore happily provided large investment banks with huge amounts of relatively cheap financing for the growth of their business in recent booms.³⁴

According to the New York Federal Reserve Bank, the “primary dealers” of Treasury securities, which recently included four of the five independent investment banks and several of the large investment banks that were part of financial conglomerates, had repo liabilities of about \$1.5 trillion in 2000 and a mere \$450 billion in 1994.³⁵ This rose dramatically to about \$4.5 trillion in 2008. Moreover, from the late 1990s through 2003, about half the repos issued by primary dealers were overnight loans, but this increased to almost two-thirds by mid-2008. In addition, while the most common forms of repo collateral are Treasury securities and agency securities, in the recent boom investment banks increasingly used private mortgage-backed securities as well. While less liquid securities were used as collateral for about 45% of large investment bank repos in 2005, this rose to about 65% just before the crash.

The next largest source of investment bank borrowing is “security credit by households,” another form of short-term credit which was about 28% of liabilities in

³⁴ An attractive attribute of repos for lenders is that they can use the collateral given to them by the borrowers as collateral for loans of their own, for example as collateral against a derivative position. The reuse of collateral is referred to as “rehypothecation.”

³⁵ Data in this paragraph are taken from T. Adrian, C. Burke and J. McAndrews 2009.

2007. These are customer cash-balances held in margin accounts at investment banks that rapidly expand in booms and shrink in busts. Though labeled “household” accounts, they include securities held by investment banks for hedge funds. Hedge fund data are not included directly in the flow of funds; rather, their activity ends up in residual sectors. In this case, the residual sector that includes hedge fund securities is “households.” It would appear that rapidly rising hedge fund activity was responsible for much of the rapid growth in “security credit by households” in the run up to the crisis, a source of growth that would obviously evaporate in the event of a crisis.³⁶

Since flow of funds data show that total investment bank liabilities doubled between 2003 and 2007 and New York Federal Reserve Bank data show that primary dealer liabilities tripled between 2000 and 2008, it is obvious that creditors failed to restrain reckless investment expansion in the boom.

Capital markets did, however, punish investment banks severely in the crisis, threatening their solvency. As the boom evolved, reliance on overnight finance increased rapidly, while the collateral used in overnight repos became riskier.³⁷ This made investment banks increasingly vulnerable to any deterioration in financial markets. “The amount of funding that investment banks were doing through overnight repo agreements surged between 2004 and 2007; *they were rolling over one-quarter of their balance sheets every day prior to the crisis*, making them vulnerable to a sudden loss of confidence” (*The Economist*, “Rebuilding the banks,” May 14, 2009, p.12, italics added). An increasing percent of the collateral used in repo loans were shaky securitized bonds issued by the bank-created special investment vehicles to finance, among other things, residential mortgage backed securities. When fear that mortgage-related securities such as CDOs were worth far less than their face value and that the monoline insurance companies that guaranteed payment on the highest tranches of CDOs would never be able to pay those they had insured began to spread, lenders refused to roll over their repos.³⁸ Investment banks lost access to up to 50% of their credit sources, putting both liquidity

³⁶ Information in this paragraph was provided by private correspondence with a flow-of-funds staff member.

³⁷ “Instead of pledging easy-to-trade Treasury securities, banks used highly rated but hard-to-value tranches of securitized pools of assets – including subprime mortgages. When investors lost faith in the ratings on these securities, their values plunged” (*Financial Times*, “Move to halt bank Over-reliance on short-term funds,” September 28, 2009).

³⁸ See Gorton and Metrick 2009.

and solvency at risk. If the government had not intervened to rescue them, the big investment banks would have collapsed. Moreover, it was government bailouts that allowed the giant investment banks associated with large financial conglomerates, including the newly transformed Goldman Sachs and Morgan Stanley, to continue to take excessive risk as soon as the worst of the crisis passed, and pay their rainmakers excessive bonuses once again. As they rebounded from the crisis, institutional investors resumed lending them money because it was now clear they were all under the government's too-big-to-fail umbrella.

Government Regulators: The radical deregulation process that began in earnest in the early 1980s under Ronald Regan in the US and Margaret Thatcher in the UK has been well chronicled. See, for example, D'Arista 1994 and Tymoigne 2009. Investment banks in particular ended up with extraordinarily loose regulation. For example, from 1975 to 2003, the US Securities and Exchange Commission (SEC) limited investment bank leverage to 12 times capital. However, in 2004, under pressure from Goldman Sachs chairman and later Treasury Secretary Henry Paulson, the SEC, by unanimous vote, raised the acceptable leverage ratio to 40 times capital *and made compliance voluntary* (*Wall Street Watch*, 2009, p. 17). This allowed large investment banks to generate asset-to-equity ratios in the mid to upper 30s just before the crisis; Merrill Lynch's leverage ratio shot from 17 in 2004 to 33 in December 2007. The Chairman of the SEC later acknowledged that the program "was fundamentally flawed from the beginning, because investment banks could opt in or out of supervision voluntarily." Moreover, "nearly one-third of the firms under supervision had failed to file the required documents" under the voluntary system, and the SEC "had not adequately reviewed many of the filings" of the firms who did submit documents (*New York Times*, "S.E.C. Concedes Oversight Flaws Fueled Collapse," September 27, 2008).

In the depths of the recent crisis, with massive government funds allocated to save the global financial from total collapse, the conventional wisdom was that the government would be forced to tightly regulate the system, including radically altering bank compensation schemes, to avoid yet another catastrophe in the future. However, the Obama administration has shown no inclination to tighten the leash on financial firms or to reign in the bizarre bonus system. See Crotty 2009 for more discussion of this issue. It

now looks as if the new financial regulatory regime will be too weak to deal with the excesses of the rainmaker financial firm.

Market Competition: The explosion of bonus payments coincided with an explosion in the assets, net revenue and profit of large investment banks. Figure 6 shows that the total assets of the top five independent investment banks grew from about one trillion to well over four trillion dollars from 1997 to 2007, while net revenue (gross revenue minus interest payments) rose by 160% from 1997 to 2006. It seems reasonable to ask why this period of high growth and of high profit (that would have been much higher if rainmakers did not receive such large rents), did not trigger a wave of new entrants to the business. New entrants, either from new firms or from smaller firms not currently in competition with the giant investment banks that rule the industry, could have lowered the revenues of the dominant firms, forcing them to lower rainmaker compensation. New investment banks could take advantage of the chronic excess supply of highly qualified university graduates who seek entry into the investment banking field but cannot find jobs there. These potential rainmakers would have worked for lower compensation than currently employed rainmakers receive, giving the new firms a competitive advantage. This could not happen overnight because of the apprentice system discussed in the next section, but it might have taken place over the intermediate run if there were no strong barriers to prevent it.

The economies of scale and scope that underlie the oligopoly market power of the big firms discussed in section 1b above constitute barriers to entry that insulate the dominant firms from competition from new entrants. Investment banks need a large capital base, access to massive quantities of borrowed funds at low interest rates and established networks of satisfied clients to operate in the biggest and most profitable traditional market segments such as M&As, IPOs, and newer segments such as writing over-the-counter derivatives, creating and warehousing arcane structured products such as CDOs, engaging in automated computerized trading, and gambling with the firm's money. The newer segments generated most of the firms' profits in the recent boom and they all require enormous investment in the hardware and human capital associated with information technology. To take just one example, consider the high-speed stock trading done by super computers. "Although precise figures are elusive, stock exchanges say that

a handful of high-frequency traders now account for more than half of all trades and collected about \$21 billion in profits last year” (*New York Times*, “Senator Wants Restrictions on High-Speed Trading,” July 25, 2009). Only the largest players can compete in this and most of the other highly profitable segments of the business.

Moreover, as mentioned above, *the degree of competition in markets dominated by the largest investment and commercial banks has actually diminished as a result of the crisis they caused and the bailout that ensued, increasing market control by the surviving giants*. The crisis thinned out ranks of powerful commercial and investment banks, while increased government support for the remaining giants solidified their market power. It is now even less likely than it was before the crisis that the forces of market competition will force large banks to end their destructive compensation policies.

S&P predicts that Morgan Stanley and Goldman Sachs will now be more dominant in investment banking. “While principal risk may decline, they should be able to take market share in advice, underwriting, trading and prime brokerage owing to less risk-taking by their peers and fewer competitors in the marketplace” (S&P Industry Surveys 2009, p. 3).³⁹ JPMorgan has become Wall Street’s biggest derivative player. Its contracts were recently 40% of the derivatives held by all banks.⁴⁰ The credit default swap market is now more tightly controlled by the top banks than it was just a few years ago.⁴¹ A *New York Times* piece argued that “a new order is emerging on Wall Street after the worst crisis since the Great Depression – one in which just a couple of victors are starting to tower over the handful of titans that used to dominate the industry.” It continues: “one may be forgiven for thinking little has changed in banking since 2007, except a move toward state-sanctioned oligopoly” “Two Giants Emerge from Wall Street Ruins,” July 16, 2009). A *Financial Times* article concludes: “The traumatic upheaval that has roiled Wall Street during the past two years has produced – surprisingly quickly – a widely acknowledged new pecking order in the world of high finance: Goldman Sachs in trading and JPMorgan Chase in banking, have become the undisputed industry leaders, with a hand in nearly every deal or trade. Clients can try to avoid these two, but

³⁹ They are clearly wrong about principal risk: Goldman reported surprisingly high profits in the second quarter of 2009 based primarily on successful gambling with Goldman money.

⁴⁰ Cited in Robert Reich’s blog of July 16, 2009, <http://robertreich.blogspot.com/2009/07/goldman-and-jpmorgan-two-winners-when.html>.

⁴¹ See *Financial Times*, “The ghosts of AIG prosper,” September 24, 2009.

only at their own peril” (“A new battle looms on Wall Street.” August 4, 2009). When Goldman announced third quarter 2009 profits that were four times larger than in the preceding year, the *Financial Times* noted this “underscored its status as one of the winners from a crisis that eliminated two rivals – Lehman Brothers and Bear Stearns – and hobbled others such as Citi, Merrill Lynch and UBS” (“Goldman and Citi highlight divide,” October 16, 2009). Consumers also face confront banks with greater market power. According to the *Washington Post*, the four largest banks now issue one of every two mortgages and about two-thirds of credit cards.⁴² The *Wall Street Journal* reports that more than half of US residential mortgages are being made by just three large banks. At 52%, their share was “just over double these banks’ market share in 2005.” In servicing [mortgages], their share is 49%, compared with 22% in 2005 (“Uncle Sam Bets the House on Mortgages,” September 18, 2009). The rise in market power affects almost all important areas of finance. Five banks now control half of the global credit default swap market. “This concentration has increased since the beginning of the financial crisis, as several counterparties have exited the market” (*Financial Times*, “A stronger infrastructure will cut CDS vulnerability,” October 20, 2009).

The *Financial Times* capital markets editor Gillian Tett argues that “the system is drifting into a pattern where the most dominant lenders are becoming more dominant than ever” (Tett 2009). A *Financial Times* editorial concludes that “the real problem in finance is a lack of competition, as the consistently high profit margins of banks suggest,” margins fattened in part by an exceptionally low cost of borrowing by financial institutions whose debt is guaranteed by the US government (“A mighty financial sector is less troubling if banks can be allowed to fail safely,” August 28, 2009).

Two important conclusions follow from this discussion. *First, rainmakers control investment banks and other important financial institutions and run them in their own interests and against the interests of the firm and the objective interests of its shareholders because nothing – other than government regulation of compensation schemes - can prevent them from doing so. This situation would self destruct were it not for recurrent government bailouts of financial markets.*

⁴² In *Washington Post*, “Banks “Too Big to Fail” Have Grown Even Bigger: Behemoths Born of the Bailout Reduce Consumer Choice,” August 28, 2009.

Second, since there is a major objective conflict between those who run these firms and those who own them, the mainstream hypothesis that financial markets are efficient is untenable for this reason alone, as well as all because of all the other problems with efficient market theory elaborated in the literature.

IVb. Setting the Rainmaker Share of Revenue: Why Doesn't the Chronic Potential Excess Supply of Rainmakers Eliminate Rents?

The basic answer is the same as that offered in the previous section. The current bonus-based compensation system that gives rainmakers an exceptionally high percent of revenue is optimal for them, so they utilize it. No one who could restrain them is willing to do so. But rainmakers cannot publicly defend the system on the basis of naked self-interest. And it is quite likely that many believe they earn their pay. The most widely used justification of outsize bonuses by representatives of financial firms is that there is a chronic excess demand for rainmakers that leads to intense inter-bank competition for their talents. If Merrill Lynch won't pay a top trader \$40 million a year, it is argued, he will go to another investment bank or to a hedge or private equity fund who will meet his compensation demand. We first critically evaluate the chronic excess demand argument, then present an exploratory alternative explanation of why a potential chronic excess supply of rainmakers does not eliminate their generous rents.

The rainmakers' 'chronic excess demand' defense of their compensation schemes.

One problem with this defense is that, as noted, the highest paid rainmakers are in the hedge and private equity fund industries. Thus, any bonus, no matter how large, can be justified by claiming that the rainmaker will quit and move to another bank or to a fund if he – and it usually is a he – is not paid the bonus he demands. However, this cannot be a general defense of high rents because the number of available high-paid rainmaker jobs in hedge and private equity funds is miniscule compared with the tens of thousands of rainmakers in investment and commercial banks. Only a small percent of bank rainmakers could possibly exercise this option.

Another major problem is that the defense cannot explain the practice of paying an outsize proportion of firm net revenues to rainmakers in periods when the industry is

shedding jobs. As we have seen, exorbitant bonuses were given to rainmakers from 2007 through the first half of 2009. Moreover, increasing shares of the bonuses were in the form of retention or guaranteed rather than firm or individual performance related, which is inconsistent with the justification for the bonus system. Yet we know there was no excess demand for rainmakers because the financial sector, including hedge and private equity funds, was shedding jobs, not hiring over most of this period. “Analysts estimate that as many as 25,000 Wall Street traders lost their jobs in the year ended March 31, or about 10% of the financial-services job losses reported by the federal Bureau of Labor Statistics” (*Wall Street Journal*, “Wall Street's B-List Firms Trade on Bigger Rivals' Woes,” August 11, 2009).⁴³ “Over all, head counts at the 12 biggest global investment banks were cut, on average, by about a fifth in 2008,” so we know there was an excess supply of rainmakers, yet the argument that we can’t cut bonuses because other firms will steal our staff continued to be offered (*New York Times*, April 12, 2009, “Crisis Altering Wall Street as Big Banks Lose Top Talent”). A *Wall Street Journal* article summarized the problem with this defense nicely.

There is no amount of shame that will deter the bonus class from pressing their demand, no scandal that will put it off limits, no public outrage over AIG or Enron or really expensive Merrill Lynch trash cans that will silence the managers' monotonous warble: "Attract and retain top talent!" And there is no possible objection to inflated compensation you can make that will not be instantly maligned as senseless populism... It can't be that hard to "retain top talent" when New York is awash with unemployed bankers and traders who are no doubt anxious for a chance to prove their own brilliance. (“Let's Move Their Cheese,” May 6, 2009).

Ever resilient, supporters of current compensation schemes argue that large bonuses *are* justified in bad years, when the industry is shedding rainmakers. First, they argue that a new boom will inevitably develop when the crisis is over, and since no one knows which future market segments will be most profitable, it is prudent to pay large bonuses to retain *all* rainmakers to make sure the firm is well placed to profit when the boom arrives, no matter what its form. This argument anticipates that there will be an excess demand for some kinds of rainmakers in the next boom, but since its character is

⁴³ “A perverse outcome of the Wall Street crisis is that compensation as a proportion of revenue could actually rise. Pearl Meyer, of Steven Hall & Partners, estimates that Wall Street pay will end up topping 60% of revenue for the foreseeable future, up from about 50% in past years” (*Wall Street Journal*, “The raise and fall of Wall Street Bankers,” July 2, 2009).

uncertain a kind of rainmaker portfolio diversification strategy is prudent. A *Financial Times* piece discussed the argument.

Uncertainty over the economic outlook also makes it hard for banks to predict which business areas will be active this year, and therefore which staff they need to keep happy. ... “The major risk to our business is people. For each vacant seat there are probably only five people out there who could do it. We’re hoping [rival] banks screw up and underpay this year, which would make it easier for us to hire,” says the head of commodities at one European investment bank. ... [A senior executive argues] “It is a very competitive market and we don’t believe we can change the system.” This is scant consolation to shareholders in investment banks, who are effectively subsidizing the payout. (“Banks’ losses fail to damp bonus season goodwill,” January 15, 2008)

The uncertainty defense is illogical as well as self-serving. As a general decision-making principle it would lead every firm – financial and nonfinancial - to invest in every business and every product that might conceivably be profitable and employ every type of worker who might or might not be needed in the future. It is as if no hard choices have to be made in conditions of risk or uncertainty. This is not the way to maximize long term profits because it leads to expensive chronic overstocking of excess rainmakers

Another defense is the argument that in bad years, rainmakers working in market segments that were profitable should not be punished by smaller bonuses for the low profits or losses generated by those in other divisions. This would be more compelling were it not for the fact that in high profit years bonuses rise for everyone in the firm regardless of how their division performs. The same people who demand high bonuses when the firm loses money because their unit performed well, demand high bonuses when the firm makes lots of money regardless of how their unit did. The defense also suffers from the problem that in many crises, including the current one, massive losses take place in divisions with a small numbers of employees. Paying all the other rainmakers high bonuses will reduce profit or magnify loss. In fact, many investment bank sub-divisions did well in 2007 and therefore demanded and received large bonuses. “However, huge losses from a tiny number of staff – Merrill blew about \$20 billion just on mortgage-related products – more than offset the profits from other successes. ... [Banks] are unable to net that off by docking the vast salaries of the few who cause havoc. So compensation costs soar as a percent of revenue and investors are left to pick

up the pieces” (*Financial Times*, “On Wall Street: Thorny subject of big bonuses in tough times,” January 18, 2008).

AIG is a wonderful example of the problem. Its Financial Products division, which gambled on credit default swaps, had fewer than 400 employees in a firm with 120,000 workers. AIG Financial Products was a big contributor to AIG’s rising profits in the boom, but in 2008 the unit lost \$40.5 billion. Though the US government owns 80% of AIG’s shares and invested \$180 billion in the corporation, AIG nevertheless paid the 377 members of the division a total of \$220 million in bonuses for 2008, an average of over \$500,000 per employee. Seven employees received more than \$3 million each (*Wall Street Journal*, “AIG Faces Growing Wrath Over Payments,” March 16, 2009). Many of these were retention bonuses awarded to prevent key employees in the division that destroyed the firm from quitting, a bizarre outcome that generated enormous popular revulsion. Events such as these led the Financial Stability Forum to propose as a core compensation principle that “compensation systems should link the size of the bonus pool to the *overall performance of the firm*” (2009, p. 3, emphasis added).

While the ‘potential’ excess supply of rainmakers is huge, the ‘effective’ excess supply may be too small to substantially reduce rents in the boom.

As shown by Philippon and Reshef 2009, the rainmaker pay premium has been rising since the early 1980s and the demand for financial firm rainmakers has certainly risen rapidly over this period, so there would appear to be some empirical foundation for the chronic excess demand thesis. However, at the same time generations of students from the most prestigious as well as non-elite colleges and universities have tried to obtain jobs with a career path leading to rainmaker status in big investment banks. These students majored in economics, finance, business, math, physics and engineering, and many had MBAs and Ph. Ds. The Katz-Goldin study of Harvard graduates showed that the share entering banking and finance rose from less than 4% in the 1960s to 23% in recent years. But competition for these jobs in the long-term financial boom from the early 1980s through 2007 was fierce. The percentage of Harvard graduates who wanted to become investment bankers but were prevented from doing so by the chronic excess supply of candidates must have been substantial. Oyer’s study shows the number of

Stanford University MBAs who became investment bankers was always far greater than the number of jobs on offer. Kaplan and Rauh 2007 estimate there were about 10,000 rainmakers in large investment banks in 2004, yet over the years of financial sector growth there must have been at least hundreds of thousands of qualified students who aspired to be investment bank rainmakers but could not obtain an appropriate starting position. *How can it possibly be that this exploding supply of job candidates with the desire and the qualifications to become future rainmakers did not eliminate or at least sharply reduce the rents associated with rainmaker positions?*

The most important answer is that the people who run these firms have no interest in lowering rainmaker pay even though a chronic potential excess supply would allow them to do because this would lower their own pay. However, above and beyond this, there are two barriers to entry that can help preserve rainmaker rents in the face of a large potential excess supply of rainmakers. I have not seen these barriers discussed in the literature. First, there appears to be an “apprenticeship” process in investment banks. Investment banks hire more new employees than they need whenever their business is growing. After an initial trial period, those who do not impress their superiors are fired. Morrison and Williams 2004 stress the “up-or-out” character of investment banking; many are hired who fail to survive this trial period. Goldman Sachs is perhaps the most vigorous practitioner of the up-or-out approach. Those who do well are retained by the firm and assigned to work with more experienced employees. If their progress is sufficiently impressive, they end up apprenticed to firm rainmakers. The ostensible purpose of the long apprenticeship is not only to allow newer employees to learn their trades, but also to convince current rainmakers that they can be trusted to accept important responsibilities the exercise of which can put large amounts of bank capital and therefore rainmaker compensation at risk. For example, apprentice traders have to demonstrate over a long period that they can be trusted to employ ever larger amounts of the firm’s capital without generating large losses. Keep in mind that there is long list of rogue traders who ended up severely injuring the firm and its rainmakers. Nick Leeson, a derivatives trader for Barings Bank, the United Kingdom’s oldest investment bank, was responsible for a loss of over 200 million pounds in 1994. This loss led to the collapse of the bank. Aspiring M&A rainmakers have to work their way into a group or team of top

firm operatives, then convince the team members that they can eventually generate large volumes of M&A fees while keeping the firm's clients happy.

Morrison and Wilhelm 2004 emphasize the importance of tacit knowledge and apprentice relations in investment banks during their partnership phase.

Tacit human capital... covers forms of knowledge and skills which do not easily lend themselves to codification or to arms-length exchange. Such skills include a wide range of talents such as advising clients, building relationships, reading market signals [a crucial skill for traders] and negotiating M&A deals which are essential to investment banking. The skills can only be learnt on the job. While an MBA program can furnish a student with technical skills, it cannot teach them how to become an investment banker. Tacit human capital is valuable to clients, but by its very nature it is hard to measure and virtually impossible to contract upon. This leads to a fundamental learning problem. Only a skilled agent can transfer his or her skills to a new hire, typically through a mentoring relationship” (p. 2)⁴⁴

The conclusion from this line of argument is that the only rainmaker candidates firms will consider fully qualified for these important jobs are those already working in financial markets at rainmaker or near- rainmaker positions – no matter how many hundreds of thousands of *potential* rainmakers may be available to them. An article referenced above quotes an executive who said that “for each vacant seat there are probably only five people out there who could do it” (*Financial Times*, Banks' losses fail to damp bonus season goodwill,” January 15, 2008). When markets are expanding rapidly in a boom, there will therefore be substantial competition for these five. *Thus, in spite of the large chronic notional or potential excess supply of rainmakers, there may never be a substantial effective excess supply of rainmakers available to bid away the rents in the boom.*

⁴⁴ They also argue that the need for an apprenticeship system ended when the big wholesale investment banks went public in the 1980s and 1990s so they could raise vast amounts of capital. The new capital was needed to acquire the information processing technology required to support complex financial engineering and automated trading schemes, and to finance the huge proprietary trading operations that became their leading source of profit in the recent boom. The “increasing emphasis within wholesale investment banks upon financial engineering increased the codifiability of relevant human capital...”; the “codification and dissemination of what was previously tacit knowledge...” eliminated the need for mentoring (p. 28). This caused the costs of market making to fall and made “trading expertise replicable” (P. 28). The trouble with this argument is that it is incompatible with the existence of huge compensation premiums for rainmakers. Why would an investment bank interested in maximizing profit pay bonuses of \$50 million and more to traders if anyone with the right training could do the job once it was substantially mechanized or ‘codified’?

It is important to understand that this apprentice system, though a natural institutional component of wholesale investment banking, is not a technologically determined process. The peculiar properties of the rainmaker firm influence the way it works and turn it into a means to regulate their compensation pools. The firm's current rainmakers will not want to allow more new people through the apprenticeship process if that means their own bonuses will be reduced. Current rainmakers have a material interest in defending their own ability to generate the revenue that constitutes their claim on the firm's bonus pool. New traders compete with existing traders for access to the firm's limited capital base. A new M&A team may erode the revenues of one with greater seniority. *Strategic considerations on the part of the existing rainmakers will strongly influence the rate at which new members are accepted into and rise within their ranks.*⁴⁵

Conditions of rapid growth in the market are obviously most conducive to expansion of the rainmaker ranks because the addition of new rainmakers may actually improve the bonus prospects of existing rainmakers by protecting the firm's competitive position. Since the apprentice system sharply constrains the supply of new rainmakers available to the firm in an expansion, current rainmakers are able to demand higher compensation under the believable threat that they will jump ship to a competitor. Moreover, the addition of especially talented new rainmakers who will add more to the bonus pool than they withdraw from it is likely to be acceptable to existing rainmakers, unless they believe the added competition involved will significantly reduce their share of the pool. (Competition for bonuses among rainmakers is cut-throat, with threats of resignation common to reinforce claims on the pool.) And existing rainmakers may be able to exploit new apprentices, then fire them before they attain full rainmaker status.

Note that seasoned rainmakers can control the flow of apprentices into the firm. To slow it down, they can simply refuse to pass on the tricks of the trade as quickly or effectively as possible, and can slow the rate at which the firm's capital is made available to new apprentices. In other words, their bonuses have to be protected in order for the apprentice system to function most effectively. A firm whose goal is to maximize shareholder returns might seek to build up a larger group of rainmakers working for

⁴⁵ Senior rainmakers can cull apprentices from their ranks or appropriate apprentice contributions to the bonus pool for themselves.

smaller bonuses than would a rainmaker firm whose objective is to maximize bonuses per existing rainmaker.

The apprentice system would not necessarily constitute an insuperable barrier to the reduction of rents in the long run if the top executives of large banks were determined to lower bonuses. The formulas used to calculate bonuses for various rainmakers are conventional; they could be changed if firms really wanted to change them. For example, firms could use the large “reserve army” of unemployed rainmakers created by the crisis to ratchet down bonus formulas to lower bonuses at any particular level of net revenues or to make bonuses a reasonable percentage of profit rather than net revenue, which would protect shareholders in the crisis. This could restrain bonuses and raise profit and over succeeding cycles. But we have seen that even when markets crash, firms do not take advantage of the substantial excess supply of rainmakers created through job loss to cut bonuses aggressively. This is because these are not traditional neoclassical or Chandlerian firms seeking, respectively, shareholder value or the reproduction and growth of the firm itself. They are run by rainmakers for rainmakers: these firms seek maximum rainmaker compensation, not minimum cost.

Second, the ‘old boy’ informal hiring policy constitutes a barrier to entry. Rainmakers at top financial firms focus their recruiting on a relatively small set of prestigious private colleges and universities from which the current rainmakers graduated and to which they typically remain loyal. A friend who was a rainmaker for one of the country’s largest banks told me that he was the only public university graduate among more than three hundred people with managing director status in his division. In spite of the occasional token hire from a state school, rainmakers recruit primarily from their alma maters, a practice that substantially limits the potential supply of fast-track rainmaker candidates. This sharply constrained pool must then be funneled through the apprenticeship process described above, further reducing the effective supply of potential rainmakers, thereby helping to sustain the size of their rents.

How does the ‘theft’ of joint rainmaker-bank capital affect rainmaker compensation?

There is a source of high rainmaker compensation not yet discussed. Oyer observes that Stanford MBAs who are employed by investment banks receive “invaluable

on-the-job training” and build “task-specific human capital” during their careers. The idea that rainmakers accumulate large amounts of task-specific capital introduces the question of who gets the benefits from the added productivity associated with this capital. A substantial part of the difference could end up with the rainmaker. Consider the concept of the M&A ‘team.’ The team is usually led by a particularly successful M&A operative with substantial experience. The leader and the team will have built up an extensive network of outside business contacts who trust them enough to do large deals with them. Since the winning of trust takes substantial time and cultivation, it is a barrier to the entry of new teams. It used to be said that the leader’s greatest asset was his ‘rolodex’ or list of client phone numbers. An interesting question is: who ‘owns’ the ‘capital’ or assets represented by this client network - the firm or the team leader?

It is not possible to give a general answer, but a substantial part of this capital, typically belongs to the team leader and his closest lieutenants. If they leave the firm, much of the business represented by the clients in their network may leave with them, causing a serious loss in firm revenue, profit and prestige. This gives the leaders substantial bargaining power with the firm over compensation. Even though the team was created by the firm, required the firm’s capital to finance its business, received an initial customer network from its predecessors, and relied heavily on the firm’s reputation to expand the network that underpins its bargaining power, the team nevertheless may have substantial control over this capital. This power does not necessarily derive from some unique talent advantage the team possesses relative to other teams or to potential teams of bright young rainmaker aspirants, though the leader is likely to be quite good at his job. Rather, it is itself a product of the firm and its apprenticeship system. Thus, a percent of the extra compensation gained by the team leader is a kind of ‘theft’ from the firm and its shareholders because it is generated by the firm’s capital, prestige and business network, yet appropriated by the rainmaker. Oliver Williamson referred to this as the “hold-up” problem (*The Economic Institutions of Capitalism*. New York: Free Press, 1985). In a sense, the very act of creating such a team involves a potential future loss of the firm’s existing network of customers.

A similar argument might be made for top traders, who learn their profession in one firm but can take that experience with them if they leave, and for those who generate

innovations in products or strategies. Keep in mind that most innovations in financial firm strategies or products cannot be patented. Of course, as argued above, the revenue pool that feeds the compensation of the employees discussed here is generated primarily from ‘false value’ and oligopoly power.

V. Concluding Observations.

The explosion of financial markets in size and complexity over the past quarter century and especially since the mid 1990s is one of the most significant economic events of this era. Driven by perverse incentives to take excessive risk that resulted in a massive buildup of system-wide leverage, by deregulation that removed restraints on excessive risk-taking, by an impressive array of financial innovations (many of which turned out to be dysfunctional), and by the global integration of national financial markets, the economic influence of financial activity and the political influence of financial firms reached heights not seen at least since the 1920s. No doubt there were positive contributions associated with some dimensions of this long financial boom. However, on balance the accelerating expansion of financial markets appears to have been destructive. It led to excessive indebtedness among the poor and, especially, the working and middle classes of most countries. This raised the rate of economic growth for awhile, but will restrict aggregate demand in the intermediate future because these debts have to be repaid in a slower growth era. It badly misallocated real resources. Far too much credit was used to fund the technology and internet booms of the late 1990s, the mortgage explosion of the 2000s, financial speculation and the financial sector itself. The trillions of dollars in losses suffered by financial firms is evidence of misallocation.⁴⁶ Far too much income was funneled away from ordinary citizens to financial market rainmakers as well as to top executives at large nonfinancial firms who received much of their income as stock

⁴⁶ Benjamin Friedman has stressed the inefficiency of our current financial system. “The discussion of the costs associated with our financial system has mostly focused on the paper value of its recent mistakes and what taxpayers have had to put up to supply first aid. The estimated \$4,000bn of losses in US mortgage-related securities are just the surface of the story. Beneath those losses are real economic costs due to wasted resources: mortgage mis-pricing led the US to build far too many houses. Similar pricing errors in the telecoms bubble a decade ago led to millions of miles of unused fiber-optic cable being laid. The misused resources and the output foregone due to the recession are still part of the calculation of how (in)efficient our financial system is” (*Financial Times*, Overmighty finance levels a tithe on growth, August 26, 2009).

options and built up impressive financial portfolios. It was a major contributor to the rapid rise of inequality of the period. It drove the global economy into a deep and prolonged recession costing many trillions of dollars. This in turn is leading to massive increases in public indebtedness that will restrict the ability of governments to operate in the public interest for many years to come. It strongly influenced the activities of the IMF and World Bank in ways that hurt the developing world. It gave excessive political influence to the representatives of giant financial institutions who are now using that influence to prevent the creation of an effective new regulatory regime or constraints on their pay.

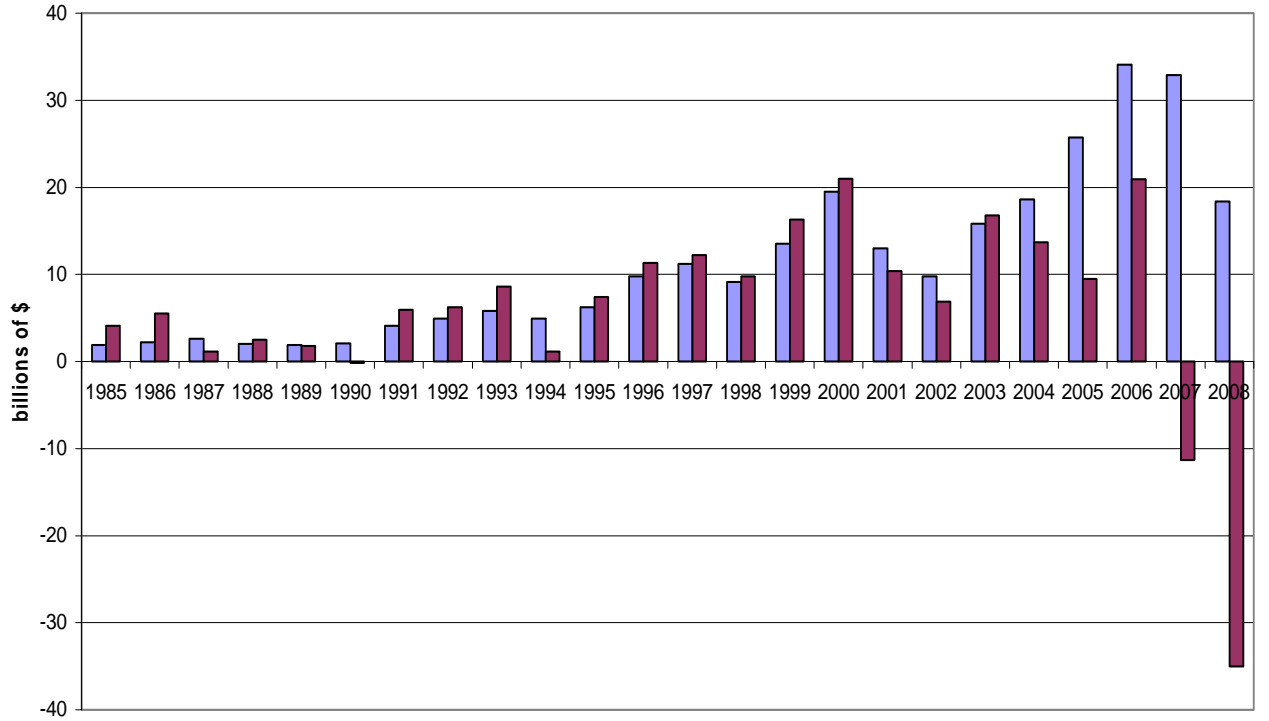
Virtually all informed analysts who do not represent the interests of financial firms – and even many who do - agree that the perverse incentive schemes under which the most important employees of large financial institutions operated were a major contributor to the financial crisis. I have presented evidence that rainmaker bonuses were shockingly large, even after the markets crashed, and that there is good reason to believe they are unearned rents rather than a reward for genuine contributions to long-term economic growth. Not even the severe financial crisis nor subsequent massive government intervention to rescue these firms (and thus preserve the jobs of most of their rainmakers) has affected the practice of paying gigantic bonuses to armies of rainmakers no matter how their firms perform. Many have written about the absurdity of rainmaker compensation schemes in the business press. But I found only one academic paper (Meunier 2007) that even raises the question of how it is that giant firms structured so that their top employees enrich themselves while destroying shareholder value and inevitably endangering the very existence of their firms are allowed to function without meaningful interference by any individual, institution, market force or regulatory authority.

The paper offers tentative or preliminary answers to key questions about the rainmaker financial firm. It argues that the huge revenues generated by rainmaker firms in the boom that are the source of their bonuses are created primarily by ‘false value’ – incomes generated by transitory boom euphoria and excessive risk-taking, not by long-term contributions to market value - and secondarily by oligopolistic market power. It provides reasoned criticism of self-serving arguments used to defend rainmaker

compensation schemes and suggests mechanisms through which the enormous potential excess supply of rainmakers is prevented from creating effective downward pressure on rainmaker rents. The goal of the paper is to make some initial progress toward answering the crucial question of how the sole objective of most of the largest firms in what has become the most powerful industry in the country and perhaps the world can be to enrich their most influential employees with utter disregard for the disasters this policy entails for shareholders, firms and the broader economy. Understanding the rainmaker firm is an essential step in the process of turning financial firms and financial markets into institutions that will help improve the economic life of the large majority of the population.

Figure 1

Wall Street bonuses and NYSE firms pre-tax profits

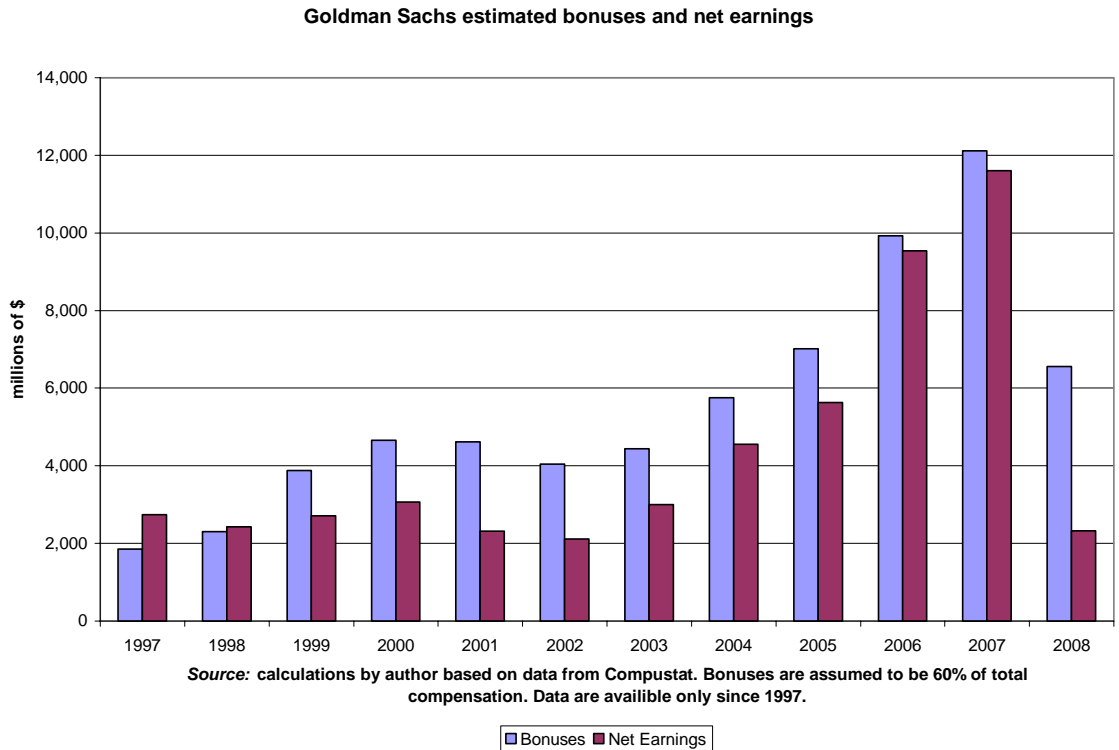
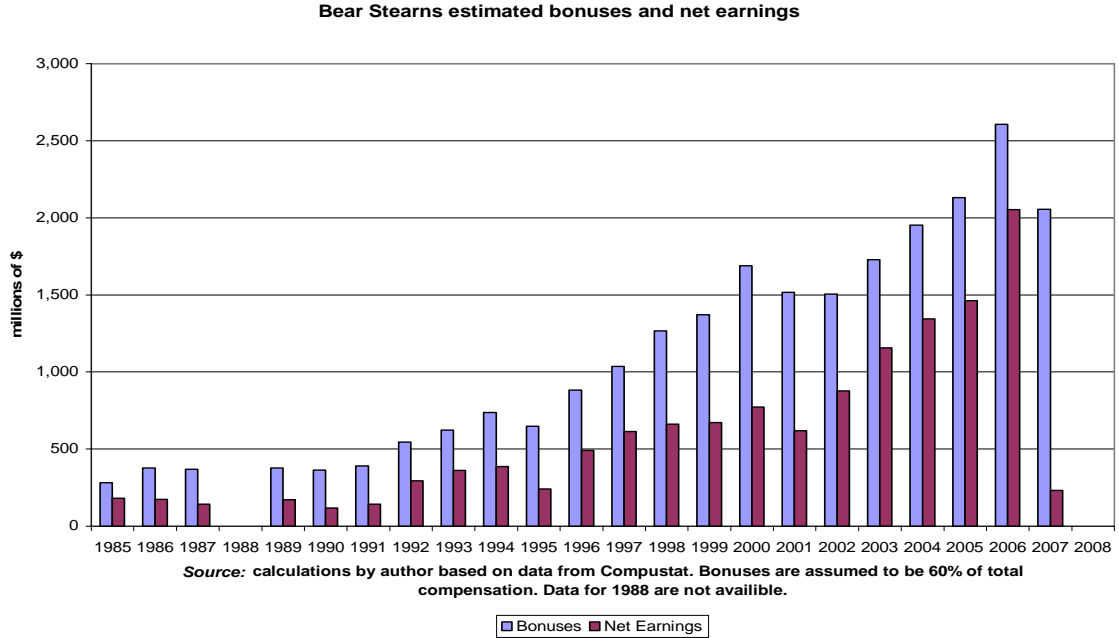


Source: bonuses are from NY State Comptrollers Office Press Release (28 Jan 2009), profits from SIFMA 2008 Fact Book. 2007 and 2008 bonuses are estimates. 2008 profits are estimates by NY State Comptrollers Office (press release, 28 Jan 2009)

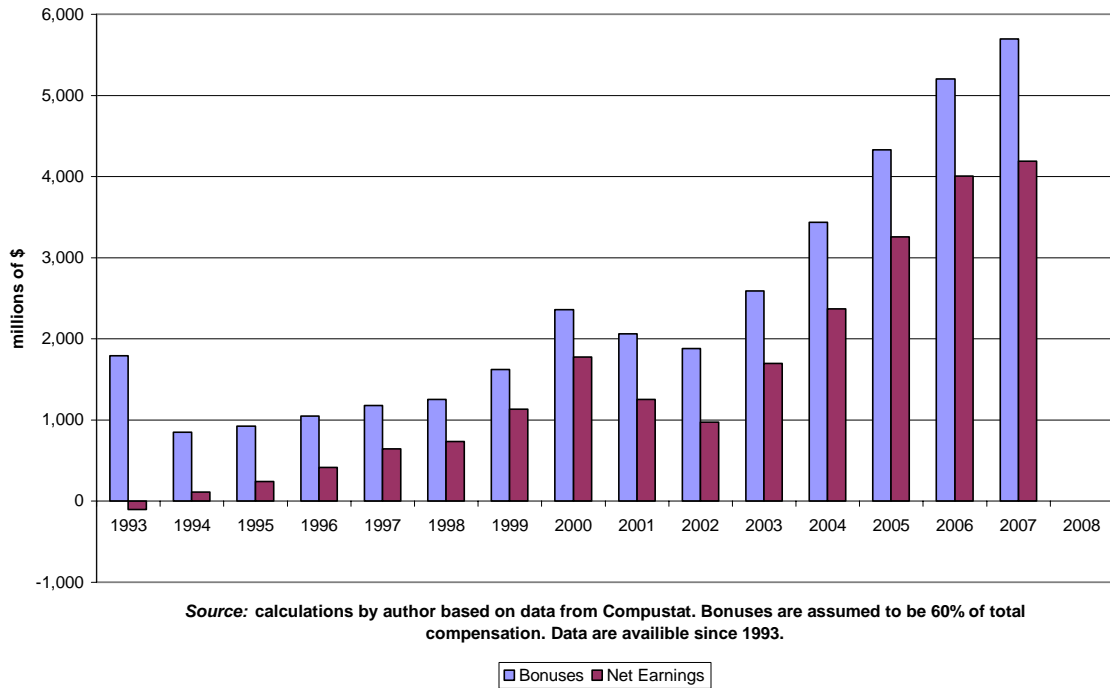
■ bonuses ■ profits

Figure 2

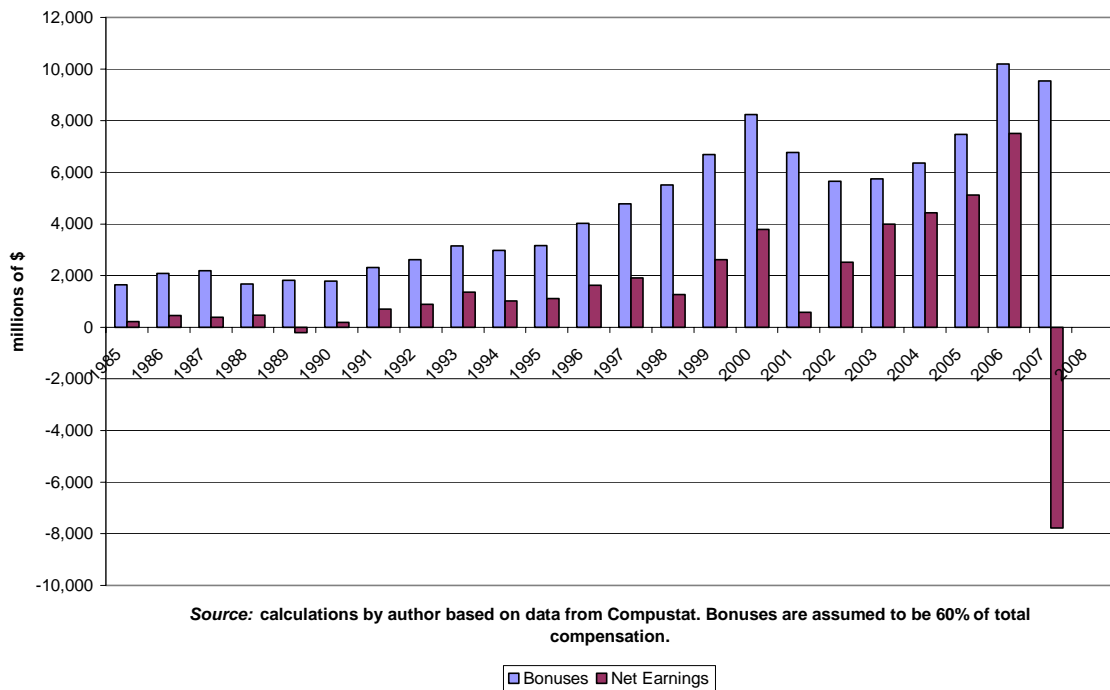
Bonuses and Net Earnings for the Big Five Independent Investment Banks



Lehman Brothers estimated bonuses and net earnings



Merrill Lynch estimated bonuses and net earnings



Morgan Stanley estimated bonuses and net earnings

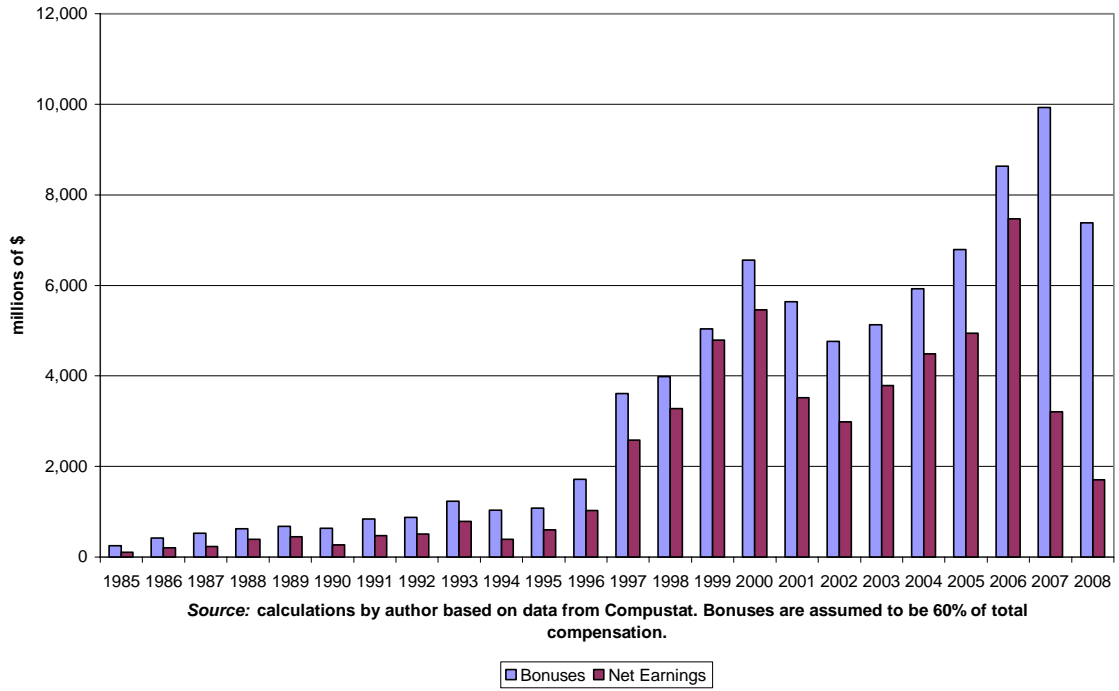
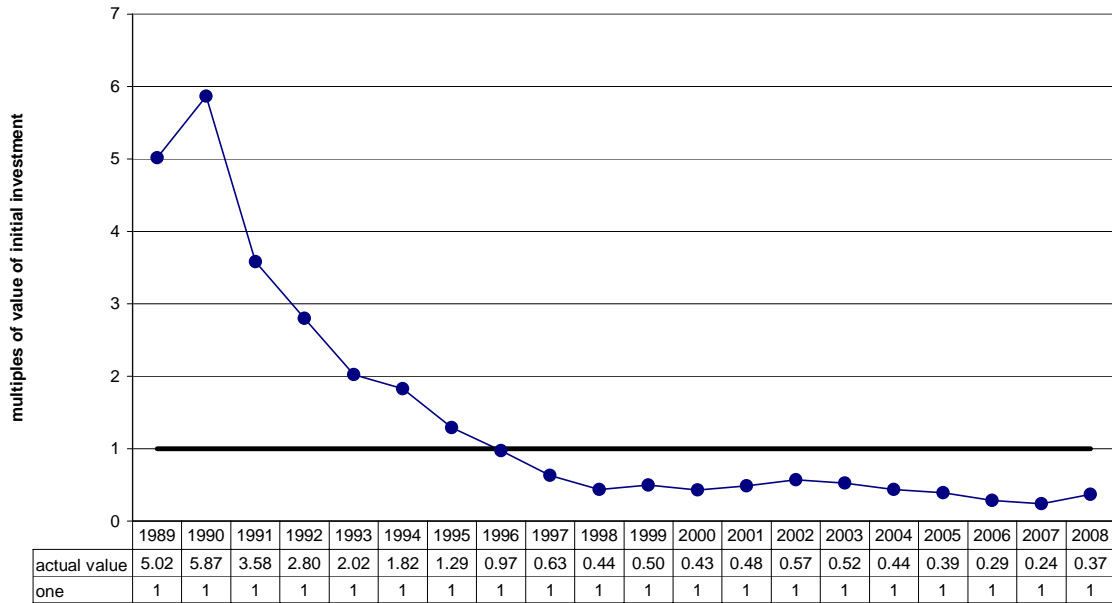


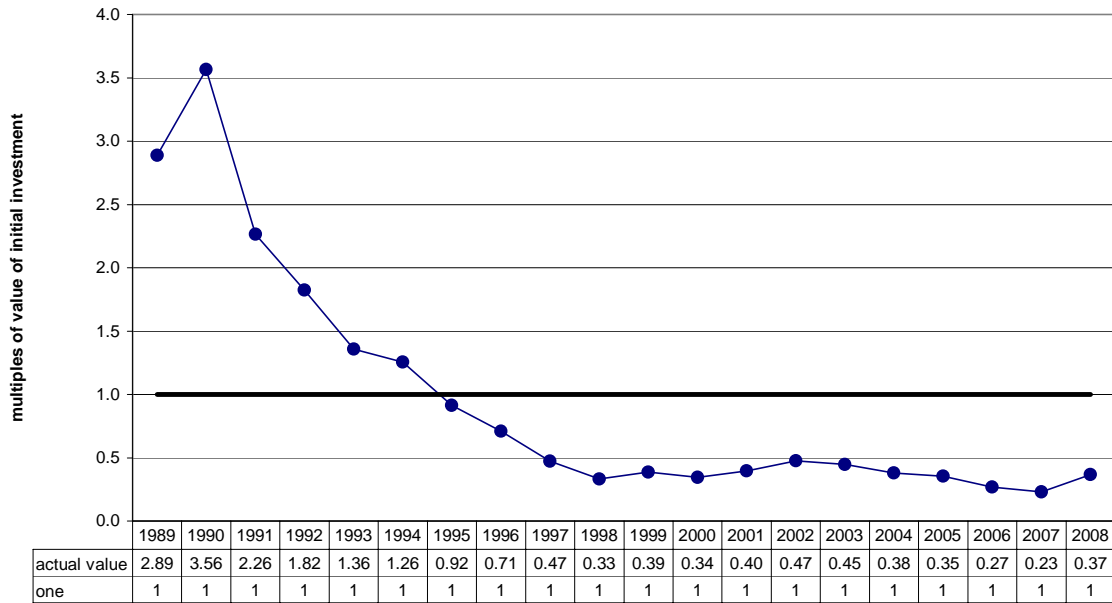
Figure 3

Top 5 Investment Banks: total cumulative NOMINAL returns, under the assumption of shares being bought in the year indicated and held until 03/25/09



Source: calculations by author based on Compustat Database. Returns are calculated as a simple average of cumulative returns for individual investment banks. Monthly returns are averaged to obtain annual data.

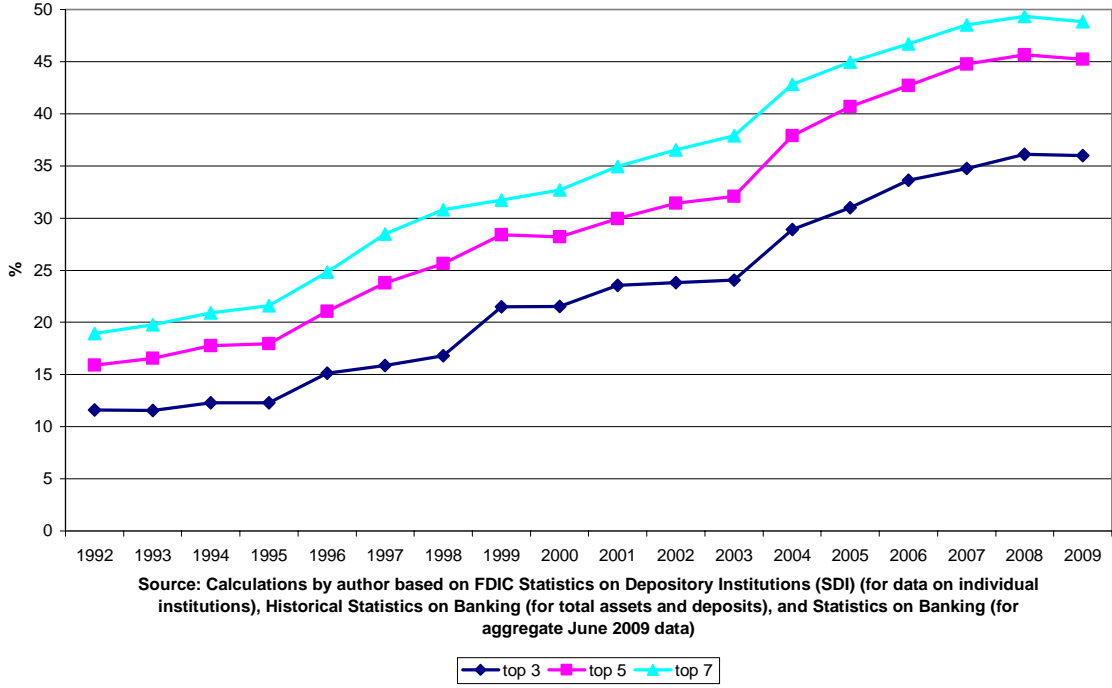
Top 5 Investment Banks: total cumulative REAL returns, under the assumption of shares being bought in the year indicated and held until 03/25/09



Source: calculations by author based on Compustat Database. Returns are calculated as a simple average of cumulative returns for individual investment banks. Monthly returns are averaged to obtain annual data.

Figure 4

Share of total assets held by top 3, 5, and 7 commercial banks (USA, 1992-2009)



Share of total deposits held by top 3, 5, and 7 commercial banks (USA, 1992-2009)

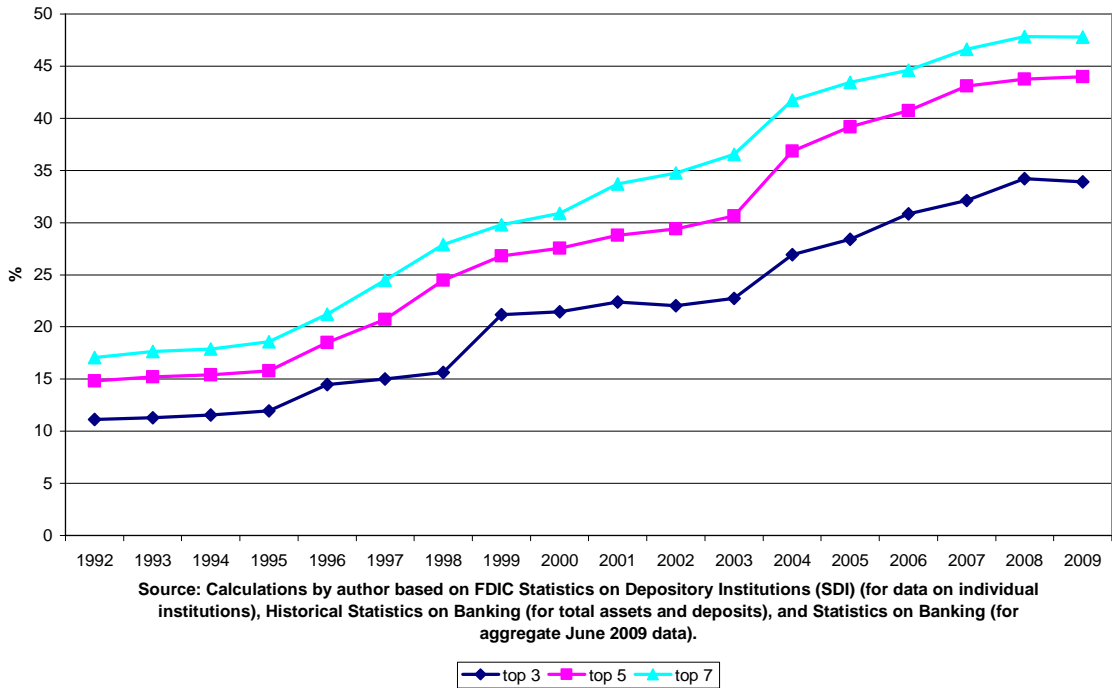
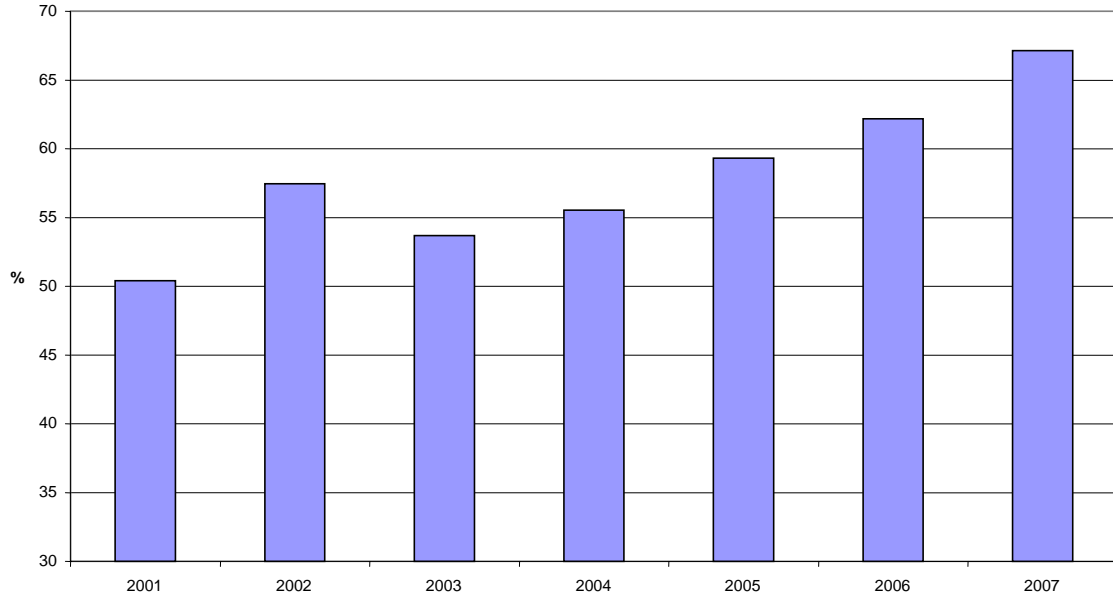


Figure 5

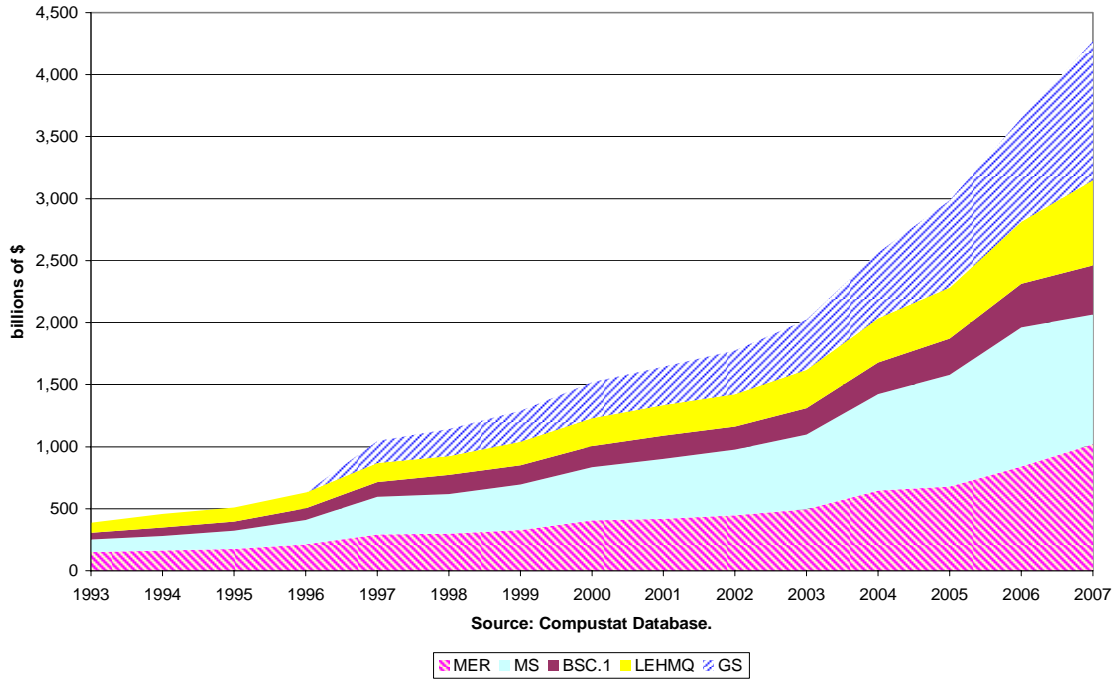
Share of total assets held by top 5 US investment banks in total assets held by the US securities industry (2001-2007)



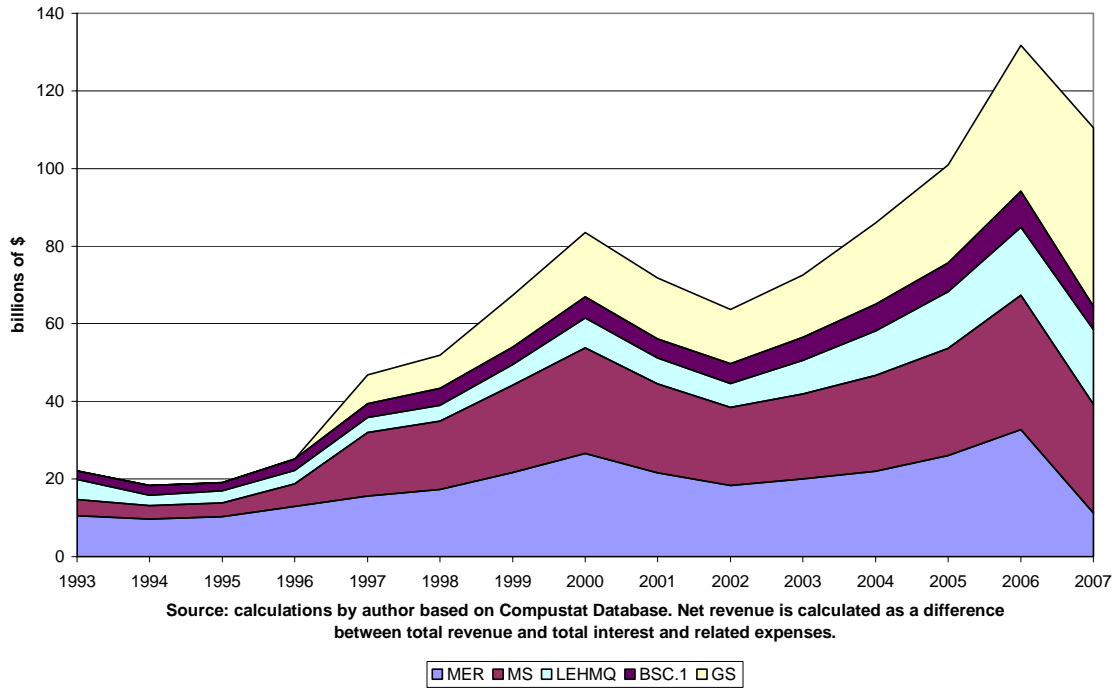
Source: calculations by author based on Compustat Database (for individual banks) and U.S. Securities Industry and Financial Markets Association (for total securities industry assets)

Figure 6

Total assets of top 5 investment banks, 1993-2007



Net revenue of top 5 investment banks, 1993-2007



REFERENCES

- Adrian, T., C. Burke and J. McAndrews (2009). "The Federal Reserve's Primary Dealer Credit Facility," *Federal Reserve Bank of New York*, "Current Issues in Economics and Finance," Vol. 15, No. 4, August.
- Amromin, Gene and Steven Sharpe (2008). "Expectations of Risk and Return Among Household Investors," Federal Reserve Board of Governors, *Finance and Economics Discussion Series* No. 17.
- Barker, Thorold (2009). *Wall Street Journal*, "Morgan Stanley's Pay Plight," July 23.
- Berlin, Mitchell (2007). "Dancing with Wolves: Syndicated Loans and the Economics of Multiple Lenders," Federal Reserve Bank of Philadelphia, *Business Review*, pp. 1-8.
- Bernstein, J., L. Mishel and H. Shierholz (2009). *The State of Working America 2008/2009*. Ithaca: Cornell University Press.
- Bertrand, M., C. Goldin. and L. Katz (2009). "Dynamics of the Gender Gap for Young Professionals in the Corporate and Financial Sectors," NBER Working Paper No. 14681, July.
- Blankfein, Lloyd (2009). *Financial Times*, "Do not destroy the essential catalyst of risk," February 8.
- Boldrin, Michele and Adrian Peralta-Alta (2009). "What happened to the US stock market? Accounting for the last 50 years," Federal Reserve Bank of St. Louis, Working Paper 2009-042A, August.
- Bosworth, Barry and Aaron Flaaen (2009). America's Financial Crisis: the End of An Era," Brookings Institution, available at: http://www.brookings.edu/~media/Files/rc/papers/2009/0414_financial_crisis_bosworth/0414_financial_crisis_bosworth.pdf.
- Craig, Susanne and Deborah Solomon (2009). *Wall Street Journal*, "Bank Bonus Tab: \$33 Billion Nine Lenders That Got U.S. Aid Paid at Least \$1 Million Each to 5,000 Employees," July 31.
- Crotty, J (1985). "The Centrality of Money, Credit and Financial Intermediation in Marx's Crisis Theory." In S. Resnick and R. Wolff, eds., *Rethinking Marxism: Essays in Honor of Harry Magdoff and Paul Sweezy*. New York: Autonomedia, 1985, pp. 45-82.
- Crotty, J. (1994). "Are Keynesian Uncertainty and Macrotheory Incompatible? Conventional Decision Making, Institutional Structures and Conditional Stability in Keynesian Macromodels." In G. Dymski and R. Pollin, eds., *New Perspectives in*

Monetary Macroeconomics: Explorations in the Tradition of Hyman Minsky. Ann Arbor: Univ. of Michigan Press, pp. 105-142.

Crotty J, (2007). "If Financial Market Competition is so Intense, Why are Financial Firm Profits so High?: Reflections on the Current 'Golden Age of Finance,'" University of Massachusetts, Political Economy Research Institute, Working Paper No. 134, April.

Crotty, J (2009). "Structural Causes of the Global Financial Crisis: A Critical Assessment of the 'New Financial Architecture'," *Cambridge Journal of Economics*, July 2009, Vol. 33, No. 4, pp. 563-80.

Crotty, J. and G. Epstein (2009). "Avoiding Another Meltdown," *Challenge*, Vol. 53, No. 1, January-February 2009, pp. 1- 26.

Cuomo, Andrew (2009). "No Rhyme or Reason: The 'Heads I Win, Tails You Lose' Bank Bonus Culture", available at:
http://www.oag.state.ny.us/media_center/2009/july/pdfs/Bonus%20Report%20Final%207.30.09.pdf.

D'Arista, Jane (1994). The Evolution of US Finance: Volumes I and II. Armonk New York: M.E. Sharpe.

Dash, Eric (2009). *Wall Street Journal*, "Effort to Rain in Pay on Wall Street Hits New Hurdle," August 10.

Edmunds and Xavier Gabaix (2009). "Incentive accounts: A solution to executive compensation," VOX website, June 24.

FDIC (2009). *Quarterly Banking Profile*, First Quarter.

Financial Stability Forum (2009). "FSF Principles for Sound Compensation," April 2. Financial Services Authority (2009), "The Turner Review: A regulatory response to the global banking crisis," March.

Findlay, M.C. and E.E. Williams. "Financial economics at 50: an oxymoronic tautology," *Journal of Post Keynesian Economics*, Winter 2008-09, 31 (2), p. 224.

Fox, Justin (2009). The Myth of the Rational Market. New York: Harper Business.

Froud, J. and K. Williams (2007). "Private equity and the culture of value extraction," CRESC Working Paper No. 31, February.

Gapper, John (2008). *Financial Times*, "Whatever is good for Goldman," September 24, 2008.

- Goldin, C. and L. Katz (2008). "Gender Differences in Careers, Education and Games," *American Economic Review*, Vol. 98, No. 2, pp. 363-69, May.
- Gorton, Gary and Andrew Metrick (2009). "Securitized Banking and the Run on the Repo," NBER Working Paper 15223, August.
- Guerrera, Francesco (2009). *Financial Times*, "Banks eye way out of hell to salvation (via the Treasury)," September 19/20, 2009.
- Hughes, Chris and Brooke Masters (2008). *Financial Times*, "Reforms of bankers' pay in the spotlight," May 22.
- Kaplan, Steve and Joshua Rauh (2007). "Wall Street and Main Street: What Contributes to the Rise in the Highest Incomes?," NBER Working Paper No. 13270, July.
- Krugman, Paul (2008). *New York Times*, "The Madoff Economy," December 19.
- Larsen, Peter (2008). *Financial Times*, "The flaw in the logic of investment banks' largesse," January 7.
- Lewis, Michael (2007). "Why I'm Ready to Be New Citigroup CEO," *Bloomberg* website, Nov. 15.
- Lewis, Michael (2009). "What Wall Street CEOs Don't Know Can Kill You," *Bloomberg* website, March 26.
- Lohr, Steve (2009). *New York Times*, "Wall St. Pay is Cyclical, Guess Where We Are Now," February 5.
- Mackenzie, Michael (2009). *Financial Times*, "High-frequency trading under scrutiny," July 28.
- Mason, Paul (2009). Meltdown: The End of the Age of Greed. London: Verso.
- McKinsey Report (2009). "Global capital markets: Entering a new era," September. Available at: http://www.mckinsey.com/mgi/reports/pdfs/gcm_sixth_annual_report/gcm_sixth_annual_report_full_report.pdf.
- Meunier, Francois (2007). "Les hauts salaires dans la banque: Talent ou collusion? (High-Earners in Investment Banking Talent or Collusion? With English summary), *Revue Francaise d'Economie*, v. 22, iss. 1, pp. 49-71.

Morrison, A. and W. Wilhelm (2004). "The Demise of Investment Bank Partnerships: Theory and Evidence," July. Available at:
http://www.finance.ox.ac.uk/file_links/finecon_papers/2004fe14.pdf.

Norris, Floyd (2009). *New York Times*, "Off the Charts: A 10-Year Stretch That's Worse Than It Looks" February 7.

Oyer, Paul (2006). "The Making of an Investment Banker: Macroeconomic Shocks, Career Choice, and Lifetime Income," National Bureau of Economic Research, Working Paper 12059, February.

Phillipon, T. and A. Reshef (2007). "Skill Biased Financial Development: Education, Wages and Occupations in the U.S. Financial Sector," NBER Working Paper No. 13437, September.

Philippon, T. and A. Reshef (2009). "Wages and Human Capital in the US Financial Industry: 1909-2006," NBER Working Paper No. 14644, January.

Plender, John, *Financial Times*, "A world where transactions rule," March 9, 2009.
Rajan, R. (2005), "Has Financial Development Made the World Riskier?," NBER Working Paper 11728, November.

Reinhart, Carmen and Kenneth Rogoff (2009). *This Time is Different: Eight Centuries of Financial Folly*. Princeton: Princeton University Press.

Robert Reich 2009. blog, July 16, at:
<http://robertreich.blogspot.com/2009/07/goldman-and-jpmorgan-two-winners-when.html>.

S&P (2009). *Industry Surveys: Investment Services*, May 28.

Securities Industry and Financial Markets Association Fact Book (SIFMA) 2008.

Stiglitz, Joseph (2009). "How to Rescue the Bank Bailout," Truthout website, January 26.

Sum, Andrew and Paulo Tobar (2008). "The Great Divergence: Real-Wage Growth of All Workers Versus Finance Workers," *Challenge*, May/June, pp. 57-79.

Tett, Gillian (2009). "Why the idea of 'living wills' is likely to die a quiet death," *Financial Times*, August 14, 2009.

The Economist (2008). "Confessions of a risk manager," August 7.

Tymoigne, Eric (2009). "Securitization, Deregulation, Economic Stability, and Financial Crisis, Part II: Deregulation, the Financial Crisis, and Policy Implications," Levy Institute Working Paper No. 573.2, August 2009.

Wall Street Watch 2009. "Sold Out: How Wall Street and Washington Betrayed America," March. Available at: http://www.wallstreetwatch.org/reports/sold_out.pdf.

Williamson, Oliver (1985), The Economic Institutions of Capitalism. New York: Free Press.