

Wall Street and Main Street: What Contributes to the Rise in the Highest Incomes?

by

Steven N. Kaplan* and Joshua Rauh*

First Draft: September 2006

This Draft: July 2007

Abstract

We consider how much of the top end of the income distribution can be attributed to four sectors – top executives of non-financial firms (Main Street); financial service sector employees from investment banks, hedge funds, private equity funds, and mutual funds (Wall Street); corporate lawyers; and professional athletes and celebrities. Non-financial public company CEOs and top executives do not represent more than 6.5% of any of the top AGI brackets (the top 0.1%, 0.01%, 0.001%, and 0.0001%). Individuals in the Wall Street category comprise at least as high a percentage of the top AGI brackets as non-financial executives of public companies. While the representation of top executives in the top AGI brackets has increased from 1994 to 2004, the representation of Wall Street has likely increased even more. While the groups we study represent a substantial portion of the top income groups, they miss a large number of high-earning individuals. We conclude by considering how our results inform different explanations for the increased skewness at the top end of the distribution. We argue the evidence is most consistent with theories of superstars, skill biased technological change, greater scale and their interaction.

* University of Chicago Graduate School of Business and NBER. This research has been supported by the Center for Research in Security Prices, the Stigler Center for the Study of the Economy and the State, and the Global Financial Markets Initiative. We are grateful to Emmanuel Saez for useful discussions and help with tax data. We thank David Autor, Lucian Bebchuk, Austan Goolsbee, Adam Looney, Andrew Metrick, Berk Sensoy, Amir Sufi, Robert Topel, Mike Weisbach, and seminar participants at Berkeley, the Duke-UNC Corporate Finance Conference, Stanford, and the University of Chicago for helpful discussions and comments. We thank Sol Garger, Cristina Iftimie, James Wang, Michael Wong, and Jaclyn Yamada for research assistance. Address correspondence to Steven Kaplan, University of Chicago Graduate School of Business, 5807 South Woodlawn Avenue, Chicago, IL 60637 or e-mail at skaplan@uchicago.edu.

I. Introduction

It is well known that the income distribution in the United States has become increasingly unequal over the last two or three decades.¹ The sources of this increased inequality, however, are not completely understood, particularly at the very top end of the distribution. In this paper, we consider in detail how much of the inequality today at the top end of the income distribution can be attributed to four different sectors of the economy – top executives of non-financial firms (Main Street); financial service sector employees from investment banks, hedge funds, private equity funds, and mutual funds (Wall Street); lawyers; and professional athletes and celebrities.

Where possible, we estimate how those contributions have varied over time. It is well-known and well-documented that top executive pay has increased substantially over the last twenty-five years (Hall and Liebman (1998), Hall and Murphy (2003), Jensen et al (2004), Bebchuk and Fried (2004 and 2006)). Those increases have generated a great deal of controversy and attention. At the same time, the financial and legal sectors also have experienced substantial growth over the last twenty-five years both in number of employees and the pay of those employees. As a result, those sectors also include many high income individuals. Unlike data on the top executives of public companies, however, compensation on investment bankers, hedge fund employees, private equity partners, and law firm partners are not disclosed systematically.

We begin with the data in ExecuComp on compensation for top executives of public companies. We use two measures of compensation. First, we consider realized or actual compensation that includes options exercised during the year. While realized compensation estimates the compensation an executive will recognize on his or her income tax return for one year, it may represent option grants from more or less than one past year. Since income from stock options is taxed upon exercise, this provides a reasonable measure of the employment-related compensation the executive actually reports to the IRS that year. Second, we consider ex ante or estimated compensation that uses the estimated value of options

¹ See Autor, Katz and Kearney (2005) and (2006), Dew-Becker and Gordon (2005), Piketty and Saez (2003), (2006a), and (2006b).

granted that year rather than the value of options exercised. This provides a better measure of the compensation the board expected to give the CEO that year and clearly represents just one year of compensation.

We extrapolate the data on those companies to also include non-ExecuComp companies. We estimate the contribution of all top executives from non-financial and financial firms to the top ends of the distributions of adjusted gross income (AGI) from the IRS, both recently and for 1994. We consider both total AGI and AGI excluding investment income.

We estimate that non-financial executives represent 5.25% of the top 0.01% bracket of AGI in 2004 using realized compensation. Using ex ante compensation, the non-financial executives represent only 3.9% of the top 0.01% bracket. In both cases, top executives explain only a modest fraction of the top 0.01% bracket. The results are similar for the top 0.001% and 0.0001% brackets.

At the same time, we find that non-financial executives represent 3.9% of the top 0.01% bracket of AGI in 1994 using realized compensation, and 3.65% using ex ante compensation. Non-financial executives, therefore, represent a modestly larger fraction of the very top brackets using realized compensation, and virtually the same fraction using ex ante compensation. While top executive pay increased substantially over the ten-year period, the increase in pay appears to explain only a modest fraction of the increase in the top end of the AGI distribution using actual pay. Furthermore, on an ex ante or expected basis the pay of top executives did not increase more quickly than that of other highly paid individuals.

We then use the financial statements of publicly-traded investment banking firms (e.g., Goldman Sachs and Morgan Stanley), and calibrated assumptions of the distribution of compensation within those firms, to estimate the distribution of the most highly compensated people (whom we refer to as managing directors) at those firms. We estimate that the managing directors and top executives of the top investment banking firms comprise a larger percentage of those individuals in the top 0.01% (but a smaller percentage in the top 0.001%) than the top executives of non-financial public companies.

Next, we attempt to estimate incomes for individuals in the asset management business. We look at hedge fund, venture capital (VC) fund, private equity or buyout (PE) fund and mutual fund investors. The data here are admittedly very coarse and we make a number of assumptions to obtain estimates of income. A large number of professionals in these areas are highly compensated. For example, we estimate that the professionals in hedge funds, VC funds, and PE funds include roughly the same number of individuals in the top 0.1% of the AGI income distribution as the top non-financial executives. While it is very difficult to estimate precise distributional changes over time for this sector, we also provide evidence that these industries are significantly larger today than 10 and 20 years ago and therefore that their employees must represent a much larger fraction of top quantiles than they did previously.

We also find that hedge fund investors and other “Wall Street” type individuals comprise a larger fraction of the very highest end of the AGI distribution (the top 0.0001%) than CEOs and top executives. In 2004, nine times as many Wall Street investors earned in excess of \$100 million as public company CEOs. In fact, the top 25 hedge fund managers combined appear to have earned more than all 500 S&P 500 CEOs combined (both realized and estimated).

We then examine lawyers using profit per partner for the top 50, 100, and 200 law firms in the United States. The average profit per partner in 2004 in the top 100 firms is \$1.0 million, representing almost 18,000 partners. This compares to an average profit per partner of \$0.45 million in 1994 representing 13,000 partners. Profits per partner, therefore, have increased by a factor of almost 2.2 times while the number of partners has increased by more than 40%. In real terms, profits per partner have increased by almost 2 times. Similarly, we estimate that the fraction of lawyers in the top 0.5% and 0.1% AGI brackets increased substantially from 1994 to 2004 (as well as from 1984 to 1994). For example, we estimate that partners of the top 100 law firms represent 2.4% of the top 0.1% AGI bracket in 2004, compared to 1.3% in 1994.

Finally, we investigate professional athletes in basketball, baseball, and football. These athletes represent a similar percentage of the top 0.1% AGI bracket in 2004 as in 1994 (0.8% both years), but a larger percentage of the top 0.01% AGI bracket (1.5% versus 1.0%). Data on celebrities are not as

complete as data on professional athletes but suggest that celebrities comprise a substantially smaller share of the top fractiles.

Overall, we estimate that the groups we study represent 15% to 26.5% of the individuals who comprise the AGI categories at and above the top 0.1%. Among the groups we study, non-financial public company CEOs and top executives are estimated relatively precisely and represent 2.0% to 6.4% of the very top AGI brackets. In every top AGI bracket, we estimate that Wall Street-related individuals comprise a greater percentage of the top AGI brackets than non-financial executives of public companies.

When we exclude investment income from AGI, the groups we study represent 22% to 33% of the individuals in the very top AGI brackets. Non-financial executives do not represent more than 12% of any of the top AGI brackets excluding investment income.

While our estimates represent a substantial portion of the top income groups, they clearly miss a large number of high-earning individuals. We suspect that some of the missing individuals are trial lawyers, executives of privately-held companies, highly paid doctors, and independently wealthy individuals who have a high AGI. While some of the missing individuals may also be non-top five executives of publicly-traded companies, the pay of the fifth highest paid executives suggests that this number is negligible for the top 0.01% and above.

From 1994 to 2004, the representation of top executives of non-financial firms in the top brackets increased using realized pay, but was virtually the same using and using ex ante pay. The contribution of lawyers, hedge fund managers, private equity and venture capital professionals to the top brackets unequivocally increased over this period, and almost certainly to a greater extent than top executives.

We conclude by considering how our results inform different explanations for the increased skewness at the top end of the distribution. These explanations include trade theories (Heckscher (1931), Olin (1933), Stolper and Samuelson (1941)), increasing returns to generalists rather than specialists (Murphy and Zabojnik (2004), Frydman (2005)), stealing theories (Bebchuk and Fried (2004) and Bebchuk and Grinstein (2005)), social norms (Piketty and Saez (2006a) and Levy and Temin (2007)), greater scale (Gabaix and Landier (2006)), skill biased technological change (Katz and Murphy (1992)),

Garicano and Rossi-Hansberg (2006), Garicano and Hubbard (2007)), and the economics of superstars (Rosen (1981)).

It seems unlikely that trade theories can account for the massive observed increase in inequality at the highest levels of the income distribution, especially given the breadth of this phenomenon and the fact that it does not affect only the groups for which the products and services are heavily and increasingly exported or bid for by tradable sectors. For example, an increase in open trade cannot be the primary factor driving the substantial increase in the pay of U.S. lawyers, given that most of their human capital is country-specific.

It also seems unlikely that our evidence can be reconciled with the theory of increasing returns to generalists. It is difficult to argue that lawyers, hedge fund investors, investment bankers, and professional athletes have become less specialized / more general over time. In fact, the opposite seems more likely to be true.

While we do not test directly whether any group of individuals is stealing or not, we do not find that the top brackets are dominated by CEOs and top executives who arguably have the greatest influence over their own pay. In fact, on an ex ante basis, we find that the representation of CEOs and top executives in the top brackets has remained constant since 1994. Our evidence, therefore, suggests that poor corporate governance or managerial power over shareholders cannot be more than a small part of the picture of increasing income inequality, even at the very upper end of the distribution. We also discuss the claim that CEOs and top executives are not paid for performance relative to other groups. Contrary to this claim, we find that realized CEO pay is highly related to firm industry-adjusted stock performance

Our evidence also is hard to reconcile with the arguments in Piketty and Saez (2006a) and Levy and Temin (2007) that the increase in pay at the top is driven by the recent removal of social norms regarding pay inequality. Levy and Temin (2007) emphasize the importance of Federal government policies towards unions, income taxation and the minimum wage. While top executive pay has increased, so has the pay of other groups, particularly Wall Street groups, who are and have been less subject to disclosure and social norms over a long period of time. In addition, the compensation arrangements at

hedge funds, VC funds, and PE funds have not changed much, if at all, in the last twenty-five or thirty years (see Sahlman (1990) and Metrick and Yasuda (2007)). Furthermore, it is not clear how greater unionization would have suppressed the pay of those on Wall Street. In other words, there is no evidence of a change in social norms on Wall Street. What has changed is the amount of money managed and the concomitant amount of pay.

Given what we think our evidence does not support, we believe that the evidence remains consistent with theories of skill biased technological change, superstars, greater scale and their interaction. With the huge improvements in information technology and the substantial increase in value of the securities markets over the last twenty-five years, asset managers, investment bankers, lawyers, and top executives can now apply their talent to much larger pools of money.

Our analysis is most closely related to the second half of Dew-Becker and Gordon (2005). They consider two possible sources of increasing income inequality – the pay of top executives and the pay of entertainment and sports superstars. Based on average pay statistics, they claim that those two groups account for most of the income earned in the very top quantiles of the income distribution. There are several ways in which our analysis is different from theirs. First, Dew-Becker and Gordon (2005) interpret the mean statistics from Bebchuk and Grinstein (2005) rather than analyze the distribution of pay we do. In doing so, they assume that each executive earns the average amount of pay which clearly ignores the true distribution. Second, they do not consider non-ExecuComp firms. Finally, they do not measure Wall Street-type professionals or lawyers at all. In his discussion of Dew-Becker and Gordon (2005), Topel (2005) raises several of these issues.

The paper proceeds as follows. Section II analyzes data from ExecuComp on incomes of top executives in non-financial and financial firms and their contribution to the income distribution. Section III focuses on other employees in the financial services and investment sector. Section IV reports our results on lawyers. Section V reports our results on professional athletes. In section VI, we use the results in the previous sections to see how much of the top end those groups explain. Section VII

discusses the extent to which the different groups are paid for performance. In section VIII, we discuss the implications of our results on different theories of increased income inequality.

II. Top Executives (Main Street)

In this section, we consider the contribution of top executives of public companies in the U.S. to the top end of the income distribution. We begin with the top executives in the ExecuComp database. ExecuComp covers the compensation of top executives of the companies in the S&P 500, the S&P Midcap 400, and the S&P Smallcap 600, plus some companies that were in those indices in previous years. In this analysis, we focus on the year 2004 because it is the most recent for which complete data are available, and 1994 because it is the first year that ExecuComp has full coverage of the index companies. For the year 1994, ExecuComp covered 1,747 total companies, and for 2004 it covered 1,722 total companies.

ExecuComp reports two summary measures of compensation, TDC1 and TDC2. TDC2 estimates the value of total compensation realized by the executive in a given year. This is the sum of salary, bonus, the value of restricted stock granted, the net value of stock options exercised and the value of long-term incentive payouts. TDC2 also will reflect any benefit that an executive may have received from backdating options. TDC2 will be closer to the amount reported as income on an executive's tax return. Because executives typically exercise options granted in previous years, TDC2 may represent compensation from more than one (or less than one) year.

TDC1 estimates the value of total compensation awarded (but not necessarily realized) to the executive that year. This equals TDC2 but replaces the net value of stock options exercised with the estimated value of stock options granted, using a Black-Scholes calculation. TDC1 does not reflect option backdating benefits because it assumes that the stock price on the issue date was the same as the exercise price.

Reported taxable income may differ from TDC2 because some restricted stock grants are not taxable until they vest. In any given year, an executive's true taxable income will reflect the restricted stock grants that vested that year which will include some current year as well as past year grants.

Reported AGI also will differ from TDC2 to the extent that executives earn income from other sources, such as directorships of other companies, or interest, dividend, and capital gains income. To control for this, we also consider AGI brackets that exclude investment income and reach qualitatively similar conclusions. Other deferred compensation, such as pension benefits, also will not appear in TDC2 or TDC1 nor would they appear in AGI.² An additional caveat when looking at AGI comparisons is that AGI is calculated at the level of the tax filing unit, whereas we consider individuals. In other words, we essentially assume that none of the individuals in our paper are married to each other or to other high earners. While not precisely true, we do not believe this is a large source of bias in our estimates.

To summarize, TDC2 will be closer to an executive's true AGI while TDC1 will more closely approximate the compensation a company's board expected to pay the executive.

We also assume that all of the top executives are U.S. citizens and report all of their income to the U.S. tax authorities. Because some top executives are not U.S. citizens or are taxed elsewhere, our results will overstate the number of executives that actually appear in the relevant tax brackets.

For 1994 and 2004, we report the number of top executives in each AGI income bracket based on TDC2 and TDC1. We restrict our sample in several additional ways. First, we remove any duplicated observations for a given individual. Second, we restrict attention to only the top five most highly compensated executives per firm. ExecuComp typically takes as many executives as happen to be in the disclosure statements, which may be more than the legally required 5. The average number of unique executive names per firm-year in Execucomp was 6.7 in 1994 and declined to 5.9 in 2004. As we do not want our results affected by changing coverage, we keep only the largest 5 TDC2 observations for each firm-year. Finally, for executives who appear in the top 5 at multiple firms within a given year (perhaps

² Sundaram and Yermack (2005) estimate the average change in pension value is 10% of total compensation (TDC1) for Fortune 500 CEOs from 1996 to 2002.

because they started the year at one firm and ended the year at another), we sum the TDC2 they earned at each firm to convert these multiple observations into one observation.

While most ExecuComp companies are non-financial companies, some, like Goldman Sachs, are financial services companies, such as banks and investment banks. Accordingly, we divide the ExecuComp executives into non-financial and financial executives. Financial executives are executives of firms that have an SIC code from 6000 to 6299. We consider firms with SIC codes at 6300 and above to be non-financials; these firms include insurance companies and real estate agents and operators. We classify them as non-financials because they are generally not “Wall Street” type firms. Financial firms comprised 42 of the S&P 500, 30 of the S&P Midcap 400, and 55 of the S&P Smallcap 600 in 1994 and 47 of the S&P 500, 33 of the S&P Midcap 400, and 32 of the S&P Smallcap 600 in 2004.

Table 1a reports the number of non-financial and financial ExecuComp executives in each AGI bracket. The cutoffs for the top fractiles of AGI income in 1994 are calculated based on the detailed IRS Statistics of Income files for US individuals, held at the NBER. The cutoffs for the top fractiles of AGI income in 2004 are calculated based on the 2002 distribution (the latest years for which the detailed files are available) and the relation between the 2002 and 2004 fractiles documented in the tabulations of Piketty and Saez (2003, 2006).

Table 1a shows that from 1994 to 2004, CEO and top executive compensation increased substantially. For the top five non-financial ExecuComp executives, the average nominal realized compensation (TDC2) increased from \$0.91 million in 1994 to \$2.82 million in 2004. For financial executives, the increase was from \$1.32 million to \$4.54 million.

Using realized compensation, the table shows that non-financial ExecuComp executives represent a somewhat larger fraction of the top AGI brackets in 2004 than they did in 1994. The increase is small in the top 0.1%, but larger in the brackets above. For example, non-financial ExecuComp executives represented 2.25% of the top 0.1% in 1994 and 2.58% in 2004. At the same time, for the top 0.01%, they represented 2.56% in 1994, but 4.46% in 2004; for the top 0.001%, 1.90% in 1994, and 5.06% in 2004.

While the top executive share of the very top brackets has increased, the top executives comprise a modest fraction of those brackets.

Using ex ante or estimated compensation, the picture is quite different. The table shows that non-financial ExecuComp executives occupy roughly the same fraction of the top brackets in 2004 as they did in 1994 except for the very top where their share actually declines. For example, non-financial ExecuComp executives represent 3.65% of the top 0.01% in 1994 and 3.54% in 2004. At the same time, they represent 2.50% of the top 0.001% in 1994, but only 1.74% in 2004.

For comparison with other studies, table 1b shows the results for ExecuComp CEOs only. The results are qualitatively similar to those for all top executives. CEOs have maintained or increased their share of the top brackets using realized compensation, and have more or less maintained their share using ex ante or estimated compensation.

Tables 1a and 1b show the fraction of financial executives in the top brackets also increase using realized pay, but remain roughly the same using estimated pay. According to Table 1a, financial executives comprise 0.57% of the AGIs in the top 0.01% in 1994 compared to 0.77% of the AGIs in 2004 using realized pay. Using estimated pay, financial executives comprise 0.80% of the top 0.01% in 1994 and 0.62% in 2004.

While the ExecuComp data cover over 1,600 publicly-traded companies, there were a total of 8,060 publicly traded companies in 2004 for which equity market values are available in Compustat. Accordingly, we estimate the compensation of top executives in the non-ExecuComp companies. We sample proxy statements to measure compensation for up to 50 non-ExecuComp companies in each of three size brackets. We do this because the non-ExecuComp companies are small relative to the ExecuComp companies and compensation tends to be lower in smaller companies (see Bebchuk and Grinstein (2005) or Gabaix and Landier (2006)).

We use three size brackets that are analogous to those in the ExecuComp data. We assume that if a firm's equity market value exceeds the maximum equity market value for S&P400 Midcap firms, it is like an S&P500 firm. We identify fewer than 50 such firms. The second group includes firms with

equity market values above \$1 billion but below the maximum for S&P 400 Midcap firms. The third group includes firms with equity market values below \$1 billion, but above the minimum equity market value for the S&P600 Smallcap firms. We exclude firms with market values below the minimum for the S&P 600 Smallcap, assuming that these companies have virtually no very high paid executives.

Table 1c assumes that top executive compensation in the non-ExecuComp firms in each size class mirrors the top executive compensation of the firms that we sampled in each size class. Table 1c indicates that there are relatively few very highly paid executives in non-ExecuComp firms. The table also shows that top executives in non-financial non-ExecuComp firms comprise a lower fraction of the top 0.01% of AGI brackets in 2004 than they do in 1994 – 0.79% versus 1.34% – but a higher fraction of the top 0.001% – 1.34% versus 0 – using realized compensation. The top executives occupy a higher fraction of the very top brackets using ex ante or estimate compensation. In all cases, however, the magnitudes are quite modest, never exceeding 1.36% of any bracket.

Table 1c also combines the estimates for ExecuComp and non-ExecuComp non-financial executives. Using realized compensation, non-financial executives overall occupied 5.25% of the top 0.01% and 6.4% of the top 0.001% in 2004 compared to 3.9% and 1.9%, respectively, in 1994. Using estimated compensation, non-financial executives overall occupied 3.9% of the top 0.01% and 1.9% of top 0.001% in 2004 compared to 3.65% and 2.5% in 1994.

Table 1d repeats the analyses in tables 1a and 1c for non-financial executives, but uses AGI brackets that exclude investment income including dividends, interest, rentals, farm income, IRA distributions, income from estates and trusts, pension and annuity distributions, long term capital gains, and Form 4797 income. This increases the percentage of the brackets occupied by the top executives. Using realized income, table 1d indicates that top executives of all non-financial firms comprise 8.55% of the top 0.01% in 2004 versus 6.07% in 1994. For the top 0.001%, the top executives comprise 11.87% in 2004 versus 3.97% in 1994. Using estimated income, table 1d indicates that top executives of all non-financial firms comprise 7.28% of the top 0.01% in 2004 versus 6.18% in 1994. For the top 0.001%, the top executives comprise 5.90% in 2004 versus 5.35% in 1994.

Overall, the analyses of top executives show two main patterns. First, using estimated or ex ante pay the share of non-financial top executives' share of the very top AGI brackets is small and has remained roughly the same since 1994. Second, using realized pay, the share of non-financial top executives in the top 0.01% has increased modestly, but has increased more substantially at the very top – in the top 0.001%.

It is worth ending with one additional point. It is possible that we leave out a large number of high earners by restricting the sample to the top 5 executives. To assess whether this is true, we look at the pay of the fifth highest paid executive (assuming that all others are below this level). The results in table 1e suggest that including non-top 5 executives would not affect our basic results at all at brackets at the top 0.01% and above. In 2004, table 1e shows that only 7 non-financial ExecuComp executives are in the top 0.01% bracket using realized pay and only 14 are in that bracket using estimated pay. The corresponding numbers in 1994 are 5 and 18. These represent at most 0.17% of their respective brackets. They also represent similar percentages in 2004 and 1994.

III. Wall Street

A. Investment Banking

It is well-known that investment banking and other financial services firms have a large number of highly compensated individuals. Because firms are not required to disclose individual compensation for these individuals, it is not clear how large the amounts are and how many individuals earn them. Investment banks typically report only a very small amount of information about the compensation of their employees, generally limited to a figure for total global employee compensation plus the usual figures for compensation of the top five corporate executives. These disclosures likely obscure the fact that there are many highly paid professionals at the firm who are not among the top five employees. Indeed, the typical managing director at a top Wall Street firm will almost never earn less than \$500,000 a year in total compensation, and there are thousands of these individuals.

In this section, we attempt to estimate the number of highly paid professionals at Wall Street securities firms, as well as their distribution of pay, and examine how this number and distribution compare to the statistics on executives of publicly traded companies. We use publicly available information on total compensation from the top 10 publicly-traded investment banks. Based on discussions with industry insiders, we create a distribution of income for these firms. We then attempt to extrapolate from that information to other firms.

1. Counting the Managing Directors

We use the title managing director to describe the top echelon of securities firm professionals and begin with a detailed study of ten of the top eleven securities firms from the list of the top 100 securities firms by Institutional Investor (2004). Institutional Investor organizes this list by total consolidated capital of the securities unit of the firms in question; the ten we study comprise roughly 90% of the total consolidated capital of the top 100. These firms are listed in Table 2a. We exclude Bank of America Securities from our top 10 because of data availability issues, and instead include number 11, J.P. Morgan Securities.

There are several complications that we attempt to address in this analysis. First, several of the top 10 are divisions of conglomerates that include both investment and commercial banks. We focus on only the securities businesses of these firms, including asset and wealth management but excluding commercial banking. While some firms report disaggregated segment level information on total number of employees, many do not. Where necessary, we use the ratio of segment net revenue to total net revenue to derive an estimate of segment employees. Second, while some securities firms report the number of managing directors, many do not. In these cases we either rely on industry sources that estimate this figure or estimate the number of global managing directors as a fraction of global employees. When we apply ratios, we typically use figures between 3 and 4 percent, calibrating in many cases to information from industry insiders. Third, while some firms report U.S. information separately from global information, in many cases we needed to estimate the number of U.S. employees. Where

necessary, we use the ratio of U.S. to global net revenues to estimate this figure. Finally, we generally assume that the ratio of U.S. to global employees is indicative of the ratio of U.S. to global revenues.

Table 2a presents our assessment of the likely number of U.S. managing directors at these ten firms. Non-italicized figures are numbers taken directly from the financial reports of the companies in question or calculated as ratios of figures taken directly from the reports. Italicized figures represent our imputations, in which we have attempted to be as conservative as possible.

We use relatively straightforward calculations to estimate the managing directors at Goldman Sachs Group and Bear Stearns Companies. The 2004 Goldman Sachs annual report lists the number of managing directors at 1,181. The annual report also lists 20,722 global employees with 13,278 based in the U.S. for a ratio of 64%. We apply this ratio to the number of managing directors to derive an estimate of 757 managing directors based in the U.S. For Bear Stearns, although the company does not list its managing directors, industry insiders revealed approximately 850 global managing directors. Furthermore, while this firm does not detail the U.S. versus non-U.S. employee breakdown, 91% of Bear Stearns revenues originate in the U.S. We therefore estimate that Bear Stearns had 770 (91% of 850) managing directors based in the U.S. in 2004. Both Goldman Sachs and Bear Stearns are essentially pure investment banks, so there are no complications involved with deriving segment-level estimates.

Lehman Brothers also provides a relatively straightforward case. The annual report lists 19,600 global employees with 14,100 based in the U.S. Unfortunately, we do not know the number of managing directors at this firm. We assume a conservative 4% (compared to the implied figures of 6% for Goldman Sachs and 8% for Bear Stearns), calibrated from conversations with industry insiders. This leads to a figure of 564 managing directors based in the U.S. in 2004.

Morgan Stanley is an example of a firm that engages in other non-securities related activities, including Discover credit cards and retail brokerage. The annual report provides the number of total employees and the number of managing directors for the firm. We estimate the number of employees in each segment by applying the ratio of segment to total net revenues to the number of global employees. For example, we estimate that the institutional securities division has 29,472 employees, which is 53,284

times the ratio of \$13,313 to \$23,708. We assume that all the managing directors come from the institutional securities and asset management divisions. This implies that 3% of the employees in those divisions are managing directors, still very low relative to Lehman, Goldman, and Bear Stearns. We estimate U.S. employment as the ratio of U.S. to total net revenue, which we assume is roughly constant across segments of the firm. These calculations yield 780 managing directors at Morgan Stanley.

Proceeding in this fashion for the remaining investment banks, we count 6,006 managing directors based in the U.S. working for these ten firms. We believe that this number is conservative. Private conversations with industry participants suggest that we underestimate the highly paid investment bankers at some of these firms. We also estimate that adding the rest of the U.S. investment banking sector would raise this figure by a considerable, but unknown amount. In our analysis, we report the income distribution per 10,000 managing directors. We believe this is a reasonable guess as to the total number of managing directors or employees receiving managing director type pay. In any investment bank, there will be a number of highly paid employees who are not yet managing directors. If one wanted to be conservative, we think 7,000 managing directors would represent a minimum.

2. Estimating the Distribution of Pay

According to industry sources, it is rare for a managing director at a top Wall Street firm to receive compensation of less than \$500,000 during the period we are studying. Furthermore, we understand that at least one quarter of managing directors earn in excess of \$2.5 million per year.³ Based on this information, we consider two possible distributions of pay. The first is a pareto distribution with a minimum value of \$500,000, which we truncate at \$35 million, as this is approximately the top value observed for any investment banking employee.

The cumulative distribution function of the pareto distribution takes the form:

³ Our estimates are based on conversations with industry sources. For confirmation, see Lisa Kasenaar, The International Herald Tribune, February 6, 2006 who reports that the Options Group, an executive-search company, estimated that “managing directors may get an average bonus of about \$2.25 million in coming weeks” in 2005; as well as Duff McDonald’s “Please, Sir, I Want Some More. How Goldman Sachs is carving up its \$11 billion money pie,” in New York Magazine, December 5, 2005

$$P(X > x) = \left(\frac{x}{x_m} \right)^{-k}$$

where x_m is the minimum value of \$500,000 and we estimate $k = 0.8613$ based on the restriction that 25% of the distribution earns more than \$2.5 million. This distribution yields estimates that are more conservative at the bottom of the distribution than would be accepted by most industry insiders, with almost half of the managing directors earning less than \$1 million.

The second distribution is an exponential distribution, which we censor below at \$500,000. The cumulative distribution function of the exponential distribution takes the form:

$$P(X > x) = 1 - e^{-\beta x}$$

where we estimate $\beta = 0.00055$ based on the restriction that 25% of the distribution earns more than \$2.5 million. This distribution is more liberal at the upper end of the distribution than the truncated pareto, though it is more conservative at the very top. The censored exponential distribution allows only 0.1% of managing directors to earn more than \$20 million, compared to 0.3% as given by the truncated pareto distribution.

It is our understanding that most of the pay estimated here will show up in AGI for the managing directors. Most of the investment banks are public companies and C corporations. The MDs of these firms will receive taxable income. MDs of private firms may receive K-1 or partnership income. It is our understanding that the majority of income and bonus that MDs receive is in the form of cash. This will appear in AGI in the year it is received. For many investment banks, MDs receive some fraction of compensation as restricted stock and options or defer some compensation. For this compensation, there will be a timing difference between our estimates and actual AGI. For example, restricted stock will appear as income when it vests and option gains will appear when the options are exercised.

Table 2b reports the estimated distributions of pay for 10,000 managing directors alongside the AGI brackets. The first vertical panel presents the percentage of managing directors in each AGI bracket. The Pareto distribution implies that 60% of the MDs earn less than \$1.4 million (the top 0.1% threshold) while the exponential distribution implies that number is 31%. The average MD earns \$1.9 million

(Pareto) and \$2.8 million (exponential). Based on conversations with industry insiders, we believe the exponential distribution is somewhat more realistic.

The second vertical panel presents the percent of each bracket accounted for by every 10,000 managing directors, and the third panel presents the number of individuals earning at least the minimum bracket amount for every 10,000 managing directors. As noted above, we believe that 10,000 managing directors is a reasonable estimate for Wall Street as a whole.

Using our assumptions, we estimate that the 10,000 top-tier managing directors at investment banks generate enough AGI to explain at least 5.8% (Pareto) or 11.2% (exponential) of the top 0.01% of the AGI distribution. These are at least as large as our estimates for all top non-financial executives of 5.25% using realized compensation and 3.9% using ex ante compensation. The MDs explain a lower fraction of the top 0.001%.

We also estimate that the MDs earn a total of \$19 billion (Pareto) to \$28 billion (exponential). This is slightly lower, but the same order of magnitude as our estimate of \$34 billion (realized) and \$27 billion (ex ante) for all top non-financial executives.

Overall, then, investment bankers appear to explain roughly the same amount of the top end of the income distribution as top executives of non-financial firms.

3. Historical Wall Street.

It seems likely that the number of managing directors on Wall Street and their compensation have increased substantially in the last 20 or 30 years. Unfortunately, data availability concerns make it difficult if not impossible to repeat our 2004 analysis for earlier periods. We can, however, get a sense of the growth in Wall Street by compare the number of employees and capital employed at Wall Street firms over time. The Securities Industry Association (SIA) provides a list of the top 50 securities firms each year. We collected the 2004 list as well as the 1987 list (the furthest back we could find). We also obtained the list of the top 50 securities firms in 1972 provided by the Investment Banker-Broker Almanac.

Table 2c reports the total number of global employees and the total global capital employed at the top 50 U.S. securities firms in 1972, 1987, and 2004. Employment increased by 170% from 1972 to 1987 and, by 79% from 1987 to 2004. Capital employed by those employees increased exponentially by more than ten times from 1972 to 1987, and by more than twenty times from 1987 to 2004. Capital per employee, therefore, increased substantially as well, from \$34 thousand (\$124 thousand in \$2004) in 1972 to \$136 thousand (\$203 thousand) in 1994 to \$1,789 thousand in 2004. This represents a remarkable increase in capital per employee, particularly since 1994.

Similarly, Morrison and Wilhelm (2007) present evidence concerning investment banks in the 1960s and 1970s. In 1970, their tabulations indicate that the top twenty-three investment banks have a total of fewer than 1,600 partners and average capital per partner of less than \$0.75 million. This would represent \$3 million of capital per partner in 2004 dollars. Assuming that the firms in table 2c have 10,000 managing directors, table 2c implies almost \$70 million of capital per managing director, a 23 fold increase relative to 1970.

B. Alternative Assets

Over the last twenty years, there has been a large increase in the amount of money allocated by institutional investors and wealthy individuals to alternative asset classes. The most prominent members of the alternative asset classes are hedge funds, venture capital (VC) funds, and private equity (PE) or buyout funds. These funds are of interest for compensation and the income distribution because the hedge fund, VC and PE fund investors potentially receive substantial compensation.

The fees typically paid to the alternative asset fund – whether hedge, VC or PE fund – consists of a management fee that equals a percentage of total or committed capital and a profit share or carried interest of the profits of the fund (after paying the management fees). The typical compensation for hedge funds today is 2 / 20, i.e., 2% management fee and 20% of the profits on total capital although the top performing hedge funds charge more. This also is typical for VC and PE funds based on committed capital. It is typical for the larger PE funds to reduce the management fee to 1½% of committed capital

while smaller VC funds increase the management fee to 2½%.⁴ In this section, we attempt to estimate the amount of fees paid to the managers of alternative assets, how those fees have increased over time, and the effect of those fees on the income distribution.

1. Hedge Funds

It is well known that hedge funds have experienced a large increase in assets under management in the last twenty years. Table 3a provides time series of hedge fund assets from three different databases, Hennessee Group, Hedge Fund Research, and TASS. All three confirm the large increase in hedge fund assets from less than \$50 billion in 1990 to roughly \$1 trillion by the end of 2005.

The last three columns of table 3a use the Hennessee Group assets under management, realized (net) hedge fund returns and the typical compensation of 2% / 20% to estimate the fees earned by hedge fund managers. The management fees are estimated by multiplying the assets under management at the beginning of the year (end of previous year) by 2%. The profit share or carry is estimated by multiplying the average return for the year if it is positive by the beginning of year assets under management to get net profit. Because net profit is after carry, we gross up the net profit by dividing by 80% to get the gross profit for the year. We then take 20% of the gross profit as the estimate of the profit share. Total fees are the sum of management fees and carried interest. Table 3a estimates that hedge fund fees have increased from less than \$0.5 billion in 1987 to less than \$2 billion in 1994 to \$17.5 billion in 2004 and \$20.5 billion in 2005.

This calculation almost certainly understates compensation because it assumes that all hedge funds earn the average return for the year. Because the 20% profit share is applied only to positive returns (and not negative returns) any appreciable dispersion across funds such that some funds earn negative returns (but not negative carry) implies that the actual profit share exceeds the estimates above. In other words, the profit share acts like a call option.

⁴ See Gompers and Lerner (1999) and Metrick and Yasuda (2007).

Malkiel (2005) reports a standard deviation of 11% on the Van Global Hedge Fund index. Chany et al. (2005) report a standard deviation of 8.25% on the CSFB / Tremont hedge fund index. They report mean annualized standard deviations across a sample of over 4,000 individual hedge funds that exceeds 14%. If we conservatively assume a standard deviation of 11% and risk free rate of 3%, using Black-Scholes, a one year call option is worth almost 6% (with a 14% standard deviation, roughly 7%). The 20% profit share is 20% of a call option on an entire fund. This implies that the profit share has an expected annual cost of 1.2% at the 11% standard deviation. Under the assumption of 11% standard deviation of hedge fund returns, the expected fees on a 2 / 20 hedge fund are roughly 3.2%. The last column of table 3a calculates fees on this basis, and figure 1 depicts the results. The estimated fees for 2004 increase from \$17.5 under the simple method to over \$25.4 billion. Obviously, the estimate would be higher under higher volatility assumptions. Interestingly, the \$25.4 billion figure is the same order of magnitude as the total pay to non-financial top executives and to investment banking MDs.

It is clear there has been a large increase in fees going to hedge funds. There is no doubt that much of this increase shows up as compensation to the owners of the hedge funds and the people they hire.⁵ It is difficult to know exactly how much. In what follows, we provide some rough estimates.

We begin with the list of the top 100 hedge fund firms in Institutional Investor (II) in 2005 which measures assets as of the end of 2004. According to II, these hedge funds managed \$568 billion. Of the 100 firms, 79 are listed as U.S. companies with \$459 billion under management. We searched the SEC Investment Advisor Public Disclosure database for information on these funds. Forty-six of these funds provided information to the SEC. These funds are listed by II as having \$268 billion of hedge fund money under management.

The funds reporting to the SEC must list a range of the number of the total number of employees as well as the number of employees who are investment advisory. On average, the forty-six funds list a minimum of 89 and a maximum of 255 employees as well as a minimum of 26 and a maximum of 109

⁵ Hedge funds may be organized as partnerships in which some of the carried interest is taxed as capital gains. Thus, carried interest would appear as part of AGI, but would be taxed at lower rates. In addition, there is some evidence that hedge fund managers defer the realization of ordinary income into the future. See Fleischer (2007).

investment advisory employees. This works out to \$160 million per minimum number of employees and \$36 million per maximum number of employees. Similarly, this works out to \$550 million per minimum number of employees and \$159 million per maximum number of investment advisory employees. The average of the minimum and maximum is \$98 million per employee and \$305 million per investment advisory employee.

Another way of looking at this is to divide the total hedge fund assets at these firms by the total number of employees. On this basis, the firms have \$65 million per minimum number of employees and \$23 million per maximum number of employees. Similarly, this works out to \$220 million per minimum number of employees and \$54 million per maximum number of investment advisory employees. The average of the minimum and maximum is \$44 million per employee and \$137 million per investment advisory employee.

In what follows, we assume that the average highly paid employee controls or is compensated from \$100 million of assets. Under the assumption of total fees of 3.2%, this works out to \$3.2 million in fees per highly compensated employee. If we then apply this to \$900 billion of hedge fund assets, we obtain 9,000 highly compensated employees with average fees of \$3.2 million.

This is a very rough estimate. This overstates total compensation to these employees because the hedge fund must pay expenses from these fees. However, operating margins in the asset management business are quite high. Before compensating top executives and paying mutual fund marketing expenses (which hedge fund firms do not pay), it is common for publicly-traded mutual fund firms to report operating margins exceeding 70%.⁶ These estimates also overstate the number of employees who are highly compensated to the extent that some of the assets and employees are not in the United States. At the same time, these estimates will understate total compensation per employee to the extent that the hedge fund firms have other activities and manage other assets.

⁶ See, for example, 2005 10-Ks for Calamos Asset Management, Eaton Vance, and Janus Capital.

It is likely that many of the big hedge fund payments will appear as ordinary partnership income on the K-1's of the owners or partners of the hedge funds. Some unknown number of the most highly compensated employees who are not partners will receive W-2 income.

Given the huge increase in hedge fund assets, it is virtually certain that the number of highly compensated employees at hedge funds has increased substantially over time. In 1984, when there were almost no hedge funds, there would have been very few such employees. In 1994, when hedge funds had less than \$100 million in assets under management, hedge fund fees were roughly 10% of the fees in 2005. At the same fee per employee ratio, this implies a ten-fold increase in the number of highly compensated employees. To the extent that the amount of money managed per individual has increased, the number of highly compensated employees will have increased less, but the compensation of each individual will have increased more.

2. Venture Capital and Private Equity Funds

The capital committed to venture capital (VC) private equity (PE) or buyout funds also has increased substantially over time. The first three columns of table 3b present the capital committed to U.S. VC funds, the number of funds raised each year from 1980 to 2005, and capital per fund according to Thomson Financial's Venture Economics database. The next three columns do the same for PE firms. When a VC or PE firm raises a fund, its investors (limited partners) commit to provide a certain amount of money over the investing life of the fund (usually five years). The investments are harvested over the subsequent five to ten years, giving a total commitment period or investment life of ten to fifteen years. The commitments, therefore, represent money committed, but not necessarily invested in a given year.

The table shows that combined annual commitments to VC and PE funds have grown from less than \$2.5 billion combined in 1982 to less than \$35 billion in 1994 to over \$150 billion in 2005. Both the number of funds and the size of the average fund have increased.

For purposes of calculating fees, columns 7 and 8 estimate the total amount of money under management in VC and PE at any one time as the sum of the capital committed over the previous seven

years (including the current year). This assumes that the VC and PE firms earn management fees on the capital committed for seven years. Most funds actually earn management fees for ten years, but the management fee typically declines after the five year investment period. Overall, the seven year assumption will tend to be conservative.

As mentioned above, compensation typically consists of a management fee (based on committed capital) and a share of the profits. Metrick and Yasuda (2007) report median management fees of 2% and median profit shares of 20% for a large sample of VC and PE funds raised from 2000 to 2005.

Accordingly, the last four columns estimate fees paid to VC and PE funds using the analogous methodology to that used initially for hedge funds. The management fees are estimated by multiplying the assets under management at the beginning of the year (end of previous year) by 2%. The profit share is estimated by multiplying the average return for the year (provided by Venture Economics) if it is positive by the beginning of year assets under management to get net profit. Because net profit is after carry, we gross up the net profit by dividing by 80% to get the gross profit for the year. We then take 20% of the gross profit as the estimate of the profit share. Total fees are the sum of management fees and carried interest.

VC and PE fees also have increased substantially over time. Under these assumptions, the combined fees to VC and PE funds have increased from less than \$0.25 billion in 1984 to almost \$3 billion in 1994 to roughly \$18 billion in 2004 and 2005.

As with the hedge funds, the simple calculation above almost certainly understates compensation because it assumes that all VC and PE funds earned the average return for the year. In fact, returns are volatile around the average and the 20% profit share acts like a call option, increasing in value with volatility. It also is likely the case that VC and PE fund returns are more volatile than hedge fund returns because they are calculated based on performance over the life of the fund rather than annually.

Kaplan and Schoar (2005) present evidence on the performance of VC and PE funds. They report that the historical standard deviation of the returns on VC funds is between 19% and 34%; on PE funds, between 19% and 27%. (The standard deviations depend on whether funds are value- or equal-weighted

and whether the returns are calculated by Venture Economics or Kaplan and Schoar.) If we conservatively, assume a standard deviation of 22%, risk-free rate of 3%, the 20% profit share and a 2% management fee, the expected annual fees for VC and PE firms equal 4% of assets under management. As depicted in figure 2, this would equal a total for VC and PE firms of roughly \$30 billion in 2004 and 2005.

Again, the \$18 billion to \$30 billion estimates are the same order of magnitude as the total pay to non-financial top executives, investment banking MDs, and hedge fund investors.

How do these fees translate into compensation? In their sample of VC and PE funds, Metrick and Yasuda (2007) report that the typical VC and PE fund has 6 partners (median of 5 and average of 6.4). Over the last five years, the Venture Economics figures indicate over 1,000 VC funds and almost 900 PE funds have been raised. This implies more than 10,000 highly compensated partners, a large increase over the number 25 years ago.

At \$18 billion in fees, this represents roughly \$1.3 million per VC partner and \$2.3 million per PE partner; at \$30 billion in fees, this represents \$2.0 million per VC partner and \$3.8 million per PE partner. Even these estimates may be low. Metrick and Yasuda (2007) estimate that the average partner in a VC firm can expect to receive \$13 million in present value over the life of a fund; the average partner in a PE firm, \$18 million in present value. Assuming a fund lasts for ten years, this works out to fees of \$1.3 million and \$1.8 million per partner per year in present value. However, successful firms invest their funds in four to five years or less, at which point they raise another fund. As a result, the net present value may effectively reflect four or five years of fees, not ten. Assuming five years, this would put the present value of average annual fees received per partner at VC and PE firms equal to \$2.6 million and \$3.6 million, respectively.

Our calculations and those of Metrick and Yasuda (2007), then, give us a range of fees per partner of \$1.3 to \$2.6 million per VC partner and \$1.8 to \$3.8 million per PE partner. The fees, of course, do not equal compensation received by the partners. VC and PE firms must pay operating expenses – employee salaries, rents, travel, deal costs, etc. – out of the fees. It is difficult to know exactly

what fraction of fees these expenses represent. It seems reasonable to assume that the expenses must be less than the management fee. Otherwise, the partners would need to finance their business themselves. As the management fees represent roughly $\frac{1}{2}$ of the total fees, this puts a lower bound on partner compensation of $\frac{1}{2}$ of the amounts at the beginning of this paragraph. In addition, these fees are averages. We have not attempted to estimate the distribution around these averages.

PE and VC investors are likely taxed similarly to hedge fund investors in that most of the income will appear as partnership income on the K-1's of the owners or partners of the funds. The one difference is that a larger fraction of the PE and VC income will be in the form of long term capital gains. The reason for this is that most of the investments will have a term of greater than one year and the 20% profit shares on those investments will appear as capital gains. (Again, see Fleischer (2007)).

In summary, there is no doubt that VC and PE partners have contributed to the increase in the top end of the income distribution. It seems likely that almost all of the 10,000 individuals earn in excess of the \$0.48 million necessary to put them in the top 0.5% of the income distribution.

As estimated fees increased by more than ten times from 1984 to 1994, and, again, by a factor of six times from 1994 to 2005, this undoubtedly represents a large increase in the number of such individuals since 1984 and 1994. In 1984, roughly 500 VC and PE funds were raised over the previous five years. These funds had capital under management of \$19 billion. At 4% total fees, this translates into \$0.76 billion of fees. With six partners per fund, this translates into 3,000 partners and \$0.25 million in fees per partner or \$0.41 million per partner in 2005. So, the number of partners has more than tripled and the fees per partner have increased by more than a factor of five times over this period.

3. Contributions to the top end of the distribution

In the previous subsection, we estimate average fees per highly compensated individual or partner in hedge fund, VC, and PE firms. We are unable to estimate the contributions of such firms to the very high end of the distribution. In this section, we use other data sources to attempt to do so.

Table 4a presents Institutional Investor's estimates of the incomes of the top 25 most compensated hedge fund managers from 2003 to 2005. The table also presents the estimates for those hedge fund managers based in the U.S. The table confirms that the top hedge fund investors earn large amounts of compensation. The 20th most highly paid hedge fund manager in the U.S. earned \$92, \$110 and \$150 million, respectively in those three years. This compares to 3 non-financial ExecuComp U.S. executives and our estimate of 4 total non-financial U.S. executives who earned more than \$100 million in 2004.

It also is striking that the top 25 individual hedge fund managers in the U.S. earned a combined total of \$5.2 billion, \$6.3 billion and over \$9 billion, respectively, in 2003, 2004 and 2005.

Table 4b presents estimated earnings of top earners in the financial industry more broadly. The first two columns present the rankings from Financial World for 1988 and 1995. Financial World includes all financial industry individuals including investment bankers, hedge fund and private equity investors. The last three columns combine the rankings from Trader Monthly and II Alpha for 2003 to 2005.

Trader Monthly ranks the top traders and hedge fund professionals only. The Trader Monthly and Alpha lists do not include PE and VC investors and, therefore, understate such incomes relative to the Financial World rankings. The recent S-1 filings of Blackstone and KKR indicate that some PE investors earn sums comparable to those of the hedge fund investors. For example, KKR reported net income of \$773 million and \$941 million in 2004 and 2005. With Henry Kravis and George Roberts each owning 37.5% of KKR, these imply incomes for Kravis and Roberts of almost \$300 million in 2004 and over \$350 million in 2005. Blackstone reported net income of \$1.5 billion and \$1.3 billion in 2004 and 2005. The 29.8% of Blackstone owned by Stephen Schwartzman implies income of \$447 million and \$388 million in 2004 and 2005. At least two other Blackstone executives appear to have earned more than \$60 million each in each of those two years.

Although we do not include PE investor incomes, table 4b suggests some conclusions. There is not much of a change in the very top end of the distribution from 1988 to 1995. In both 1988 and 1995,

40 individuals earned more than \$30 million in 2004 and 10 individuals earned more than \$82 million in 2004. There appears to have been a large increase in the top end since then. In 2004 and 2005, among only the traders and hedge fund investors, more than 57 individuals earned more than \$30 million and more than 37 individuals earned more than \$82 million. Again, this indicates a large increase in the very top end of the income distribution.

C. Mutual Funds

At the same time that alternative assets under management and their fees have grown substantially, so have institutionally managed assets, particularly mutual funds. In this section, we document the increase in assets under management and fees paid to mutual funds.

Table 5a shows that total assets under management at mutual funds have increased from \$135 billion in 1980 to \$2.16 trillion in 1994 to \$8.9 trillion in 2005 with more than half of the assets in 2005 residing in equity mutual funds. The number of funds has grown from fewer than one thousand to almost eight thousand.

Table 5b uses data from the 2006 Investment Company Institute Handbook to report the fees including sales loads paid on these funds. The asset weighted percentage fees have declined over time, driven by the increase in index funds and by the decrease in the use of sales loads. While the percentage fees have declined, the huge increase in assets under management has led to a substantial increase in fees. Fees have increased from \$1.3 billion in 1980 to \$31.1 billion in 1995 to \$73.1 billion in 2005. In 2005, they have increased from \$2.7 billion in 1980 to \$37.9 billion in 1995 to \$73.1 billion in 2005.⁷

Unfortunately, it is very difficult to measure the number of people involved in the mutual fund industry and the pay distribution of those individuals. The fees are paid to investment managers as well as to brokers and intermediaries who sell or distribute the mutual funds. Some of these individuals work for the top securities firms and are already counted in the investment banking section. Rather than

⁷ Bogle (2005) makes a similar point.

provide inaccurate estimates, we simply conclude that there are likely many highly compensated individuals in the mutual fund industry and that number has grown substantially since 1980.

IV. Lawyers

We next look at the pay of top corporate lawyers. To do this we rely on American Lawyer Magazine's annual surveys of law firm revenues and compensation. In 1985, Am Law covered the top 50 firms (by revenue); in 1995, the top 100 firms (by revenue); and, in 2005, the top 200 firms. The Am Law surveys are released mid-year and, therefore, reflect results for the previous calendar year. Table 6a, therefore, summarizes the Am Law results for the calendar years 1984 (Am Law 50), 1994 (Am Law 100) and 2004 (Am Law 200).

For the purpose of studying compensation, the current Am Law surveys report the average profit per equity partner at each of the top law firms. Because law firms are typically structured as flow-through entities for tax purposes, the profit an equity partner earns should appear as ordinary income to the partner and will show up in the partner's AGI. As a result, average profit per equity partner likely provides a lower bound on the AGI of the average equity partner because it does not include non-law firm income earned by the partner. Because law firms are typically structured as partnerships, equity partners do not receive W-2's and, therefore, will not show up in the distribution of W-2s.

In our analysis, we prefer to use profit per equity partner because those partners are the key partners in the firms. According to the Am Law survey, equity partners are those who file a Schedule K-1 tax form and receive no more than half their compensation on a fixed-income basis. Non-equity partners receive more than half of their compensation on a fixed-income basis. They are lawyers whom the firm wants to retain, but who do not receive the same voting rights, decision rights, and compensation.

By 2004, most law firms distinguished between equity partners and non-equity partners, with the median Am Law 100 firm having roughly one non-equity partner for each three equity partners. The 2004 Am Law numbers report profits per equity partner. For the 1984 Am Law 50, we use total partners and profits per all partners. At that time, few firms, if any, had gone to the model of non-equity partners,

so these calculations represent primarily equity partners. In 1994, some firms had begun to appoint non-equity partners. As a result the Am Law 100 reports the number of equity and non-equity partners. The median firm in the Am Law 100 had no non-equity partners. Unfortunately, the Am Law 100 only reports profit per total partners not profits per equity partner. In our analysis, we report the number of equity partners and profits per all partners for 1994. This slightly understates true profits per equity partner, but likely not more than 10%. When we estimate profits per partner for the 56 firms that do not have any non-equity partners, we obtain average (median) profits per partner that are 9.4% (5.7%) greater than the profits per partner for all 100 firms.

Table 6a summarizes the data from the 1984, 1994, and 2004 Am Law surveys. The data exhibit two strong patterns. First, a large number of law partners are in the top 0.5% and top 0.1% of the income distribution in 2004. Second, both the compensation of law partners and the number of highly compensated law partners have grown substantially over time.

Table 6a indicates that the average profits per partner in the top 50, top 100, and top 200 U.S. law firms in 2004, respectively, were \$1.26, \$1.01 and \$0.83 million. These averages are the averages of the average profit per partner for each firm. The medians of the averages are lower, at \$1.08, \$0.86 and \$0.67 million. These profits accrued to, respectively, 11,034, 17,861, and 26,755 partners. Average profits per partner exceed \$2 million for 9 firms; they are at least \$0.5 million for 93 of the top 100 firms, and 152 of the top 200 firms.

Because, the law firms do not make the profit distributions to individual partners known to the public, it is impossible to know exactly how the payouts to individual partners are distributed around the average profits per partner. Conversations with law partners suggest that the distribution is not so skewed as the distribution of CEO and investment banker MD pay. In what follows, we make the following distributional assumption. We assume that 1/3 of the partners earn more than the average while 2/3 of the partners make less than the average. We assume that the most highly paid partner earns twice the average while the least highly paid partner earns half the average. We base this distribution on conversations with law partners at top firms. For some firms, the distribution is less skewed; for others, more skewed. Our

sense is that this captures the distribution on average. The bottom line of our results would not be very different if we assumed a less skewed distribution.

Based on these distributions, we estimate that 14,351 of the 17,861 partners in the Am Law 100 earned more than \$0.48 million in 2004. Table 6b indicates that these partners represent more than 2% of the returns with AGI's in the top 0.5% and top 0.1%.

If we extend the analysis to the Am Law 200, we estimate that another 4,246 lawyers earn more than \$0.48 million, bringing the total to over 18,000; and another 312 earn more than \$1.4 million bringing the total to 3,477.⁸ These figures imply that when the Am Law 200 firms are included, equity partners comprise more than 2.6% of the AGI distribution above the top 0.5% and top 0.1%. When we exclude investment income Am Law 200 partners comprise more than 4% of the top 0.1%.

It also is worth pointing out that the 26,000 plus equity partners at Am Law 200 firms earn a total of roughly \$22 billion (at \$0.83 million per partner). This is the same order of magnitude as the total pay to non-financial top executives, investment banking MDs, hedge fund investors, and PE and VC investors.

Furthermore, table 6a indicates that lawyers have experienced a large real increase in pay over the last 10 and 20 years. In 1984, the average profit per partner at the top 50 firms was \$0.309 million or \$0.498 million in \$2004. By 1994, the average profit per partner had increased to \$0.531 million or \$0.636 in \$2004. And by 2004, the average profit per partner at the top 50 firms had increased to \$1.260 million.

The table also reports the AGI cutoffs for the top 0.5% and top 0.1% of the AGI distribution in those three years. In 2004, AGI of \$0.48 million and \$1.40 million, respectively, were in the top 0.5% and top 0.1% of the AGI distribution. In 1994, the analogous figures were \$0.29 million and \$0.73 M; in 1984, they were \$0.16 million and \$0.42 million. While the average profit per partner in 1984 and 1994

⁸ Because some of the partners of these law firms are based overseas, this overstates the true number of partners in these brackets. It is impossible to know how large this effect is, both absolutely and compared to the overstatement for top executives.

is close to the midpoint of the two cutoffs, the average profit per partner is much closer to the top 0.1% in 2004 suggesting that the average law partner is now at a higher point in the AGI distribution than before.

Table 6a also indicates that the number of partners has increased substantially going from an average of 90 in 1984, to 155 in 1994 and to 221 in the top 50 firms in 2004. In the top 100 firms, the average number of equity partners increased from an average of 130 in 1994 to 179 in 2004.

Table 6b shows the effect of the increase in equity partners and compensation per partner by comparing the contribution of the equity partners to the top AGI brackets in the different years. The table indicates that the equity partners at top law firms have markedly increased their presence in the top income brackets. In 1984, Am Law 50 partners represented 0.50% of the top 0.5% and 1.06% of the top 0.1%. These increased to 0.90% and 0.97%, respectively, in 1994, and to 1.50% and 2.05% in 2004. Am Law 100 partners comprised 1.46% of the top 0.5% and 1.30% of the top 0.1% AGI brackets in 1994. This increased to 2.17% and 2.39%, respectively, in 2004.

Overall then, the representation of top corporate lawyers in the top 0.5% and top 0.1% AGI brackets has increased substantially over time.

V. Professional Athletes

In this section, we look at the pay of professional athletes. To do this, we collect compensation information on professional baseball, football, and basketball players in the U.S. These three sports are among the most popular in the U.S. and include a relatively large number of athletes.

We obtain baseball compensation information for 1984 to 2005 from the “Business of Baseball” website (<http://roadsidephotos.sabr.org/baseball/data.htm>) and from USA Today for 2005. We obtain basketball and football compensation information from Professor Rodney Fort of Washington State University (<http://www.rodneymfort.com/PHSportsEcon/Common/OtherData/DataDirectory.html>). Fort credits sports statistician Patricia Bender for the basketball information from 1991-2000, and the USA Today site for information from 2001-present. He obtained the football information from USA Today

and Sports Illustrated. These figures understate AGI because they only include income earned from the athlete's team and, therefore, do not include any income from endorsements and other sources

Table 7 describes the extent to which those professional athletes are represented in the top end of AGI distributions for 1995 and 2004. The level of pay has increased substantially with the average athlete earning \$1.85 million in 2004 versus \$0.78 million in 1995. The table also indicates that the athletes represent roughly the same percentage of the top 0.1%, but a larger percentage of the top 0.01% AGI bracket in 2004 than they did in 1995. In 1995 and 2004, the athletes in baseball, football and basketball represented 0.8% of the returns in the top 0.1%. At the same time, the athletes represented 1.0% of the returns in the top 0.01% in 1995, but 1.5% of the returns in the top 0.01% in 2004.

The table also shows that in total, the 3400 plus athletes earned just over \$6.3 billion in 2004. This sum is substantially smaller than the sums going to the other groups we have analyzed.

Over this period, then, professional athletes increased their pay substantially, maintained or increased their share of the top brackets, but represented a small fraction of those very top brackets.

VI. Contributions to top end of the income distribution

In this section, we attempt to aggregate the results from the previous section to see how many individuals we can identify at the very top end of the income distribution.

To summarize, we have estimated the number of high income individuals who are top executives at public companies, highly compensated investment bankers, hedge fund investors, VC investors, PE investors, lawyers and professional athletes. Table 8a presents a summary of the individuals that we count in each category for the top fractiles – from top 0.5% to top 0.0001% -- of the earnings distribution in 2004. Table 8a also includes the estimated earnings of the individuals in the Forbes Celebrity 100 in 2004. The table does not include estimates of the number of highly paid individuals at mutual funds and other institutional money managers. As a result, we believe that the estimates in these tables understate the individuals in our groups that are in the top brackets.

In table 8a, we use the ExecuComp data on realized pay and our estimates for the non-ExecuComp executives to populate the top brackets for non-financial and financial executives. We use the exponential-based estimates of the distribution of investment banker income. For hedge fund investors, we use an average compensation of 3.2% of assets under management and estimate an average of \$3.2 million in compensation per 9,000 highly compensated employees. We assume that all 9,000 have AGI above \$0.48 million (top 0.5%) and 1/3 or 3,000 have AGI above \$1.4 million (top 0.1%). We use Trader Monthly and the II Alpha 25 for the very top end of the hedge fund distribution. We almost certainly underestimate the number of hedge fund investors in the top 0.01% (\$7.2 million) because the Trader Monthly and II Alpha lists do not report enough hedge fund investor incomes to go below \$12 million. For VC investors, we assume an average compensation of 4.0% of assets under management and estimate an average of \$1.8 million (the midpoint of the \$1.3 to \$2.3 million range) in compensation per 6,000 partners. We assume that all 6,000 partners have AGI above \$0.48 million and 1/5 or 1,200 have AGI above \$1.4 million. For PE investors, under the 4.0% assumption, we estimate an average of \$2.8 million in compensation per 5,400 partners. We assume that all 5,400 have AGI above \$0.48 million and 2/5 or 2,160 have AGI above \$1.4 million. For VC and PE, we do not try to make any assumptions for incomes above the top 0.01%. We do recognize that at least three PE investors – Kravis, Roberts and Schwarzman – earned at least \$101 million and were in the top 0.0001% bracket. We use the distributions calculated earlier for law partners and professional athletes.

Table 8a indicates that our groups comprise 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% bracket.

Including financial top executives, investment bankers, hedge funds, VC investors, and PE investors, we count more than twice as many Wall Street individuals as Main Street individuals (non-financial top executives) in the top 0.5% and the top 0.1% of the AGI distribution.

We also estimate that financial top executives, investment bankers, and hedge fund investors comprise a greater fraction of the top 0.01%, a similar fraction of the top 0.001% and a substantially

greater fraction of the top 0.0001% than the top Main Street individuals. Including VC investors, PE investors, mutual fund investors, and measuring hedge fund investors more accurately would almost certainly tip the fraction in favor of Wall Street for the top 0.001% as well.

When we estimate AGI brackets excluding investment income, our groups explain a larger fraction of the top groups, particularly the top 0.01%. Our groups comprise almost 10% of the top 0.5%, 22.2% of the top 0.1%, almost 33% of the top 0.01% and more than 26% of the top 0.001%. We are unable to do this calculation for the top 0.0001%.

Table 8b takes an alternative look at our different groups. It summarizes the dollar amounts of AGI and fees of our various groups and how they have changed over time. The AGI of the non-financial executives in ExecuComp in 2004 is \$34 billion. This has increased in real terms by a factor of 2.6 times from \$12.9 billion (\$10.7 billion nominal).

Using the exponential distribution, we estimate that investment bankers earned a total of \$28.4 billion in 2004. Because of data availability issues, we are unable to estimate total compensation in 1994.

Fees to hedge funds investors totaled \$25.4 million in 2004, an increase in real terms by a factor over 7 times relative to 1994. Fees to PE funds and VC funds totaled \$18.4 billion and \$10.9 billion in 2004. These represent increases in real terms by factors of 3.9 and 6.8 times respectively relative to 1994. Estimated fees to mutual funds increased by 1.9 times in real terms from 1995 to 2004 after having increased by 4.6 times from 1985 to 1995.

Law partners at the Am Law 100 earned a total of \$18.1 billion in 2004, representing an increase in real profits of 2.6 times relative to 1994, virtually identical to the increase to top non-financial executives.

While it is not possible to map all of these results into changes in the income distribution, these results again strongly suggest that Wall Street and legal professionals have contributed at least as much as and probably more than top executives of non-financial public companies to the widening of the income distribution.

VII. Pay-for-Performance

Some critics of CEO and top executive pay point not only to the high levels of pay, but also argue that those executives are not paid for performance. For example, Bebchuk and Fried (2005) argue that CEO compensation schemes “weaken managers’ incentives to increase firm value and even create incentives to take actions that reduce long-term reduce long-term reduce firm value.” They and others have led some to conclude that there is no link between top executive pay and firm performance. The compensation of top executives is often contrasted with that of hedge fund, VC, and PE investors who are supposedly highly paid for performance.

In this section, we provide evidence on the relation between firm performance and CEO compensation. We also discuss the extent to which hedge fund, VC, and PE investors are paid for performance.

First, we use the ExecuComp database to compare the amount of compensation the CEOs actually receive – realized compensation or TDC2 – to the company performance over the previous one, three, and five years. Each year from 1999 to 2004, we sort the ExecuComp firms into five groups based on beginning of year book assets. We do this because it is well-known that compensation varies with firm size. (See Gabaix and Landier (2006)). Within each size group, we sort the CEOs into five groups based on realized compensation from lowest to highest. For each firm-year, we measure performance as the total return to the firm’s stock less the value-weighted performance of the firm’s industry (using Fama-French industry returns). We then compare performance across the different compensation-size groups.

Figure 3 reports the results graphically for the three previous years of stock performance. Within each size quintile, actual compensation is highly related to performance, i.e., there is strong pay-for-performance. Firms with the CEOs in the top 20% of compensation outperform their industries by an average of 61%. Firms with CEOs in the bottom 20% of compensation underperform their industries by an average of 19%. The results are qualitatively identical for one year and five years of stock performance.

We suspect some of the confusion over pay is that critics focus on ex ante or estimated pay rather than realized pay. Because much of realized pay reflects the exercise of in-the-money options, CEOs will tend to receive large payoffs whenever their firms' stock has increased substantially. It is not surprising that most large payoffs result from strong stock performance. Estimates in Bebchuk and Grinstein (2005) imply that at least 1/2 of the expected value of CEO compensation has been equity-based since 1996.

It also is worth mentioning that CEO turnover has increased over time as has the relation of CEO turnover to poor performance. (See Kaplan and Minton (2006)). Those results suggest that boards do hold CEOs accountable for poor performance, providing CEOs additional incentives to perform.

It is interesting to compare top executive compensation to hedge fund, VC, and PE investor compensation. As mentioned earlier, all three types of investors receive compensation that is a combination of a fixed annual management fee and a variable share of profits, usually 20%. These option-like payoffs imply that compensation of hedge fund, VC, and PE investors is strongly related to performance if the performance is positive, but is unrelated to performance if the performance is poor. In other words, hedge fund, VC, and PE fund investors can earn a lot of money even with mediocre or even poor performance. Estimates in Metrick and Yasuda (2007) suggest that the performance-based component – the profit share or carried interest – of VCs and PE investors represents less than 40% of the expected present value of compensation.

Although the compensation of these different groups is not directly comparable, it is not obvious that CEO pay is any less related to performance than that of hedge fund, VC, and PE investors.

VIII. Summary and Implications

We have attempted to measure how much of the inequality today at the top end of the income distribution can be attributed to different sectors of the economy – top executives of non-financial firms (Main Street); financial service sector employees from investment banks, hedge funds, VC funds, PE funds, and mutual funds (Wall Street); lawyers; and professional athletes. We also have estimated how those contributions have varied over time.

Studying these groups, we believe we are able to identify at least 15% to 26.5% of the individuals who comprise the AGI categories at and above the top 0.1%. We estimate that CEOs and top executives of non-financial public companies comprise fewer than half of these individuals and do not comprise more than 6.4% of any of the top AGI brackets. Individuals we characterize as Wall Street professionals comprise a greater a fraction of the top end of the distribution than the top five executives of “Main Street” public companies.

We believe our assumptions are generally conservative and, therefore, these groups – particularly the non-executive groups – may represent a larger fraction of the very top than we are able to report. Nevertheless, even under less conservative assumptions, we doubt those groups could possibly explain more than 40% of the very top categories. While our estimates represent a substantial portion of the top income groups, they clearly miss a large number of high-earning individuals. This seems strongly inconsistent with the claim in Dew-Becker and Gordon (2005) that CEOs, celebrities, and athletes explain most of the top end of the distribution. We suspect that some of the missing individuals are trial lawyers, executives of privately-held companies, and independently wealthy individuals who have a high AGI.

We also find that the representation of the top executives in the top AGI brackets has increased only modestly from 1994 to 2004, particularly using ex ante compensation. Using realized compensation, top executives comprise roughly the same fraction of the top 0.1% of the AGI distribution in 2004 as they did in 1994 and a somewhat higher fraction of the top 0.01% (5.3% in 2004 versus 3.9% in 1994). Using ex ante compensation, top executives comprise a slightly lower fraction of the top 0.1% (3.32% versus 3.55%) and a slightly higher fraction of the top 0.01% (3.93% versus 3.65%) in 2004 than they did in 1994. In contrast, the contributions of hedge fund managers, private equity investors, venture capital investors, and corporate lawyers have clearly increased substantially over the past 10 and 20 years, likely by a greater amount than the top executives.

These results inform some of the different explanations for the increased skewness at the top end of the income distribution. As mentioned earlier, these explanations include trade theories (Heckscher (1931), Olin (1933), Stolper and Samuelson (1941)), skill biased technological change (Katz and Murphy

(1992)), increasing returns to generalists rather than specialists (Murphy and Zabojnik (2004), Frydman (2005)), stealing theories (Bebchuk and Fried (2004) and Bebchuk and Grinstein (2005)), social norms (Piketty and Saez (2006a) and Levy and Temin(2007)), greater scale (Gabaix and Landier (2006)), and the economics of superstars (Rosen (1981) which posits technological advance as an explanation for greater scale.

We believe our results are not well-explained by trade theories, increasing returns to generalists, stealing theories, and social norms.

The trade theories predict that the increase in inequality will be greater among individuals or groups in industries that are most engaged in trade. It seems unlikely that trade theories can account for the increase in inequality at the top levels of the income distribution given the breadth of the phenomenon across the occupations we study. In particular, it seems difficult for trade to explain the increase in the top end of VC investors, PE investors, and, particularly, lawyers and professional athletes. For example, it is difficult to understand how trade has increased the pay of U.S. lawyers (most of whose human capital is country-specific) by a factor of four over the last twenty years..

The theory of increasing returns to generalists predicts an increased return to those with generalist skills, and has been proffered as one explanation for the increase in CEO and top executive pay. We think the types of occupations responsible for some of the increase in the top end of the income distribution are not consistent with this theory. In particular, we do not believe that lawyers, hedge fund investors, investment bankers, or professional athletes have become less specialized / more general over time. In fact, the opposite seems more likely to be true.

The stealing theories argue that corporate governance deteriorated in the last ten years to such an extent that CEOs and top executives have been able to increase their compensation substantially through what amounts to stealing. CEOs (and top executives) are the only one of the groups we study who some argue can set their own pay without competitive negotiation. While we do not test directly whether any group of individuals is stealing or not, our evidence suggests that stealing CEOs or poor corporate governance cannot possibly be more than a small part of the picture of increasing income inequality, even

at the very upper end of the distribution. First, other groups that are not in a position to steal have experienced equal or larger increases in their contribution to the top AGI brackets. Second, top executives occupy roughly the same part of the top AGI brackets in 2004 as they did in 1994 using *ex ante* compensation – the amount that boards of directors expect to pay. Third, the top executives represent less than 6.4% of any of the top AGI brackets (using realized pay) and CEOs represent less than 5% of any of the top brackets. Fourth, realized top executive compensation (as measured by TDC2) is strongly related to a company’s stock performance.

Our evidence also is hard to reconcile with the arguments in Piketty and Saez (2006a) and Levy and Temin (2007) that the increase in pay at the top is driven by the recent removal of social norms regarding pay inequality. Piketty and Saez (2006a) suggest that “impediments to free markets due to labor market regulations, unions, or social norms regarding pay inequality can keep executive pay below market. Such impediments have been largely removed in the United States, but still exist in Europe and Japan.” Levy and Temin (2007) emphasize the importance of Federal government policies towards unions, income taxation and the minimum wage. We do not think our evidence is favorable towards a central role for social norms. While top executive pay has increased, so has the pay of other groups, particularly Wall Street groups, who are and were less subject to disclosure and, arguably, less subject to social norms. In addition, the compensation arrangements at hedge funds, VC funds, and PE funds of a 2% management fee and 20% profit share have not changed much, if at all, in the last twenty-five years (see Sahlman (1990), Gompers and Lerner (1999), and Metrick and Yasuda (2007)). Furthermore, it is not clear how greater unionization would have suppressed the pay of those on Wall Street. In other words, there is no evidence of a change in social norms on Wall Street. What has changed is the amount of money managed and the concomitant amount of pay.

We believe that our evidence remains more favorable toward the theories of skill-biased technological change, greater scale and superstars.

Skill biased technological change predicts that inequality will increase if technological progress raises the productivity of skilled workers relative to unskilled workers and / or raises the price of goods

made by skilled workers relative to those made by unskilled workers. For example, computers and advances in information technology may complement skilled labor and substitute for unskilled labor. This seems likely to provide part of the explanation for the increase in pay of professional athletes (technology increases their marginal product by allowing them to reach more consumers) and Wall Street investors (technology allows them to acquire information and trade large amounts more easily and efficiently).

Gabaix and Landier (2006) argue that the wage differential between the best and next best CEO for a firm will reflect the talent differential between the two multiplied by the size of the firm. In equilibrium, CEOs and top executives will be paid more as their firms and the other firms they can work for become larger. In other words, the larger size increases the returns to hiring the more productive people. As long as other firms are also large, competition for talent will drive wages up. This theory is not necessarily specific to CEOs and top executives.

While we do not test the Gabaix and Landier (2006) theory directly, our results are arguably consistent with it. Gabaix and Landier point out that U.S. public companies have grown larger over time, with the typical large firm increasing in market value by four to seven times in real terms from 1980 to 2003. In our analysis, we find that financial services firms, VC funds, PE funds, hedge funds, and law firms all have grown larger, in many instances by orders of magnitude. For example, the typical law firm in the Am Law 50 has increased revenues by six times in real terms from 1984 to 2004. Similarly, the total amount of capital per employee at the top 50 firms in the securities industry has increased by almost nine times in real terms from 1987 to 2004.

Our results also are consistent with Rosen (1981) who argues that technological change, particularly in information and communications, can increase the relative productivity of superstars or talented individuals. Rosen's theory can be viewed as a combination of the previous two explanations in that the individuals and firms who benefit from the technological change are likely to get larger. It is worth noting that Gabaix and Landier do not explain why firms (and funds) have been able to become so much larger over time. The same technological change that is biased towards skills may have helped

firms and funds to become larger during our sample period.

References

- Autor, David H., Katz, Lawrence F., and Kearney, Melissa S., 2005, "Trends in U. S. Wage Inequality: Re-assessing the Revisionists," NBER Working Paper 11627, September.
- Autor, David H., Katz, Lawrence F., and Kearney, Melissa S., 2006, "The Polarization of the U.S. Labor Market," *American Economic Review* 96 (2).
- Bebchuk, Lucian and Jesse Fried, 2005, "Pay Without Performance: Overview of the Issues," *Journal of Applied Corporate Finance*, 17:4, 8-23.
- Bebchuk, Lucian and Grinstein, Yaniv, 2005, "The Growth of Executive Pay," *Oxford Review of Economic Policy* 21(2), 283-303.
- Bogle, Jack, 2005, *The Battle for the Soul of Capitalism*, New Haven: Yale University Press.
- Chany, Nicholas, Mila Getmansky, Shane M. Haas, and Andrew W. Lo, 2005, "Systemic Risk and Hedge Funds," Working paper, Sloan School, MIT.
- Dew-Becker, Ian and Robert J. Gordon, 2005, "Where Did the Productivity Go? Inflation Dynamics and the Distribution of Income." *Brookings Papers on Economic Activity* 2.
- Fleischer, Victor, 2007, "Two and Twenty: Partnership Profits in Hedge Funds, Venture Capital Funds and Private Equity Funds," UCLA Law School Working Paper.
- Frydman, Carola , 2005, "Rising Through the Ranks: The Evolution of the Market for Corporate Executives, 1936-2003," working paper, Harvard University.
- Frydman, Carola and Raven E. Saks, 2005, "Historical Trends in Executive Compensation, 1936-2003," working paper, Harvard University.
- Gabaix, Xavier and Augustin Landier, 2006, "Why Has CEO Pay Increased So Much?" working paper, New York University.
- Garicano, Luis and Esteban Rossi-Hansberg, 2006, "Organization and Inequality in a Knowledge Economy", *Quarterly Journal of Economics*.
- Garicano, Luis and Tom Hubbard, 2007, "The Returns to Knowledge Hierarchies," working paper, University of Chicago.
- Gompers, Paul and Josh Lerner, 1999, "An Analysis of Compensation in the U.S. Venture Capital Partnership," *Journal of Financial Economics*, 51, 3-44.
- Hall, Brian J., and Jeffrey B. Liebman, 1998, "Are CEOs Really Paid Like Bureaucrats?" *Quarterly Journal of Economics* 113, 653-691.
- Hall, Brian J., and Kevin J. Murphy, 2003, "The Trouble with Stock Options," *Journal of Economic Perspectives* 17(3), 49-70.
- Heckscher, Eli, 1931, *Merkantilismen*, Stockholm: Norstedt & Söner.

- Jensen, Michael C, Kevin J. Murphy, and Eric G. Wruck, 2004, "Remuneration: Where We've Been, How We Got Here, What are the Problems, and How to Fix Them," working paper, Harvard Business School, NOM Working Paper 04-28.
- Kaplan, Steven and Bernadette Minton, 2006, "How has CEO Turnover Changed? Increasingly Performance Sensitive Boards and Increasingly Uneasy CEOs," working paper, University of Chicago.
- Katz, Lawrence F. and Kevin M. Murphy, 1992, "Changes in Relative Wages, 1963-1987: Supply and Demand Factors," *Quarterly Journal of Economics* 107, 35-78.
- Levy, Frank and Peter Temin, 2007, *Inequality and Institutions in 20th Century America*, working paper, MIT.
- Malkiel, B. and A. Saha, 2005, "Hedge Funds: Risk and Return," Working paper, Princeton University.
- Metrick, Andrew and Ayako Yasuda, 2007, *Economics of Private Equity Funds*, working paper, Wharton School, University of Pennsylvania.
- Morrison, A. and W. Wilhelm, forthcoming, "The Demise of Investment-Banking Partnerships: Theory and Evidence," *Journal of Finance*.
- Murphy, Kevin J., and Jan Zabojnik, 2004, "CEO Pay and Turnover: A Market Based Explanation for Recent Trends," *American Economic Review Papers and Proceedings* 94, 192-196.
- Ohlin, Bertil, 1933, *Interregional and International Trade*, Cambridge: Harvard University Press.
- Piketty, Thomas and Saez, Emmanuel, 2003, "Income Inequality in the United States, 1913- 1998," *Quarterly Journal of Economics* 118: 1-39.
- Piketty, Thomas and Saez, Emmanuel, 2006a, "The Evolution of Top Incomes: A Historical and International Perspective," *American Economic Review* 96 (2), 200-206.
- Piketty, Thomas and Saez, Emmanuel, 2006b, "New tables updated to 2004 for Income Inequality in the United States, 1913-2004," working paper, University of California.
- Rosen, Sherwin, 1981, "The Economics of Superstars," *American Economic Review* 71(5), 845-858.
- Sahlman, William, 1990, "The Structure and Governance of Venture Capital Organizations," *Journal of Financial Economics*, 27, 473-521.
- Stolper, Wolfgang F., and Paul A. Samuelson, 1941, "Protection and Real Wages," *Review of Economic Studies* 9, 58-73.
- Sundaram, R. and D. Yermack, 2005, "Pay Me Later: Inside Debt and Its Role in Managerial Compensation," working paper, New York University.
- Topel, Robert, 2005, "Comments on Dew-Becker and Gordon," *Brookings Papers on Economic Activity* 2.

Table 1a: AGI Thresholds and Top Executive Compensation, Execucomp Executives

					Including Options Exercised						Including Options Granted					
					Execucomp Non-Financial		Execucomp Financial				Execucomp Non-Financial		Execucomp Financial			
Bottom of Bracket	Top of Bracket	Number of Returns	Bracket	Number of Executives	Share of Bracket	Share of Bracket and Above	Number of Executives	Share of Bracket	Share of Bracket and Above	Number of Executives	Share of Bracket	Share of Bracket and Above	Number of Executives	Share of Bracket	Share of Bracket and Above	
<i>2004</i>																
\$0	\$309,160	131,061,150	0-99	557	0.00%	0.01%	28	0.00%	0.00%	555	0.00%	0.01%	41	0.00%	0.00%	
\$309,160	\$479,177	661,925	99-99.5	926	0.14%	0.55%	56	0.01%	0.05%	637	0.10%	0.55%	60	0.01%	0.04%	
\$479,177	\$1,400,370	529,540	99.5-99.9	2905	0.55%	0.95%	195	0.04%	0.08%	2961	0.56%	1.00%	200	0.04%	0.08%	
\$1,400,370	\$7,189,506	119,146	99.9-99.99	2824	2.37%	2.58%	249	0.21%	0.27%	3182	2.67%	2.76%	247	0.21%	0.25%	
\$7,189,506	\$31,178,805	11,915	99.99-99.999	524	4.40%	4.46%	87	0.73%	0.77%	445	3.73%	3.54%	78	0.65%	0.62%	
\$31,178,805		1,324	>99.999	67	5.06%	5.06%	15	1.13%	1.13%	23	1.74%	1.74%	4	0.30%	0.30%	
				Mean (\$M)		\$2.82	\$4.54		\$2.45		\$3.66					
				Median (\$M)		\$1.17	\$1.66		\$1.28		\$1.48					
				Total Dollars (\$M)		\$22,025	\$2,863		\$19,084		\$2,307					
<i>1994</i>																
\$0	\$194,200	114,783,570	0-99	807	0.00%	0.01%	18	0.00%	0.00%	948	0.00%	0.01%	41	0.00%	0.00%	
\$194,200	\$286,290	579,715	99-99.5	1124	0.19%	0.59%	67	0.00%	0.06%	777	0.13%	0.58%	50	0.01%	0.06%	
\$286,290	\$733,602	463,772	99.5-99.9	3207	0.69%	0.99%	275	0.00%	0.11%	2851	0.61%	1.03%	243	0.05%	0.11%	
\$733,602	\$3,179,134	104,349	99.9-99.99	2262	2.17%	2.21%	310	0.00%	0.32%	2698	2.59%	2.69%	302	0.29%	0.34%	
\$3,179,134	\$13,444,936	10,435	99.99-99.999	275	2.64%	2.56%	52	0.50%	0.51%	394	3.78%	3.65%	87	0.83%	0.80%	
\$13,444,936		1,159	>99.999	22	1.90%	1.90%	7	0.60%	0.60%	29	2.50%	2.50%	6	0.52%	0.52%	
				Mean (\$M)		\$0.91	\$1.32		\$1.04		\$1.53					
				Median (\$M)		\$0.49	\$0.74		\$0.57		\$0.82					
				Total Dollars (\$M)		\$6,988	\$960		\$8,037		\$1,117					

This table shows the distribution of total compensation for executives in Execucomp relative to the distribution of AGI income. Only the top 5 executives in terms of TDC2 are counted for each Execucomp company. Financial firms are defined as firms that have an SIC code between 6000 and 6299, which includes depository institutions, nondepository credit institutions, and securities and commodities brokers. Percentiles are shown relative to the number of tax filers. The cutoffs for the top fractiles of AGI income in 1994 are calculated based on the detailed IRS Statistics of Income files for US individuals, held at the NBER. The cutoffs for the top fractiles of AGI income in 2004 are calculated based on the 2002 distribution (the latest years for which the detailed files are available) and the relation between the 2002 and 2004 fractiles documented in the tabulations of Piketty and Saez (2003, 2006).

Table 1b: AGI Thresholds and Execucomp CEO Compensation

Bottom of Bracket	Top of Bracket	Number of Returns	Bracket	Including Options Exercised			Including Options Granted		
				Execucomp Non-Financial			Execucomp Non-Financial		
				Number of CEOs	Share of Bracket	Share of Bracket and Above	Number of CEOs	Share of Bracket	Share of Bracket and Above
<i>2004</i>									
\$0	\$309,160	131,061,150	0-99	37	0.00%	0.00%	45	0.00%	0.00%
\$309,160	\$479,177	661,925	99-99.5	64	0.01%	0.11%	40	0.01%	0.11%
\$479,177	\$1,400,370	529,540	99.5-99.9	392	0.07%	0.22%	281	0.05%	0.22%
\$1,400,370	\$7,189,506	119,146	99.9-99.99	749	0.63%	0.80%	890	0.75%	0.90%
\$7,189,506	\$31,178,805	11,915	99.99-99.999	272	2.28%	2.36%	280	2.35%	2.25%
\$31,178,805		1,324	>99.999	40	3.02%	3.02%	18	1.36%	1.36%
			Mean (\$M)		\$5.77			\$5.08	
			Median (\$M)		\$2.54			\$3.01	
			Total Dollars (\$M)		\$8,964			\$7,900	
<i>1994</i>									
\$0	\$194,200	114,783,570	0-99	21	0.00%	0.00%	21	0.00%	0.00%
\$194,200	\$286,290	579,715	99-99.5	51	0.01%	0.12%	30	0.01%	0.12%
\$286,290	\$733,602	463,772	99.5-99.9	469	0.10%	0.23%	353	0.08%	0.23%
\$733,602	\$3,179,134	104,349	99.9-99.99	718	0.69%	0.74%	764	0.73%	0.86%
\$3,179,134	\$13,444,936	10,435	99.99-99.999	131	1.26%	1.20%	209	2.00%	1.98%
\$13,444,936		1,159	>99.999	8	0.69%	0.69%	21	1.81%	1.81%
			Mean (\$M)		\$1.58			\$2.08	
			Median (\$M)		\$0.94			\$1.22	
			Total Dollars (\$M)		\$2,213			\$2,910	

This table shows the distribution of total compensation including options exercised (TDC2) for CEOs in Execucomp relative to the distribution of AGI income. This tabulation is similar to Table 1a, the only difference being that only CEOs are counted. See note to Table 1a for further details.

Table 1c: AGI Thresholds and Top Executive Compensation, Effect of Non-Execucomp Executives

Bottom of Bracket	Top of Bracket	Number of Returns	Bracket	Non-Execucomp Non-Financial						Execucomp and Non-Execucomp Non-Financial					
				Including Options Exercised			Including Options Granted			Including Options Exercised			Including Options Granted		
				Number of Executives	Share of Bracket	Share of Bracket and Above	Number of Executives	Share of Bracket	Share of Bracket and Above	Number of Executives	Share of Bracket	Share of Bracket and Above	Number of Executives	Share of Bracket	Share of Bracket and Above
<i>2004</i>															
\$0	\$309,160	131,061,150	0-99	4111	0.00%	0.01%	6059	0.00%	0.01%	4668	0.00%	0.02%	6614	0.01%	0.02%
\$309,160	\$479,177	661,925	99-99.5	3292	0.50%	0.77%	4137	0.63%	0.62%	4218	0.64%	1.32%	4774	0.72%	1.17%
\$479,177	\$1,400,370	529,540	99.5-99.9	5259	0.99%	1.04%	3340	0.63%	0.62%	8164	1.54%	1.99%	6301	1.19%	1.62%
\$1,400,370	\$7,189,506	119,146	99.9-99.99	1518	1.27%	1.23%	695	0.58%	0.56%	4342	3.64%	3.80%	3877	3.25%	3.32%
\$7,189,506	\$31,178,805	11,915	99.99-99.999	86	0.72%	0.79%	50	0.42%	0.39%	610	5.12%	5.25%	495	4.15%	3.93%
\$31,178,805		1,324	>99.999	18	1.34%	1.34%	2	0.18%	0.18%	85	6.40%	6.40%	25	1.92%	1.92%
			Mean (\$M)		\$0.84			\$0.56			\$1.54			\$1.23	
			Median (\$M)		\$0.50			\$0.38			\$0.74			\$0.70	
			Total Dollars (\$M)		\$12,000			\$8,022			\$34,026			\$27,106	
<i>1994</i>															
\$0	\$194,200	114,783,570	0-99	2801	0.00%	0.01%	3780	0.00%	0.01%	3608	0.00%	0.02%	4728	0.00%	0.02%
\$194,200	\$286,290	579,715	99-99.5	1933	0.33%	0.60%	2112	0.36%	0.51%	3057	0.53%	1.19%	2889	0.50%	1.10%
\$286,290	\$733,602	463,772	99.5-99.9	3410	0.74%	0.86%	2856	0.62%	0.66%	6617	1.43%	1.85%	5707	1.23%	1.69%
\$733,602	\$3,179,134	104,349	99.9-99.99	1418	1.36%	1.36%	995	0.95%	0.86%	3680	3.53%	3.57%	3693	3.54%	3.55%
\$3,179,134	\$13,444,936	10,435	99.99-99.999	156	1.49%	1.34%	0	0.00%	0.00%	431	4.13%	3.91%	394	3.78%	3.65%
\$13,444,936		1,159	>99.999	0	0.00%	0.00%	0	0.00%	0.00%	22	1.90%	1.90%	29	2.50%	2.50%
			Mean (\$M)		\$0.38			\$0.55			\$0.61			\$0.77	
			Median (\$M)		\$0.27			\$0.37			\$0.37			\$0.46	
			Total Dollars (\$M)		\$3,712			\$5,329			\$10,700			\$13,366	

This table shows the estimated distribution of total compensation for top 5 executives of companies not in the Execucomp database, relative to the distribution of AGI income. Non-Execucomp counts were obtained by sampling the disclosure documents of non-Execucomp firms in 1994 and 2004, and then scaling to the number of non-Execucomp firms in the universe. See note to Table 1a for details on the computation of the income fractile thresholds and the definition of financial versus non-financial firms.

Table 1d: Non-Investment Income Thresholds and Top Executive Compensation

Bottom of Bracket	Top of Bracket	Number of Returns Bracket		Non-Execucomp Non-Financial						Execucomp and Non-Execucomp Non-Financial					
				Including Options Exercised			Including Options Granted			Including Options Exercised			Including Options Granted		
				Number of Executives	Share of Bracket	Share of Bracket and Above	Number of Executives	Share of Bracket	Share of Bracket and Above	Number of Executives	Share of Bracket	Share of Bracket and Above	Number of Executives	Share of Bracket	Share of Bracket and Above
<i>2004 Execucomp Executives</i>															
\$0	\$270,601	131,061,150	0-99	361	0.00%	0.01%	405	0.00%	0.01%	3177	0.00%	0.02%	4864	0.00%	0.02%
\$270,601	\$404,912	661,925	99-99.5	702	0.11%	0.56%	497	0.08%	0.56%	4008	0.61%	1.43%	4908	0.74%	1.30%
\$404,912	\$1,121,024	529,540	99.5-99.9	2711	0.51%	1.02%	2524	0.48%	1.04%	8743	1.65%	2.25%	6830	1.29%	1.86%
\$1,121,024	\$5,143,664	119,146	99.9-99.99	3110	2.61%	3.04%	3540	2.97%	3.31%	5026	4.22%	4.65%	4520	3.79%	4.14%
\$5,143,664	\$19,778,205	11,915	99.99-99.999	782	6.56%	6.94%	771	6.47%	6.32%	975	8.19%	8.55%	886	7.44%	7.28%
\$19,778,205		1,324	>99.999	137	10.35%	10.35%	66	4.99%	4.99%	157	11.87%	11.87%	78	5.89%	5.89%
<i>1994 Execucomp Executives</i>															
\$0	\$170,850	114,783,570	0-99	555	0.00%	0.01%	760	0.00%	0.01%	2475	0.00%	0.02%	3680	0.00%	0.02%
\$170,850	\$243,593	579,715	99-99.5	873	0.15%	0.62%	595	0.10%	0.60%	3020	0.00%	1.29%	2767	0.48%	1.19%
\$243,593	\$584,837	463,772	99.5-99.9	3017	0.65%	1.08%	2573	0.55%	1.09%	6445	0.00%	2.06%	5791	1.25%	1.90%
\$584,837	\$2,267,697	104,349	99.9-99.99	2742	2.63%	2.80%	3052	2.92%	3.25%	4797	0.00%	4.74%	4486	4.30%	4.49%
\$2,267,697	\$8,922,199	10,435	99.99-99.999	464	4.45%	4.40%	655	6.28%	6.18%	657	6.30%	6.06%	655	6.28%	6.18%
\$8,922,199		1,159	>99.999	46	3.97%	3.97%	62	5.35%	5.35%	46	3.97%	3.97%	62	5.35%	5.35%

This table shows the distribution of total compensation for executives relative to the distribution of AGI income. Only the top 5 executives in terms of TDC2 are counted for each Execucomp company. Non-Execucomp counts were obtained by sampling the disclosure documents of non-Execucomp firms in 1994 and 2004, and then scaling to the number of non-Execucomp firms in the universe. Financial firms are defined as firms that have an SIC code between 6000 and 6299, which includes depository institutions, nondepository credit institutions, and securities and commodities brokers. Percentiles are shown relative to the number of tax filers. The cutoffs for the top fractiles of AGI income in 1994 are calculated based on the detailed IRS Statistics of Income files for US individuals, held at the NBER. The cutoffs for the top fractiles of AGI income in 2004 are calculated based on the 2002 distribution (the latest years for which the detailed files are available) and the relation between the 2002 and 2004 fractiles documented in the tabulations of Piketty and Saez (2003, 2006). Non-investment income is AGI excluding dividends, interest income, rental income, farm income, IRA distributions, income from estates and trusts, pension and annuity distributions, long term capital gains, and Form 4797 income.

Table 1e: AGI Thresholds and Execucomp Compensation of 5th Highest Paid Executive

Bottom of Bracket	Top of Bracket	Number of Returns	Bracket	Including Options Exercised Execucomp Non-Financial			Including Options Granted Execucomp Non-Financial		
				Number of #5 Guys	Share of Bracket	Share of Bracket and Above	Number of #5 Guys	Share of Bracket	Share of Bracket and Above
<i>2004</i>									
\$0	\$309,160	131,061,150	0-99	225	0.00%	0.00%	186	0.00%	0.00%
\$309,160	\$479,177	661,925	99-99.5	307	0.05%	0.09%	184	0.03%	0.10%
\$479,177	\$1,400,370	529,540	99.5-99.9	650	0.12%	0.14%	648	0.12%	0.17%
\$1,400,370	\$7,189,506	119,146	99.9-99.99	290	0.24%	0.22%	447	0.38%	0.35%
\$7,189,506	\$31,178,805	11,915	99.99-99.999	7	0.06%	0.05%	14	0.12%	0.11%
\$31,178,805		1,324	>99.999	0	0.00%	0.00%	0	0.00%	0.00%
			Mean (\$M)		\$1.00			\$1.33	
			Median (\$M)		\$0.64			\$0.88	
			Total Dollars (\$M)		\$1,477			\$1,972	
<i>1994</i>									
\$0	\$194,200	114,783,570	0-99	327	0.00%	0.00%	349	0.00%	0.00%
\$194,200	\$286,290	579,715	99-99.5	326	0.06%	0.10%	209	0.04%	0.09%
\$286,290	\$733,602	463,772	99.5-99.9	599	0.13%	0.13%	565	0.12%	0.15%
\$733,602	\$3,179,134	104,349	99.9-99.99	177	0.17%	0.16%	293	0.28%	0.27%
\$3,179,134	\$13,444,936	10,435	99.99-99.999	5	0.05%	0.04%	18	0.17%	0.16%
\$13,444,936		1,159	>99.999	0	0.00%	0.00%	0	0.00%	0.00%
			Mean (\$M)		\$0.42			\$0.56	
			Median (\$M)		\$0.31			\$0.36	
			Total Dollars (\$M)		\$601			\$796	

This table shows the distribution of total compensation including options exercised (TDC2) for CEOs in Execucomp relative to the distribution of AGI income. This tabulation is similar to Table 1a, the only difference being that only CEOs are counted. See note to Table 1a for further details.

Table 2a: Estimated Numbers of Managing Directors or Equivalents at Top Securities Firms

	Net Revenue (millions)				Employees					
	Currency	Global	U.S.	Ratio of U.S. to	Global	Global Managing	Global MDs or	U.S. to Global	U.S. Employees	U.S. MDs or
				Global		Director (MD)		Equivalents		Employee Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Goldman Sachs Group	US\$	20,550	12,932	63%	20,722	6%	1,181	64%	13,278	757
Bear Stearns Companies	US\$	6,813	6,172	91%	10,961	8%	850	91%	9,930	770
Lehman Brothers	US\$	11,576	8,225	71%	19,600	4%	784	72%	14,100	564
Morgan Stanley	US\$	23,708	17,365	73%	53,284	2%	1,071	73%	39,028	
Institutional Securities	US\$	13,113	9,572	73%	29,472	3%	884	73%	21,514	645
Asset Management	US\$	2,738	1,999	73%	6,154	3%	185	73%	4,492	135
J.P. Morgan Chase and Co.	US\$	43,097	32,972	77%	160,968	—	—	77%	123,151	
Investment Bank	US\$	12,605	9,644	77%	17,478	4%	699	77%	13,372	535
Treasury & Securities Services	US\$	4,857	3,716	77%	22,612	2%	452	77%	17,300	346
Assets and Wealth Management	US\$	4,179	3,197	77%	12,287	2%	246	77%	9,400	188
Credit Suisse First Boston	CHF	55,139	12,267	22%	19,479	3%	584	22%	4,334	130
Deutsche Bank	EUR	21,546			65,417	—	—	18%	11,954	
Corporate and Investment Bank	EUR	13,414			14,130	4%	565	18%	2,582	103
Corporate Investments (Private Equity)	EUR	621			65	4%	3	18%	12	0
UBS	CHF	50,975			67,424	—	—	39%	26,232	
Investment Banking and Securities	CHF	17,600			16,970	4%	679	39%	6,602	264
Wealth Management (U.S.)	CHF	5,158			16,969	2%	339	100%	16,969	339
Asset Management	CHF	2,487			2,665	2%	53	100%	2,665	53
Merrill Lynch	US\$	22,023	15,878	72%	50,600	—	—	79.4%	40,200	
Global Markets and Investment Banking	US\$	11,022	7,947	72%	12,000	4%	480	79.4%	9,534	381
Investment Management	US\$	1,581	1,140	72%	2,500	4%	100	79.4%	1,986	79
Citigroup Global Market Holdings	US\$	39,340	18,490	47%	38,000	4%	1,520	47%	17,860	714
Total U.S. MDs										6,006

This table presents an assessment of the likely number of U.S. managing directors in the securities business (including asset management but excluding commercial and retail banking) at top 10 investment banking firms. Non-italicized figures are numbers taken directly from the financial reports of the companies in question or calculated as ratios of figures taken directly from the reports. Italicized figures represent imputed figures, which we describe in detail in the text.

Table 2b: Income Distribution and Wall Street Managing Directors in 2004

			Number of Filings	Distribution of Compensation for Managing Directors at Top Investment Banks		Percent of Category Bracket Explained per 10,000 Managing Directors		Percent of Category and Above Explained per 10,000 Managing Directors		Number in Category and Above Explained per 10,000 Managing Directors	
				Pareto	Exponential	Pareto	Exponential	Pareto	Exponential	Pareto	Exponential
<i>2004 AGI Distribution</i>											
\$479,177	\$1,400,370	99.5-99.9	529,540	60.4%	31.0%	1.1%	0.6%	1.5%	1.5%	10,000	10,000
\$1,400,370	\$7,189,506	99.9-99.99	119,146	32.0%	54.2%	2.7%	4.5%	3.0%	5.2%	3,964	6,900
\$7,189,506	\$31,178,805	99.99-99.999	11,915	7.4%	14.7%	6.2%	12.3%	5.8%	11.2%	767	1,482
\$31,178,805		>99.999	1,324	0.3%	0.1%	2.0%	1.0%	2.0%	1.0%	26	13
		Mean (\$M)		\$1.90	\$2.84	\$1.90	\$2.84				
		Median (\$M)		\$1.10	\$2.60	\$1.10	\$2.60				
		Total Dollars (\$M)		—	—	\$19,013	\$28,410				
<i>2004 Distribution of AGI Excluding Investment Income</i>											
\$404,912	\$1,121,024	99.5-99.9	529,540	54.4%	27.2%	1.0%	0.5%	1.5%	1.5%	10,000	10,000
\$1,121,024	\$5,143,664	99.9-99.99	119,146	34.6%	47.6%	2.9%	4.0%	3.4%	5.5%	4,565	7,278
\$5,143,664	\$19,778,205	99.99-99.999	11,915	9.4%	24.7%	7.9%	20.7%	8.3%	19.0%	1,102	2,521
\$19,778,205		>99.999	1,324	1.7%	0.5%	12.6%	3.9%	12.6%	3.9%	166	51

This table reports the estimated distributions of pay for 10,000 managing alongside AGI brackets. Based on industry information, the figures assume that essentially no managing director of a top 10 investment bank earned less than \$500,000 in 2004. Two possible distributions of pay are considered. The first is a pareto distribution with a minimum value of \$500,000, estimated so that 25% of managing directors earn more than \$2.5 million and truncated at \$35 million, the highest payout observed for an investment banking employee in 2004. The second distribution is an exponential distribution, which we censor below at \$500,000 and calibrate so that only one employee earns more than \$25 million. The middle pair of columns presents the percent of each bracket accounted for by every 10,000 managing directors, and the right-most pair presents the number of individuals earning at least the minimum bracket amount for every 10,000 managing directors.

Table 2c: Securities Industry Capital and Employees Over Time

	<u>SIA 2004</u>	<u>SIA 1987</u>	<u>IB-BA 1972</u>
Total Number of Employees in top 50 Firms	389,181	217,813	80,784
Total Amount of Capital in top 50 Firms (\$ Million)	\$696,087	\$29,636	\$2,768
Capital per Employee	1.789	0.136	0.034
Capital per Employee (\$2004)	1.789	0.203	0.124

The table reports the total number of global employees and the total global capital employed at the top 50 U.S. securities firms in 1972, 1987, and 2004. SIA information is from Securities Industry Association Handbook for 1987 and 2004. IB-BA is Investment Banker-Broker Almanac.

Table 3a: Assets Under Management and Estimated Fees for Hedge Funds

Year	Money Under Management Hedge Fund Hennessee	Money Under Management Hedge Fund HFR	Money Under Management Hedge Fund TASS	# Funds Hedge Fund Hennessee	# Funds Hedge Fund HFR	# Funds Hedge Fund No FOF HFR	Money Under Management Hedge Fund Hennessee	Hedge Fund Returns Hennessee	Fees Hedge Funds 2/20 Average Returns	Fees Hedge Funds 2/20 Expected 11% Volatility
1980										
1981										
1982										
1983										
1984										
1985										
1986	\$20			100			\$20			
1987								11.99	\$0.46	\$0.68
1988								20.16		
1989								24.58		
1990		\$39			610	530		11.97		
1991	\$35	\$58		880	821	694	\$35	25.83		
1992	\$50	\$96		1,100	1,105	937	\$50	15.57	\$0.84	\$1.12
1993	\$99	\$168	\$50	1,640	1,514	1,277	\$99	25.69	\$1.32	\$1.60
1994	\$76	\$167	\$57	2,080	1,945	1,654	\$76	0.17	\$1.98	\$3.17
1995	\$97	\$186	\$72	2,800	2,383	2,006	\$97	17.70	\$1.86	\$2.43
1996	\$130	\$257	\$99	3,000	2,781	2,392	\$130	19.07	\$2.40	\$3.10
1997	\$210	\$368	\$145	3,200	2,990	2,564	\$210	18.18	\$3.19	\$4.16
1998	\$221	\$375	\$154	3,500	3,325	2,848	\$221	1.43	\$4.28	\$6.72
1999	\$324	\$456	\$197	4,000	3,617	3,102	\$324	30.77	\$6.12	\$7.07
2000	\$408	\$491	\$209	4,800	3,873	3,335	\$408	8.16	\$7.14	\$10.37
2001	\$564	\$599	\$264	5,500	4,454	3,904	\$564	4.35	\$8.60	\$13.06
2002	\$592	\$626	\$310	5,700	5,379	4,598	\$592	-2.89	\$11.28	\$18.05
2003	\$795	\$820	\$489	7,000	6,297	5,065	\$795	18.78	\$14.62	\$18.94
2004	\$934	\$973	\$674	8,050	7,436	5,782	\$934	8.25	\$17.54	\$25.44
2005		\$1,105	\$813		8,661	6,665		7.85	\$20.51	\$29.89

This table reports assets under management at hedge funds and number of hedge funds over time as reported by the Hennessee Group, Hedge Fund Research, and TASS. Hedge fund fees are calculated in two ways, assuming annual management fees of 2% and profit share of 20% using Hennessee Group assets under management. First, hedge fund fees are calculated using the average returns for the year and assuming that all funds earn the average return. Second, hedge fund fees are calculated assuming that fees equal 2% management fee and that the profit share leads to fees of 1.2% per year based on a Black-Scholes calculation with expected volatility of 11% and a risk-free rate of 3%.

Table 3b: Assets Under Management and Estimated Fees for Venture Capital (VC) and Private Equity (PE) Funds

Year	Capital Committed Venture (\$B)	# Funds VC	Capital per Fund (\$ M)	Capital Committed Private Equity (\$B)	# Funds PE	Capital per Fund (\$ M)	Money Under Management VC SevenYear (\$B)	Money Under Management PE SevenYear (\$B)	VC Returns	VC Estimated Fees 2/20 Actual Returns (\$B)	VC Estimated Fees 2/20 Expected 22% Vol. (\$B)	PE Returns	PE Estimated Fees 2/20 Actual Returns	PE Estimated Fees 2/20 Expected 22% Vol.
1980	\$2.1	54	\$38	\$0.2	4	\$46	\$2.1	\$0.2						
1981	\$1.5	75	\$20	\$0.4	7	\$50	\$3.6	\$0.5	20.10	\$0.05	\$0.14			
1982	\$1.7	89	\$20	\$0.6	13	\$47	\$5.3	\$1.1	30.50	\$0.10	\$0.21			
1983	\$4.0	143	\$28	\$1.5	18	\$86	\$9.3	\$2.7	54.90	\$0.18	\$0.37	52.50	\$0.04	\$0.11
1984	\$3.2	120	\$26	\$3.5	24	\$148	\$12.4	\$6.2	-5.80	\$0.19	\$0.50	-4.40	\$0.05	\$0.25
1985	\$4.0	120	\$33	\$3.0	22	\$136	\$16.4	\$9.2	-0.90	\$0.25	\$0.66	2.90	\$0.13	\$0.37
1986	\$3.8	103	\$37	\$5.0	34	\$147	\$20.2	\$14.2	4.40	\$0.35	\$0.81	11.70	\$0.21	\$0.57
1987	\$4.5	119	\$38	\$16.1	48	\$335	\$22.6	\$30.1	6.40	\$0.44	\$0.91	10.00	\$0.32	\$1.20
1988	\$4.5	105	\$43	\$12.9	62	\$209	\$25.7	\$42.7	2.60	\$0.47	\$1.03	17.70	\$0.74	\$1.71
1989	\$5.1	105	\$48	\$12.2	83	\$146	\$29.0	\$54.2	5.20	\$0.55	\$1.16	13.70	\$1.00	\$2.17
1990	\$3.5	89	\$39	\$9.6	72	\$134	\$28.5	\$62.3	3.00	\$0.60	\$1.14	-4.30	\$1.08	\$2.49
1991	\$2.0	42	\$48	\$7.5	34	\$219	\$27.4	\$66.2	22.80	\$0.73	\$1.10	22.20	\$1.59	\$2.65
1992	\$5.3	82	\$65	\$12.3	64	\$193	\$28.7	\$75.6	14.90	\$0.65	\$1.15	11.50	\$1.51	\$3.02
1993	\$4.0	91	\$44	\$17.8	88	\$202	\$29.0	\$88.4	19.40	\$0.71	\$1.16	18.70	\$1.86	\$3.54
1994	\$8.9	137	\$65	\$25.5	117	\$218	\$33.3	\$97.8	15.90	\$0.69	\$1.33	20.70	\$2.23	\$3.91
1995	\$10.1	173	\$59	\$32.1	124	\$259	\$38.9	\$116.9	49.30	\$1.08	\$1.56	32.20	\$2.74	\$4.68
1996	\$11.5	161	\$72	\$37.8	128	\$295	\$45.4	\$142.5	42.70	\$1.19	\$1.81	34.80	\$3.36	\$5.70
1997	\$19.6	242	\$81	\$51.7	154	\$336	\$61.5	\$184.7	33.10	\$1.28	\$2.46	26.80	\$3.81	\$7.39
1998	\$30.0	289	\$104	\$79.1	206	\$384	\$89.5	\$256.3	18.90	\$1.52	\$3.58	15.60	\$4.41	\$10.25
1999	\$57.2	450	\$127	\$71.1	188	\$378	\$141.5	\$315.0	188.80	\$6.02	\$5.66	71.30	\$9.69	\$12.60
2000	\$107.4	639	\$168	\$86.8	193	\$450	\$244.9	\$384.0	24.30	\$3.69	\$9.79	10.60	\$7.14	\$15.36
2001	\$38.0	310	\$123	\$71.2	169	\$421	\$274.0	\$429.7	-34.30	\$4.90	\$10.96	-20.60	\$7.68	\$17.19
2002	\$9.2	198	\$47	\$47.7	166	\$288	\$273.0	\$445.4	-29.50	\$5.48	\$10.92	-13.10	\$8.59	\$17.82
2003	\$11.6	155	\$75	\$40.0	138	\$290	\$273.1	\$447.6	6.80	\$5.92	\$10.92	18.20	\$10.93	\$17.91
2004	\$18.8	206	\$91	\$65.3	177	\$369	\$272.3	\$461.2	15.40	\$6.51	\$10.89	17.20	\$10.88	\$18.45
2005	\$26.4	200	\$132	\$130.9	228	\$574	\$268.7	\$513.0	14.10	\$6.41	\$10.75	21.40	\$11.69	\$20.52

This table reports annual capital commitments to, number of funds raised in, and average annual returns of Venture Capital (VC) and Private Equity (PE) from 1980 to 2005 using Thomson Financial's Venture Economics database. Money under management is calculated as the sum of capital commitments over the last seven years including the current year. Estimated fees are calculated using the money under management at the beginning of the year, average returns for the year, and assuming that all funds earn the average return.

Table 4a: Top Hedge Fund Incomes in Millions of Dollars

Rank	<i>Alpha Top Hedge Fund Managers (Global)</i>			<i>Alpha Top Hedge Fund Managers (U.S. Only)</i>		
	2003	2004	2005	2003	2004	2005
1	750	1020	1500	750	1020	1500
2	510	670	1400	510	670	1400
3	500	550	840	500	550	840
4	420	450	550	420	450	550
5	350	420	500	350	420	500
6	350	305	425	350	305	425
7	300	300	400	300	300	400
8	230	240	400	230	240	400
9	150	225	340	150	225	340
10	146	205	275	146	205	275
11	135	195	230	135	195	230
12	128	180	215	128	180	215
13	125	153	210	125	153	210
14	120	125	200	120	125	200
15	110	125	200	110	125	200
16	110	125	200	110	125	200
17	100	120	190	100	120	190
18	95	115	175	95	115	175
19	95	115	160	95	115	160
20	92	110	150	92	110	150
21	80	110	150	80	110	150
22	80	110	150	80	110	145
23	75	102	150	75	102	—
24	70	100	145	70	100	—
25	65	100	130	65	100	—

Source: Institutional Investor's estimates of the incomes of the top 25 most highly compensated hedge fund managers from 2003 to 2005. The right panel presents only those hedge fund managers listed as based in the U.S.

Table 4b: Top Financial Industry Incomes in Millions of Dollars

Rank	<i>Financial World</i>				<i>Trader Monthly and Alpha</i>		
	1988	1988 in \$2004	1995	1995 in \$2004	2003	2004	2005
1	190	283	1500	1777	750	1020	1500
2	120	179	350	415	510	670	1400
3	110	164	150	178	500	550	840
4	110	164	115	136	420	450	550
5	100	149	95	113	350	420	550
6	88	130	90	107	350	305	500
7	80	119	76	90	300	300	425
8	65	97	76	90	275	240	400
9	55	82	75	89	230	225	400
10	55	82	70	83	225	205	340
20	30	45	40	47	100	120	190
30	25	37	30	36	63	88	125
40	20	30	25	30	35	63	68
50	15	22	20	24	25	35	45
60	15	22	17	20	13	28	35
70	10	15	14	17	8	23	23
80	9	13	13	15	8	13	13
90	8	12	10	12	8	13	13
100	8	12	9	11	NA	NA	NA

Financial World rankings include all financial industry individuals and employees, including private equity and hedge funds. Trader Monthly rankings include traders and hedge fund professionals only, and Alpha rankings are for hedge fund professionals only. Alpha figures are released later and for this reason when there is conflicting information about a given individual's earnings, Alpha numbers are used. Inflation adjustments for the counts of 1988 in \$2004 and 1995 in \$2004 are performed using the GDP deflator.

Table 5a: Assets Under Management at Mutual Funds

	\$ billions					# of Funds					
	Total	Equity	Hybrid	Bond	Money Market	Total	Equity	Hybrid	Bond	Money Market	
1980	\$135	\$44			\$14	\$76	564	288		170	106
1981	\$241	\$41			\$14	\$186	665	306		180	179
1982	\$297	\$54			\$23	\$220	857	340		199	318
1983	\$293	\$77			\$37	\$179	1,026	396		257	373
1984	\$371	\$80	\$11		\$46	\$234	1,243	459	89	270	425
1985	\$495	\$111	\$18		\$123	\$244	1,528	562	103	403	460
1986	\$716	\$154	\$26		\$243	\$292	1,835	678	121	549	487
1987	\$769	\$175	\$29		\$248	\$316	2,312	824	164	781	543
1988	\$809	\$189	\$26		\$256	\$338	2,737	1,006	179	942	610
1989	\$981	\$245	\$36		\$272	\$428	2,935	1,069	189	1,004	673
1990	\$1,065	\$239	\$36		\$291	\$498	3,079	1,099	193	1,046	741
1991	\$1,393	\$405	\$52		\$394	\$542	3,403	1,191	212	1,180	820
1992	\$1,643	\$514	\$78		\$504	\$546	3,824	1,325	235	1,400	864
1993	\$2,070	\$741	\$145		\$619	\$565	4,534	1,586	282	1,746	920
1994	\$2,155	\$853	\$164		\$527	\$611	5,325	1,886	361	2,115	963
1995	\$2,811	\$1,249	\$210		\$599	\$753	5,725	2,139	412	2,177	997
1996	\$3,526	\$1,726	\$253		\$645	\$902	6,248	2,570	466	2,224	988
1997	\$4,468	\$2,368	\$317		\$724	\$1,059	6,684	2,951	501	2,219	1,013
1998	\$5,525	\$2,978	\$365		\$831	\$1,352	7,314	3,512	526	2,250	1,026
1999	\$6,846	\$4,042	\$379		\$812	\$1,613	7,791	3,952	532	2,262	1,045
2000	\$6,965	\$3,962	\$346		\$811	\$1,845	8,155	4,385	523	2,208	1,039
2001	\$6,975	\$3,418	\$346		\$925	\$2,285	8,305	4,716	483	2,091	1,015
2002	\$6,390	\$2,662	\$325	\$1,130	\$2,272		8,244	4,747	473	2,035	989
2003	\$7,414	\$3,684	\$430	\$1,248	\$2,052		8,126	4,599	508	2,045	974
2004	\$8,107	\$4,384	\$519	\$1,290	\$1,913		8,041	4,547	510	2,041	943
2005	\$8,905	\$4,940	\$567	\$1,357	\$2,041		7,977	4,586	505	2,015	871

This table reports assets under management and number of funds for equity, hybrid and bond mutual funds from 1980 to 2005. The source is the 2006 Investment Company Institute Handbook.

Table 5b: Fees at Mutual Funds

Year	\$ billions Total Assets	Preferred Common	Fees Asset Weighted % Stock Funds	Fees Asset Weighted % Bond Funds	Fees \$ Billions Stock Funds	Fees \$ Billions Bond Funds	Fees \$ Billions Total	Fees \$ Billions in \$2005 Stock Funds	Fees \$ Billions in \$2005 Bond Funds	Fees \$ Billions in \$2005 Total
1980			2.32%	2.05%	\$1.0	\$0.3	\$1.3	\$2.1	\$0.6	\$2.7
1981										
1982										
1983										
1984	\$137	\$83								
1985	\$252	\$114	2.19%	1.91%	\$2.4	\$2.7	\$5.1	\$3.9	\$4.3	\$8.2
1986	\$424	\$161								
1987	\$453	\$182								
1988	\$471	\$179								
1989	\$553	\$245								
1990	\$567	\$216	1.98%	1.89%	\$4.7	\$6.2	\$10.9	\$6.5	\$8.5	\$15.0
1991	\$851	\$381								
1992	\$1,096	\$485								
1993	\$1,505	\$712								
1994	\$1,544	\$824								
1995	\$2,058	\$1,215	1.55%	1.45%	\$19.4	\$11.7	\$31.1	\$23.6	\$14.3	\$37.9
1996	\$2,624	\$1,718								
1997	\$3,409	\$2,358								
1998	\$4,174	\$3,004								
1999	\$5,233	\$4,060								
2000	\$5,119	\$3,910	1.28%	1.03%	\$50.7	\$11.9	\$62.6	\$56.9	\$13.4	\$70.2
2001	\$4,690	\$3,424	1.24%	0.97%	\$42.4	\$12.3	\$54.7	\$46.4	\$13.5	\$59.9
2002	\$4,118	\$2,688	1.24%	0.93%	\$33.0	\$13.5	\$46.6	\$35.5	\$14.6	\$50.1
2003	\$5,362	\$3,760	1.22%	0.94%	\$44.9	\$15.8	\$60.7	\$47.4	\$16.6	\$64.1
2004	\$6,194	\$4,490	1.17%	0.92%	\$51.3	\$16.6	\$67.9	\$52.7	\$17.1	\$69.8
2005	\$6,865	\$5,054	1.13%	0.90%	\$55.8	\$17.3	\$73.1	\$55.8	\$17.3	\$73.1

This table reports fees as a percentage of assets under management, dollars of fees, and dollars of fees in 2004 dollars using the GDP implicit price deflator for bond and equity mutual funds from 1980 to 2005. Fees include loads and sales charges. The source is the 2006 Investment Company Institute Handbook.

Table 6a: Statistics for Lawyers at Top Firms

	<u>Top 50 in 1984</u>	<u>Top 50 in 1994</u>	<u>Top 50 in 2004</u>	<u>1984 Top 50 still in Top 100 in 2004</u>	<u>Top 100 in 1994</u>	<u>Top 100 in 2004</u>	<u>Top 200 in 2004</u>
Revenues (\$ millions) per firm	\$66.4 \$61.5	\$209.5 \$174.0	\$644.6 \$573.0	\$611.9 \$503.5	\$153.1 \$124.5	\$460.4 \$398.5	\$297.6 \$199.5
Revenues (\$ millions) per firm in 2004\$	\$106.8 \$99.0	\$251.2 \$208.6	\$644.6 \$573.0	\$611.9 \$503.5	\$183.6 \$149.3	\$460.4 \$398.5	\$297.6 \$199.5
Lawyers per firm	258 230	469 401	889 808	830 661	371 330	682 597	471 361
Total number of lawyers all firms	13,150	23,463	44,473	37,329	37,098	68,186	94,214
Equity partners per firm	90 75	155 136	221 205	203 168	130 112	179 152	134 116
Total number of equity partners all firms	4,603	7,774	11,034	9,144	12,961	17,861	26,755
Profits per Equity Partner (\$ millions)	\$0.309 \$0.265	\$0.531 \$0.460	\$1.260 \$1.075	\$1.339 \$1.116	\$0.450 \$0.398	\$1.014 \$0.855	\$0.828 \$0.665
Top 0.5% in AGI	\$0.160	\$0.286	\$0.479	\$0.479	\$0.286	\$0.479	\$0.479
Top 0.1% in AGI	\$0.418	\$0.733	\$1.400	\$1.400	\$0.733	\$1.400	\$1.400
Profits per Equity Partner in 2004 \$ (\$ millions)	\$0.498 \$0.427	\$0.636 \$0.552	\$1.260 \$1.075	\$1.339 \$1.116	\$0.540 \$0.477	\$1.014 \$0.855	\$0.828 \$0.665
Number of firms	51	50	50	45	100	100	200

This table reports revenues, lawyers, equity partners and profits per partner for law firms from the American Lawyer magazine, AmLaw top law firms for calendar years 1984, 1994, and 2004. In each cell, average is reported above medians. When converted, 1984 and 1994 dollars are converted into 2004 dollars using the GDP Implicit Price Deflator. In 1984, we assume that all partners are equity partners, so profits per equity partner equals profit per partner. In 1994, firms began to appoint non-equity partners. The median firm had no non-equity partners. For 1994, we report the number of equity partners and profits per all partners. This slightly understates true profits per equity partner. In 2004, ALM distinguished between profits per equity and total partners.

Table 6b: Top Law Firm Equity Partners and AGI

	Bottom of Bracket	Top of Bracket	Number in Bracket and Above	Bracket	Estimated Am Law 100		Estimated Am Law 200		Estimated Am Law 50	
					Number of Equity Partners	Share of Bracket and Above	Number of Executives	Share of Bracket and Above	Number of Equity Partners	Share of Bracket and Above
<i>2004</i>	\$479,177	\$1,400,370	661,925	>99.5	14,351	2.17%	18,597	2.81%	9,915	1.50%
	\$1,400,370		132,385	>99.9	3,165	2.39%	3,477	2.63%	2,708	2.05%
<i>1994</i>	\$286,290	\$733,602	579,715	>99.5	8,465	1.46%			5,233	0.90%
	\$733,602		115,943	>99.9	1,509	1.30%			1,130	0.97%
<i>1984</i>	\$159,958	\$417,846	534,355	>99.5					2,671	0.50%
	\$417,846		106,871	>99.9					1,132	1.06%

This table estimates the number of equity partners at the Am Law top law firms in the top 0.5% and 0.1% AGI brackets in 1984, 1994, and 2004. For each law firm, the estimates that 1/3 of the partners earn more than the average while 2/3 of the partners earn less than the average. The estimates assume that the most highly paid partner earns twice the average while the least highly paid partner earns half the average.

Table 6c: Top Law Firm Equity Partners and AGI Excluding Investment Income

	Bottom of Bracket	Top of Bracket	Number in Bracket and Above	Bracket	Estimated Am Law 100		Estimated Am Law 200		Estimated Am Law 50	
					Number of Equity Partners	Share of Bracket and Above	Number of Executives	Share of Bracket and Above	Number of Equity Partners	Share of Bracket and Above
<i>2004</i>										
	\$404,912	\$1,121,024	661,925	>99.5	15,802	2.39%	20,932	3.16%	10,514	1.59%
	\$1,121,024		132,385	>99.9	4,986	3.77%	5,607	4.24%	4,137	3.12%
<i>1994</i>										
	\$243,593	\$584,837	579,715	>99.5	9,879	1.70%			5,972	1.03%
	\$584,837		115,943	>99.9	2,679	2.31%			1,889	1.63%

This table estimates the number of equity partners at the Am Law top law firms in the top 0.5% and 0.1% AGI brackets in 1994, and 2004. For each law firm, the estimates that 1/3 of the partners earn more than the average while 2/3 of the partners earn less than the average. The estimates assume that the most highly paid partner earns twice the average while the least highly paid partner earns half the average.

Table 7: Professional Athletes and AGI

		Number of Returns	Percentiles	Baseball	Football	Basketball	All	Share of Bracket	Share of Bracket and Above	
<i>Total AGI</i>										
<i>2004</i>										
\$	-	\$ 309,160.20	131,061,150	0-99	122	616	0	738	0.0%	0.0%
\$	309,160.20	\$ 479,176.99	661,925	99-99.5	204	417	30	651	0.1%	0.2%
\$	479,176.99	\$ 1,400,370.36	529,540	99.5-99.9	173	633	134	940	0.2%	0.3%
\$	1,400,370.36	\$ 7,189,506.01	119,147	99.9-99.99	243	434	197	874	0.7%	0.8%
\$	7,189,506.01	\$ 31,178,804.88	11,915	99.99-99.999	84	57	62	203	1.7%	1.5%
\$	31,178,804.88		1,324	>99.999	0	1	0	1	0.1%	0.1%
				Mean (\$M)	\$2.48	\$1.24	\$3.74	\$1.85		
				Median (\$M)	\$0.76	\$0.54	\$2.21	\$0.64		
				Total Dollars (\$M)	\$2,051	\$2,681	\$1,580	\$6,312		
<i>1995</i>										
	\$	208,400.00	117,035,820	0-99	481	743	59	1283	0.0%	0.0%
\$	208,400.00	\$ 310,900.00	591,090	99-99.5	95	221	19	335	0.1%	0.2%
\$	310,900.00	\$ 820,222.24	472,872	99.5-99.9	155	473	68	696	0.1%	0.3%
\$	820,222.24	\$ 3,658,000.00	106,396	99.9-99.99	163	401	214	778	0.7%	0.8%
\$	3,658,000.00	\$ 14,957,428.35	10,640	99.99-99.999	91	5	18	114	1.1%	1.0%
\$	14,957,428.35		1,182	>99.999	0	0	0	0	0.0%	0.0%
				Mean (\$M)	\$0.96	\$0.55	\$1.42	\$0.78		
				Median (\$M)	\$0.22	\$0.28	\$1.11	\$0.30		
				Total Dollars (\$M)	\$950	\$1,022	\$535	\$2,508		
<i>Excluding Investment Income</i>										
<i>2004</i>										
\$	-	\$ 270,600.78	131,061,150	0-99	0	493	0	493	0.0%	0.0%
\$	270,600.78	\$ 404,912.28	661,925	99-99.5	308	481	30	819	0.1%	0.2%
\$	404,912.28	\$ 1,121,024.07	529,540	99.5-99.9	169	606	117	892	0.2%	0.3%
\$	1,121,024.07	\$ 5,143,664.32	119,147	99.9-99.99	215	473	168	856	0.7%	0.9%
\$	5,143,664.32	\$ 19,778,205.17	11,915	99.99-99.999	132	104	106	342	2.9%	2.6%
\$	19,778,205.17		1,324	>99.999	2	1	2	5	0.4%	0.4%
<i>1995</i>										
	\$	180,510.49	117,035,820	0-99	442	638	54	1134	0.0%	0.0%
\$	180,510.49	\$ 264,890.00	591,090	99-99.5	95	254	18	367	0.1%	0.2%
\$	264,890.00	\$ 644,044.51	472,872	99.5-99.9	149	411	35	595	0.1%	0.3%
\$	644,044.51	\$ 2,539,830.20	106,396	99.9-99.99	158	497	201	856	0.8%	0.9%
\$	2,539,830.20	\$ 9,524,042.85	10,640	99.99-99.999	141	43	70	254	2.4%	2.1%
\$	9,524,042.85		1,182	>99.999	0	0	0	0	0.0%	0.0%

Table 8a: Top AGI Income Quantiles and Earnings of Top Individuals in Different Categories in 2004

	<u>in top 0.5%</u>	<u>in top 0.1%</u>	<u>in top 0.01%</u>	<u>in top 0.001%</u>	<u>in top 0.0001%</u>
Total Tax Units in 2004	661,925	132,385	13,239	1,324	132
AGI Threshold	\$479,177	\$1,400,370	\$7,189,506	\$31,178,805	\$101,000,000
Non-Financial Top Executives in ExecuComp	6,320	3,415	591	67	3
Non-Financial Top Executives Non-ExecuComp (Estimated)	<u>6,880</u>	<u>1,622</u>	<u>104</u>	<u>18</u>	<u>0</u>
Total Main Street	13,200	5,037	695	85	3
Total Main Street as % of Bracket	1.99%	3.80%	5.25%	6.40%	2.27%
Financial Top Executives Total (Estimated)	546	351	102	15	0
Investment Bankers	10,000	6,900	1,482	13	0
Hedge Fund Investors	9,000	3,000	>100	60	26
VC Investors	6,000	1,200			
PE Investors	<u>5,400</u>	<u>2,160</u>	>5	>5	3
Total Wall Street	30,946	13,611			
Am Law 100 Law Partners	<u>14,351</u>	<u>3,165</u>			
Total Wall Street + Law Partners	45,297	16,775			
Professional Athletes	2,018	1,078	204	1	0
Top Celebrities	>100	100	64	22	3
Total Estimated in Our Sample	60,615	22,990	2,652	201	35
Total in our Sample as % of Bracket	9.16%	17.37%	20.03%	15.18%	26.44%

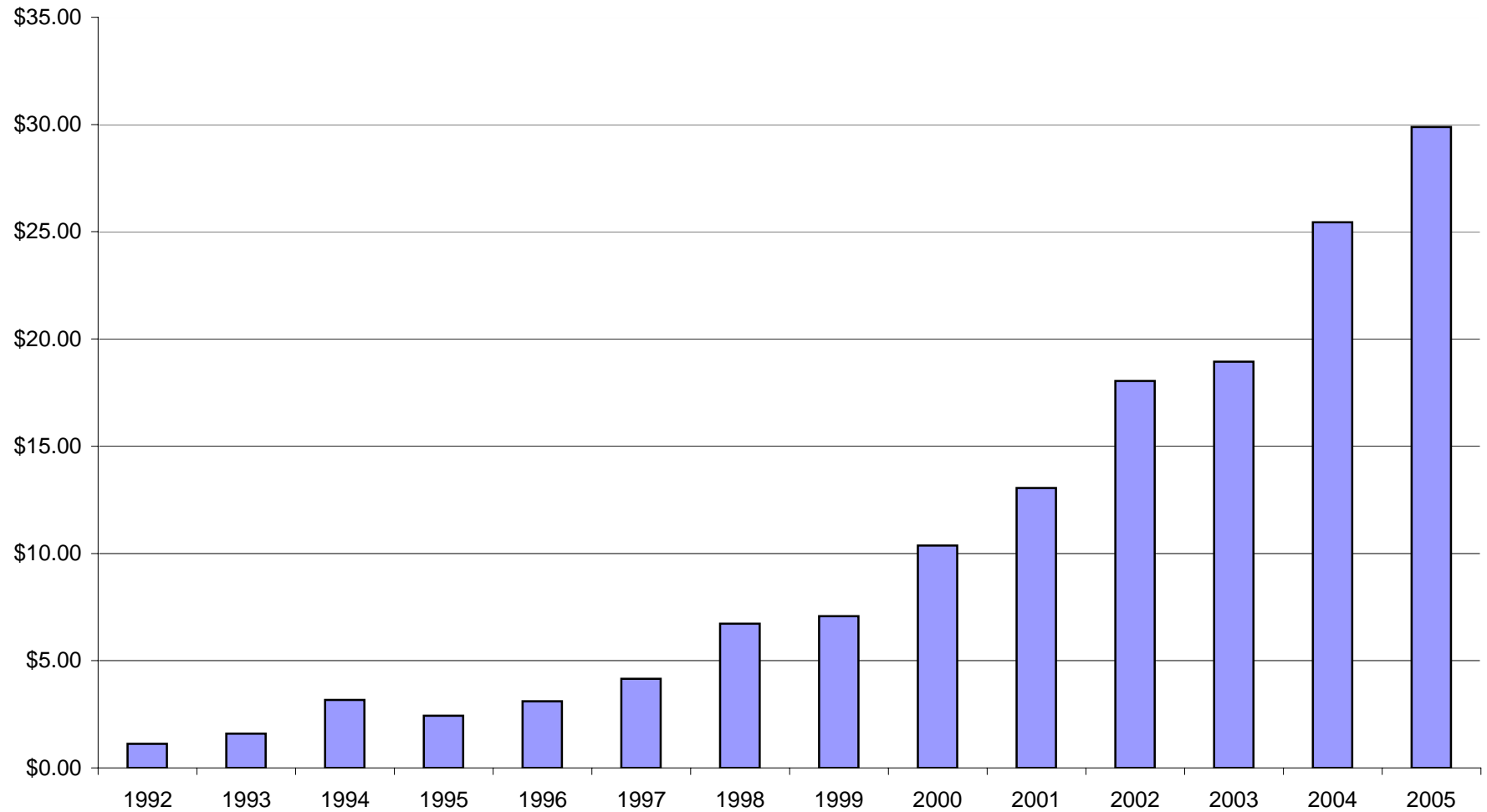
This table uses the ExecuComp data and our estimates of the non-ExecuComp companies to populate the top brackets for executives of non-financial and financial companies. It uses estimated 2004 brackets for the top 0.5%, 0.1%, 0.01%, and 0.001%, and it uses the 2001 AGI cutoff for the top 0.0001% bracket due to data availability. It assumes the exponential-based estimates of the distribution of investment banker income. For hedge fund investors, the figures in the table assume an average compensation of 3.2% of assets under management; that all 9,000 have AGI above \$0.5 million (top 0.5%); and that 1/3 or 3,000 have AGI above \$1.4 million (top 0.1%). For the very top end of the hedge fund distribution, the figures rely on the numbers in Tables 4a and 4b, which are based on Trader Monthly and the II Alpha 25. For VC investors, we assume an average compensation of 4.0% of assets under management; that all 6,000 partners have AGI above \$0.5 million; and that 1/5 or 1,200 have AGI above \$1.4 million. For PE investors, under the same 4.0% assumption, we assume that all 5,400 have AGI above \$0.5 million and 2/5 or 2,160 have AGI above \$1.4 million. For VC and PE, we do not try to make any assumptions for incomes above the top 0.01%. We use the distributions calculated earlier for law partners and professional athletes.

Table 8b: Dollars Earned over time by various sectors (in \$billions)

	2004	1994 in \$2004	1984 in \$2004	1994	1984
<i>Group 1: Main Street</i>					
AGI of Non-Financial Top Executives in ExecuComp	\$22.0	\$8.4		\$7.0	
AGI of Non-Financial Top Executives, not in ExecuComp	\$12.0	\$4.5		\$3.7	
Total Main Street	\$34.0	\$12.9		\$10.7	
<i>Group 2: Wall Street, Including Lawyers</i>					
AGI of Financial Top Executives in ExecuComp	\$2.9	\$1.2		\$1.0	
AGI Investment Bankers (10,000 on Exponential Distribution)	\$28.4				
Fees to Hedge Fund Investors	\$25.4	\$3.8	\$1.1	\$3.2	\$0.7
Fees to VC Investors	\$10.9	\$1.6	\$0.8	\$1.3	\$0.5
Fees to PE Investors	\$18.4	\$4.7	\$0.4	\$3.9	\$0.2
Profits to Am Law 100 Law Partners	\$18.1	\$7.1	\$4.6	\$5.8	\$2.8
Fees to Mutual Fund Investors	\$69.8	\$36.8	\$8.0	\$31.1	\$5.1
Total Wall Street, Including Lawyers	\$174.0				
<i>Group 3: Other Public Figures</i>					
AGI to Professional Athletes	\$6.3	\$3.0		\$2.5	
AGI to Celebrities	\$2.5				
Total Other Public Figures	\$8.8				

The table summarizes the dollar amounts of AGI and fees of the various groups and how they have changed over time. 1984 Hedge funds use 1986 estimates. 1994 Professional Athletes use 1995 estimates. 1994 and 1984 mutual funds use 1995 and 1985 estimates. 1984 Am Law 100 estimated as two times 1984 Am Law 50 Partners. AGI to investment bankers for 2004 comes from the assumptions in Table 2b; for 1984 we scale the 2004 value down by the ratio of 1987 capital per employee to 2004 capital per employee.

**Figure 1: Estimated Hedge Fund Fees
(\$ Billions)**



**Figure 2: Estimated VC and PE Fund Fees
(\$ Billions)**

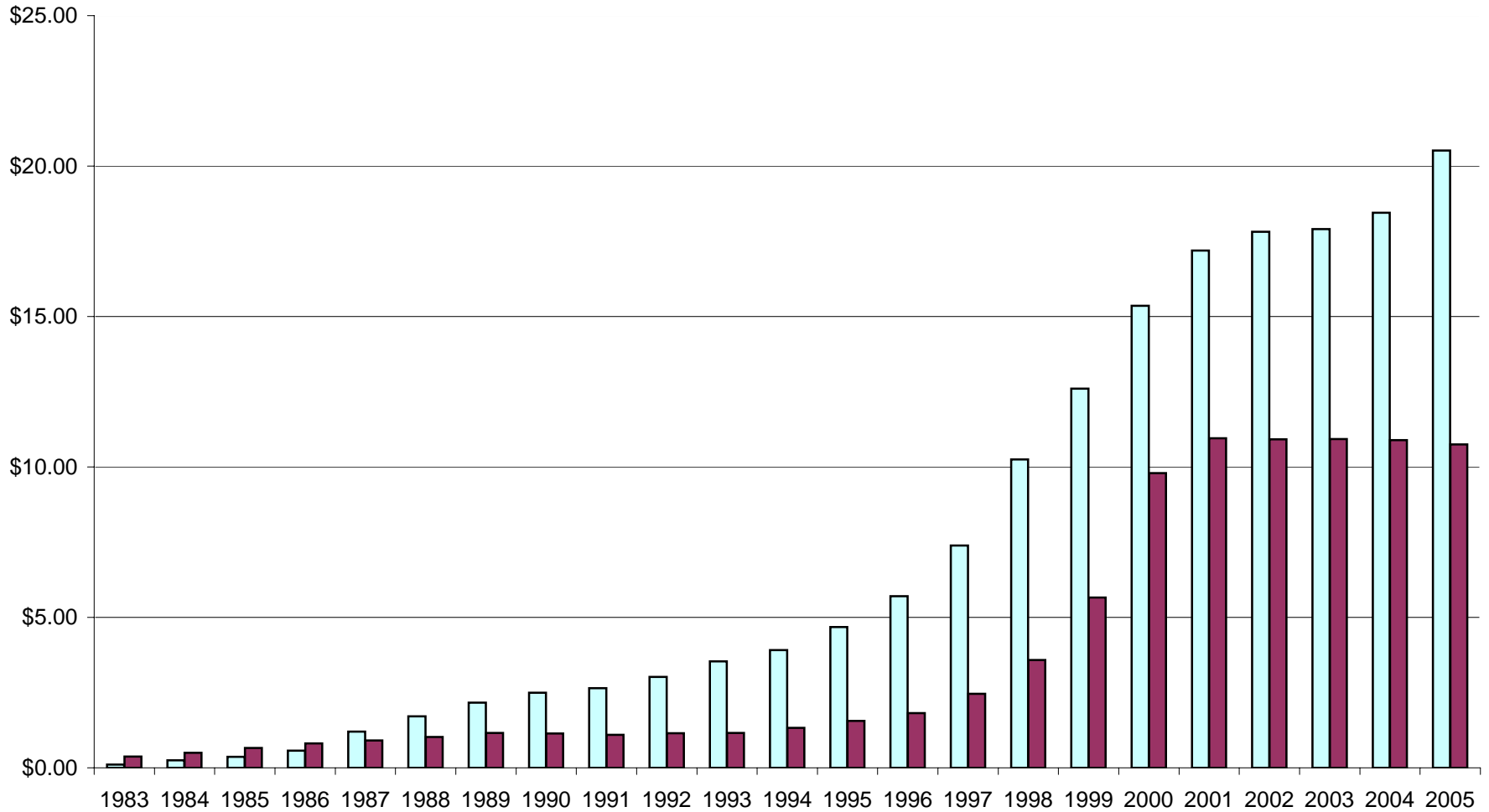


Figure 3: Three Year Performance Relative to Value Weighted Industry, CEOs Only

