

Executive Compensation and Corporate Governance in the United States: Perceptions, Facts, and Challenges

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ABSTRACT

In this paper, I consider the evidence for three common perceptions of U.S. chief executive officer (CEO) pay and corporate governance: (1) CEOs are overpaid and their pay keeps increasing; (2) CEOs are not paid for their performance; and (3) boards do not penalize CEOs for poor performance. While average CEO pay increased substantially through the 1990s, it has declined since then. CEO pay levels relative to other highly paid groups today are comparable to their average levels in the early 1990s. The ratio of large-company CEO pay to firm market value also is similar to its level in the late 1970s and lower than its pre-1960s levels. The relative pay of large-company CEOs in the late 2000s is comparable to or modestly higher than in the late 1930s. This all suggests that similar forces, likely technology and scale, have played a meaningful role in driving CEO pay and the pay of others with top incomes. With regard to performance, CEOs are paid for performance and penalized for poor performance. Finally, boards do monitor CEOs. The rate of CEO turnover has increased in the 2000s, compared to the 1980s and 1990s, and is significantly tied to poor stock performance. While corporate governance failures and pay outliers—as well as the very high average pay levels relative to the typical household—undoubtedly have contributed to the common perceptions, a meaningful part of CEO pay appears to be market-determined and boards do appear to monitor their CEOs. Consistent with that finding, top executive pay policies at over 98 percent of S&P 500 and Russell 3000 companies received majority shareholder support in the Dodd-Frank mandated “say-on-pay” votes in 2011.

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1. INTRODUCTION

Chief executive officers (CEOs) are routinely perceived to be overpaid, and corporate boards of directors are perceived to provide poor or limited oversight of CEOs. These perceptions have three typical components:

- CEOs are overpaid and their pay keeps increasing.
- CEOs are not paid for their performance.
- Boards are not doing their jobs as monitors.

For example, Bebchuk and Fried (2006) claim that “flawed compensation arrangements have not been limited to a small number of ‘bad apples’; they have been widespread, persistent, and systemic.”

In the last decade, the United States has implemented two major pieces of legislation designed to improve corporate governance. The scandals of Enron, WorldCom, and others early in this century led to the Sarbanes-Oxley legislation in 2002. The subsequent financial crisis led to the Dodd-Frank legislation in 2010, which includes a requirement that all public companies obtain an annual advisory shareholder vote on top executive pay (“say-on-pay”). Despite the legislation and attention, the perceptions and criticism of CEO pay continue. Recently, the *New York Times* wrote, “[T]he top brass generally do much, much better than the rest of us, whether times are good or bad.”¹ And *Forbes* wrote, “Our report on executive compensation will only fuel the outrage over corporate greed.”²

In this paper, I consider the accuracy of these perceptions today. What are the facts about CEO pay? Is it true that the typical CEO is

¹ Natalie Singer. “A Rich Game of Thrones: C.E.O. Pay Gains May Have Slowed, but the Numbers Are Still Numbing.” *New York Times*. April 8, 2012.

² Scott DeCarlo. “Gravity-Defying CEO Pay.” *Forbes*. April 23, 2012.

not paid for performance? How much and how well do public company boards monitor their CEOs, particularly for poor performance? The recurring question I address is what are the drivers of CEO pay? Is pay driven by the power that CEOs wield over their boards, leading CEOs to be overpaid? Is pay driven by a competitive market for talent, such that CEOs are paid appropriately? Or is pay driven by a combination of those and other forces?

What has happened to CEO pay over time? CEO pay can be measured in two ways. The first, “estimated” or “grant-date” pay, includes the CEO’s salary, bonus, restricted stock, and the estimated value of stock options when they are granted. This is the compensation package the board has awarded the CEO that year. The second, “realized” pay, values stock options at their realized values only if and when they are exercised and realized.

In looking at CEO pay levels, I focus on estimated pay because that is the pay under the board’s control. Average estimated CEO pay (adjusted for inflation) is at roughly the same level in 2010 as it was in 1998 and lower than it was in 2000. In other words, average CEO pay has not continued to increase. It has declined since the large run-up of the 1990s.

While public company CEO pay has declined, it is still very high relative to typical household income. But that is also true of the pay of top performers in other professions such as lawyers, investors, and private company executives. I extend the analysis in Kaplan and Rauh (2010) to measure average CEO pay relative to the pay of others with top incomes. The ratio of average CEO pay to the average pay of those with top incomes (the top 0.1 percent of taxpayers, annually) is comparable to or lower than the ratios in the early 1990s. The ratio in the late 2000s is comparable to (albeit slightly higher than) the level in the late 1930s.³ And the results in Bakija, Cole, and Heim (2012) suggest that the pay of public company executives has increased by less than the pay of private company executives.

I also extend the analysis in Kaplan and Rauh (2010) to show the increase in compensation for several particular highly paid groups. Top lawyers have seen their pay increase by roughly the same percentage as the CEOs of firms in Standard and Poor’s 500–stock index.

³ See also Murphy (2012) and Frydman and Jenter (2010) for excellent surveys on CEO pay. They show similar time series evidence on CEO compensation.

Hedge fund, private equity, and venture capital investors have seen their fees increase markedly. The top 25 hedge fund managers as a group regularly earn more than all 500 CEOs in the S&P 500.

In other words, while public company CEOs are highly paid, other groups with similar backgrounds and talents have done at least equally well over the last 15–20 years. If one uses evidence of higher CEO pay as evidence of managerial power or capture, one must also explain why the other professional groups have had a similar or even higher growth in pay. A more natural interpretation is that the market for talent has driven a meaningful portion of the increase in pay at the top. Consistent with this market-determined conclusion, top executive pay policies at more than 98 percent of firms in the S&P 500 and Russell Investments' 3000-stock index received majority shareholder support in the Dodd-Frank mandated say-on-pay votes in 2011. The 2012 votes have followed a similar pattern.

Second, are CEOs paid for good stock performance? In looking at CEO pay-for-performance, I look at the relation of realized pay to firm performance. The question is whether CEOs who perform better earn more in realized pay. Kaplan and Rauh (2010) look at actual CEO pay in a given year. Firms with CEOs in the top quintile (top 20 percent) of realized pay generate stock returns 60 percent greater than those of other firms in their industries over the previous three years. Firms with CEOs in the bottom quintile of realized pay underperform their industries by almost 20 percent in the previous three years. The results are qualitatively similar with performance over the previous five years or previous year. The important question that is harder to answer is whether the extent of that pay-for-performance is efficient and appropriate given market conditions.

Third, are boards doing their jobs? Kaplan and Minton (2012) study CEO turnover among firms appearing in *Fortune* magazine's annual list of the 500 largest grossing U.S. companies from 1992 to 2007. Turnover levels for these firms since 1998 have been higher than in work that has studied earlier periods. In any given year, one out of six *Fortune* 500 CEOs loses his or her job. This compares to one out of 10 in the 1970s. CEOs can expect to be CEOs for less time than in the past. If these declines in expected CEO tenures since 1998 are factored in, the effective decline in CEO pay since then is larger than reported above.

And the CEO turnover is related to poor firm stock performance—both poor performance relative to the industry and poor industry

performance. Jenter and Llewellyn (2010) present additional evidence consistent with this conclusion. They find “that boards aggressively fire CEOs for poor performance, and that the turnover-performance sensitivity increases substantially with board quality” (boards with more independent directors and more director stock ownership).

Murphy (2012) ends his impressive and detailed survey of executive compensation with the conclusion that “[i]t’s complicated.” He concludes that executive compensation is affected by the interaction of a competitive market for talent, managerial power, and political factors. His conclusion is hard to disagree with, and the data I present here are consistent with it.

Of course, corporate governance failures do occur, and pay outliers where managerial power is exercised can surely be found. And, again, the pay levels discussed here are very high relative to the typical household. These factors undoubtedly feed the common perceptions. In addition, political and tax factors likely have contributed to the run-up of pay in the 1990s and the decline since then.

However, the average, large sample, and long-term evidence are less consistent with the common perceptions and more supportive of market forces as important determinants of CEO pay levels. CEO pay in particular is likely to have been affected by forces similar to those that have led to the increase in incomes at the very top. At the same time, boards *have* been performing their monitoring function—and arguably have been doing so better today than in previous decades. The positive results of the 2011 (and 2012) say-on-pay votes suggest a meaningful role for a competitive market for talent.

This evidence also explains why compensation and the role of boards are likely to remain challenging, if not controversial. While boards have to pay well enough to attract and retain executive talent, they must be sensitive to the accurate perception that CEO pay is high relative to the median household and to the negative publicity from pay and governance outliers.

The rest of this paper details these results and conclusions.

2. HOW IS CEO PAY MEASURED?

CEO and top executive pay can be measured two ways. The first measure is the estimated or grant-date value of CEO pay. This includes the CEO’s salary and bonus, the value of restricted stock issued, and the estimated value of the options issued to the CEO

that year (usually calculated using the Black-Scholes option pricing model, a generally accepted formula for valuing options). This is the compensation package the board has awarded the CEO that year and, therefore, the appropriate measure to estimate pay levels and assess board governance.

Estimated pay is not a measure of what the CEO actually gets to take home. The CEO takes his or her salary and bonus, but does not get to cash in the options or the restricted stock. Estimated pay, therefore, is not the appropriate measure for considering whether CEOs are paid for performance.⁴

The second measure is realized or actual CEO pay. This includes the CEO's salary and bonus, the value of restricted stock, and the value of the options the CEO exercised that year. Because it uses actual option gains (not the theoretical values), this second measure is a better measure of the amount of money the CEO actually takes home in a given year. This measure, therefore, is more appropriate for considering whether CEOs are paid for performance.⁵

Note that realized pay is not a perfect measure, because it includes restricted stock granted in a year as realized pay. In reality, the restricted stock vests over time, so executives cannot sell their restricted stock for several years. As a result, even realized pay may understate the extent to which CEOs are paid for performance.

Another point worth remembering is that the realized pay measure does not necessarily include the options granted in just one year. That is, in any given year, a CEO may choose to exercise options granted over many years or may choose not to exercise any options. As a result, realized pay will tend to be more variable than estimated pay.

3. WHAT ARE THE FACTS ABOUT CEO PAY?

In this section, I report time series information on the pay of U.S. CEOs. I begin with the CEOs of S&P 500 companies from 1993 to 2010 using data from Standard and Poor's ExecuComp database. These are the largest publicly traded U.S. companies, with the median

⁴ It is interesting and somewhat puzzling that Institutional Shareholder Services (ISS), the prominent proxy advisory firm, uses estimated pay to assess pay-for-performance. See Hewitt and Bowie (2011) for ISS's perspective on pay-for-performance.

⁵ Because it measures realized gains, it also includes any benefits from backdating that lowered the exercise price of the options.

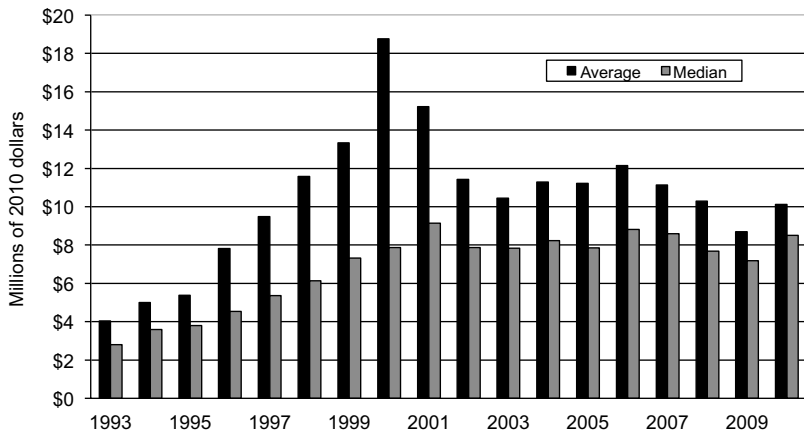
S&P 500 company employing more than 20,000 people. I then report pay for the CEOs of the other companies covered by ExecuComp—companies that at one time have been in Standard and Poor’s 1500-stock index but are not in the S&P 500. For both sets of companies, I consider estimated and realized pay.

3.1 S&P 500 CEOs

Figures 1 through 4 report information on the pay of S&P 500 CEOs from 1993 to 2010. The figures show that CEO pay increased significantly from 1993 to 2000. Since 2000, however, average CEO pay has declined. In real terms, pay in 2010 was roughly equal to its level in 1998.

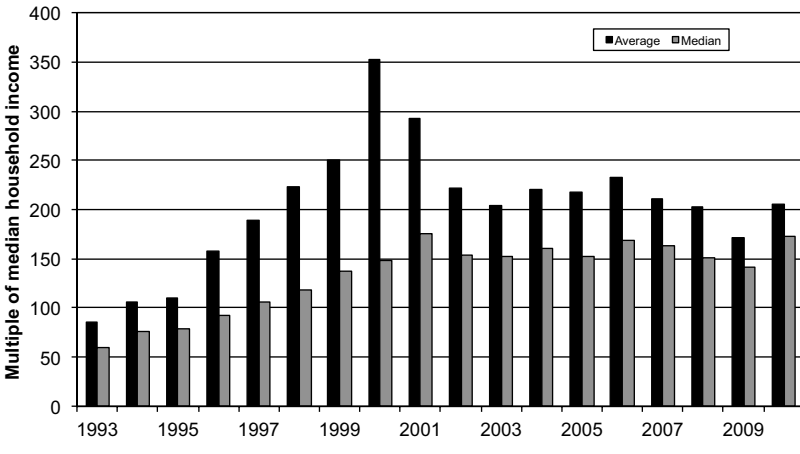
Figure 1 reports the average and median total estimated pay of S&P 500 CEOs from 1993 to 2010 (in millions of 2010 dollars). This is the pay the board expects to give the CEO. Average CEO pay increased markedly from 1993 to 2000. Since peaking in 2000, it has declined by more than 46 percent. Median CEO pay also increased markedly from 1993 to 2000. Median pay peaked in 2001 and has declined slightly since then. The convergence of the means

Figure 1
Average and Median Total Pay of S&P 500 CEOs, 1993–2010
(estimated; in millions of 2010 dollars)



Source: ExecuComp.

Figure 2
Average and Median Total Pay of S&P 500 CEOs Relative to Median Household Income, 1993–2010 (estimated)



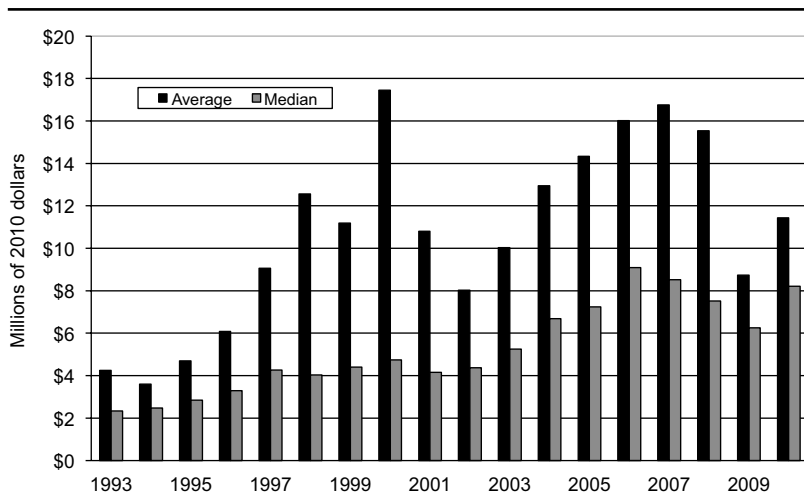
Sources: ExecuComp, Census Accounts.

and medians suggests that boards have become substantially less likely to award large and unusual pay packages to CEOs since 2000. Nevertheless, the graphs indicate that boards expected to pay CEOs well. In 2010, among S&P 500 CEOs, the median estimated pay was just over \$8.5 million; the average pay was just over \$10 million.

Figure 2 reports S&P 500 CEO estimated pay relative to median household income. Again, average and median CEO pay peaked in 2000–2001. Average CEO pay peaked in 2000 at more than 350 times the median household income in the United States. It has since declined to roughly 200 times. Median CEO pay peaked in 2001 at somewhat more than 175 times median household income, and that number has remained more or less constant. While these multiples are not as high as some that are quoted by shareholder activists, they remain very high.⁶

⁶ For example, as of April 2012, the AFL-CIO website reports that CEO pay in 2010 was 343 times that of the median worker.

Figure 3
Average and Median Total Pay of S&P 500 CEOs,
1993–2010 (realized)



Sources: ExecuComp, author data.

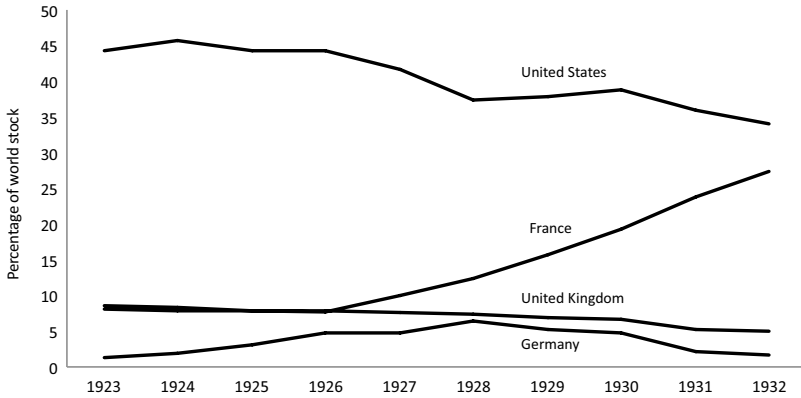
Figures 3 and 4 present the analogous figures for actual, or realized, CEO pay. Recall that this measure includes exercised options issued in the past. Figure 3 shows that average actual pay also peaked in 2000, dipped by more than 50 percent by 2002, rebounded close to 2000 levels by 2007, dipped markedly again in 2009, and rebounded somewhat in 2010. Average pay in 2010, at \$11.6 million, is 35 percent below its peak in 2000.

Median CEO pay has continued to increase and peaked in 2006 at a value of just over \$8 million. The increase in the median is the result of the increased use of restricted stock rather than stock options. Figure 4 shows a similar pattern for average and median realized pay relative to median household income. The average and median S&P 500 CEO realized, respectively, 234 and 165 times the median household in 2010.

3.2 Non-S&P 500 CEOs

Figure 5 presents average and median estimated pay for the CEOs of companies in the ExecuComp database that are not in the

Figure 4
Average and Median Total Pay of S&P 500 CEOs
Relative to Median Household Income, 1993–2010 (realized)



Sources: ExecuComp, Census accounts.

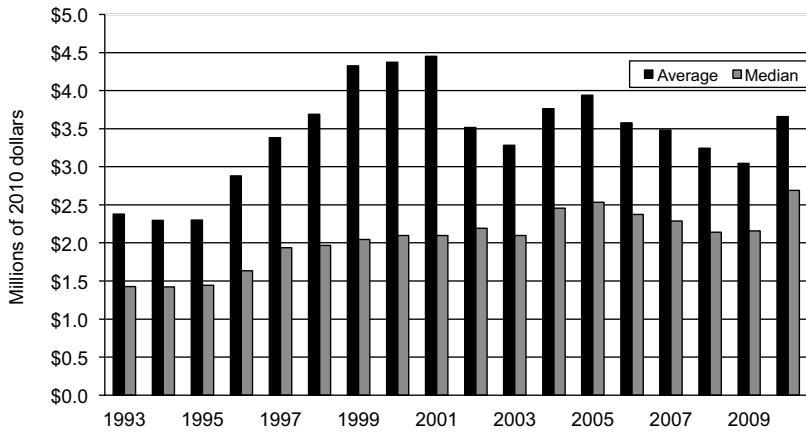
S&P 500. Figure 6 compares the average and estimated pay for these CEOs to the income of the median household.

Figure 5 shows that pay for these CEOs, like those in the S&P 500, increased in the 1990s and declined in the 2000s. The ups and downs, however, were smaller in magnitude than those for the S&P 500. Overall, from 1993 to 2010, average pay increased by 54 percent for non-S&P 500 CEOs compared to 150 percent for S&P 500 CEOs. Just as for S&P 500 CEOs, average pay levels today for non-S&P 500 CEOs are roughly equal to those in 1997 and 1998.

Figure 6 shows that average estimated pay of non-S&P 500 CEOs was 50 times greater than median household income in 1993, 70 times greater in 1997, and 90 times greater in 2001, before it fell back to roughly 70 times greater as of 2010.

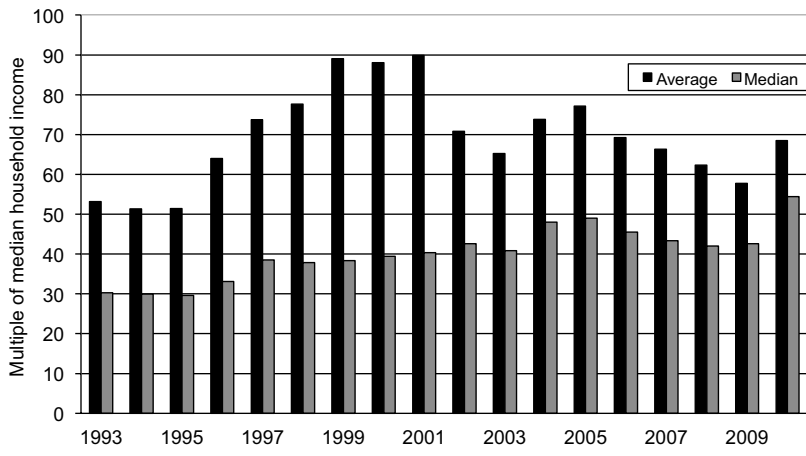
Figure 7 reports the average and median realized pay of non-S&P 500 CEOs. Average realized pay grew through 2005, dipped markedly through 2009, and rebounded somewhat in 2010. Average pay

Figure 5
Average and Median Total Pay of Non-S&P 500 CEOs,
1993–2010 (estimated)



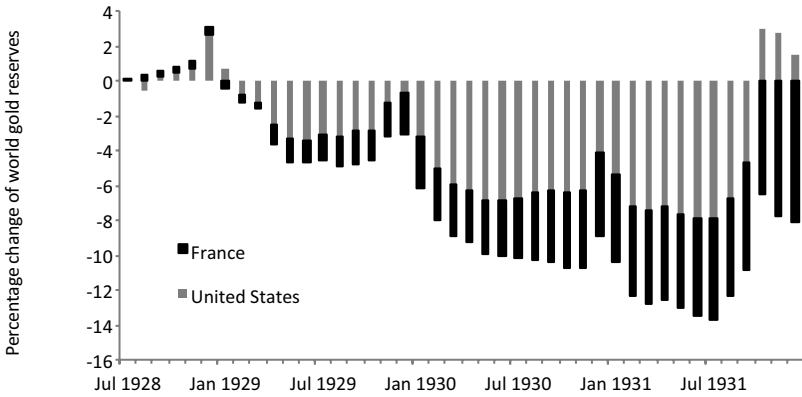
Source: ExecuComp.

Figure 6
Average and Median Total Pay of Non-S&P 500 CEOs
Relative to Median Household Income, 1993–2010 (estimated)



Sources: ExecuComp, Census accounts.

Figure 7
Average and Median Total Pay of Non-S&P 500 CEOs,
1993–2010 (realized)



Source: ExecuComp.

in 2010, at \$4.0 million, is still 20 percent below its peak in 2005 and is roughly one-third of realized pay for S&P 500 CEOs.

Overall, then, these figures show that estimated CEO pay—the pay that boards expected to pay their CEOs—peaked in 2000–2001, both for S&P 500 and non-S&P 500 CEOs. Since then, average estimated CEO pay has declined, returning to roughly the level it was in 1997 and 1998.

Nevertheless, some outliers on estimated pay still seem consistent with managerial power. In 2010, eight CEOs earned more than \$30 million; three earned more than \$50 million. Interestingly, those three—the CEOs of CBS, Oracle, and Viacom—are controlled by their large shareholders, Sumner Redstone (CBS and Viacom), and Larry Ellison (Oracle).

4. HOW DOES CEO PAY COMPARE TO THAT OF OTHER HIGHLY PAID PEOPLE?

Although estimated CEO pay has declined in the last 10 years, it is clear that CEOs are highly paid and have done very well since the

early 1990s. The important question is why they have done so well. Are the high pay levels due to the managerial power of CEOs over their boards? Are those pay levels driven by a competitive market for talent? Or have other factors been important?

Gabaix and Landier (2008) argue that market forces explain the increases in CEO pay. In a simple competitive model, they show that as firms get bigger, CEOs will get paid more. A talented CEO creates more value as a firm becomes larger. In a competitive market, CEO pay will be bid up as firms become larger. Larger average firm size increases the returns to hiring a more productive CEO. They find empirically that increases in CEO pay since 1980 can be fully attributed to the increase in large company market values.

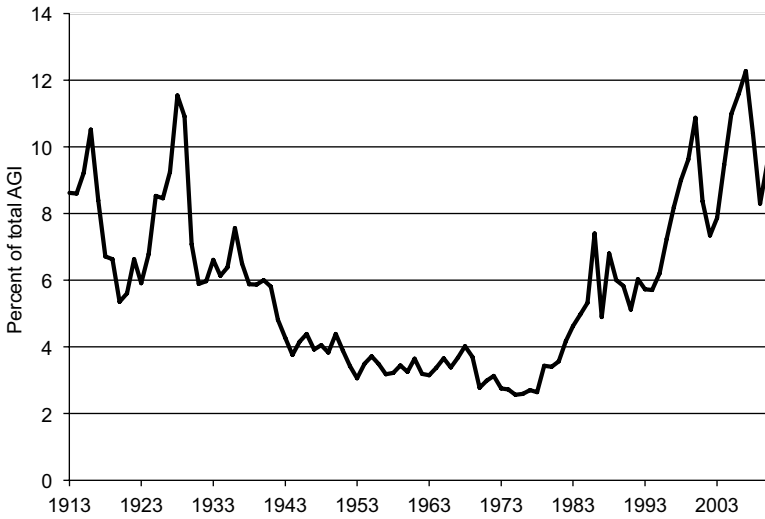
Frydman and Saks (2010) studied top executive pay from the 1930s to 2005. They, too, conclude that the evidence is not consistent with the managerial power/rent extraction story. Yet their results call into question the story in Gabaix and Landier because CEO pay did not increase with firm market value before 1970 and because changes in firm size explain less of the variation in changes in compensation.

Gabaix and Landier, Frydman and Saks, and Murphy and Zábojník (2008) focus on the market for top executives of public companies. But the same individuals can also become executives at private companies, become (or remain) consultants, and—earlier in their careers—become lawyers, investment bankers, and investors. In a competitive market for talent, similarly talented individuals should have done as well as CEOs over the last 20 or 30 years.

That is indeed what has occurred. Piketty and Saez (2003 and 2006) show that the share of pretax income earned by very high earners—the top 1 percent or top 0.1 percent—has increased markedly over the last 30 years. Figures 8 and 9 reproduce the income share—as expressed in adjusted gross income (AGI)—for the top 0.1 percent of earners from 1914 to 2010, and the more recent period from 1989 to 2010, respectively. The pattern in Figure 9 shows roughly the same patterns as those for CEO pay in Figures 1, 3, 5, and 7.

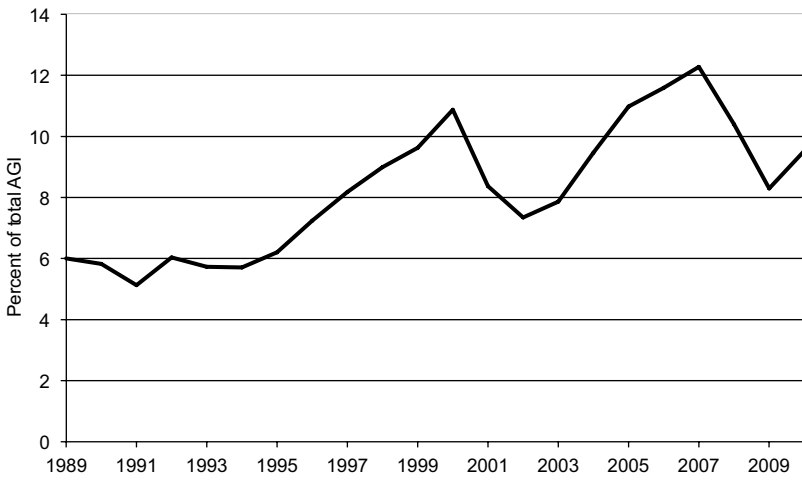
In Kaplan and Rauh (2010), Josh Rauh and I compare how well off CEOs and top executives were in 2004 (the most recent year with good data available when we wrote the paper) compared to 1994 (the first year in which good data were available) relative to other top earners. Figure 10 updates this analysis by comparing the average estimated pay of S&P 500 CEOs to the average pay of U.S. taxpayers in the

Figure 8
Income Share (AGI) of Top 0.1% of U.S. Taxpayers, 1913–2010



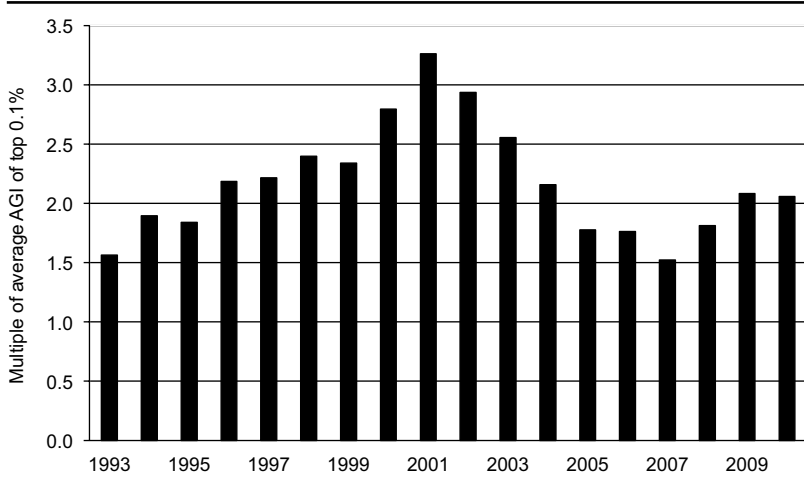
Source: Piketty and Saez (2010).

Figure 9
Income Share (AGI) of Top 0.1% of U.S. Taxpayers, 1989–2010



Source: Piketty and Saez (2010).

Figure 10
Average Pay (Estimated) of S&P 500 CEOs Relative to Average AGI of Top 0.1% of U.S. Taxpayers, 1993–2010



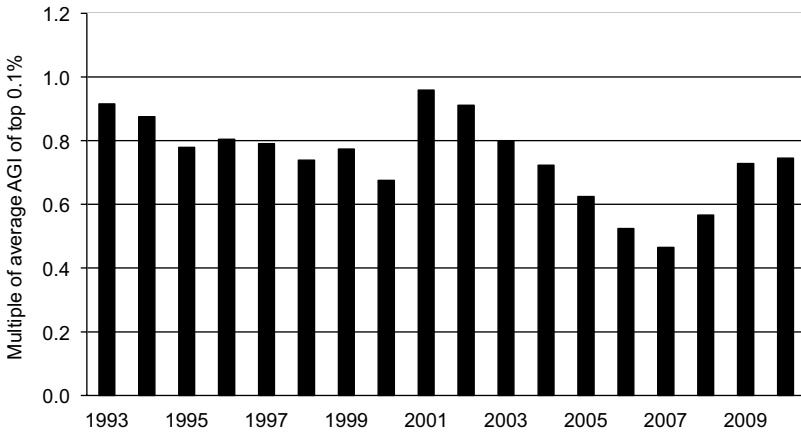
Sources: ExecuComp, Piketty and Saez (2010).

top 0.1 percent from 1993 to 2010. In 2010, the AGI cutoff for the top 0.1 percent was \$1.5 million; the average AGI for taxpayers in the top 0.1 percent was \$4.9 million. Because there are roughly 140,000 such taxpayers, the 500 S&P 500 CEOs have only a minimal effect on the average AGI of this group.

Consistent with Kaplan and Rauh, pay for S&P 500 CEOs relative to the average income of the top 0.1 percent in 2010 is about what it was in 1994. On a relative basis, estimated pay increased markedly from 1993 to 2001, then declined markedly from 2001 to 2007. In fact, of the 18 years in the sample, the ratio was the lowest in 2007. In other words, S&P 500 CEOs have seen little change in their estimated pay relative to the top 0.1 percent since the early 1990s.

Figure 11 repeats the same analysis for estimated pay for non-S&P 500 CEOs. In every year, the average non-S&P 500 CEO earns less than the average taxpayer in the top 0.1 percent. The ratios in every year from 2005 to 2010 are lower than the ratios

Figure 11
Average Pay (Estimated) of Non-S&P 500 ExecuComp CEOs
Relative to Average AGI of Top 0.1% of U.S. Taxpayers,
1993–2010



Sources: ExecuComp, Piketty and Saez (2010).

before 1998. Non-S&P 500 CEOs are worse off in their estimated pay relative to the top 0.1 percent than they were in the early and mid-1990s.

Over the last 20 years (the period in which the level of estimated CEO pay increased markedly), CEO pay relative to the top 0.1 percent has remained relatively constant or even declined. That result is consistent with a competitive market for talent. To use evidence of higher public company CEO pay as proof of managerial power or rents would require an explanation of why others in the very top income groups—not subject to managerial power effects—have seen a similar growth in pay.

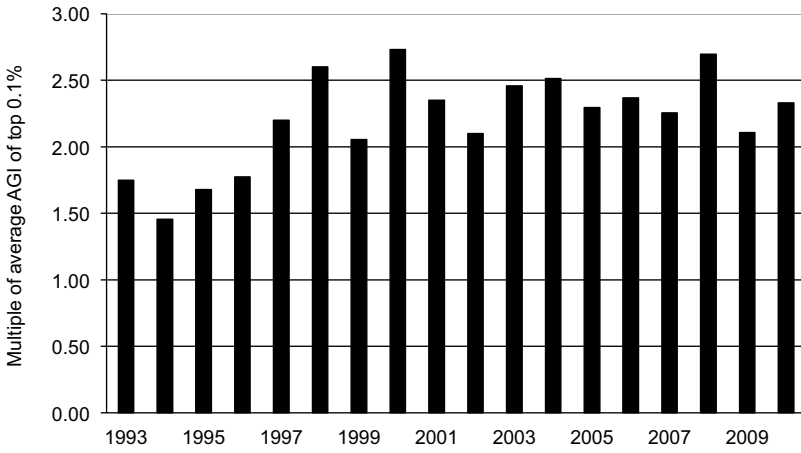
The greater puzzle in these figures is why estimated CEO pay increased so much at S&P 500 firms from 1993 to 2001 and declined so much from 2001 to 2007, both in real terms and relative to the top 0.1 percent of U.S. taxpayers. Murphy (forthcoming) rejects the simple managerial-power explanation for these patterns for several reasons. First, there is no evidence that boards have become

weaker over time. In fact, most evidence suggests the opposite. Second, the largest increases in pay go to CEOs hired externally, from outside the company. Those CEOs are hired in arm's-length negotiations with boards over whom they have no power initially. Third, as we saw above, the price of alternative talent increased significantly.

Instead, Murphy (2012) attributes the large run-up in CEO pay (particularly option-based pay) in the 1990s not to managerial power, but to four different forces: First, boards responded to increased shareholder pressure for equity-based pay. Second, Bill Clinton and Congress passed Section 162(m) of the tax code, which permitted public companies to deduct top executive pay if that pay was tied to performance, and options qualified for the deduction. Third, the Financial Accounting Standards Board did not require companies to expense options for accounting purposes as long as the strike price of the options equaled the company's grant date share price. Most option grants, therefore, had no income statement cost, so many boards undervalued or misperceived the true cost of issuing options. Fourth, that misperception led many companies to award the same *number* of options each year rather than options with the same *value*. As stock prices increased markedly in the 1990s, the value of those options increased markedly as well. These four forces fueled the run-up. It reversed after 2000 because of a backlash from the Internet bust, because companies increasingly expensed options (and were required to do so by 2006), and because of stricter rules on option plans from the New York Stock Exchange and NASDAQ. I am sympathetic to Murphy's analysis, particularly for the S&P 500 CEOs.

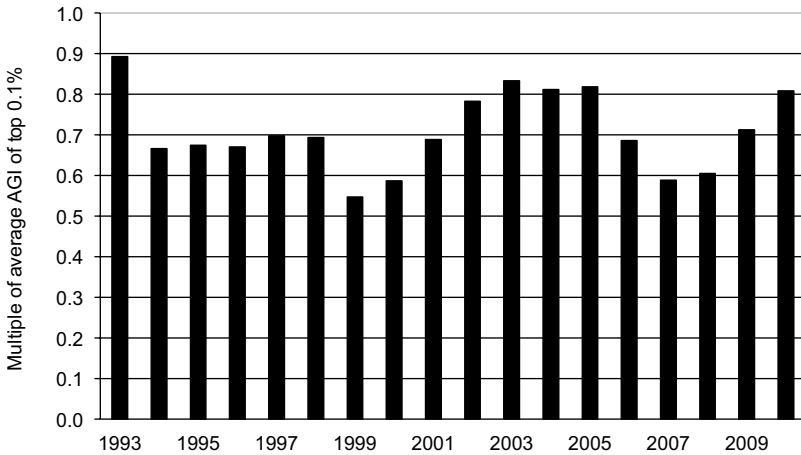
Figures 12 and 13 report the analogous analyses for realized pay. Since 1997, realized pay of S&P 500 CEOs has been stable at 2.0 to 2.5 times the average pay of the top 0.1 percent. From 1993 to 1996, realized pay was somewhat lower, at roughly 1.75 times. At the same time, the average pay of non-S&P 500 CEOs has varied from 0.6 to 0.8 times the average pay of the top 0.1 percent since 1994, with no obvious trend. The ratio was relatively low in 2007 and 2008 at roughly 0.6 and relatively high in 2010 at roughly 0.8. Overall, the ratios have remained relatively stable for both sets of CEOs. And, again, there is little evidence that the CEOs have been particularly better off than others in the top 0.1 percent.

Figure 12
Average Pay (Realized) of S&P 500 CEOs Relative to Average
AGI of Top 0.1% of U.S. Taxpayers, 1993–2010



Sources: ExecuComp, Piketty and Saez (2010).

Figure 13
Average Pay (Realized) of Non-S&P 500 ExecuComp CEOs
Relative to Average AGI of Top 0.1% of Taxpayers, 1993–2010



Sources: ExecuComp, Piketty and Saez (2010).

5. WHAT HAS HAPPENED TO CEO TURNOVER?

The previous analyses look at how CEO pay has changed over time. They implicitly assume that other aspects of the CEO job, such as tenure, have not changed. This turns out not to be the case.

Bernadette Minton and I studied CEO turnover in *Fortune* 500 firms from 1992 to 2007 in Kaplan and Minton (2012).⁷ We considered all turnovers, both internal and those that occurred through takeovers (primarily) and bankruptcy. We found that turnover levels since 1998 are substantially higher than turnover levels from 1992 to 1997, and that they are substantially higher than shown in previous work that has studied previous periods.

Murphy and Zábajník (2008) found that, in the 1970s and 1980s, roughly 10 percent of CEOs turned over each year, not counting takeovers. Kaplan and Minton found a similar percentage, 10.2 percent, for large-company CEOs from 1992 to 1997. Since 1998, however, turnover has increased meaningfully. Not counting takeovers, 12.4 percent of CEOs turned over each year, on average, from 1998 to 2003; 12.2 percent of CEOs turned over each year, on average, from 2004 to 2010. Figure 14 updates the Kaplan and Minton data through 2010 and reports it graphically.

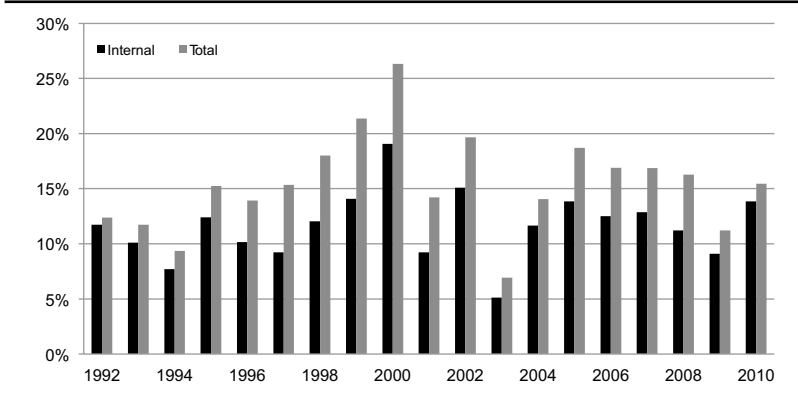
When takeovers are included, the changes are greater. From 1992 to 1997, total CEO turnover averaged 13.0 percent; from 1998 to 2003, total turnover averaged 17.6 percent; and from 2004 to 2010, 15.8 percent.

Thus, since 1998, an average of 16.6 percent of CEOs of *Fortune* 500 companies lost their jobs each year. That means the average CEO can expect to have the job for roughly six years. In the early 1990s, expected CEO tenure was closer to eight years. In the 1970s, when there were few takeovers, expected tenure was closer to 10 years.

The decline in tenure implies that the CEO job has become riskier over time. Comparing CEO pay in the 2000s to CEO pay in the 1990s (and earlier), then, is not an apples-to-apples comparison. The shorter expected tenure offsets some of the benefit of the increase in CEO pay over this period. For example, if a CEO earns CEO-like pay for only six years instead of eight and earns markedly less if he or she retires, the reduced tenure would effectively represent a 25 percent reduction in expected pay.

⁷ The results are virtually the same for S&P 500 firms.

Figure 14
Internal and Total Annual Turnover of *Fortune* 500 CEOs,
1992–2010



Source: Updated from Kaplan and Minton (2012).

Peters and Wagner (2012, 5) estimated this relationship explicitly. They found “a robust and significantly positive association between predicted turnover risk and CEO compensation.” In their paper, a 1 percent increase in turnover risk is associated with a 10 percent increase in pay. If turnover has increased by 2 percent, then risk-adjusted pay should have increased by 20 percent.

Taking this seriously, CEO pay in 2010 in Figures 1–7 and 10–13 would need to be reduced by at least 20 percent relative to CEO pay before 1998. That would make the decline in real CEO pay and CEO pay relative to others in the top 0.1 percent even greater than described above. In other words, CEOs have done relatively worse compared to their early 1990s counterparts than the compensation figures alone would suggest.

6. WHAT ABOUT THE LONGER TERM?

Both Frydman and Saks (2010) and Frydman and Jenter (2010) consider long-run patterns of large-company CEO pay. Frydman and Saks conclude that “the long-run trends in pay seem inconsistent with explanations related to managerial rent seeking.” At the same time, they conclude that the firm scale explanation of Gabaix and

Landier (2008), who “predict that compensation should correlate 1-to-1 with the growth in the size of the aggregate value of firms,” is unsuccessful before 1970.

For this section, like Frydman and Saks, I compared a long time series of estimated CEO pay with firm size, and I obtained results similar to theirs. I also compared that times series of estimated CEO pay with the average pay of the top 0.1 percent of U.S. taxpayers. Here the results were somewhat different. Over the long term, estimated CEO pay has moved with the pay of the top 0.1 percent. This suggests an important competitive market component for CEO pay over the long term.

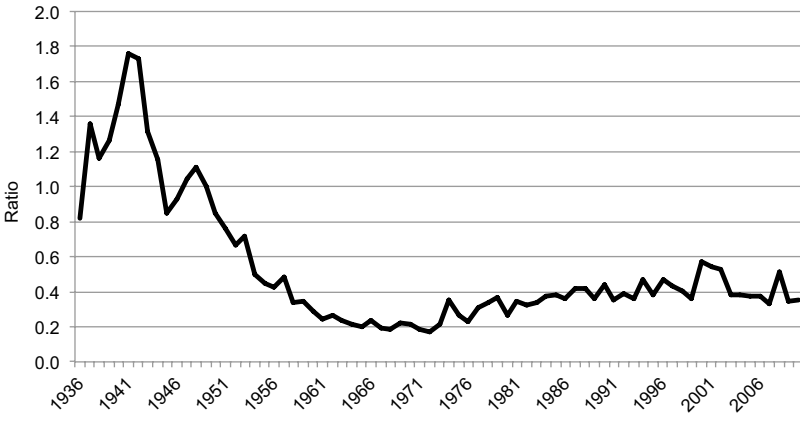
To look at CEO pay over the long term, I stapled together three data sets. First, I used the ExecuComp data for S&P 500 CEOs from 1992 to 2010. Second, for 1980 to 1992, I used the means of estimated pay for large-company CEOs in Hall and Leibman (1998). The Hall and Leibman data come from roughly 400 firms that were on the *Forbes* magazine list of the largest U.S. public companies in the 1980s. Like the S&P 500 companies, these are representative of large public companies. (Hall and Leibman present estimates from 1980 to 1994.) To make them comparable, I indexed the Hall and Leibman numbers to the 1992 ExecuComp numbers. That is, I calculated 1991 pay as the 1992 ExecuComp pay changed by the percentage change in the Hall and Leibman pay numbers from 1991 to 1992. The percentage pay changes in Hall and Leibman from 1992 to 1994 of 2 percent and 21 percent are similar to the percentage pay changes in ExecuComp of 1 percent and 24 percent for those years, suggesting the sample firms are similar.

Third, for 1936 to 1980, I used the annual means of estimated pay from Frydman and Saks (2010).⁸ Those data come from the 50 largest publicly traded companies in 1940, 1960, and 1990, which they followed over time. They argue that these data also are representative of a group of large companies.

The resulting series is somewhat different from Frydman and Saks, who show a larger increase in pay over time. The reason is that the average increase in CEO pay in Frydman and Saks from 1980 to 1994 data is larger (289 percent) than the average increase (209 percent) in the Hall and Leibman data; the Frydman and Saks increases also are greater than those reported by Murphy (2012) for the 1980s.

⁸ I thank Carola Frydman for providing them.

Figure 15
Average Large-Company CEO Pay Relative to Average
Market Value of CRSP Top-500 Companies

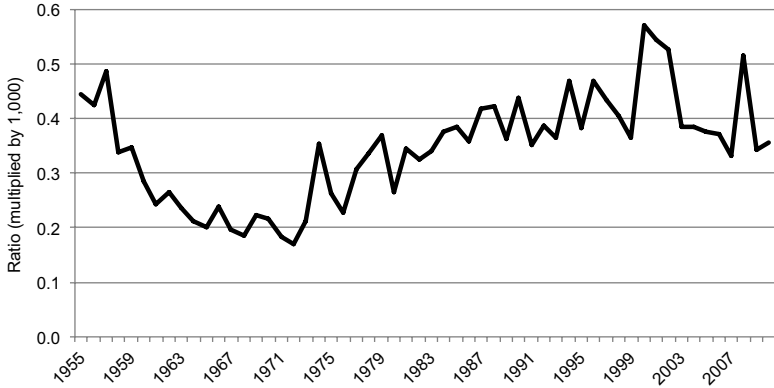


Sources: S&P 500 CEO pay for 1992–2010 are from ExecuComp; large-company CEO pay for 1980–1992 are from Hall and Leibman (1998); and large-company CEO pay for 1936–1980 are from Frydman and Saks (2010). Average market value of top-500 companies for 1936–2010 are from the Center for Research in Security Prices.

Figure 15 shows the ratio of average CEO pay to the average stock market value of the top 500 publicly traded companies according to the Center for Research in Security Prices. I report the ratio multiplied by 1,000. The figure shows that CEO pay was a much higher fraction of market value in the 1930s and 1940s than it was in the 1960s. Figure 16 shows that today the ratio is similar to its level in the late 1970s and the late 1950s. Said another way, market values increased through 1960 much more than CEO pay. The growth rates of market values exceeded pay in the 1960s, but caught up again by the late 1970s. The ratios increased modestly through 2000 and have declined since, returning to their late 1950s level. The data, then, support the Gabaix and Landier (2008) prediction about the positive relationship between firm size and CEO pay since the late 1970s, but not before.

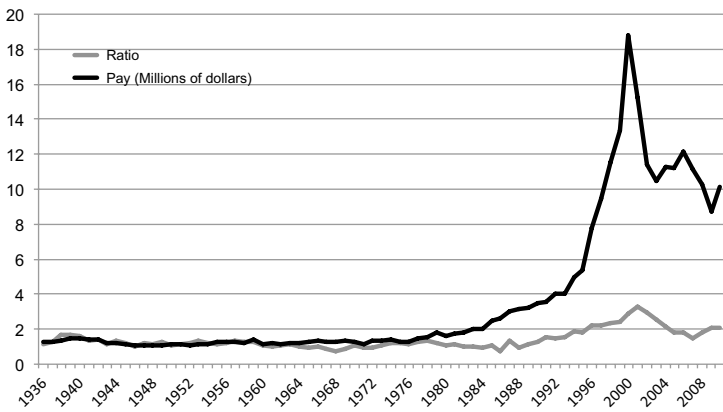
Figure 17 shows average CEO pay in 2010 dollars and the ratio of CEO pay to the average pay of the top 0.1 percent from 1936 to 2010. Figure 18 shows only the ratio. While average pay has increased markedly in the last 30 years, the ratio of pay to the top 0.1 percent has increased by much less. The ratio increased from the mid-1980s to the

Figure 16
 Average Large-Company CEO Pay Relative to Average Market Value of CRSP Top-500 Companies, 1960–2010



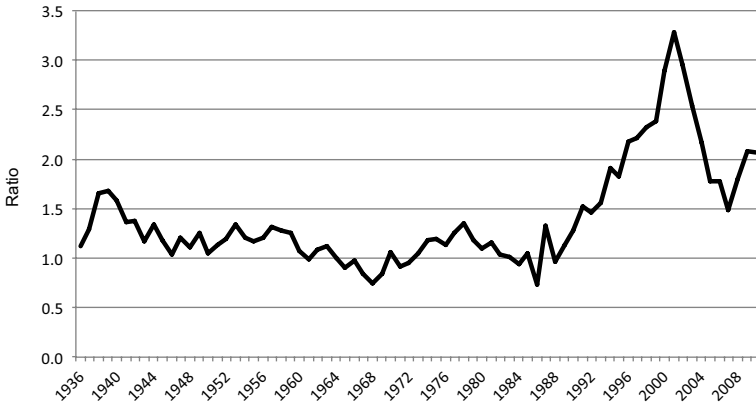
Sources: S&P 500 CEO pay for 1992–2010 are from ExecuComp; large-company CEO pay for 1980–1992 are from Hall and Leibman (1998); and large-company CEO pay for 1936–1980 are from Frydman and Saks (2010). Average market value of top-500 companies for 1936–2010 are from CRSP.

Figure 17
 Average Large-Company CEO Pay and Ratio of Average Large-Company CEO Pay to Average Pay of Top 0.1%



Sources: ExecuComp 1992–2010; Hall and Leibman (1998) 1980–1992; Frydman and Saks (2010) 1936–1980; Piketty and Saez (2010).

Figure 18
Average Large-Company CEO Pay to Average AGI of
Top 0.1%, 1936–2010



Sources: ExecuComp, Hall and Leibman (1998); Frydman and Saks (2010); Piketty and Saez (2010).

turn of the century. Since then, it has declined, although it remains above its level in the mid-1980s. Interestingly, the ratio in 2007 was lower than the ratio in the late 1930s, when dispersed shareholdings and problems of managerial power were presumably less acute than they are today. The ratio today is modestly higher than in the late 1930s.

The unanswered question is, what drove the ratio so high in the 1990s and has led to its decline since then? Murphy and Zábajník (2008) and Frydman (2007) argue that part of the increase since the 1980s can be explained by a movement toward CEOs with more general skills and by a more competitive labor market. In particular, Murphy and Zábajník attribute the increase in executive pay to the increased prevalence of hiring CEOs from outside the firm.

Nevertheless, Murphy (2012) doubts that such changes can explain the increase in pay levels in the late 1990s. As already mentioned, government policies and regulations likely played an important role. In addition, Holmstrom and Kaplan (2001) and Murphy (2012) both suggest that the relatively low pay of CEOs at the start of the 1980s was suboptimal.

In summary, taken together, Figures 15–18 suggest that a combination of firm scale and the market for talent are associated with a meaningful amount of the movement of large-company CEO pay over time.

7. HOW DO CEOs COMPARE TO OTHER HIGHLY PAID GROUPS?

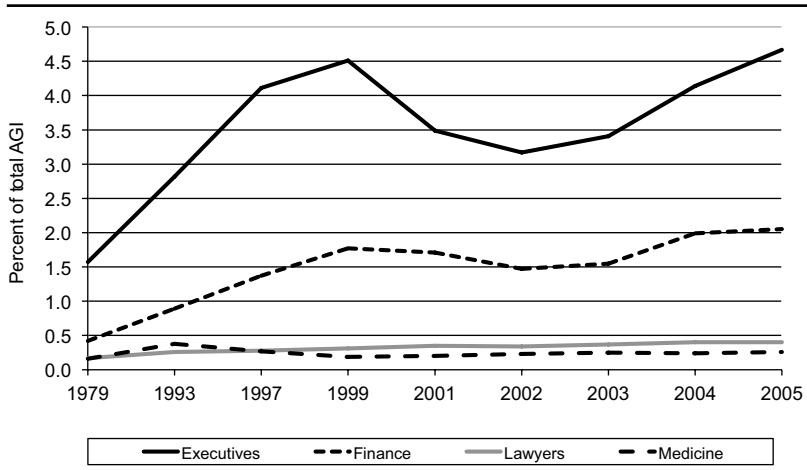
In this section, I present more detailed evidence on how other groups—nonpublic company executives, lawyers, investors, investment bankers, and athletes—in the top income brackets have fared over the last 20–30 years relative to public company CEOs.

7.1 Other Executives

Bakija, Cole, and Heim (2012) studied IRS tax return data for a number of years between 1979 and 2005. They were able to distinguish among taxpayers who were employed as business executives, financial executives, lawyers, and in medicine.

Figure 19 looks at taxpayers in the top 0.1 percent of AGI and reports the percentage of total AGI contributed by those taxpayers in the four groups. The figure shows that the percentage of AGI from executives in the top 0.1 percent of taxpayers increased from 1.5 percent in 1979 to 3.0 percent in 1993, and then to over 4.5 percent in 2005. Taxpayers in finance increased from 0.4 percent in 1979, to 0.9 percent in 1993, to over 2.0 percent in 2005. Those increases

Figure 19
Percent of Total Income (AGI) for Various Occupation Groups in the Top 0.1% of Taxpayers



Source: Bakija, Cole, Heim (2012).

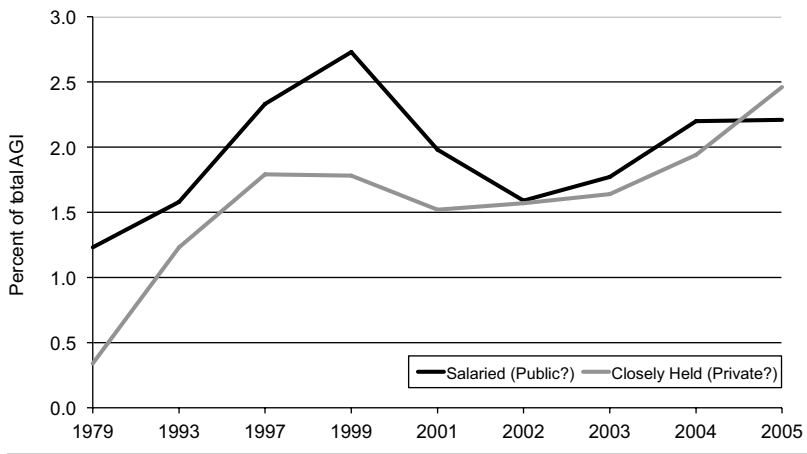
compare to income shares of all top-0.1 percent taxpayers of 3.4 percent in 1979, to 5.7 percent in 1993, to 11.0 percent in 2005. The share of the top 0.1 percent, then, increased more than three times. Executives increased their shares by roughly the same three times while taxpayers in finance increased their share by roughly five times. The larger relative increase in finance is consistent with the results and arguments in Kaplan and Rauh (2010) and Philippon and Reshef (2008) that financial executives did particularly well over this period.

Bakija, Cole, and Heim (2012) cannot identify whether the executives in their sample work for private or public companies, or whether the taxpayers are CEOs or not. They try to distinguish between public and private company CEOs by comparing executives who receive the majority of their income in salary and wages with those who receive the majority of their income from self-employment, partnership, and S-corporation-related income, not salary and wages. They argue that the former are more likely to include public company executives while the latter are more likely to include executives of closely held businesses. Bakija, Cole, and Heim (2012) also distinguish among executives, managers, and supervisors. In Figure 20, I combine those three groups. The conclusions and patterns are similar if I look only at executives.

Figure 20 is the key graph from the Bakija, Cole, and Heim (2012) data. It indicates that the pay of executives of closely held businesses increased more than the pay of salaried executives from 1979 to 1993, and again from 1993 to 2005. Figure 21 shows that executives of closely held firms accounted for roughly 22 percent of the top 0.1 percent in 2005, up from 18 percent in 1993 and 9 percent in 1979. At the same time, salaried executives made up 20 percent of the top 0.1 percent in 2005, down from 28 percent in 1993 and 38 percent in 1979.

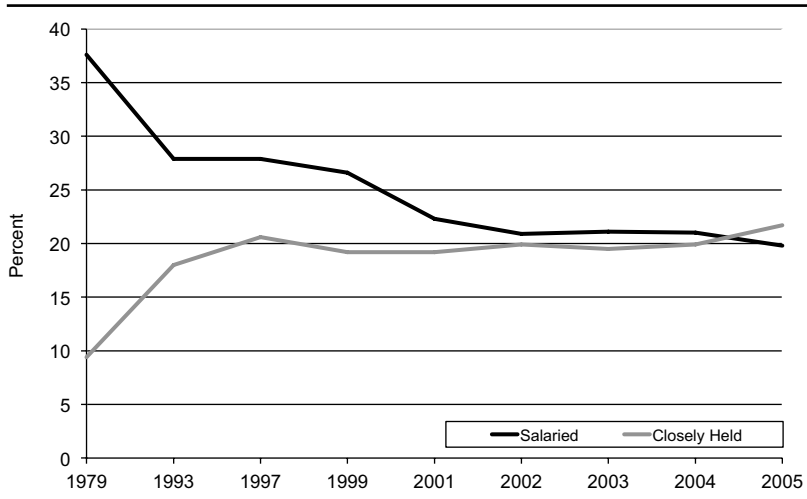
Public company executives—who are presumably more subject to problems of managerial power—saw their pay and relative standing increase less over this period than executives of closely held companies that are, by definition, controlled by large shareholders or the executives, and are subject to limited agency problems. This is notable because many of the salaried and closely held company executives likely come from the same general executive pool and, presumably, can move between public company and private company employment. Again, using evidence of higher public company

Figure 20
 Percent of Total Income (AGI) Earned by Executives, Managers, and Supervisors (Combined) in Top 0.1% of Taxpayers



Source: Bakija, Cole, Heim (2012).

Figure 21
 Percent of Executives, Managers, and Supervisors (Combined) in Top 0.1% of Taxpayers



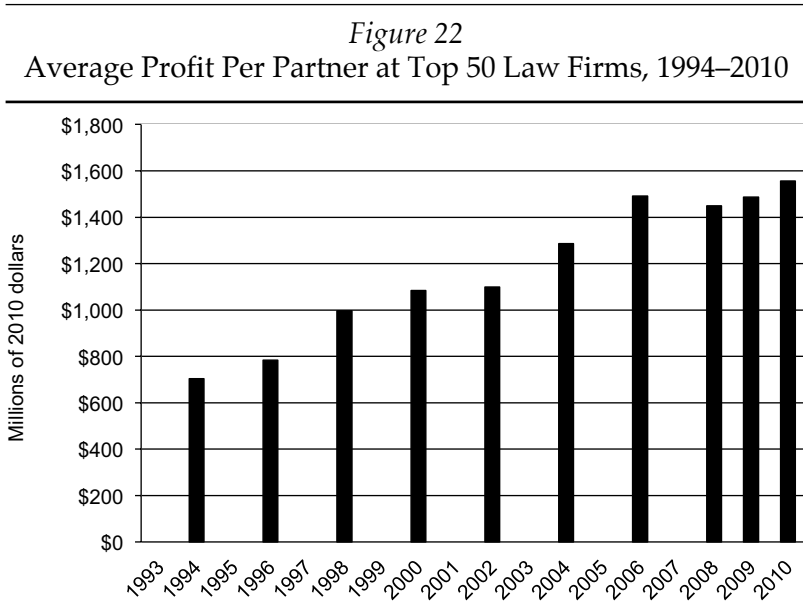
Source: Bakija, Cole, Heim (2012).

executive pay as inherent evidence of capture or managerial power requires an explanation of why private company executives and the other professional groups have had similar or higher growth in pay where managerial power concerns are largely absent.

7.2 Lawyers

Lawyers at top law firms are another useful comparison group for CEOs. Much of the work these lawyers perform is for corporate clients. Because the law firms are partnerships and their fees are negotiated in an arm's-length manner with clients, partner pay at such firms is arguably market-based and not subject to managerial power concerns. It can also be argued that top lawyers are drawn from a similar undergraduate pool as top public company executives. In addition, it is useful to note that the general counsels of large public companies are often former law partners. Accordingly, there is some overlap in the market for talent between top executives and top lawyers.

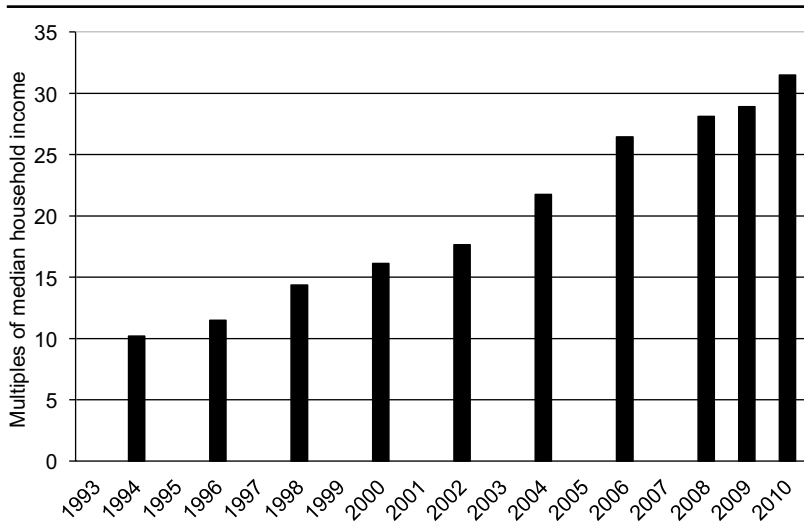
Figure 22 reports average profit per partner at the 50 top law firms from *American Lawyer* magazine surveys from 1994 to 2010. This



Source: *American Lawyer*, various years.

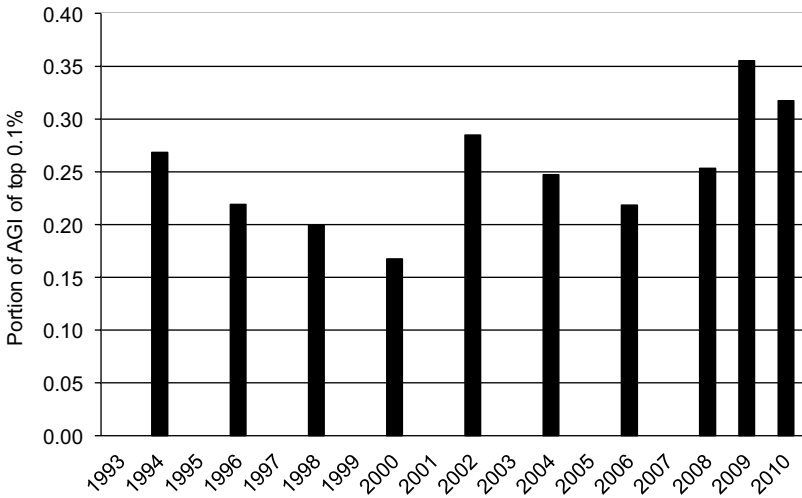
calculation measures the total partner profits at all 50 firms divided by the total number of partners. (The average of the profits per partner at each firm is slightly higher.) The average profit per partner provides an estimate of the average partner’s AGI earned from employment at his or her law firm. The average profit per partner increased from \$0.7 million in 1994 to almost \$1.6 million in 2010 (in 2010 dollars). Figure 23 shows that the average profit per partner increased from 10 times median household income to 30 times over this period. Figure 24 shows the average partner’s income increased from roughly one-quarter to between 0.30 and 0.35 of the average income of the top 0.1 percent of taxpayers. Figure 25 shows that estimated pay of the average S&P 500 CEO was roughly six times that of the average law partner in 1994 and remains at that level today after diverging in the late 1990s. Finally, Figure 26 shows that estimated pay of non-S&P 500 CEOs has declined from three times the average top-50 law firm partner to two times. In other words, the average S&P 500 CEO and the average top-50 law firm partner have

Figure 23
Average Profit Per Partner at Top 50 Law Firms Relative to Median Household Income, 1994–2010



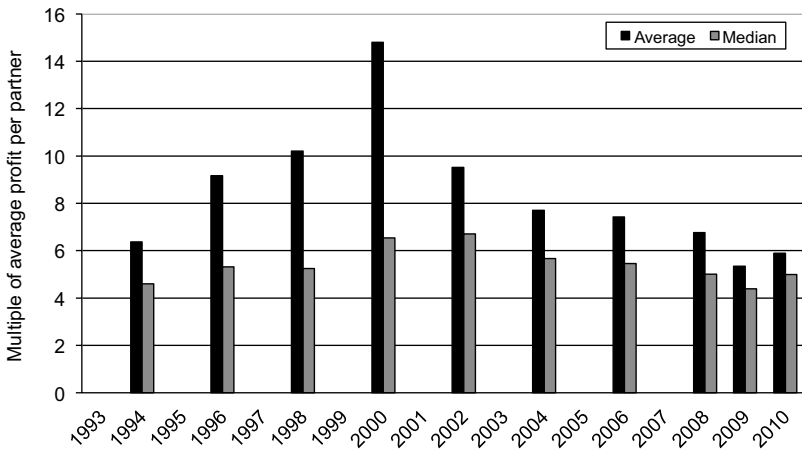
Sources: *American Lawyer*, Census.

Figure 24
Average Profit Per Partner at Top 50 Law Firms Relative to Average AGI of Top 0.1%, 1994–2010



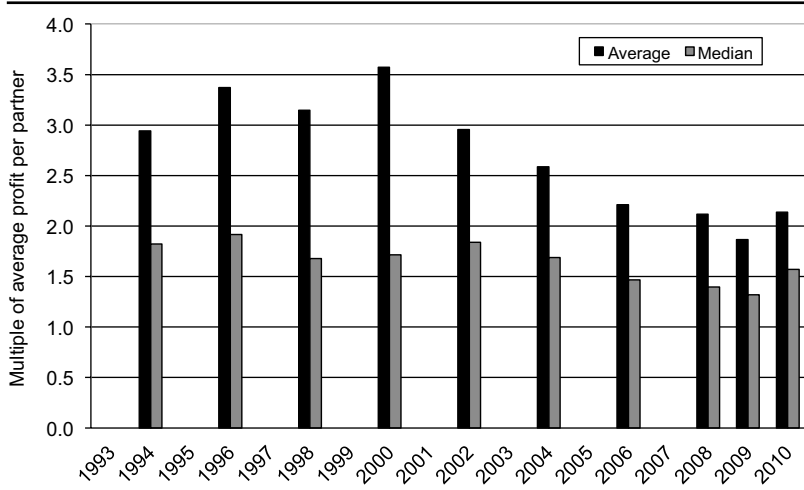
Sources: *American Lawyer*, Piketty and Saez (2010).

Figure 25
S&P 500 CEO Pay (Estimated) Relative to Average Profit Per Partner at Top 50 Law Firms, 1994–2010



Sources: ExecuComp, *American Lawyer*.

Figure 26
Non-S&P 500 CEO Estimated Pay Relative to Average Profit Per Partner at Top 50 Law Firms, 1994–2010



Sources: ExecuComp, *American Lawyer*.

done roughly as well over the last 20 years. The lawyers have done relatively better than non-S&P 500 CEOs.

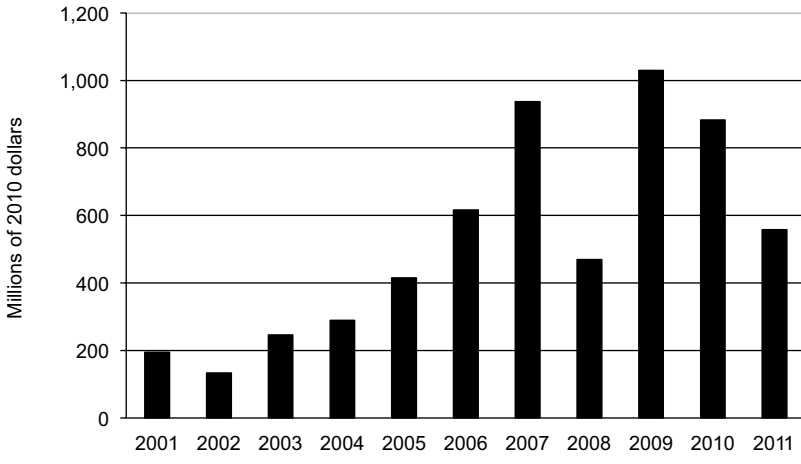
These numbers may understate how well the very top partners at these law firms have done. That is because the number of partners increased over this period from 7,000 to 12,000 (i.e., the averages went up quite a bit, but so did the number of partners). If it were possible to compare the pay of the top 7,000 partners in 2010 and 1994, just as it is possible to compare the pay of the S&P 500 CEOs, it is likely that the increase for the top lawyers would be greater.

On the whole then, top corporate law partners have seen their percentage pay increase over the last 20 years by at least as much as public company CEOs. The profit of law firms (and the pay of corporate lawyers) is set by arm’s-length or market negotiations. Again, this is consistent with an increase in the market value of talent.

7.3 Hedge Fund Managers

Top hedge fund managers are another highly paid group. Since 2001, *Absolute Return + Alpha (AR)* magazine has published an annual

Figure 27
Average Pay of Top 25 Hedge Fund Managers, 2001–2011



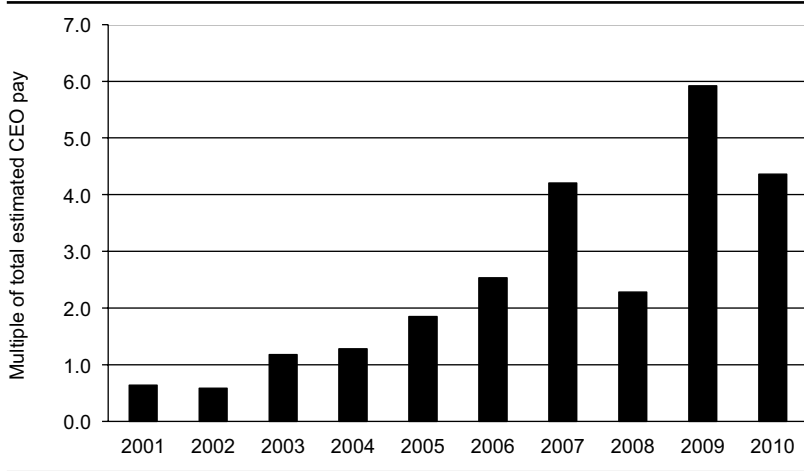
Source: *Absolute Return + Alpha*.

“Rich List” of the 25 highest paid hedge fund managers. *AR* estimates the annual income of these managers from fees and their capital invested in their funds. As a result, *AR* overstates the income of these managers attributable to their employment per se, as separate from their investment income. Nevertheless, the results are striking.

Figure 27 reports the average income of these hedge fund managers (in millions of 2010 dollars). The average peaked at over \$1 billion in 2007 and was as low as \$134 million in 2002. These numbers are much higher than the averages for S&P 500 CEOs.

Figure 28 puts this into perspective. It compares the combined incomes of the 25 highest paid hedge fund managers to the combined estimated pay of the S&P 500 CEOs from 2001 to 2011. From 2001 to 2004, the ratio was roughly 1.0, implying that 25 hedge fund managers earned roughly as much as S&P 500 CEOs. Since 2004, however, the ratio has grown substantially. In 2010, the 25 hedge fund managers earned roughly four times as much as the S&P 500 CEOs. In other words, hedge fund managers appear to have done considerably better than CEOs over this period.

Figure 28
 Total Pay of Top 25 Hedge Fund Managers Relative to Total
 Estimated Pay of 500 S&P 500 CEOs, 2001–10



Sources: ExecuComp, *Absolute Return + Alpha*.

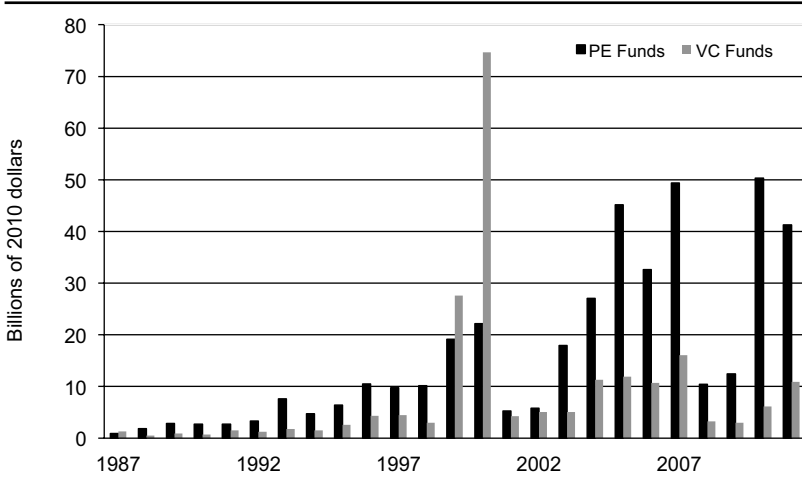
Consistent with these figures, the *Forbes* magazine list of the 400 wealthiest Americans for 2011 (the most recent at the time this paper was written) includes at least 26 hedge fund managers, with 10 among the top 100 richest Americans. At the same time, the list does not include one public company CEO who earned most of his or her equity when the company was public. Two non-founder public company CEOs are among the top 100—Steve Ballmer of Microsoft and Eric Schmidt, formerly of Google—but both received most of their equity before their companies went public.

7.4 Private Equity Investors

Kaplan and Rauh (2010) document a large increase in fees to private equity (PE) and venture capital (VC) investors through 2005. Since 2005, the assets under management in private equity have increased substantially.

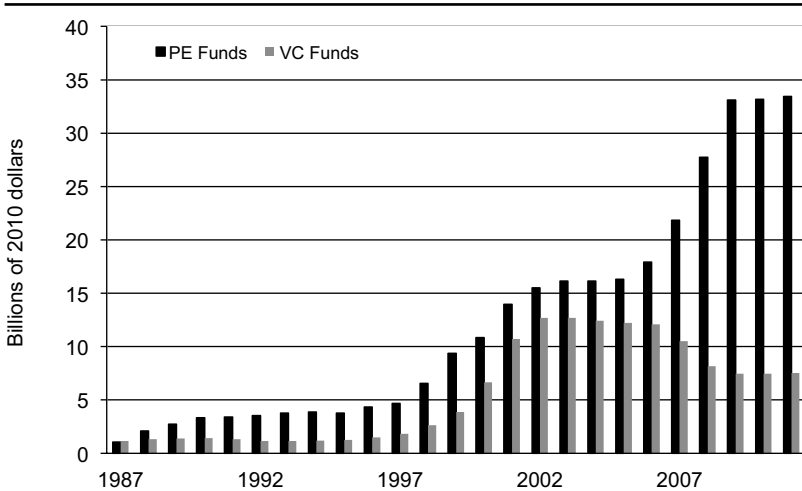
Figures 29 and 30 calculate the fees and document their growth in two ways. Both figures assume private equity and venture capital investors earn fees on capital raised over a recent seven-year period.

Figure 29
 Estimated Fees of U.S. Private Equity and Venture Capital Funds Using Annual Returns



Sources: *Private Equity Analyst*, Cambridge Associates, Steven Kaplan.

Figure 30
 Estimated Fees of U.S. Private Equity and Venture Capital Funds (assuming 4% and 5% of assets under management)



Sources: *Private Equity Analyst*, Cambridge Associates, Steven Kaplan.

Capital raised or committed is obtained from *Private Equity Analyst* newsletter.

Figure 29 assumes that the PE firms earn a 1.5 percent management fee on that capital; VC firms earn a 2.0 percent management fee. In addition, Figure 29 assumes that PE and VC firms receive 20 percent of the profits earned by funds in a given year. Profits are estimated using the average return earned by PE and VC funds in a given year, reported by Cambridge Associates. This calculation likely understates fees because it assumes that all funds earn the average annual return. Because the 20 percent profit share is applied only to positive returns, any dispersion across funds such that some funds earn negative returns implies that the actual profit share exceeds the estimates above.

Figure 30 simply assumes that PE firms earn overall fees of 4 percent, while VC firms earn fees of 5 percent on capital raised over the previous seven years. This assumes that the profit share has a value of roughly 2.5 percent per year for PE firms and 3 percent per year for VC firms. Those assumptions are consistent with treating the profit share as a call option on the funds with volatility of estimates 28 percent and 35 percent, respectively, for PE and VC funds. The 4 percent and 5 percent assumptions also are consistent with the fee estimates in Metrick and Yasuda (2010).

Figure 29 shows that fees to PE firms have increased substantially over time. Since 2005, they have averaged roughly \$34 billion per year in 2010 dollars. This represents an increase of almost three times the average over the previous 10 years. Figure 30 estimates PE firm fees at roughly \$26 billion per year since 2005. Under both sets of assumptions, estimated fees in 2010 have increased by a factor of five to eight times since 1993.

Consistent with this growth in fees, a number of private equity investors regularly show up in the *Forbes* lists of billionaires and wealthy Americans. The 2011 *Forbes* 400 list of the wealthiest Americans included at least 25 members who earned their wealth through PE and VC funds.

Venture capital investors have had a more volatile record. Their fees peaked around the Internet boom at the turn of the century, with estimated fees in Figure 29 exceeding \$70 billion in 2000. Nevertheless, both Figures 29 and 30 suggest that fees have increased roughly six times since 1993.

7.5 Athletes

Kaplan and Rauh also compare CEO pay to that for professional athletes in baseball, basketball, and football in 1995 and 2004. I extend that analysis by looking at the average pay of the top 25 most highly paid athletes in those sports.

Figure 31 reports those averages for baseball, basketball, and football in every other year from 1993 to 2011. Pay at the top has increased markedly for the athletes since 1993, with baseball, basketball, and football players earning, respectively, 2.5, 3.3, and 5.8 times as much in 2009 as in 1993.

Figure 32 gives average estimated pay for S&P 500 CEOs relative to the average pay of the athletes. The figure shows that in 2009, compared to 1993, the S&P 500 CEOs have done roughly as well as the top baseball players, but not as well as the top basketball and football players.

7.6 Summary

The point of these comparisons is to confirm that while public company CEOs earn a great deal, they are not unique. Other groups with

Figure 31
Average Top 25 Salaries in Professional Baseball,
Basketball, and Football

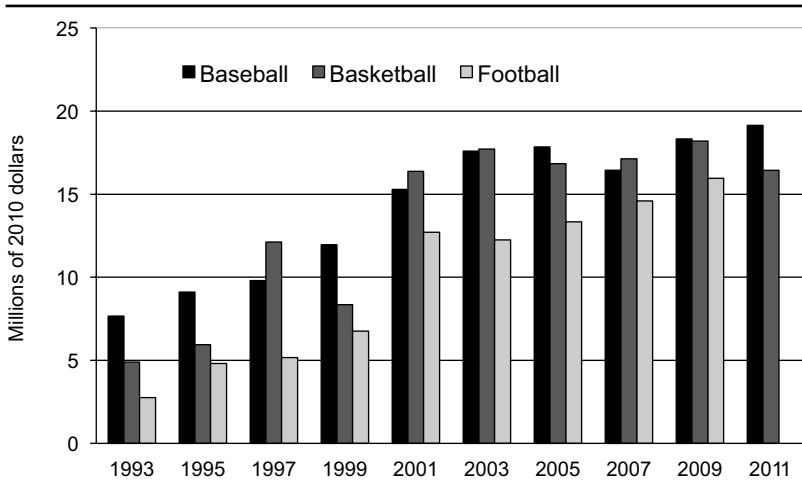
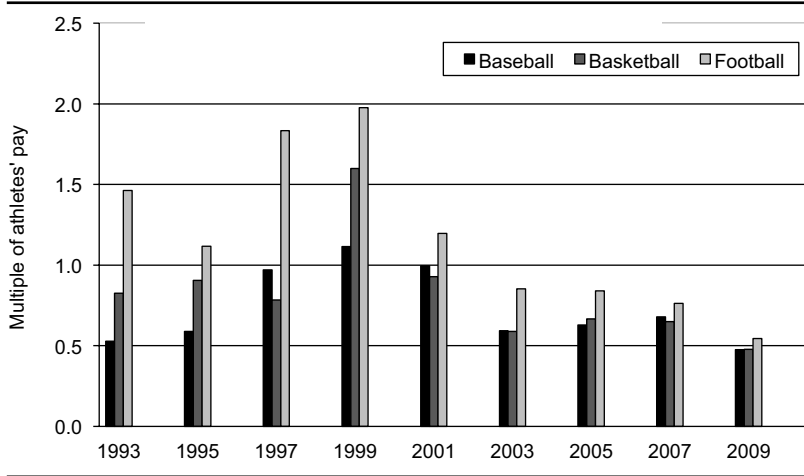


Figure 32
**S&P 500 CEO Estimated Pay Relative to Average Pay of
 Top 25 Baseball, Basketball, and Football Players**



similar backgrounds—private company executives, corporate lawyers, hedge fund investors, private equity investors, and others—have seen significant pay increases where there is a competitive market for talent and managerial power problems are absent. Again, to use evidence of higher CEO pay as evidence of managerial power or capture requires an explanation of why these other professional groups have had a similar or even higher growth in pay. More likely, a meaningful portion of the increase in CEO pay has been driven by market forces as well.

What are those market forces? In Kaplan and Rauh (2010), we argue that changes in technology, along with an increase in the scale of enterprises and finance, have allowed more talented or fortunate people to increase their productivity relative to others. This assessment seems relevant to the increase in pay of lawyers and investors (technology allows them to acquire information and trade large amounts more efficiently) as well as CEOs (technology allows them to manage very large global organizations). It suggests that increases in incomes at the top have been driven more by technology and scale than by poor corporate governance.⁹ Under this view, as firms have

⁹ See Parker and Vissing-Jorgensen (2010) for a concurring view.

become more valuable and technology increasingly has allowed CEOs to affect that value, boards have responded by spending more to attract and motivate talent.

8. WHAT DO BOARDS DO? ARE THEY CONTROLLED BY THEIR CEOs?

According to the managerial power story, managers control their boards and the boards are too friendly to management: boards do not pay for performance and boards do not fire CEOs for poor performance. This section considers the evidence for this.

8.1 Are CEOs Paid for Performance?

Critics contend that CEOs are not paid for good stock performance. For example, *New York Times* columnist Gretchen Morgenson recently wrote, "Many corporate boards talk a good line about paying for performance. Then they turn around and award fat paychecks to chief executives who, by many measures, don't deserve them."¹⁰

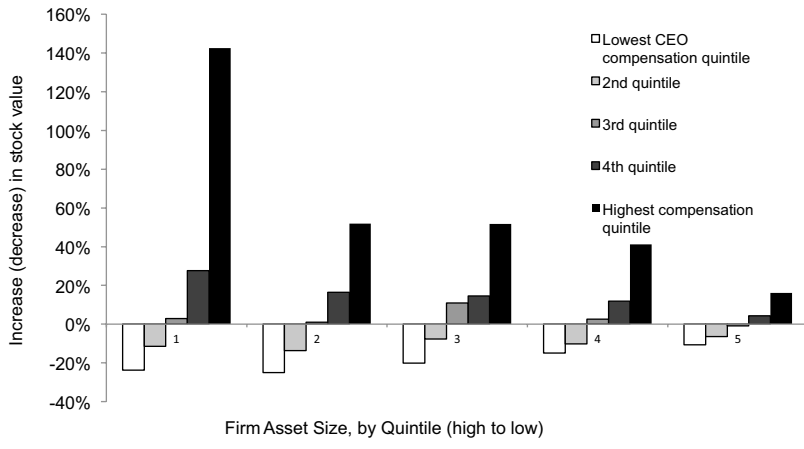
On average, that is not the case. In some cases, the critics confuse estimated pay—what the boards give to the CEOs as estimated pay—and realized pay. The key question is whether CEOs who perform better earn more in realized pay.

For each year from 1999 to 2004, Kaplan and Rauh (2010) took all the firms in the ExecuComp database and sorted them into five groups based on size (assets). We did this because it is well established that pay is tied to firm size: bigger firms pay more. Within each size group for each year, we sorted the CEOs into five groups based on how much compensation they actually realized. We then looked at how the stocks of each group performed relative to their industry over the previous three years. (The results are qualitatively and statistically identical if we use one year or five years.)

Figure 33 presents the results. Realized compensation is highly related to firm stock performance. Firms with CEOs in the top quintile of actual pay are the top-performing quintile relative to their industries in every size group. Firms with CEOs in the bottom quintile of actual pay are the worst-performing quintile relative to their industries in every size group. And the magnitudes of the performance differences are large. These calculations understate actual

¹⁰ Gretchen Morgenson. "A Rich Game of Thrones: At Last, Signs that Shareholders Are Making Their Voices Heard." *New York Times*. April 8, 2012.

Figure 33
Three-Year Firm Performance Relative to Value-Weighted Industry, by Quintiles, CEOs Only



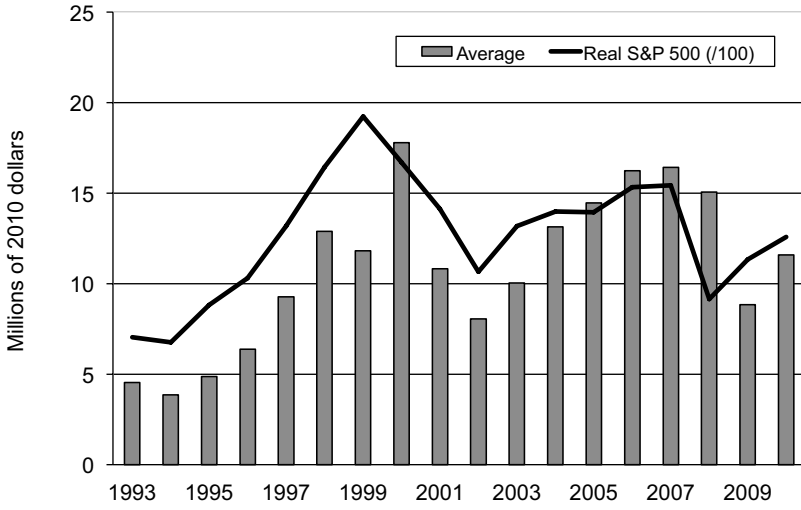
pay for performance because they value restricted stock at grant-date values. In reality, executives do not get to sell their stock at those values. At a minimum, they have to wait several years until the restricted stock vests. As a result, the values actually realized will be further tied to stock performance.

Figure 34 graphs the level of the S&P 500 index against average realized CEO pay for S&P 500 CEOs. As with the cross-section, there is a strong relationship between realized pay and stock performance in the time series.

Similarly, Frydman and Saks (2010) studied the correlation between executives’ wealth and firm performance. They found that CEO wealth has been strongly tied to firm performance since the 1930s and that the relationship “strengthened considerably” after the mid-1980s.

The evidence, thus, supports the belief that realized CEO pay and CEO wealth are strongly tied to firm performance. In their surveys, Frydman and Jenter (2010) and Murphy (2012) reach similar conclusions. They calculate an “equity at stake” that measures the change in CEO wealth from a 1 percent change in stock price. Murphy reports that the equity at stake for the median S&P 500 CEO is almost \$600,000 in 2010, and has been at that level or higher in all but one

Figure 34
Average Realized Pay of S&P 500 CEOs vs. S&P 500 Index,
1993–2010



Sources: ExecuComp, Steven Kaplan.

year since 1998. Frydman and Jenter conclude that the “long run evidence shows that compensation arrangements have served to tie the wealth of managers to firm performance—and perhaps to align Managers’ with shareholders’ interests—for most of the twentieth century.” Murphy also reports that CEOs have a large amount of wealth tied to firm performance.

The more difficult question is how much pay-for-performance is optimal and whether the current practices can become more efficient. Some argue that pay-for-performance should be increased, while others argue that pay-for-performance incentives—particularly in financial services—should be lower.

Pay-for-performance is also criticized because pay is based on absolute or actual performance rather than performance relative to a firm’s industry.¹¹ In other words, CEOs and executives are paid to some extent for general economic conditions or luck.

¹¹ For example, see Bebchuk and Fried (2006) and Bertrand and Mullainathan (2001).

Some critics also point out that CEOs of large companies who do not perform well are still paid a great deal. This, too, is complicated. CEOs of S&P 500 companies, almost by definition, have been very successful over their careers and have opportunity costs. CEOs are paid well on average because they have other opportunities; the CEO job is riskier and less certain than in the past; and the typical S&P 500 company is a large and complicated entity with more than 20,000 employees. But while CEOs who perform poorly are paid less than CEOs who perform well, poorly performing CEOs are still paid well relative to the average worker or household. As an analogy, consider two lawyers in a corporate trial. Companies will hire the best lawyers they can find. The lawyers will get paid well. Yet, one side will win and one side will lose. That does not mean that the lawyers on the losing side have no opportunity cost and should not be paid for the trial or for future trials.

8.2 Are CEOs Fired for Poor Performance?

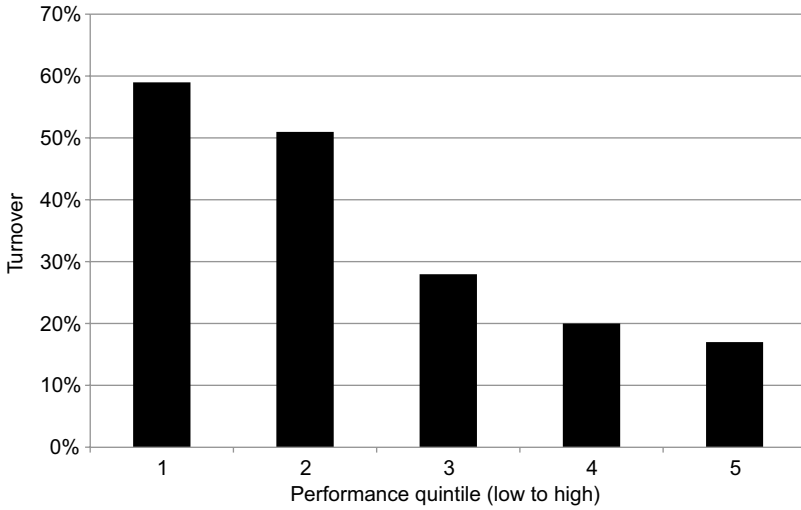
Critics contend that boards are too friendly to management. However, as described earlier, Kaplan and Minton (2012) found that CEO turnover has increased measurably since the mid-1990s. We also considered how that turnover varies with firm performance and found that turnover is significantly higher when firm performance is poor.

We divided firm performance into performance of the firm's industry and performance relative to the industry. We found that board-driven CEO turnover is strongly related to both. CEOs are more likely to lose their job when their firms perform poorly relative to the industry and when their industries perform poorly. The relationships are meaningful—and stronger from 1997 onward, suggesting that CEO incentives have become more linked to performance over time, not less.

The Kaplan and Minton results suggest that since 1998, annual CEO turnover is higher than at any time since 1970. The job is riskier: turnover initiated by the board is significantly related to industry stock performance and firm stock performance relative to the industry. That is, CEOs face significant performance pressure.

Jenter and Llewellyn (2010) present additional evidence consistent with this conclusion. They looked at CEO turnover in the 1,600-plus firms in the ExecuComp database from 1992 to 2004. They found "that boards aggressively fire CEOs for poor performance, and that the turnover-performance sensitivity increases substantially with board

Figure 35
Five-Year CEO Turnover by Firm Performance Quintile



Source: Jenter and Lewellen (2010).

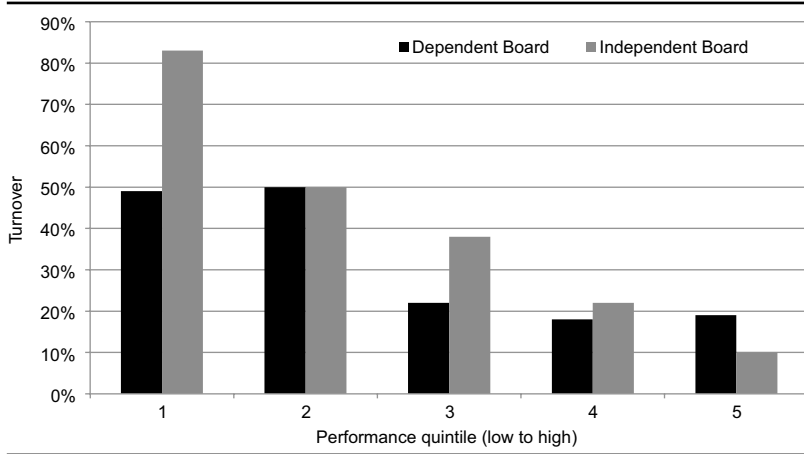
quality.” In the first five years of tenure, CEOs who perform in the bottom quintile are 42 percent more likely to depart than CEOs in the top quintile. That spread increases to more than 70 percentage points for firms with high quality boards.” (Higher quality boards have more independent directors and more director stock ownership.) Jenter and Llewellyn’s results are shown graphically in Figures 35 and 36.

As with pay-for-performance, the more difficult question is whether these differential departure rates are optimal and whether the current practices can become more efficient. See Taylor (2010) for an attempt at estimating this.

9. WHAT DO SHAREHOLDERS THINK?

It would be useful to know what shareholders think of all this. Fortunately, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 mandated that all firms with more than \$75 million in publicly traded stock hold an advisory (i.e., nonbinding) shareholder vote on the compensation of the top five executives. These votes are known as say-on-pay votes. The law went into effect for proxy

Figure 36
Five-Year CEO Turnover by Firm Performance Quintile

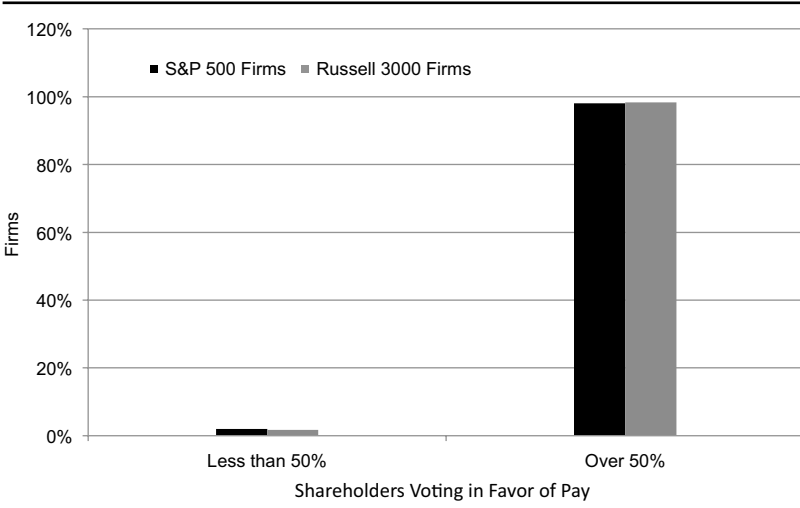


votes in 2011. According to Thomas, Palmiter, and Cotter (2011), the legislative supporters of the provision believed that by increasing shareholder power, the say-on-pay vote would reduce the CEO pay spiral and link pay to performance. This is more or less the view of those who take the managerial power position that CEOs have captured the pay process. Under the alternative view—pay levels and pay-for-performance are largely determined in a competitive market for talent—say-on-pay votes would be unnecessary. The say-on-pay votes, therefore, set up a useful test of the two views.

The results of these votes in 2011 overwhelmingly favored existing pay policies. Equilar (2011) reported that only 38 of 2,252 companies (less than 2 percent) received less than a majority of favorable votes. Only 165 (less than 8 percent) received a favorable vote under 70 percent of the voting shareholders.¹² At the same time, 1,654 companies (more than 73 percent) received a favorable vote of more than 90 percent of the voting shareholders. The results were similar at larger companies, with pay policies receiving shareholder approval at more than 98 percent of S&P 500 companies. Figures 37 and 38 report these results graphically.

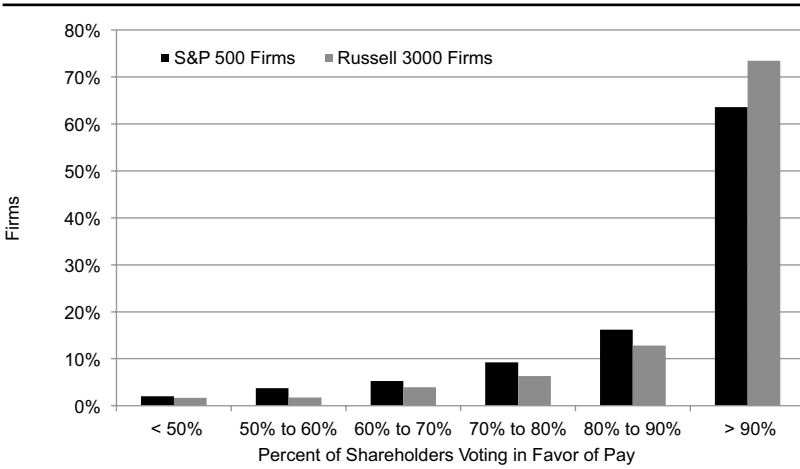
¹² Mishra (2012) reports that 182 of 2,500 firms, or 7.3 percent, received a favorable vote of less than 70 percent.

Figure 37
Say-On-Pay Favorable Votes in 2011



Source: Equilar.

Figure 38
Say-On-Pay Favorable Votes, 2011



Source: Equilar.

Those levels of approval do not appear to be a one-year phenomenon. At the time this paper was written, in the summer of 2012, more than 1,400 firms had held their annual shareholder vote for the year, and those votes followed a qualitatively similar pattern.

The few companies that did not receive majority support, as well as some of the companies with a substantial minority of “no” votes, suggest that some CEOs do exert managerial power. But they appear to be exceptions. And the “no” votes from shareholders highlight those exceptions and put pressure on boards to fix them. At the same time, the positive shareholder votes for most companies seem inconsistent with the view that CEO and top executive pay are driven largely by managerial power. Rather, the votes are consistent with a more market-based view of top executive pay for the typical company.

10. WHAT CAN WE LEARN FROM PRIVATE EQUITY INVESTORS?

In Kaplan (2008), I noted that the movement of public company CEOs to work for private equity firms and private equity–funded companies was consistent with a competitive market for executives. Private equity investors are strongly motivated to make profits. Any extra compensation to a CEO reduces the profit of a private equity investor. In addition, private equity investors control the boards of their firms, so the negotiations between boards and CEOs are at arm’s length. If public company executives were overpaid for what they do, they would not be likely to leave those public companies.

Cronqvist and Fahlenbrach (2011) studied changes in the design of CEO contracts for publicly traded firms that are taken private by private equity investors. They did not find any evidence that private equity sponsors reduce base salaries, bonuses, and perquisites. They interpret this as suggesting that CEO pay levels in public companies are not excessive.

Cronqvist and Fahlenbrach found that private equity investors—like public companies—use subjective performance evaluation and time-vesting equity, and do not condition vesting on relative industry performance. That is, CEOs of private equity–funded companies (with very concentrated ownership) are compensated for performance that is outside the control of the CEO (e.g., an oil firm’s profits increase owing to an increase in the price of oil or to another positive

industry shock). This is worth mentioning, given the criticism mentioned earlier that public company executives are paid for luck. If relative performance evaluation were meaningfully more efficient, we would expect to see private equity investors make more use of it.

At the same time, Cronqvist and Fahlenbrach found that CEO contracts make less use of earnings-based and nonfinancial measures and greater use of equity grant performance-vesting based on pre-specified performance measures, and require terminated CEOs to forfeit unvested equity. These last results suggest that private equity firms implement greater pay-for-performance than public company investors. If this is the case, it suggests one area where public company boards can do better.

11. HOW HAVE U.S. PUBLIC COMPANIES PERFORMED?

In Kaplan (2008), I argued that the U.S. economy, and particularly the U.S. corporate sector, had performed well in the previous 15 years or so, the period in which corporate governance and CEO pay have been criticized. During that period, the productivity of the U.S. economy increased substantially, both on an absolute basis and relative to other developed countries.¹³ Furthermore, the U.S. stock market had performed well.

Since I wrote that article in early 2008, the U.S. economy has gone through a financial crisis and recession. The S&P 500 has declined from a peak of 1,576 in 2007 to roughly 1,350 as this is being written. At the same time, CEO pay has declined. What has happened to the operating performance of the S&P 500?

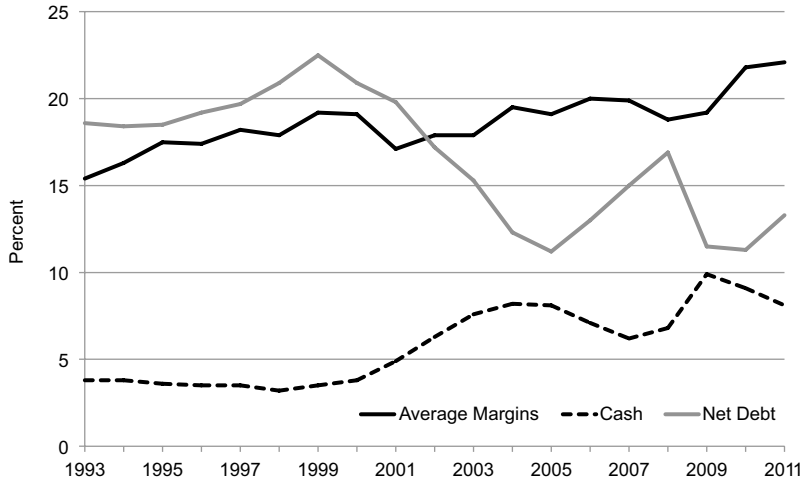
Scott Thurm of the *Wall Street Journal* recently reported that S&P 500 firms have weathered the financial crisis surprisingly well, with revenues up and debt levels down since 2007.¹⁴ This performance is consistent with reports that U.S. companies held large amounts of cash in 2011. Figures 39 and 40 confirm those results.

Figure 39 reports earnings before interest, taxes, depreciation, and amortization (EBITDA) to sales, better known as the median operating margins; net debt (total debt net of cash) to total assets; and cash to total assets for the S&P 500 companies from 1993 to 2011. (The figure uses medians because outliers make averages difficult to interpret.)

¹³ See Jorgenson, Ho, and Stiroh (2008) and van Ark, O'Mahoney, and Timmer (2008).

¹⁴ Scott Thurm. "For Big Companies, Life Is Good." *Wall Street Journal*. April 8, 2012.

Figure 39
 Median S&P 500 Operating Performance, 1993–2011



Source: COMPUSTAT.

Figure 40
 Median Sales and EBITDA Growth for
 S&P 500 Firms, 1993–2011



Source: COMPUSTAT.

Median margins increased from 1993 to 2007. They increased again, to their highest level in the period, from 2007 to 2011. Net debt declined from 1993 to 2005, increased from 2005 to 2008, and has declined to 2006 levels in 2011. Cash holdings have generally increased from 1993 to 2009 and declined slightly since then. Figure 39 shows a picture of successful operating performance at S&P 500 companies in the first few years after 1993, and again from 2007 to 2011.

Figure 40 reports median annual sales and EBITDA growth for S&P 500 companies from 1993 to 2011. Except in 2001 and 2009, EBITDA at the median S&P 500 company has grown. On average, median EBITDA has grown 7.3 percent per year. The median company in the S&P 500 increased its revenues by almost 9 percent in 2007 and increased its EBITDA by almost 14 percent from 2007 to 2011—despite the financial crisis and recession. The performance of nonfinancial companies in the S&P 500 has been even stronger.

12. SUMMARY AND IMPLICATIONS

This paper considers the evidence for three common perceptions or criticisms of U.S. CEO pay and corporate governance: (1) CEOs are overpaid and their pay keeps increasing; (2) CEOs are not paid for performance; and (3) boards do not penalize CEOs for poor performance. The evidence is somewhat different from the perceptions.

While average CEO pay increased substantially through the 1990s, it has declined since then. CEO pay levels relative to other highly paid groups today are comparable to or lower than their average levels in the early 1990s. The ratio of large-company CEO pay to firm market value is similar to its levels in the late 1970s and lower than its pre-1960s levels. And the pay for large-company CEOs relative to other high earners is comparable to its level in the early 1990s and modestly higher than in the late 1930s.

On average, CEOs, are paid for performance and penalized for poor performance, with a large fraction of stock options and restricted stock in the typical CEO pay package.

Finally, boards do monitor CEOs, and that monitoring appears to have increased over time. CEO tenures in the 2000s are lower than in the 1980s and 1990s. And CEO turnover is tied to poor stock performance.

Shareholders largely approve of the current state of executive pay and corporate governance. In the first year of the Dodd-Frank mandated say-on-pay votes (2011), top executive pay policies

received majority shareholder support at roughly 98 percent of S&P 500 and Russell 3000 companies.

Murphy (2012) concludes his impressive and detailed survey of executive compensation with the finding that executive compensation is affected by the interaction of a competitive market for talent, managerial power, and political factors. That conclusion is hard to disagree with.

There have been corporate governance failures and pay outliers where managerial power surely was exercised. And CEO pay levels are still very high relative to the typical household or person. Those are sources of the common perceptions. That said, a meaningful part of CEO pay appears to have been driven by the market for talent. In recent decades, CEO pay is likely to have been affected by the same forces of technology and scale that have led to the general increase in incomes at the very top.

For researchers, this evidence still leaves a number of questions unanswered. In particular, it would be useful to quantify the relative contributions of the market for talent, managerial power, and other considerations. And there is certainly room for more work on understanding what incentives are appropriate under what circumstances, particularly in financial versus nonfinancial businesses.

As for corporate boards, this evidence explains why compensation and the role of boards are likely to remain challenging, if not controversial. The market for talent puts pressure on boards to reward their top people at competitive pay levels to both attract and retain them. At the same time, boards must be sensitive to the accurate perception that executive pay is high relative to median household income and to the negative publicity from pay and governance outliers. Those perceptions and the current lackluster economy create political and popular pressure to reward top people with less.

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Comment

Carola Frydman

The rapid rise in the level of executive compensation and the transformation in the structure of pay contracts in American publicly traded corporations since the 1980s has sparked a lively but as yet unresolved academic debate on the sources of those changes. While many different theories have been proposed, two main views—the managerial power theory and the efficient contracting theory—are predominant. Succinctly, the managerial power view argues that executive pay is the result of rent extraction by chief executive officers that control corporate boards. Pay levels are, therefore, inefficient. In contrast, defenders of the efficient contracting theory state that the competitive labor market for managerial talent determines pay, and that corporate boards attempt to align the incentives of CEOs to those of shareholders.

In his paper, Steven Kaplan presents a wide array of stylized facts to dispel some of the commonly held perceptions on executive compensation. Undeniable cases of failure in corporate governance and egregious high levels of pay give credence to the managerial power view. But while the pay of some executives likely results from rent extraction, establishing whether or not this mechanism determines the compensation of the typical CEO is not easily done. The author argues that aggregate data on executive compensation and turnover, at least for the representative CEO, are more consistent with the efficient contracting view.

Many of the stylized facts won't be surprising to researchers familiar with the executive compensation literature and with Kaplan's previous work. His important contribution in this paper is bringing together an extremely large set of facts and offering a

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cohesive interpretation of them. Overall, I agree with the basic premises. These are the main facts we have to contend with if we hope to establish why executive compensation has evolved in a particular way. The interpretation of the facts is more difficult, and I suggest a few areas in which further study is required to strengthen our understanding of the evidence. I argue that a dichotomous debate between rent extraction and efficient contracting has been somewhat stifling for academic research, with each camp providing a rationalization for each characteristic of real compensation contracts (Frydman and Jenter 2011). As Kevin J. Murphy (forthcoming) convincingly argues, advancing our knowledge will require addressing the numerous complexities of executive pay.

PERCEPTIONS, FACTS, AND INTERPRETATION

Kaplan contends with two main perceptions regarding the *level* of executive pay. First, the increase in the real level of total pay was only marked during the 1990s, particularly for CEOs of S&P 500 firms. Over the last decade, executive compensation has declined for the average executive and remained roughly constant for the median CEO. This fact, it is argued, dispels the commonly held view that executive pay has steadily increased in recent decades.

Kaplan focuses less on the different patterns of the median and the mean, yet this difference is actually quite informative. Because the distribution of compensation is highly skewed, the mean tends to be influenced by outliers whereas the median is a better measure of compensation for the typical executive. Thus, the decline in average pay suggests that extremely large paychecks have not been as common during the last decade as they were in the 1990s. A defender of the managerial power hypothesis could therefore argue that rent extraction was a significant force behind the rise in pay during the 1990s, and that those “excessive” levels of pay have started to correct themselves in the 21st century.

The second and, I believe, more relevant perception regarding the level of pay is that CEOs are overpaid. Pay levels are undeniably high but, as Kaplan correctly emphasizes, the real question is whether these high levels are excessive or optimal. The author presents a series of facts to argue that the latter view is the more plausible interpretation. First, adjusting total CEO pay for the likelihood of losing the executive job would probably indicate lower executive pay

over the past two decades since job separations have become more common. Moreover, the pay of a typical CEO has been constant relative to the market value of firms. Finally, several other occupations—such as executives of privately held firms, hedge fund managers, lawyers, and sports stars—have experienced equally rapid increases in remuneration. This fact is relevant for two reasons. Some of these jobs may be valid outside options for executives of publicly held firms. If compensation increases in the financial sector, for example, other companies will have to raise their remuneration of CEOs to retain executive talent. Moreover, these companies suffer less from the corporate governance problems that affect publicly traded firms, such as lack of observability of the manager's productivity. Since the rise in pay over time for these occupations cannot be explained by a rent extraction motive, the paper suggests that this theory is unlikely to explain the similar increase in the remuneration of CEOs of publicly traded firms.

In my view, Kaplan's argument highlights how difficult it is to determine the relevant labor market for top executives and what constitutes valid outside options for talented executives. Remuneration for managerial jobs in privately held firms seems a more appropriate comparison than the earnings of sports stars or, to some extent, lawyers. Moreover, precisely because the governance of publicly traded firms is prone to monitoring and information problems not present in other types of organizations, it is possible that the factors driving compensation patterns differ, to some substantial degree, across occupations.

A better understanding of these issues is necessary if we hope to determine what the optimal level of pay is in practice. A competitive labor market model would set remuneration to compensate for the value of the marginal product of labor. In bargaining or principal-agent models, the level of pay would, to some extent, depend on the best outside option. Some have argued that CEO candidates are able to extract large rents during the hiring process (Khurana 2002); others view a competitive labor market as a better description of the matching process between CEOs and firms (Gabaix and Landier 2008). The competitive model faces a further challenge because firms competing for talent would need to bid up the level of pay if some firms offered higher wages to attract talent, leading to widespread overpayment (Acharya and Volpin 2010).

Regarding the *structure* of contracts, Kaplan's paper dispels two related perceptions. While some believe that executive pay is not linked to firm performance, a comparison of firms of similar size reveals that executive pay is higher following years of good performance. A second perception is that boards do not punish CEOs for poor performance. However, the likelihood of separation, which has increased in recent decades, is higher following poor performance, particularly when boards are independent. These are important facts, deserving of attention. As difficult as it is to set the structure of pay optimally, contracts appear to be moving in the right direction as boards increasingly reward CEOs for good performance and punish them for bad outcomes.¹

LEARNING FROM THE LONG-RUN TRENDS IN PAY

The compensation of top executives has been a contentious issue, and the discussion has remained remarkably consistent since the separation of corporate ownership from corporate control at the turn of the 20th century. During the Roaring Twenties, the U.S. government started to investigate the pay of executives in high-compensation industries like finance and transportation. Defenders of the managerial ranks argued,

Some of our railroad men get big salaries. What of it? They earn them. . . . All these men, and thousands more in many fields of service, see clearly, think accurately, trust their judgment, and take the risk. . . . Executives are rare, so rare that they get big salaries—and smaller men snarl at them. But progress depends on such exceptional men, and we should trust them with our biggest tasks and concede them the rewards that genius and grit deserve.²

Fortunately, and unique to the American experience, we do not need to rely on public opinion about the size of executive pay in earlier decades because we have quantitative information. Following

¹ It is important to note that increasing the correlation of pay to firm performance is not always an improvement. For example, compensation contracts may give CEOs an incentive to take on too much risk. An interesting area for future research would be to better assess the distortions introduced by the structure of contracts.

² Boston News Bureau. "They Earn Their Salaries" (editorial). *Wall Street Journal*. February 27, 1923.

the Great Depression, the newly established Securities and Exchange Commission began requiring the disclosure of executive pay for all publicly traded corporations. Thus, compensation can be tracked fairly consistently since the 1930s. The long-run changes in compensation and in the market for managers are revealing. First, the median level of pay was much lower from the 1940s to the 1970s, a period in which the governance of firms was arguably much weaker than it has been in the recent decades. Moreover, sharp changes occurred in the late 1970s: the level of pay increased at rates that had not been seen before; the use of equity-based pay became an increasingly large fraction of compensation packages; executives began moving across corporations and even across industries late in their careers, and total pay, which had until then been unrelated to the aggregate growth of firms, became highly correlated with the size of the typical publicly traded corporation (see, for example, Frydman 2007, Murphy and Zábojník 2008, Frydman and Saks 2010).

Theories that attempt to explain the changes in executive pay in recent decades will have to confront the evolution of the long-run trends as well. For example, it is possible that the increase in firm scale, coupled with competition for managerial talent, accounts for the growth in pay since the 1980s. But was talent any less scarce during the 1950s and 1960s, when the size of firms expanded at a similar pace? If not, what other market-based or institutional differences can explain the differential paths in pay and managerial careers between these two periods?

IT'S COMPLICATED AND CHALLENGING

To most individuals knowledgeable about the long-run trends in income inequality in the United States, the evolution of executive compensation over time may not seem so surprising. CEO pay remained low when the distribution of income was compressed, and it grew as the society became more unequal. To account for the changes in income inequality over the 20th century, researchers have mostly focused on the interactions among skill-biased technological change, the relative supply and demand for skills, and various institutions that affect the distribution of earnings (see, e.g., Goldin and Katz 2010). The factors that explain the evolution of income inequality are complex and intertwined, and this insight seems also applicable to executive compensation. In a forthcoming article, Murphy

argues that any convincing explanation of executive compensation would be intrinsically complicated. Kaplan's paper echoes this view, and I concur. I am hopeful that future research will be inspired by the work on income inequality and will attempt to link, both theoretically and empirically, the interactions among scale effects, the relative supply of and demand for managerial talent, corporate governance, and the various regulations that affect how firms remunerate their executives.

An assessment of these complexities is relevant for two main reasons. First, a better understanding of the determinants of compensation would be central for public policy. Given that regulations may have unexpected or undesirable consequences, future policies should be grounded in a detailed understanding of managerial markets. Second, structuring the academic debate around two opposing views—managerial power versus efficient contracting—has been somewhat counterproductive for academic research. In a recent literature review, Dirk Jenter and I found that most characteristics of real world compensation contracts have been interpreted as consistent with *either* view (Frydman and Jenter 2010). Based on such cross-sectional evidence, siding with either camp is problematic. Thus, one challenge for future theoretical work is to produce testable predictions that can differentiate between the two approaches.

Although the debate is often cast as opposing views, these two hypotheses are not mutually exclusive. Better theoretical and empirical understanding of the interactions between efficient contracting and managerial power—as well as the regulations that affect managerial contracts—may greatly further our knowledge. Another remaining challenge is to generate a more detailed knowledge of how the labor market for executives works. Learning more about hiring and promotion decisions and executives' career paths and choices may help better guide our models in the future.

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Comment

Lucian Taylor

I believe the facts Steven Kaplan presents, and I also mainly believe his interpretation. Although some of these views may be controversial among the general public, neither the facts nor the interpretation will come as a surprise to researchers working in this area. As Kaplan points out, the paper mainly surveys existing research. However, his paper performs an important service by communicating some recent research on these topics to the public.

Kaplan's paper just scratches the surface of a very large body of research on executive pay and governance. The first part of my comment provides a few more facts about pay and governance from other research papers. The second part of my discussion argues that facts are not enough, and that we sometimes need theory to help us interpret the facts.

BLOCKHOLDERS

Corporate governance aims to solve agency problems. Shareholders are the principal, and the chief executive officer and other top executives are the agents. The question here is how we can make sure a firm is being run in shareholders' best interests, given that the shareholders cannot run the firm themselves. Shareholders must hire CEOs and other top executives to run the firm, but those executives' interests may not align with shareholders' interests.

There are two main ways we get executives to do the right thing for shareholders in two ways. First, we provide them with incentives: we tie their pay to the firm's performance, and we threaten to fire them if the firm performs poorly. Second, we monitor them. Shareholders hire the corporate board of directors to monitor the CEO.

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For example, the CEO will likely need the board's approval before acquiring another company. It also falls on the board to provide the CEO with the right incentives—that is, to set the CEO's compensation contract and potentially replace the CEO.

But who makes sure the board is acting in shareholders' best interests? Directors are themselves agents whose interests are not necessarily aligned with shareholders' interests. In other words, there is a second layer of principal-agent conflict between shareholders and the board. In theory, we can solve this second agency like we solved the first one, through providing incentives and direct monitoring. We give boards several types of incentives: directors typically own shares in the firm, so their wealth is tied to the firm's performance; shareholders can replace directors after bad performance; and directors care about their reputation.

Moving up one level, who monitors the board, and who makes sure the board has the right incentives? This is a crucial question, because if boards are not acting in shareholders' interests, there is little hope that the CEO will act in shareholders' interests. As the picture suggests, it is shareholders who need to monitor the board and make sure the board has the right incentives. But the problem is this: if the typical shareholder is small, then what incentives do shareholders have to make sure the board is doing its job? If you are anything like me, your investments are diversified across many companies. Your ownership of any single company is so small that you do not have much incentive to make sure that company's board is doing its job. A firm's many small shareholders would have difficulty coordinating with each other.

One potential solution is government intervention. We could create laws that ensure the board has strong enough incentives and let regulators monitor the board. That way, shareholders would know they are buying a "safe" product when they invest in a company, just like we know we are buying a safe drug when we go to the pharmacy, thanks to the Food and Drug Administration's oversight.

The good news is that we do not need government intervention to solve this problem, because there is a market solution. The solution to this problem is to let a large shareholder, called a blockholder, monitor the board. The blockholder's large stake in the company provides an incentive to figure out whether the board is doing its job and to intervene if it is not. Thus, blockholders can make this governance system work well.

Blockholders are pervasive. Here are some facts from a recent paper by Holderness (2009):

- Some 96 percent of U.S. public firms have a blockholder, defined as a shareholder who owns at least 5 percent of the shares.
- Blockholders own 39 percent of a firm, on average.
- Three times as many firms have a majority blockholder as have no blockholder.
- Ownership is less concentrated in larger firms, but even 89 percent of S&P 500 firms have blockholders.
- Ownership concentration in the United States is similar to concentration in other countries.

Since blockholders are pervasive and have a strong incentive to monitor boards of directors, we have some hope that boards are acting in shareholders' interests.

WHAT HAPPENS TO CEOs WHO GET FIRED?

Citing research by Jenter and Lewellen (2010), Kaplan shows that poorly performing CEOs are much more likely to leave their firm. Presumably, many of those CEOs were fired. An important follow-on question is whether being fired is costly to a CEO. If not, then the threat of being fired does not provide CEOs with a strong incentive to perform.

CEOs typically receive separation pay upon leaving the firm, which makes being fired less costly to the CEO. Goldman and Huang (2010) collect data on separation payouts to 609 S&P 500 CEOs who left office between 1993 and 2007. Only 287 of those CEOs received a separation payout, so the median separation payout was zero. For those CEOs who received a nonzero payout, the average payout was \$9.5 million, which is roughly 290 percent of their average annual salary. The \$9.5 million amount pools together CEOs who leave the firm voluntarily and those who are fired. From Yermack (2006), we know that separation pay is several times higher if the CEO was forced out of the firm. To the extent that CEOs expect a separation payout upon being fired, the payouts soften the blow and make the threat of dismissal a weaker incentive for CEOs.

One cost of being fired is that it is potentially harder to find a new job. Fee and Hadlock (2004) examine the future employment

outcomes for S&P 500 CEOs who left their jobs between 1993 and 1998. They show that for executives under age 60 who were forced out, only 34 percent found future work in an executive role ($n = 253$). For executives under age 60 who left as part of a scandal, only 13 percent found future work in an executive role ($n = 16$). For CEOs who left the firm and did manage to become CEO elsewhere, the median new firm was 90 percent smaller ($n = 12$). Since executive pay is strongly positively correlated with firm size, this last result suggests that those CEOs took a large pay cut. These results together suggest that executives do have trouble finding high-quality jobs after they are forced out of the firm, which provides CEOs with an incentive to perform well and avoid being fired.

COMPENSATION PEER GROUPS

As Kaplan points out, there are examples of “corporate governance failures and pay outliers where managerial power surely was exercised.” He argues that the problems are mainly outliers and isolated cases. However, examples of “managerial power” are widespread and easily found, not just a case of a few outliers. Next I provide one example.

When setting a CEO’s pay, the board’s compensation committee typically benchmarks the pay level against the pay level in a peer group of similar firms. The choice of peer group is subjective and at the firm’s discretion. For example, in 2006 the pharmaceutical firm Pfizer stated, “The Committee sets midpoint salaries, target bonus levels, and target annual long-term incentive award values at the median of a peer group of pharmaceutical companies and a general industry comparator group of Fortune 100 companies.” (Faulkender and Yang 2010). The pharmaceutical peers included Abbott Labs, Amgen, Merck, and a few other firms. The “general industry comparator group” included several firms that look quite different from Pfizer, including Walt Disney, Wells Fargo, General Motors, and others.

The potential problem is that CEOs may wield power over their pay by convincing the compensation committee to choose a favorable set of peer firms. In other words, firms may be able to cherry pick the peer group so as to pay the CEO as much as they want.

In 2006, the Securities and Exchange Commission required that firms start disclosing which other firms they choose as their peer group. Faulkender and Yang (2010) analyzed data on firms’ choice of

peer group. They found that firms tend to choose highly paid peers to justify their high CEO compensation. In other words, firms do appear to cherry pick peer firms with high pay. The effect is especially strong when the peer group is smaller, the CEO is the chairman of the board, the CEO has longer tenure, and the directors are busy serving on multiple boards. Their interpretation is that CEOs can wield power over the level of pay via the choice of peer group, especially in firms with weaker governance. This manifestation of managerial power is widespread across firms, not a matter of a few outliers.

FACTS ARE GREAT, BUT MODELS HELP, TOO

Kaplan's paper presents many empirical facts, which provides a great service. However, next I will try to argue that facts alone are not enough. Models sometimes provide surprising, counterintuitive lessons about what good governance looks like. Also, a model sometimes helps when interpreting the empirical facts. The following example, drawn from Taylor (2010), illustrates this point.

According to data from 1970 to 2006, on average roughly 2 percent of CEOs are fired per year. (The rate has gone up in recent years, a point I will come back to.) Total CEO turnover is higher than 2 percent per year, but most turnovers represent voluntary successions rather than firings. The 2 percent firing rate seems low, and it is tempting to conclude that CEOs are entrenched and directors are not acting in shareholders' interests.

However, the literature provides little guidance for making such judgments. For example, it is not clear what firing rate we should expect from a well-functioning board. Therefore, it is difficult to judge whether the observed 2 percent rate is low or high. If it is indeed too low, it is not clear how much shareholder value is being destroyed.

My goal (in Taylor 2010) was to provide a benchmark for the CEO firing rate and to quantify the amount of shareholder value at stake. The benchmark is a model in which a rational board of directors has to decide each year whether to replace its CEO. Some CEOs have high ability, others have low ability. The board faces a tradeoff: firing a low-ability CEO will increase the firm's future profits, but in the short term, firing the CEO is costly. One complication is that we cannot directly observe a CEO's ability. Instead, we learn about it gradually over time.

By taking that model to the data, I found some interesting results:

- The 2 percent observed firing rate is indeed low, in the sense that to produce a 2 percent firing rate, boards must behave as if firing the CEO costs at least \$200 million.
- There is evidence of entrenchment: Boards behave as if firing the CEO costs at least \$200 million, but really it costs the firm much less to replace the CEO. The gap between the *perceived* and *actual* turnover cost indicates that boards find it very unpleasant to fire their CEO. In other words, CEOs are entrenched.
- The degree of entrenchment was 73 percent lower in 1990–2006 compared to 1971–1989, mainly because the rate of forced turnover was much higher (3 percent per year) in the later subsample.
- Using results from the 1990–2006 subsample, shareholder value would rise by just 1.4 percent if we could somehow eliminate entrenchment, all else being equal.

One question I was not able to answer (in Taylor 2010) is how much CEO entrenchment is optimal for shareholders. Zero entrenchment is probably not optimal, since firms might have a hard time attracting talented CEOs if those CEOs face a high chance of being fired.

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