

Executive Compensation: Where We Are, and How We Got There

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Abstract

In this study, I summarize the current state of executive compensation, discuss measurement and incentive issues, document recent trends in executive pay in both U.S. and international firms, and analyze the evolution of executive pay over the past century. Most recent analyses of executive compensation have focused on efficient-contracting or managerial-power rationales for pay, while ignoring or downplaying the causes and consequences of disclosure requirements, tax policies, accounting rules, legislation, and the general political climate. A major theme of this study is that government intervention has been both a response to and a major driver of time trends in executive compensation over the past century, and that any explanation for pay that ignores political factors is critically incomplete.

JEL classification: G34, G38, J31, J33, J38, K22, K34, M12, M41, M48, M52

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1. Introduction

The first decade of the new century brought significant changes to executive compensation in large US companies. Rocked by scandals ranging from accounting fraud to option backdating – coupled with suspicions that Wall Street bonuses led to excessive risk taking that triggered the financial crisis – compensation committees faced a plethora of new pay-related laws and tax, accounting, and disclosure rules designed to stem perceived abuses in executive pay. After more than tripling (after inflation) during the 1990s stock-option explosion, the median total pay for chief executive officers (CEOs) in the S&P 500 remained relatively stagnant in the early 2000s, and indeed even declined during the 2008-2009 Great Recession. But, the flattening of pay levels belied significant structural changes in the composition of pay, as companies adapted to the new regulations and jettisoned stock options in favor of restricted stock. Moreover, realized pay for top-level executives was postured for a new explosion in the second decade of the 2000s, as stock and options granted near the bottom of the market in 2009 became vested and exercisable. These trends suggest the outrage over executive pay – recently reflected by the “Occupy Wall Street” movements and in calls from the Obama administration for increased tax rates for “millionaires and billionaires” – will likely continue unabated over the next several years.

The recent controversies over executive pay are not the first – nor will they be the last – time that executive compensation has sparked outrage and calls for regulation and reform. Indeed, scrutinizing, criticizing, and regulating high levels of executive pay has been an American pastime for nearly a century. In 1932, for example, controversies surrounding high salaries for executives in bailed-out railroads led to pay disclosures and pay caps; disclosure requirements were soon extended to banks, utilities, and large corporations, and further extended to all publicly traded companies following the 1933 and 1934 Securities Acts. Outrage over perceived excesses in “restricted stock option plans” in the 1960s led Congress to prohibit repricing, reduce maximum expiration terms, restrict exercise prices, and extend required holding periods after exercises. In the 1980s, Congress imposed large tax penalties on firms paying (and executives receiving) large severance payments following a change in control, and in the 1990s non-performance-based pay exceeding \$1 million was deemed unreasonable and therefore not deductible as an ordinary business expense for corporate income tax purposes. Therefore, the recent backlash over executive pay associated with the accounting and backdating scandals and the financial crisis – triggering Sarbanes-Oxley, new disclosure and accounting rules, restrictions on deferred compensation, and myriad pay

regulations under the Dodd-Frank Act – continues a tradition of regulatory responses to perceived excesses and abuses in top-level pay.

The purpose of this study is to document the current state of executive compensation and to show how the level and structure of CEO pay over the past century has evolved in response to economic, institutional, and political factors. My intention is not to provide a comprehensive survey of the academic literature on executive compensation (or even a systematic update of Murphy (1999)), but rather to document a body of facts to guide future theoretical and empirical research in the area. I show that government intervention into executive compensation – largely ignored by researchers – has been both a response to and a major driver of time trends in CEO pay. There have been two broad patterns for government intervention into CEO pay. The first pattern is aptly described as knee-jerk reactions to isolated perceived abuses in pay, leading to disproportionate “one-size-fits-all” responses and a host of unintended and undesirable consequences. The second pattern – best described as “populist” or “class warfare” – arises in situations where CEOs (and other top executives) are perceived to be getting richer when lower-level workers are suffering. Beyond these two broad patterns, indirect intervention in the form of accounting rules, securities laws, broad tax policies, and listing requirements have also had direct impact on the level and composition of CEO pay. In most cases, companies and their executives have responded to the interventions by circumventing or adapting to the reforms, usually in ways that increased pay levels and produced other unintended (and typically unproductive) consequences.

More broadly, this study provides institutional context useful in “explaining” time trends in the level and structure of CEO pay. As emphasized by Frydman and Jenter (2010) and explored below in Section 5, the academic literature focused on explaining these trends is roughly divided into two camps: the “efficient contracting” camp and the “managerial power” camp. The efficient-contracting camp – rooted in optimal contracting theory – maintains that the observed level and composition of compensation reflects a competitive equilibrium in the market for managerial talent, and that incentives are structured to optimize firm value. The managerial-power camp – exemplified in a series of papers by David Yermack, Lucian Bebchuk and Jesse Fried – maintains that both the level and composition of pay are determined not by competitive market forces but rather by captive board members catering to rent-seeking entrenched CEOs. Frydman and Jenter (2010) conclude that neither camp offers convincing explanations for cross-sectional and time-series patterns in the data.

The efficient-contracting and managerial power camps are not mutually exclusive. For example, in a series of papers designed to explain the escalation in option grants in the 1990s,

I have argued that stock options were granted in such large quantities to so many employees in the 1990s because boards and executives (erroneously) perceived options to be essentially free to grant.¹ This explanation might be viewed as a combination of both camps: directors yielded to shareholder pressure to tie more closely to equity values, but were duped by managers into the idea that options were free to grant, thus leading to massive grants without any noticeable reductions in other forms of pay. However, as will become clear in Section 3.7 below, a more-complete explanation must include the role of government: the option explosion in large part caused by changes to tax and accounting rules coupled with changes in disclosure, holding, and listing requirements.

In essence, the efficient-contracting camp views executive pay as mitigating agency problems between executives and shareholders, while the managerial-power camp views excessive pay as symptomatic of agency problems between shareholders and board members (who often own only a trivial fraction of their firm's common stock and who are in no sense perfect agents for the shareholders who elected them). The reason government intervention into executive pay adds an important new dimension to the analysis is because the interests of the government differ significantly from those of shareholders, directors, or executives. In particular, as will become evident from the legislative history in Section 3 below, Congressional (and, more generally, public) outrage over executive pay is almost always triggered by perceived excesses in the *level* of compensation without regard to incentives and company performance, and the regulatory responses have also fixated on pay levels (albeit with little effect).

Limitations on the form of government intervention add another interesting dimension to the agency problem. In most circumstances, Congress has stopped short of directly capping the level of pay or imposing restrictions on its structure.² However, Congress controls the tax code (including individual and corporate tax rates, punitive excise taxes, and defining what compensation is "reasonable" and therefore deductible by the company), and has routinely used tax rules to regulate pay. In addition, Congress (through its influence on

¹ See, for example, Murphy (2002), Murphy (2003), and Hall and Murphy (2003).

² Congress has occasionally attempted to cap wage increases. For example, the World War II Stabilization Act of 1942 froze wages and salaries (for all workers, not just executives), and the 1971 Nixon wage-and-price controls imposed a 5.5% limit on increases in executive pay (the limit being binding for company-defined groups of executives, but not necessarily for individual executives). In addition, Congress has occasionally imposed restrictions on individual pay components, such as Sarbanes-Oxley's prohibition on company-provided loans. More recently, Congress directly (and enthusiastically) regulated both the level and structure of pay for executives in financial services firms receiving assistance under Treasury's Troubled Asset Relief Program ("TARP"); see Section 3.8.5 below.

the SEC) indirectly controls disclosure requirements, long the favorite (and singularly most ineffective) tool used to control perceived abuses in pay. Ultimately, attempts to regulate the level of pay through tax and disclosure rules (instead of direct pay caps) have allowed plenty of scope for circumvention and opportunism and other unintended consequences, often leading to the next round of scandals and government responses.

Section 2 (“Where We Are”) analyzes the level and structure of CEO pay packages, discusses measurement issues, explores 1970-2011 time trends and, more generally, serves as a primer on executive compensation. I distinguish between three different measures of total compensation: (1) grant-date pay (based on grant-date values for stock and options, and target values for bonuses); (2) realized pay (based on the vesting of stock awards and the gains from exercising options); and (3) risk-adjusted pay (expected pay from the perspective of risk-averse CEOs). I document the dramatic increase in CEO pay during the 1990s, driven primarily by an unparalleled escalation of stock option grants, and the flattening of pay during the early 2000s (as firms replaced option grants with stock awards). In addition, I provide 1992-2011 time-series evidence on the relation between CEO wealth and shareholder wealth and stock-price volatilities, and discuss incentive issues related to bonus plans and earnings announcements.

Section 3 (“How We Got There”) provides a history of CEO pay in the United States, emphasizing the causes and consequences of government interventions, which have substantially prohibited what would otherwise be highly desirable and productive pay practices. I begin by examining the controversies leading to the first public disclosures of executive pay in the 1930s, which in turn laid the groundwork for all future controversies of and interventions into U.S. CEO pay. I document the rise and fall of restricted stock options in the 1950s, created and ultimately destroyed by changes in tax rules. I discuss how wage-and-price controls and a stagnant stock market facilitated an explosion in perquisites in the 1970s; the surrounding controversy led to new tax and disclosure rules (but did not seem to lead to a reduction in perquisites). I show how penalties on golden parachutes in the 1980s appears to have increased the prevalence of change-in control plans; tax gross-ups, early exercise of stock options, and employment agreements. While the increase in option grants in the 1990s in part reflected increased pressure from shareholders to tie CEO pay more closely to performance, I show that the option explosion is largely attributed to tax, accounting and disclosure rules coupled with changes in holding and listing requirements that favored stock options over other forms of incentive compensation. Next, I speculate that the increased reliance on options helped fuel the accounting and backdating scandals in the early 2000s, which in turn led to a variety of government responses and subsequent changes in

compensation (including the move toward restricted stock). I then discuss the pay restrictions for recipients of government bailouts during the financial crisis. Finally, I discuss the ongoing implementation of the Dodd-Frank Act.

Section 4 provides international comparisons of CEO pay, based largely on my joint work with Nuno Fernandes, Miguel A. Ferreira, and Pedro Matos (Fernandes, et al. (2012)). Based on recently available data from 14 countries with mandatory pay disclosures – we show that the stylized fact that U.S. CEOs earn substantially more than foreign CEOs is wrong, or at least outdated. In particular, the “US Pay Premium” became statistically insignificant by 2007 and largely reflects a risk premium for stock-option compensation (which remains more prevalent in the United States than in other countries). In reaching this conclusion, we control not only for the “usual” firm-specific characteristics (e.g., industry, firm size, volatility, and performance) but also for governance characteristics that systematically differ across countries. The remaining differences in pay are largely explained by evolutionary differences in the politics of pay. In particular, Section 3 showed that CEO pay reflects, in part, political responses to perceived (or actual) abuses in pay. Since those perceived abuses differ across countries, the evolution of pay has also differed. For example, CEO pay became highly controversial in both the United States and the United Kingdom in the early 1990s. In the United States, the (likely unintended) result of the controversy was the explosion in stock option grants. In the United Kingdom, the result of a slightly different controversy was to essentially move away from options in favor of performance shares and other forms of equity-based compensation.

Section 5 uses the results in the prior sections to suggest a general theory of executive compensation. I argue that viewing efficient contracting and managerial power as competing hypotheses to “explain” executive compensation has not been productive, since the hypotheses are not mutually exclusive and because they ignore critical political factors and other influences on pay. Ultimately, what makes CEO pay interesting, complicated, and worthy of continued investigation is that the paradigms co-exist and interact.

2. Where we Are: A Primer on Executive Compensation

2.1. Measuring Executive Pay

Underlying every intra-firm, cross-sectional, cross-country, or time-series analysis of executive compensation is an assumption (too often implicit) about how to measure the total

compensation received by the executives. If executives were simply paid a base salary set at the beginning of each year, it would be easy to compare salaries across executives (within a firm or across firms, industries, and countries) to identify the highest paid, to compare salaries across years to determine how pay has changed over time, and to compare executive salaries to wages paid in other occupations. But consider the following:

- Executives receive compensation in a dizzying array of forms, including base salaries, annual bonuses, long-term incentives, restricted stock, performance shares (i.e., restricted stock with performance-based vesting), stock options, retirement benefits, and perquisites ranging from health benefits to club memberships and personal use of the corporate jet.
- Many of these forms of compensation depend on performance measured over a single or multiple years, and it is not obvious how (or when) to measure them. For example, stock options (which give the executive the right, but not the obligation, to buy a share of stock at a predetermined price) typically have terms of up to ten years. Should stock options be “counted” as compensation when granted, or only when exercised?
- In addition, executives routinely receive lump-sum amounts at various points in time, such as signing bonuses when joining their firms, severance payments upon termination, and change-of-control payments when their companies are taken over. Moreover, some payments “earned” while employed (such as defined-benefit pension obligations) are not paid until long after the executive is retired and his compensation is no longer reported (or sometimes paid as a lump-sum upon retirement). Again, it is not obvious how, or when, to measure these aspects of compensation.
- Finally, different components of compensation impose different amounts of risk on executives. The payoffs from stock options, for example, are inherently more risky than are payoffs from restricted stock, which in turn are more risky than base salaries. Risk-averse and undiversified executives will naturally place a lower value on riskier forms of compensation, and yet most studies of executive pay simply (and blindly) add together these different forms of compensation. The “risk premium” executives attach to different forms of compensation depend on observable characteristics such as risk aversion and diversification, and it is not obvious how to add or how to weight the various components.

2.1.1. “Grant-date” vs. “Realized” Pay

While the ultimate value of stock awards and stock options is not known until the stock vests and the options are exercised, these equity awards clearly have a value upon grant. Perhaps the most critical choice facing researchers in executive compensation is whether to measure the compensation associated with equity awards as the amount actually realized upon vesting and exercise, or to assign an “ex ante” grant-date value. Most academic research on executive compensation since the mid-1980s have adopted the ex ante approach, valuing stock awards as the fair market value on the date of grant (i.e., the grant-date stock price multiplied by the number of shares granted), and valuing stock options on the grant date using some variant of the Black and Scholes (1973) formula.

When total compensation is measured using grant-date values, it is routinely referred to as *expected compensation* to distinguish it from *realized compensation* as measured at the time the stock vests and the options are exercised.³ However, calling the grant-date pay “expected” is somewhat loose:

- For restricted shares (i.e., shares to be delivered at a future point in time), the grant-date stock price is the discounted expected value only if there are no performance hurdles, no dividends (or if the executive receives dividends on restricted shares, which is common) and only if there is no risk of forfeiture (i.e., no risk that the employment relation is terminated by either party prior to vesting).
- For stock options, the Black-Scholes value is the discounted expected payoff of a non-forfeitable option exercisable only on its expiration date for an executive who perfectly hedges away the risk of the option (or, alternatively, the expected payoff under the risk-neutral distribution discounted at the risk free rate).
- As discussed below in Section 2.1.2, the grant-date value (for either stock or option awards) is not a measure of value from the perspective of risk-averse undiversified executives who cannot hedge away the risk. However, with appropriate adjustments for dividends, forfeiture, dilution, and (for options) early exercise, the grant-date value can be an appropriate estimate of the cost to the company of granting restricted stock or options.

³ Standard & Poor’s ExecuComp database – the most widely used data in executive compensation research – defines grant-date and realized compensation as “TDC1” and “TDC2,” respectively. However, since the value of restricted shares upon vesting has only been disclosed since 2006, ExecuComp actually measures TDC2 using grant-date values for restricted shares (and exercise gains for options).

Similarly, bonus plans have a “grant-date value” typically measured as the target bonus, paid when the company achieves (usually accounting-based) target performance. However, even when target performance equals expected performance, the target bonus is only the “expected bonus” when the rewards and penalties for surpassing or missing targets are symmetric.

To illustrate the distinction between grant-date and realized pay, suppose that a CEO’s compensation in 2010 and 2011 consisted of a salary of \$500,000 paid each year and 50,000 shares of restricted stock awarded at the beginning of 2009 that become non-forfeitable (“vest”) at the end of 2011. Suppose further that the company’s stock price rose from \$10 to \$30 over the course of these two years. This CEO’s *grant-date* pay (which includes the grant-date value of the restricted stock) was \$1,000,000 in 2010 (consisting of the 2010 \$500,000 base salary and the unvested stock with a grant-date value of \$500,000) and the 2011 salary of \$500,000. But, his *realized* pay (consisting of his base salary plus the amount realized upon vesting) was \$500,000 in 2010 and \$2,000,000 in 2011 (\$500,000 in base salary plus \$1,500,000 from the sale of his stock at the end of 2011).

Grant-date and realized pay are both legitimate measures of CEO compensation and each is a legitimate answer to a different question. Compensation committees evaluating the competitiveness of their CEO pay package at the beginning of the year (that is, before performance results are tallied) should focus on grant-date pay levels. In contrast, realized pay levels will (by definition) depend on the company’s current and past performance, and are therefore most useful in evaluating whether ultimate rewards have been commensurate with company performance.

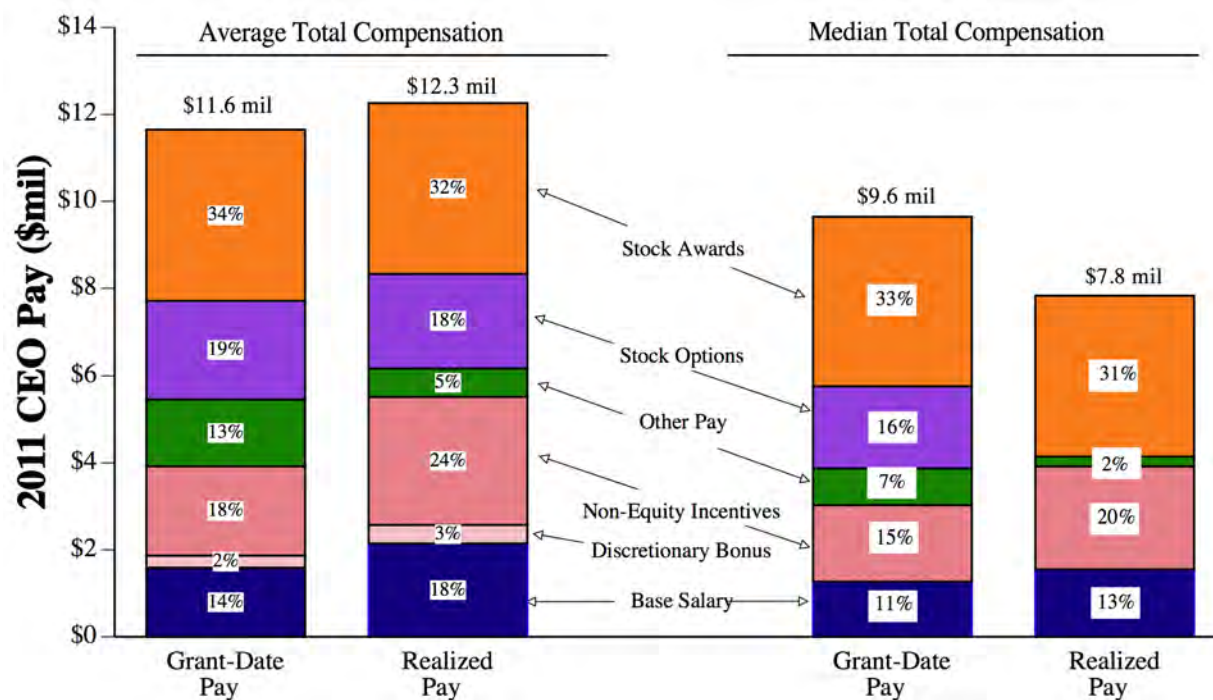
The distinction between grant-date and realized pay is also critical for researchers estimating the link between pay and performance. For example, researchers beginning with (I confess, reluctantly) Murphy (1985) have assessed the relation between pay and performance by regressing total grant-date compensation on measures of corporate performance (using CEO fixed-effects or first-differences to control for unobservable factors affecting pay levels). However, consider two otherwise identical executives, the first paid \$1 million annually in base salary and the second paid \$1 million annually in restricted shares. Researchers regressing grant-date pay levels on performance would conclude that neither executive is paid for performance, when in fact the second CEO’s realized pay is strongly related to performance.

The SEC has helped confuse the distinction between grant-date and realized compensation by conflating elements of each in the “Summary Compensation Table”

required in corporate proxy statements. In particular, since 2009, the SEC has required companies to report the grant-date fair-market values of stock and option grants in the Summary Compensation Table, while at the same time reporting the realized (rather than target) payouts from non-equity-based bonus plans. In addition, the SEC rules are particularly confusing for companies that pay annual bonuses partly in cash and partly in stock and options, as is common in financial services. As an example, suppose that a CEO receives a bonus of \$10 million in January 2012 for performance in 2011, and that \$4 million is paid in cash and the remaining \$6 million in stock and options. According to SEC rules, the \$4 million cash bonus is included as part of 2011 compensation (and reported in the firm's 2012 proxy statement), while the \$6 million bonus paid in the form of stock and options is included as part of 2012 compensation (and not reported until the firm's 2013 proxy statement).

Adding to the confusion between grant-date and realized pay was the (thankfully temporary) existence of a *third* measure mandated by the SEC and included in the Summary Compensation Table in proxy statements issued between 2007 and 2009 (covering compensation paid between 2006 and 2008). Under the SEC's 2007-2009 reporting requirements, "SEC Total Compensation" included the *accounting expense* the company records for stock and options during the year under Financial Accounting Standard 123R (FAS 123R) discussed below in Section 3.8.4. Using the accounting expense for valuing options instead of the grant-date value of options was a last-minute change to the reporting requirements made by the SEC in December 2006 without public comment. Under the SEC approach that mandates the use of accounting numbers in the table, the grant-date value of a \$500,000 as \$250,000 in the grant year and \$250,000 in the following year – numbers that bear no meaningful economic relationship to anything in the system. Fortunately, the confusion was relatively short-lived: in late 2009 the SEC revised its disclosure rules to include grant-date values rather than annual accounting expenses in the summary pay table.

Another element of the confusion in describing the typical CEO pay package reflects the statistical distinction between averages and medians. Suppose, for example, that there are eleven CEOs in an industry, ten receiving compensation of \$1 million and the eleventh receiving \$12 million. The *average* compensation in this industry is \$2 million (calculated by summing all compensation amounts and dividing by 11), while the *median* is only \$1 million (calculated as the compensation where half the CEOs are paid more and half the CEOs are paid less). Average and median pay are, again, both legitimate measures of CEO pay, but are answers to different questions. Average pay is relevant in assessing aggregate levels of pay (a reader can multiply the average pay by the number of CEOs and get total compensation paid

Figure 2.1 2011 pay for CEOs in S&P 500 companies

Note: Figure 2.1 is based on proxy statement information compiled in Standard & Poors' ExecuComp database for 465 S&P 500 firms with fiscal closings between June 2011 and May 2012, based on ExecuComp's May 2012 update .

Grant-date Pay:

Base Salary and Discretionary Bonus reflects amounts *actually received for the fiscal year*

Non-Equity Incentives evaluated at target level (or average of minimum and maximum if target not reported)

Stock Options *evaluated at grant date using firm-estimated present value* (typically Black-Scholes (1973) calculations)

Stock Awards *evaluated at grant-date using firm-estimated present value* (typically grant-date market price), including both time-lapse restricted stock and performance shares.

Other Compensation includes perquisites, signing bonuses, termination payments, above-market interest paid on deferred compensation, and the change in the actuarial value of pension benefits.

Realized Pay:

Base Salary and Discretionary Bonus reflects amounts *actually received for the fiscal year*

Non-Equity Incentives defined as *payouts during the fiscal year* (including payouts on awards made in prior years)

Stock Options defined as *gains executive realized by exercising options during the fiscal year*

Stock Awards defined as *value of awards vesting during the fiscal year* (valued on the date of vesting)

Other Compensation includes perquisites, signing bonuses, termination payments, above-market interest paid on deferred compensation, and pension benefits paid during the year.

The pay-composition percentages for Average Compensation are calculated as the average ratio of each component to total compensation for each CEO. The composition percentages for Median Compensation are calculated as the median ratio of each component: median ratios do not sum to 100% (because the sum of the medians is not the median of the sum).

to all CEOs), while median pay is more relevant in describing compensation for a "typical" CEO.

Figure 2.1 illustrates the 2011 grant-date and realized compensation for CEOs in firms listed in Standard and Poors S&P 500 (essentially the largest 500 US firms ranked by market value). The data are based on proxy statement information reported in Standard & Poors'

ExecuComp database for the 463 S&P 500 firms.⁴ For both measures, total compensation is comprised of six basic components: (1) base salaries; (2) discretionary bonuses; (3) non-equity incentives (based on both annual and multi-year performance measures); (4) stock options; (5) stock awards; and (6) other pay.⁵ Base salaries and the payouts from discretionary (non-formulaic) bonuses are the same for both grant-date and realized total compensation. However, the definitions of the remaining pay components vary with the measure utilized.

For *grant-date pay*, non-equity incentives are evaluated at the target level of payout (or, calculated as the average of the minimum and maximum payout if the target is not reported).⁶ The grant-date value of stock options is defined as the company's estimate of the present value of the options on the grant date: this value is typically based on Black and Scholes (1973) or similar methodologies and approximates the amount an outside investor would pay for the option. Similarly, the grant-date value of stock awards is calculated as of the grant date using the grant-date market price, which in turn approximates the amount an outside investor would pay for the stock. "Other compensation" includes perquisites, signing bonuses, termination payments, and above-market interest paid on deferred compensation. In addition, "other compensation" includes the change in the actuarial value of pension benefits, which typically constitutes a large percentage of compensation for those executives with supplementary defined-benefit pension plans.⁷

⁴ I adopt the convention that companies with fiscal closings after May 31, in year "T" are assigned to fiscal year "T" while companies with fiscal closings on or before May 31, Year "T" are assigned to fiscal year "T-1". Thus, the 2011 fiscal year includes companies with fiscal closings between June 1, 2011 and May 31, 2012. The data in Figure 2.1 are based on the ExecuComp's May 2012 update, and exclude 35 companies that had not yet filed proxy statements by May 2012.

⁵ The categories in Figure 2.1 are designed to correspond to the SEC disclosure requirements effective as of December 2006. Under the prior disclosure requirements, firms separately reported "annual bonuses" and "payouts from long-term performance plans." Under the 2006 requirements, both annual cash bonuses from short-term incentive plans and long-term performance bonuses are considered "non-equity incentive compensation" if they are based on pre-established and communicated performance targets. If they are not based on pre-established and communicated targets the SEC (and I) treat them as discretionary bonuses.

⁶ The actual payouts during the year are used as an estimate for grant-date non-equity incentives in firms without reported targets or caps.

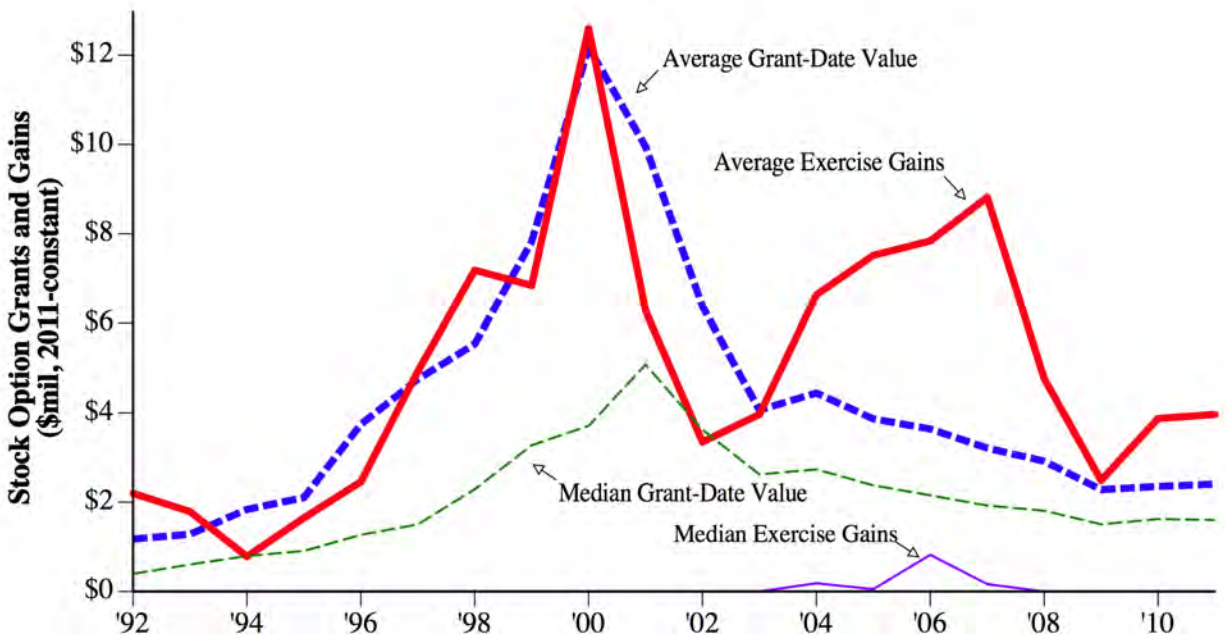
⁷ The "change in the actuarial value of pension benefits" is the year-to-year change in the actuarial present value of the CEO's accumulated benefit under all defined benefit and actuarial pension plans, assuming a normal retirement age as defined in each company's plan (or, if not so defined, the earliest time at which the CEO may retire under the plan without any benefit reduction due to age). The pension information in Figure 2.1 was first available in 2006, and these amounts are therefore excluded in my historical analyses below.

For *realized pay*, non-equity incentives are defined as actual payouts during the fiscal year, including both amounts paid in formula-based annual bonus plans, and current-year payouts from longer-term plans. Stock options are calculated as the gains realized by exercising options during the year, and stock awards are calculated as the value of the stock (or other equity instruments) as of the vesting date. Other compensation includes perquisites, signing bonuses, termination payments, above-market interest paid on deferred compensation, and the actual payments made to the CEO during the year under pension or retirement plans.

The first two columns in Figure 2.1 depict *average* grant-date and realized compensation. The pay-composition percentages are constructed by first calculating the composition percentages for each CEO, and then averaging across CEOs. The average grant-date CEO Pay in S&P 500 firms in 2011 was \$11.6 million, compared to average realized pay of \$12.3 million. Stock awards are the largest single component of both grant-date and realized pay in 2011. The “Other Pay” component of grant-date pay is large compared to the corresponding component for realized pay, reflecting that the definition of grant-date pay includes the (generally positive) change in the actuarial present value of pension benefits during the year. In contrast, the realized pay for pensions include only pension benefits paid during the year for proxy-named executives (which excludes amounts to be paid after retirement).

The remaining two columns in Figure 2.1 depict *median* compensation. The composition percentages for Median pay are calculated as the median ratio of each component: median ratios do not sum to 100% (because the sum of the medians is not the median of the sum). Median compensation is typically lower than average pay, since a small number of very-highly paid CEOs will increase the average pay but not the median pay. For example, ConocoPhillips’s CEO James Mulva realized \$141 million through exercising stock options in 2011. If the options had not been exercised, his pay would have fallen to “only” \$5.3 million, and the average realized compensation for the 465 executives in Figure 2.1 would fall \$303,000 from \$12.436 million to approximately \$12.133 million. Equity awards for the median executive are dominated by stock (rather than option) awards, and together option and stock awards comprise about half of total compensation for the typical executive.

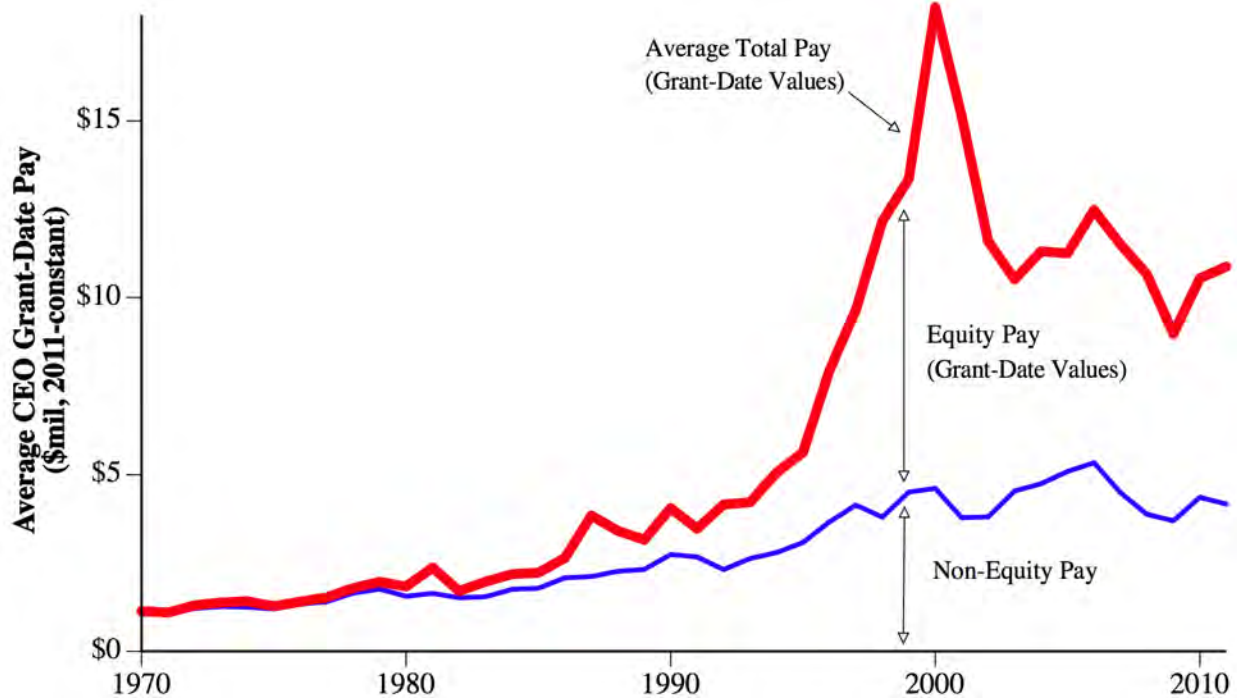
Figure 2.2 Average and Median Stock Option Grant-Date Values and Exercise Gains for CEOs in S&P 500 Firms, 1992-2011



Note: Grant-date values based on company fair-market valuations, when available, and otherwise based on ExecuComp's modified Black-Scholes approach. Dollar amounts are converted to 2011-constant dollars using the Consumer Price Index.

The difference between grant-date and realized values, and averages and medians, is especially pronounced for stock options. Figure 2.2 shows the average and median grant-date values and exercise gains (i.e., realized values) for stock options granted to or exercised by CEOs in S&P 500 firms from 1992-2011. As shown in the figure, the average grant-date values (dotted line) and exercise gains (solid line) were remarkably similar leading up to the 2000 burst in the Internet bubble. In contrast, average exercise gains increased while average grant-date values fell leading up to the 2008 financial crisis, reflecting the shift in grants primarily reflecting the shift from options to restricted stock described in more detail below.

Figure 2.2 shows that median grant values and exercise gains were always below their respective averages. Interestingly, the median exercise gain was zero except for in the 2004-2007 period, indicating that less than half of the S&P 500 CEOs exercised options during

Figure 2.3 Average Equity and Non-equity Grant-Date Pay for CEOs in S&P 500 Firms, 1970-2011

Note: Compensation data are based on all CEOs included in the S&P 500, using data from *Forbes* and ExecuComp. CEO total pay includes cash pay, restricted stock, payouts from long-term pay programs and the value of stock options granted (using company fair-market valuations, when available, and otherwise using ExecuComp's modified Black-Scholes approach). Average (median) equity compensation prior to 1978 estimated based on option compensation in 73 large manufacturing firms (based on Murphy (1985)), equity compensation from 1979 through 1991 estimated as amounts realized from exercising stock options during the year, rather than grant-date values. Non-equity incentive pay is based on actual payouts rather than targets, since target payouts were not available prior to 2006. Dollar amounts are converted to 2011-constant dollars using the Consumer Price Index.

most years in the sample (including 2000, when the *average* gain across all S&P 500 CEOs exceeded \$12 million).⁸

Figure 2.3 shows how average grant-date pay for CEOs has evolved from 1970 to 2011. The data are adjusted for inflation and are based on information extracted from annual *Forbes* surveys (1970-1991) and Standard & Poors ExecuComp Database (1992-2011).⁹

⁸ The “spike” in exercise gains in 2006 likely reflects companies accelerating the exercisability of options in anticipation of new accounting rules that would require an accounting expense for outstanding non-exercisable options; see Choudhary, Rajgopal and Venkatachalam (2009) and the discussion in Section 3.8.4 below.

⁹ The *Forbes* survey includes data from the largest 500 firms ranked by market capitalization, assets, sales, and net income; the union of these sets includes approximately 800 CEOs per year. The ExecuComp survey includes data from firms in the S&P 500, S&P MidCap 400, S&P SmallCap 600, plus additional firms not in these indices, and covers approximately 1800 CEOs per year. Compustat historical data were used to identify firms included in the S&P 500 at the end of each fiscal year.

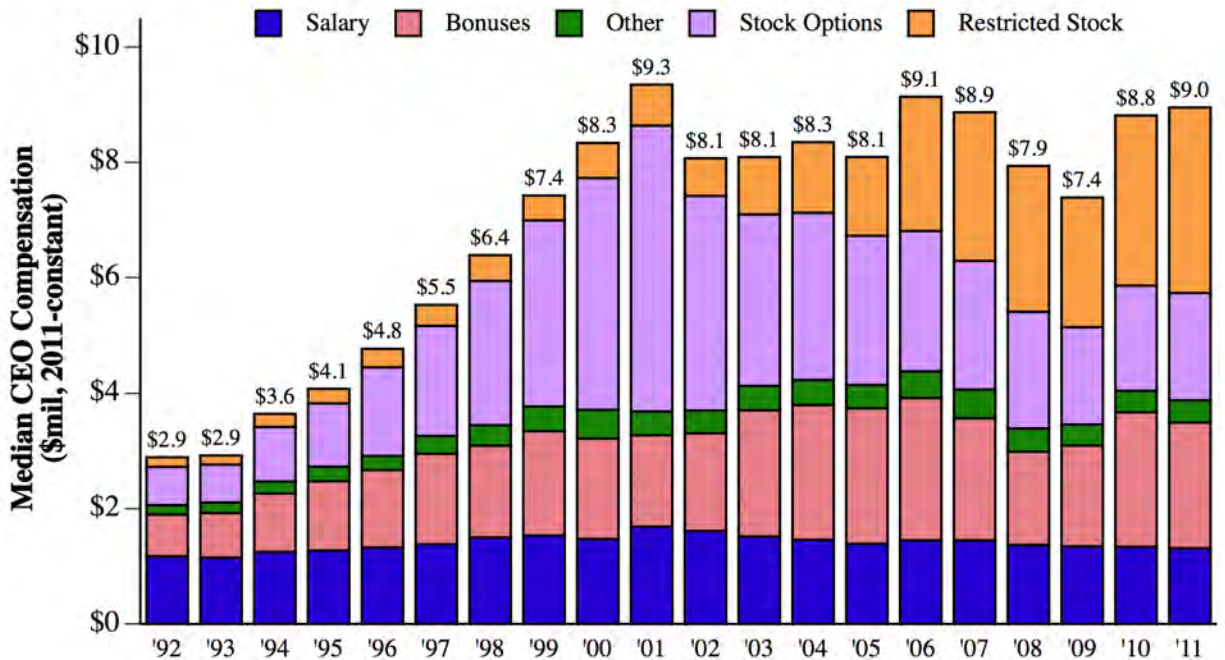
Non-equity pay includes base salaries, payouts from short-term and long-term bonus plans, deferred compensation, and benefits. Total compensation includes non-equity compensation plus equity-based compensation, including the grant-date values of stock options and restricted stock.¹⁰ Due to changing reporting requirements and data availability some of the estimates of grant-date compensation are approximations, but the trends depicted in Figure 2.3 are nonetheless historically representative. As shown in the figure, average grant-date compensation increased from about \$1.1 million in 1970 to \$10.9 million in 2011, down from a peak of \$18.2 million in 2000.¹¹ Finally, the figure shows that most of the growth in CEO pay since 1990 is explained by the growth in equity-based pay. Indeed, stock and options constituted only a trivial percentage of pay in the early 1970s, and grew to be the dominant form of pay by the late 1990s.

Figure 2.4 shows how both the composition and level of grant-date pay evolved from 1992-2011. Because of the skewness in the pay distribution (where a small number of CEOs receive unusually high levels of compensation), the median pay in Figure 2.4 is significantly lower than the average pay in Figure 2.3 in each year. The pay-composition percentages in the figure are constructed by first calculating the composition percentages for each CEO, and then averaging across CEOs. As evident from the figure, underlying the growth in pay for CEOs since the 1990s is an escalation in stock-option compensation from 1993-2001 coupled with a dramatic shift away from options towards restricted stock from 2002-2011. In 1992, base salaries accounted for 41% of the \$2.9 million median CEO pay package, while stock options (valued at grant date) accounted for 25 percent. By 2001, base salaries accounted for only 18% of the median \$9.2 million pay, while options accounted for more than half of pay.

¹⁰ ExecuComp's modifications for 1992-2006 include using 70% of the option full term, and Winsorizing dividends and volatilities. Equity compensation prior to 1978 estimated based on option compensation in 73 large manufacturing firms (based on Murphy (1985)), equity compensation from 1979 through 1991 estimated as amounts *realized* from exercising stock options during the year, rather than grant-date values. Using the amounts realized from the exercise of options (rather than the value of options granted) from 1978 to 1991 is also not expected to impose a large bias in the general trend in options and compensation. Indeed, Frydman and Saks (2005) show that trends based on grants and exercises were nearly indistinguishable during this period. In addition, Hall and Liebman (1998) analyze trends in grant-date option values during the 1980s and document a very similar pattern to that shown in Figure 2.3.

¹¹ The 2011 average pay in Figure 2.3 (\$10.9 mil) is slightly smaller than the \$11.6 mil average in Figure 2.1. This difference largely reflects that Figure 2.1 includes the change in the actuarial value of pension benefits, a component of compensation that was not disclosed or reported before 2006. Another difference – but relatively immaterial – is that Figure 2.1 includes the “target” rather than realized payouts from bonuses and other non-equity incentive plans; these data also became available after the 2006 revisions in disclosure rules. To maintain comparability in the time series, Figure 2.3 excludes pensions and uses payouts rather than targets for bonus plans.

Figure 2.4 Median Grant-date Compensation for CEOs in S&P 500 Firms, 1992-2011



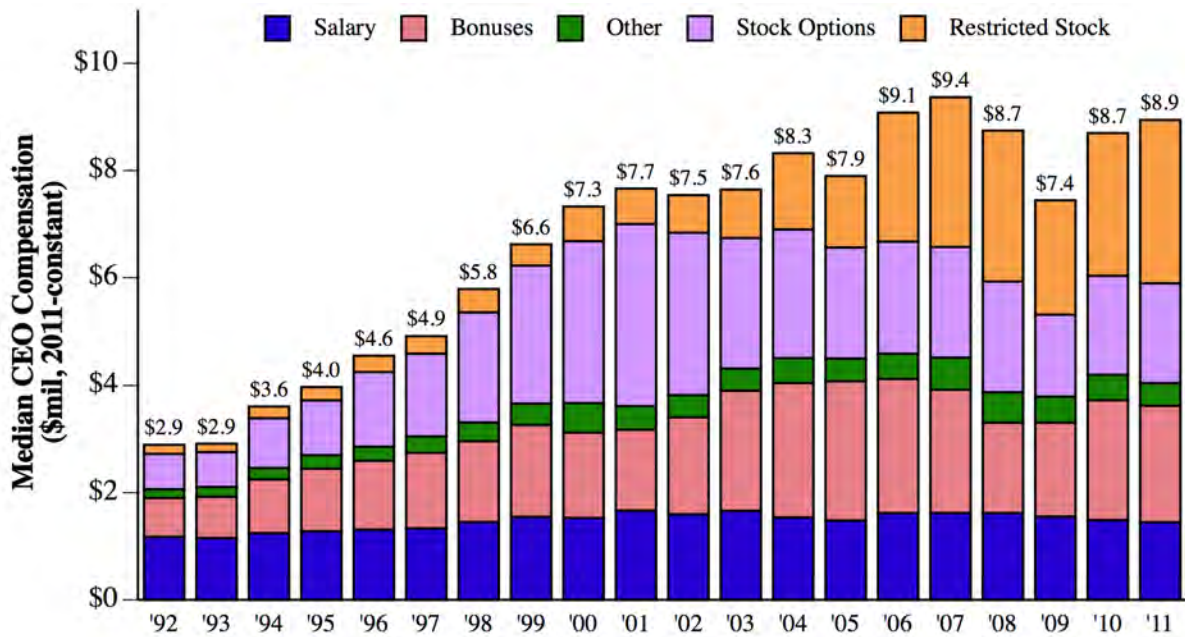
Note: Compensation data are based on all CEOs included in the S&P 500, using data from ExecuComp. CEO grant-date pay includes cash pay, payouts from long-term pay programs, and the grant-date value of stock and option awards (using company fair-market valuations, when available, and otherwise using ExecuComp’s modified Black-Scholes approach). Monetary amounts are converted to 2011-constant US dollars using the Consumer Price Index.

By 2011, options fell to only 21% of pay, as many firms switched from granting options to granting restricted stock (which swelled to 36% of pay).

In interpreting the time-series in Figure 2.4, it is important to recognize the selection bias inherent in the S&P 500. In particular, the firms in the index are selected by a committee based primarily on market capitalization and industry representation. For example, during the 1990s the S&P 500 increased its representation of “new economy” firms, as these firms became higher valued and a more important component of the economy.¹² Indeed, the fraction of the S&P 500 comprised of new economy firms grew from 5.5% in 1992 to over 12% in 2001 (and remained at about 11% for the rest of the sample period). Since new economy firms have traditionally relied on stock options as a major component of pay (see

¹² I define new economy firms as companies with primary SIC designations of 3570 (Computer and Office Equipment), 3571 (Electronic Computers), 3572 (Computer Storage Devices), 3576 (Computer Communication Equipment), 3577 (Computer Peripheral Equipment), 3661 (Telephone & Telegraph Apparatus), 3674 (Semiconductor and Related Devices), 4812 (Wireless Telecommunication), 4813 (Telecommunication), 5045 (Computers and Software Wholesalers), 5961 (Electronic Mail-Order Houses), 7370 (Computer Programming, Data Processing), 7371 (Computer Programming Service), 7372 (Prepackaged Software), and 7373 (Computer Integrated Systems Design).

Figure 2.5 Median Grant-date Compensation for CEOs in Firms Included in the 1992 S&P 500

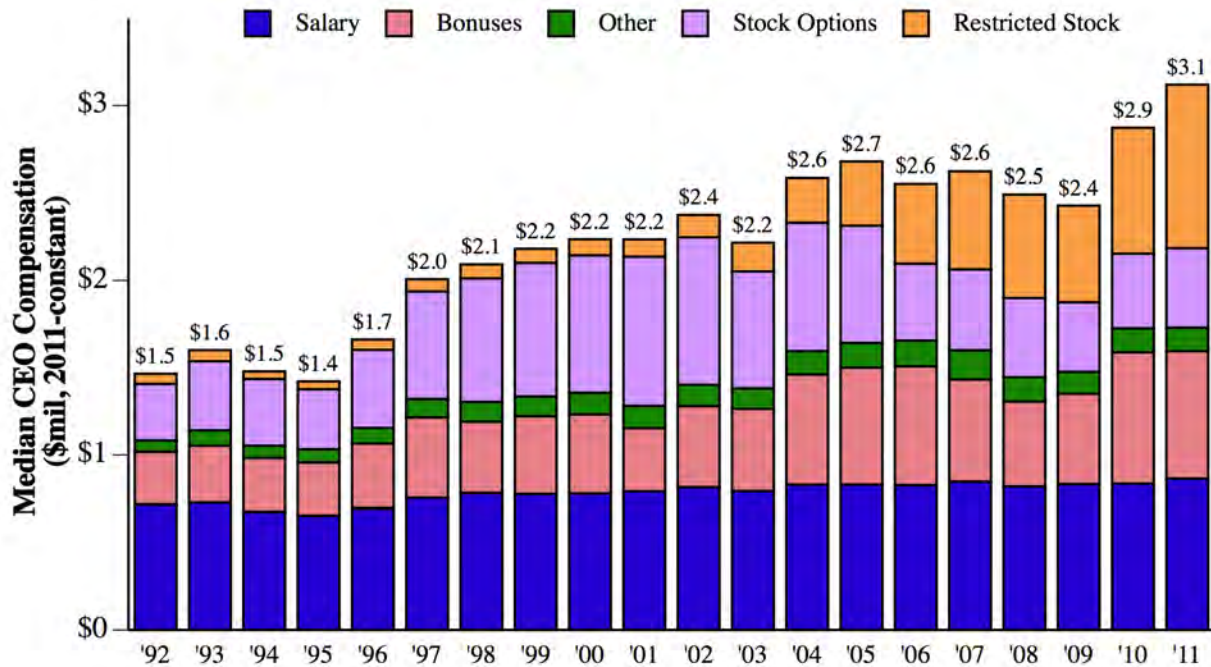


Note: Compensation data are based on all CEOs included in the 1992 S&P 500, using data from ExecuComp. The sample size varies from 472 in 1992 to 179 in 2011. CEO grant-date pay includes cash pay, payouts from long-term pay programs, and the grant-date value of stock and option awards (using company fair-market valuations, when available, and otherwise using ExecuComp’s modified Black-Scholes approach). Monetary amounts are converted to 2011-constant US dollars using the Consumer Price Index.

Murphy (2003)), the increase in both the level of pay and the use of options in Figure 2.4 in part reflects changes in the composition of the S&P 500.

Figure 2.5 replicates Figure 2.4 after restricting the sample to only firms included in the S&P 500 in 1992. This sample restriction attenuates increase in pay levels, which increased 165% from 1992 to 2000 (instead of 220% as in Figure 2.4). The figure also suggests that CEO pay continued in increase until 2007 (a starkly different pattern than suggested by Figure 2.4). However, while Figure 2.5 mitigates the S&P 500 selection bias in Figure 2.4, it is subject to a survivor bias: only half of the S&P 500 firms in 1992 were still publicly traded by 2011.

While the analysis in this chapter will generally focus on S&P 500 companies, Figure 2.6 shows the evolution of the level and compensation for CEO pay below the S&P 500. The data, extracted from ExecuComp, include firms in the S&P MidCap 400, S&P SmallCap 600, and a small number of other firms tracked by S&P. As evident by comparing the scales in Figure 2.4 and Figure 2.6, the level of CEO pay below the S&P 500 is considerably smaller than pay levels for S&P 500 CEOs. In addition, while median pay for S&P 500 CEOs more than tripled from 1970-2011, pay for CEOs below the S&P 500 merely doubled.

Figure 2.6 Median Grant-date Compensation for CEOs in non-S&P 500 Firms, 1992-2011

Note: Compensation data are based on all CEOs included in the S&P MidCap 400, SmallCap 600, and a small number of other non-S&P 500 firms tracked by S&P and included in the ExecuComp database. CEO grant-date pay includes cash pay, payouts from long-term pay programs, and the grant-date value of stock and option awards (using company fair-market valuations, when available, and otherwise using ExecuComp's modified Black-Scholes approach). Monetary amounts are converted to 2011-constant US dollars using the Consumer Price Index.

Similar to their S&P 500 counterparts, restricted stock has replaced stock options as the primary form of equity-based compensation.

2.1.2. The "Cost" vs. the "Value" of Incentive Compensation

In constructing measures of total compensation, it is important to distinguish between two often-confused but fundamentally different valuation concepts: the cost to the company of granting the compensation and the value to an executive from receiving the compensation. Consider, for example, a company that decides to give a share of restricted stock to its CEO vesting in five years (that is, the CEO is restricted from selling the share of stock for five years, and receives the accumulated dividends (plus interest) upon vesting). Suppose further that the market price of a share of stock is \$10. The economic or opportunity cost of the stock grant to the company is the amount the company could have received if it were to sell an unrestricted share to an outside investor rather than giving the restricted share to the CEO. Ignoring the probability of forfeiture and the slight dilution discount associated with issuing a new share, the company could raise \$10 by selling the share to an outside investor. Thus, the company's cost of granting the share is the price of the share on the open market.

Alternatively (but equivalently), by granting the restricted share to the CEO, the company is effectively promising to deliver one share of stock to the CEO in five years. If the company had no shares available to issue, it could satisfy this contract by purchasing a share on the open market in five years at a price that might be higher or lower than \$10. If the company wanted to perfectly hedge the “price risk” of its future obligation, it could purchase a share of stock in the open market today (for \$10) and deliver it to the CEO in five years. Thus, again, the company’s cost of granting the share is simply the price of the share on the open market.

But, what about the CEO? The CEO would clearly prefer to have \$10 today than a promise to receive one share of stock in five years; after all, he could always take the \$10 and *buy* a share of stock today, but will likely have other more-preferred uses for the \$10. Moreover, if the CEO is risk averse and undiversified (in the sense that his overall wealth is positively correlated with company stock prices, through existing stock ownership, option holdings, and the risk of being fired for poor performance), the value the CEO places on the share of restricted stock will be strictly less than the fair market value of the share. Note that the CEO’s value will predictably decrease as the CEO becomes more risk averse or less diversified.

Similarly, suppose that the company decides to give a the CEO an option to buy a share of stock at a predetermined exercise price. The opportunity cost of granting the option is the amount an outside investor would pay for it. The outside investor is generally free to trade the option, and can also take actions to hedge away the risk of the option (such as short-selling the underlying stock). Black and Scholes (1973) and Merton (1973) demonstrated that, since investors can hedge, options can be valued as if investors were risk neutral and all assets appreciate at the risk-free rate. This risk-neutrality assumption forms the basis of option pricing theory and is central to all option pricing models, including binomial models, arbitrage pricing models, and Monte Carlo methodologies. Ignoring dilution, forfeiture, and early exercise, these now-standard methodologies provide reasonable estimates of what an outside investor would pay, and therefore measure the company’s cost of granting options.

Measures of opportunity cost that ignore dilution, forfeiture, and early exercise will systematically overstate the company’s cost of granting options. Dilution reduces the cost of granting options because companies typically issue new shares when options (technically, warrants) are exercised. While the impact of dilution on any specific option grant is typically immaterial, the impact can be significant when added across all employees receiving options. Forfeiture reduces the cost because executives typically forfeit some or all of their

unexercisable options upon resignation or termination.¹³ Most importantly, allowing executives to exercise options before they expire reduces the company's cost of granting options because risk-averse employees – seeking diversification and liquidity – predictably exercise non-tradable options sooner than would an outside investor holding a tradable option.

However, even after appropriate adjustments for dilution, forfeiture, and early exercise, Black-Scholes values do not measure the value of the non-tradable option to a risk-averse executive. In contrast to outside investors, company executives cannot trade or sell their options, and are also forbidden from hedging the risks by short-selling company stock. In addition, while outside investors tend to be well-diversified (holding small amounts of stock in a large number of companies), company executives are inherently undiversified, with their physical as well as human capital invested disproportionately in their company. For these reasons, company executives will generally place a much lower value on company stock options than would outside investors.

Lambert, Larcker and Verrecchia (1991) and Hall and Murphy (2002) propose measuring the value of a non-tradable option to an undiversified risk-averse executive as the amount of riskless cash compensation the executive would exchange for the option.¹⁴ Suppose that an executive has non-firm-related wealth of w , holds a portfolio $S(\bullet)$ of company shares and options, and is granted n options to buy n shares of stock at exercise price X in T years. Assuming that w is invested at the risk-free rate, r_f , and that the realized stock price at T is P_T , the executive's wealth at time T is given by

$$(1) \quad W_T \equiv w(1 + r_f)^T + S(P_T) + n \bullet \max(0, P_T - X).$$

¹³ Employment agreements often provide for accelerated vesting in situations where the executive is terminated by the company without cause.

¹⁴ Meulbroek (2001) measures the value:cost “inefficiency” of options using a completely different (non-utility-based) but complementary approach. Her method enables her to make precise estimates of what she calls the “deadweight cost” of option grants without knowledge of the specific utility function or wealth holdings of executives. Her approach produces a lower bound estimate of the value-cost inefficiency since her goal is to isolate the deadweight cost owing to sub-optimal diversification, while abstracting from any additional deadweight cost from the specific structure of the compensation contract.

If, instead of the option, he were awarded V in cash that he invested at the risk-free rate, his wealth at time T would be:¹⁵

$$(2) \quad W_T^V = (w+V)(1+r_f)^T + S(P_T).$$

Assuming that the executive's utility over wealth is $U(W)$, we can define the executive's value of n options as the "certainty equivalent" V that equates expected utilities (1) and (2):

$$(3) \quad \int U(W_T^V) f(P_T) dP_T \equiv \int U(W_T) f(P_T) dP_T.$$

Solving (3) numerically requires assumptions about the form of the utility function, $U(W)$, and the distribution of future stock prices, $f(P_T)$. I follow Hall and Murphy (2002) in assuming that the executive has constant relative risk aversion ρ , so that $U(W) \equiv \ln(W)$ when $\rho=1$, and $U(W) \equiv \frac{1}{1-\rho} W^{1-\rho}$ when $\rho \neq 1$. I adopt the Capital Asset Pricing Model (CAPM) and assume that the distribution of stock prices in T years is lognormal with volatility σ and expected value equal to $(r_f + \beta(r_m - r_f) - \sigma^2/2)T$, where β is the firm's systematic risk and r_m is the return on the market portfolio.¹⁶

Calculating certainty equivalents from (3) requires data on stock and option grants and holdings (available from corporate proxy statements¹⁷), and also requires unobservable data on executive "safe wealth" (i.e., wealth not correlated with company stock prices) and executive risk aversion. Following Hall and Murphy (2002), I assume that CEOs have relative risk-aversion parameters of 2 or 3, and that each CEO has "safe wealth" equal to the greater of \$5 million (in 2011-constant dollars) or four times the current cash compensation.¹⁸ For other inputs, I assume a market risk premium of 6.5%, set the risk-free

¹⁵ Cai and Vijh (2005) adopt a more-realistic (but computationally more difficult) assumption that the executive's safe wealth is optimally allocated between a riskless asset and the market portfolio. An advantage of the Cai-Vijh approach is that the certainty-equivalent values of options can never exceed Black-Scholes values.

¹⁶ For tractability, I assume that the distribution of future stock prices is the same whether the executive receives options or cash. If the grant provides incentives that shift the distribution, and if the shift is not already incorporated into stock prices as of the grant date, I will underestimate both the cost and value of the option.

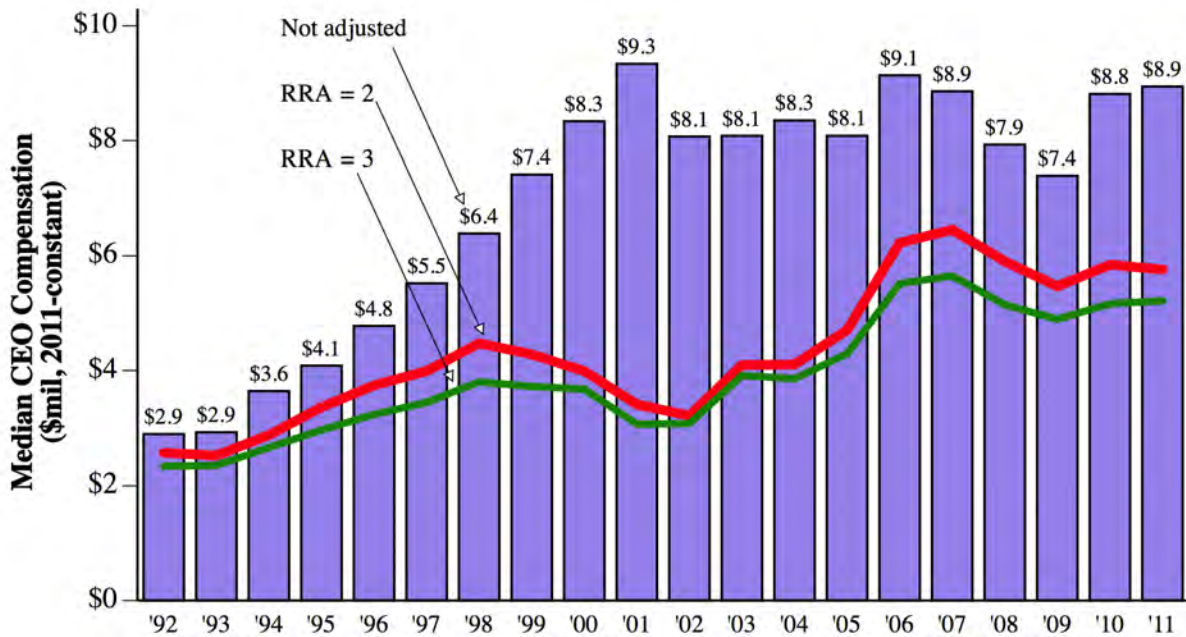
¹⁷ Under pre-2006 disclosure rules, companies reported only the aggregate number of options outstanding at the end of each year, and the intrinsic value of the in-the-money options. Following the procedure described in Murphy (1999) and adopted by Core and Guay (2002), I subtract the current-year grant from the year-end option holdings and calculate the number and average exercise price of prior grants.

¹⁸ The results are generally robust to reasonable changes in these assumptions. In addition, for post-2006 data, I re-estimated certainty equivalents after including the actuarial value of pension benefits as safe wealth; the results are generally unaffected by this change.

rate to the yield on 7-year US Treasuries, estimate dividend yields as the average yield over the past 36 months and volatilities based using the last 48 months of stock returns. Dividend yields above 5% are set to 5%, while volatilities below 20% or above 60% are set to 20% and 60%, respectively. As a simplifying assumption, I assume that the term for all options and restricted stock grants equals the term on the largest option grant (or five years if no options are granted), and assume that the executive's prior holdings of stock and options are fixed throughout the term of the new grants. Finally, I assume (somewhat arbitrarily) that the risk-adjusted value of accounting-based bonuses is worth 90% of target bonuses.

Figure 2.7 shows the 1992-2011 evolution of risk-adjusted pay for CEOs in S&P 500 firms, assuming constant relative risk aversion of 2 or 3. The bar height depicts median pay without risk adjustments from Figure 2.4. Several features of the figure are worth noting:

- The value of compensation from the perspective of risk-averse undiversified CEOs can be substantially less than the cost of compensation reported in company proxy statements. For example, in 2001 (at the peak of the use of stock options), the median risk-adjusted pay for CEOs with constant relative risk aversion of 3 (\$2.6 million) was less than one third of the median reported pay (\$9.3 million).

Figure 2.7 Median Risk-Adjusted Pay for CEOs in non-S&P 500 Firms, 1992-2011

Note: Risk-adjusted pay is estimated using the “certainty equivalence” approach, estimated numerically assuming that the executive has constant relative risk aversion (rra) of 2 or 3, and assuming (using the Capital Asset Pricing Model) that the distribution of stock prices over the actual term of the options granted is lognormal with volatility σ and expected value $(r_f + \beta(r_m - r_f) - \sigma^2/2)T$, where σ and β are determined using monthly stock-return data over 48 months, r_f is the country-specific average yield on government securities during the year of grant, and $r_m - r_f = 6.5\%$ is the market risk premium, assuming relative risk aversion of 2 or 3; safe wealth is assumed to be the greater of \$5 million or four times total compensation (in 2011-constant dollars). The risk-adjusted value of accounting-based bonuses is assumed to be worth 90% of actual bonuses.

- While reported pay levels increased significantly between 1998 and 2001 (driven primarily by the escalation in the grant-date values of stock options), risk-adjusted pay actually *fell* over this time period as a larger percentage of pay was being delivered in the form of risky stock options.
- Similarly, while reported pay levels were relatively flat from 2002 to 2007, risk-adjusted pay grew substantially as risky stock options were increasingly replaced by less risky stock awards.

The qualitative results in Figure 2.7 are robust to alternative definitions of risk aversion, safe wealth, equity premiums, and option terms. Calculating more precise estimates of risk-adjusted compensation for individual CEOs requires unavailable data on outside wealth and unobservable measures of individual risk aversion. In addition, more-precise estimates should allow CEOs to invest outside wealth in the market portfolio (Cai and Vijh (2005)) and allow for early exercise and different vesting and exercise terms of current grants and existing holdings. Nonetheless, the results in Figure 2.7 highlight that inferences based

on reported grant-date compensation do not necessarily extend to risk-adjusted compensation.

2.2. Measuring Executive Incentives

Conceptually, the incentives created by any compensation plan are determined by two factors: (1) how performance is measured; and (2) how compensation (or wealth) varies with measured performance. Most of the executive compensation literature has focused on the relation between CEO and shareholder wealth (or, what Jensen and Murphy (1990b) defined as the “pay-performance sensitivity”), where CEOs with higher pay-performance sensitivities are defined as having better incentives to create shareholder value. Therefore, I begin this section with an analysis of different ways to measure incentives executives have to increase shareholder wealth. Next, given the recent focus on excessive risk-taking many believe contributed to the financial crisis, I consider two measures of the incentives executives have to increase stock-price volatilities. Finally, I discuss a variety of other incentive problems not neatly encapsulated in pay-performance or pay-volatility sensitivities, such as incentives to smooth or manage earnings or to pursue short-run profits at the expense of long-run value.

2.2.1. The Relation Between CEO and Shareholder Wealth

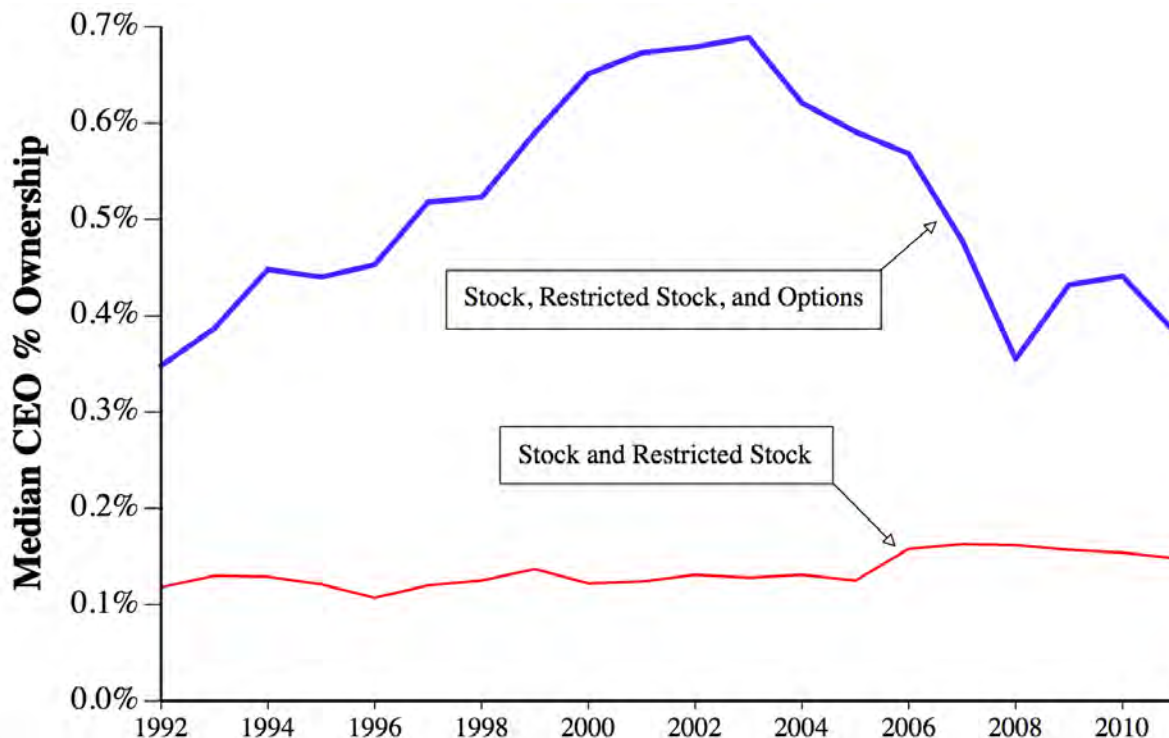
Most research on CEO incentives has been firmly (if not always explicitly) rooted in agency theory: compensation plans are designed to align the interests of risk-averse self-interested CEOs with those of shareholders. Following this framework, most of the focus has been on the relation between CEO compensation (or CEO wealth) and changes in firm value. Researchers have often used the ratio of equity-based total compensation to total compensation as a measure of incentives. However, the most direct linkage between CEO and shareholder wealth comes not from current compensation but from the CEO’s existing portfolio of stock, restricted stock, and stock options. Indeed, while the equity-to-total pay ratio is positively correlated with the CEO’s holdings of restricted stock and options, the ratio is *negatively* correlated with unrestricted stockholdings (reflecting, for example, the redundancy of granting stock options to a CEO who already owns large amounts of the company’s shares).

In addition to the direct link between stock-price performance and the CEO’s portfolio of stock and options, CEO wealth is also indirectly tied to stock-price performance through accounting-based bonuses (reflecting the correlation between accounting returns and stock-price performance), through year-to-year adjustments in salary levels, target bonuses, and

option and restricted stock grant sizes, and through the threat of being fired for poor stock-price performance. The CEO pay literature has yet to reach a consensus on the appropriate methodologies and metrics to use in evaluating the “indirect” relation between CEO pay and company stock-price performance. For practical purposes, however, Hall and Liebman (1998) and Murphy (1999) show that virtually all of the sensitivity of pay to corporate performance for the typical CEO is attributable to the direct rather than the indirect part of the CEO’s contract, and the direct part can be measured from information available in corporate proxy statements.

Since agency costs arise when agents receive less than 100% of the value of output, the CEO’s share of ownership is a natural measure of the potential severity of the agency problem. In particular, the CEO’s percentage holdings of his company’s stock measures how much the CEO gains from a \$1 increase in the value of the firm, and how much he loses from a \$1 decrease. Computing percentage ownership for restricted and unrestricted shares is trivial (simply divide by the total number of shares outstanding). Including stock options in a percentage holdings measure is more complicated, since options that are well out-of-the-money provide few incentives to increase stock prices, while options that are well in-the-money provide essentially the same incentives as holding stock. Therefore, each stock option should count somewhat less than one share of stock when adding the holdings to form an aggregate measure of CEO incentives, and the “weight” should vary with how much the option is in (or out) of the money. In constructing an aggregate measure of CEO incentives, I weight each option by the “Option Delta,” defined as the change in the value of a stock option for an incremental change in the stock price. Option Deltas range from near zero (for deep out-of-the-money options) to near one (for deep in-the-money options on non-dividend paying stock).¹⁹ I call this measure the “effective ownership percentage” to distinguish it from the actual ownership percentage based only on stock (and not option) holdings.

¹⁹ The percentage option holdings multiplied by the option delta is a measure of the change in CEO option-related wealth corresponding to a change in shareholder wealth. More formally, suppose that the CEO holds N options, and suppose that shareholder wealth increases by \$1. If there are S total shares outstanding, the share price P will increase by $\Delta P = \$1/S$, and the value of the CEO’s options will increase by $N \Delta P (\partial V / \partial P)$, where V is the Black-Scholes value of each option, and $(\partial V / \partial P)$ is the option delta. Substituting for ΔP , the CEO’s share of the value increase is given by $(N/S)(\partial V / \partial P)$, or the CEO’s options held as a fraction of total shares outstanding multiplied by the “slope” of the Black-Scholes valuation. For examples of this approach see Jensen and Murphy (1990a), Yermack (1995), and Murphy (1999). Hall and Murphy (2002) offer a modified approach to measure the pay-for-performance incentives of risk-averse undiversified executives. An alternative approach, adopted by Jensen and Murphy (1990b), involves estimating the option pay-performance sensitivity as the coefficient from a regression of the change in option value on the change in shareholder wealth.

Figure 2.8 Median Effective Percentage Ownership for CEOs in S&P 500 Firms, 1992-2011

Note: Percentage ownership for stock and restricted stock measured as the CEO's shareholdings divided by the total number of shares outstanding. Effective percentage ownership for stock options measured by weighting each option held by that options "Black-Scholes Delta" and dividing by the total number of shares outstanding. Year-end options under the pre-2006 disclosure rules estimated using the procedure described in Murphy (1999).

Figure 2.8 shows the evolution of the median effective percentage ownership for CEOs in S&P 500 firms from 1992-2011. The percentage ownership for stock and restricted stock is calculated by dividing the CEO's shareholdings by the total number of shares outstanding. Effective percentage ownership for stock options is measured by weighting each option held by the executive at the end of the fiscal year by "Option Delta" for that option (which varies according to the exercise price and time remaining to exercise), and dividing by the total number of shares outstanding.²⁰ As shown in the figure, stock and restricted stock holdings for the median S&P 500 executive has grown modestly over the 20-year period (reflecting the increased popularity of restricted stock), ranging from 0.12% to 0.15%. Over the same time period, total effective ownership (including delta-weighted options) doubled from 0.35% in 1992 to 0.69% in 2003, before falling to 0.38% in 2011. The drop in ownership in 2008 depicted in Figure 2.8 primarily reflects that most options held by CEOs at the end of

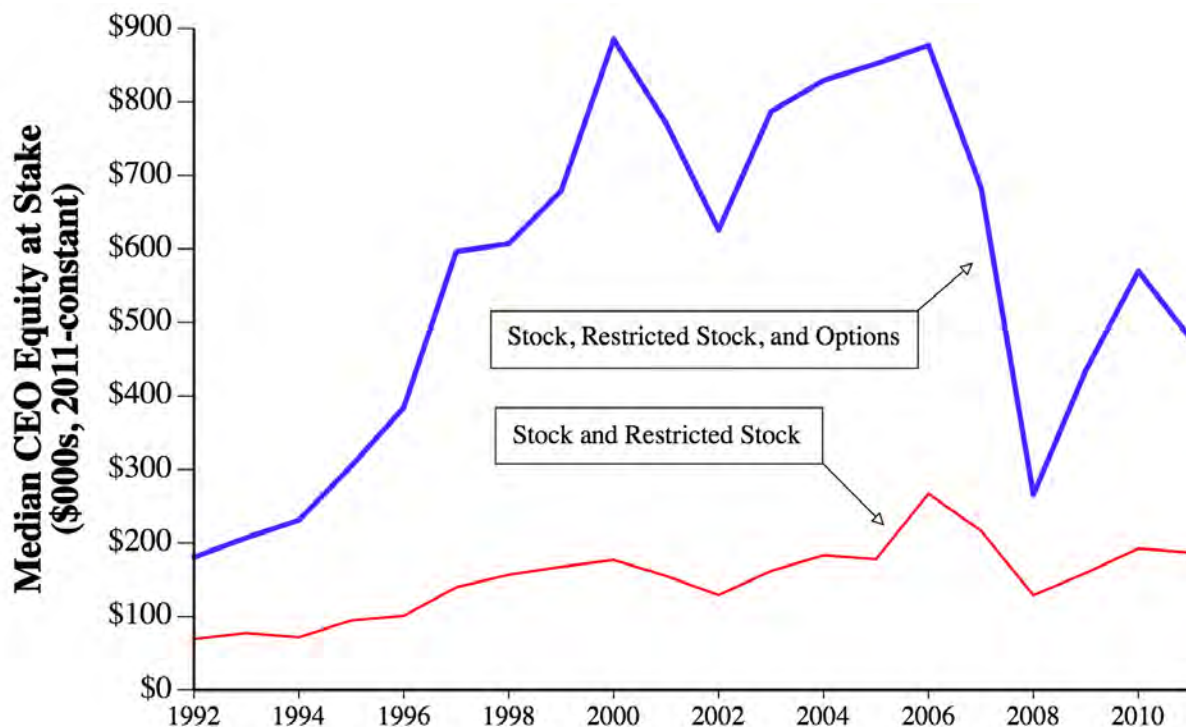
²⁰ Proxy disclosure rules effective since December 2006 provide the details on year-end option portfolios required to estimate Options Deltas. Year-end portfolios prior to 2006 are estimated using the procedure described in Murphy (1999) and adopted by Core and Guay (2002).

2008 were substantially out-of-the-money and therefore had low incentives and low Option Deltas.

The measure of effective CEO ownership in Figure 2.8 is essentially the “Pay-Performance Sensitivity” introduced by Jensen and Murphy (1990b). The primary difference is that I am measuring the effective ownership percentage, while Jensen and Murphy measured the change in CEO wealth per \$1,000 change in shareholder wealth, which equals the effective ownership percentage multiplied by ten. The other difference is that Jensen and Murphy also include indirect incentives from cash compensation and disciplinary terminations. Using data from 1974-1986, Jensen and Murphy estimate a median pay-performance sensitivity for stock and options of \$2.50 for every \$1,000 change in shareholder wealth, which corresponds to an ownership percentage of 0.250%.²¹ Therefore, by the end of 2003 pay-performance sensitivities had nearly tripled from 1974-1986. But, by year-end 2011 the pay-performance sensitivity was slightly above its 1992 level, or about 50% higher than the Jensen-Murphy estimate.

The average market capitalization of firms in the S&P 500 grew (in 2011-constant dollars) from \$10.0 billion in 1992 to \$35.8 billion in 2000 (before falling to \$22.7 billion in 2011), therefore the dollar value of the typical CEOs ownership position is large even if his percentage holding is low. Hall and Liebman (1998) argue that a better way to measure CEO incentives is as the change in CEO wealth for a 1% change in the value of the firm rather than as the ownership percentage. Baker and Hall (2004) provide some theoretical justification for using this measure. In particular, Baker and Hall show that percentage ownership is the right measure of incentives when the marginal product of the CEO effort is constant across firm size, such as a CEO contemplating a new corporate headquarters that will benefit the CEO but perhaps not the shareholders, or an outside takeover bid that will benefit outside shareholders but perhaps not the CEO. But, the Hall-Liebman measure is the appropriate when the marginal product of the CEO effort scales with firm size, such as a corporate reorganization (assuming it takes the same amount of CEO effort to reorganize a big firm than a small firm).

²¹ Including incentives from potential dismissals and performance-related changes in the value of salaries, bonuses, and option grants, increased the “final” Jensen-Murphy estimate to \$3.25 per \$1,000, or an effective ownership percentage of 0.325%.

Figure 2.9 Median “Equity at Stake” for CEOs in S&P 500 Firms, 1992-2011

Note: Following Frydman and Jenter (2010), “Equity-at-Stake” is measured as the effective ownership percentage multiplied by 1% of the firms market capitalization (in thousands of 2011-constant dollars).

Figure 2.9 shows the evolution of the Hall-Liebman measure – what Frydman and Jenter (2010) call “equity at stake” – from 1992 to 2011. The equity at stake measure is calculated as 1% of the effective ownership percentage multiplied by the firm’s market capitalization.²² In 1992, each 1% change shareholder wealth resulted in a \$181,000 change in CEO wealth for the median CEO in the S&P 500. The equity-at-stake measure grew to nearly \$900,000 in 2000 and again in 2005, before plummeting to \$265,000 in 2008 as a result of both the decline in market capitalizations and the decline in Option Deltas.

As an alternative to both the Jensen-Murphy and Hall-Liebman measures, Edmans, Gabaix and Landier (2009) provide theoretic justification for measuring incentives using the “wealth-performance elasticity” (i.e., the percentage change in CEO wealth corresponding to a percentage change in firm value) when the CEO effort has a multiplicative (rather than additive) effect on both CEO utility and firm value. In practice, creating this measure

²² Suppose that the CEO holds M shares and N options. If the share price P increases by 1%. If there are S total shares outstanding, the value of the CEO’s portfolio will increase by $.01P(M+N(\partial V/\partial P))$ or $.01(PS)[(M+N(\partial V/\partial P))/S]$, where PS is the firm’s market capitalization and the quantity in the square brackets is the equation for the CEO’s effective ownership percentage.

generally requires data not available to researchers (in particular, the CEOs wealth beyond his portfolio of company stock and options).²³

2.2.2. The Relation Between CEO Wealth and Stock-Price Volatilities

Suspicious that executive compensation policies in financial services firms contributed to the 2008-2009 financial crisis eventually broadened to similar suspicions for companies outside the financial sector. In December 2009, as part of the continued fallout from the crisis, the SEC began requiring all publicly traded companies to disclose and discuss compensation policies and practices that might provide incentives for executives to take risks that are reasonably likely to have a material adverse effect on the company.

When executives receive rewards for upside risk, but are not penalized for downside risk, they will naturally take greater risks than if they faced symmetric consequences in both directions. For top executives rewarded primarily with equity-based compensation, the primary source of risk-taking incentives emanates from stock options. The pay-performance relation implicit in stock options is inherently convex, since executives receive gains when stock prices exceed the exercise price, but their losses when the price falls below the exercise price are capped at zero.

Since equity is a “call option” on a leveraged firm (Black and Scholes (1973)), equity-based pay in a leveraged firm can provide similar risk-taking incentives as those provided by stock options in an all-equity firm. Consider, for example, an investment opportunity promising equal chances of a \$400 million gain and a \$600 million loss (i.e., a net-present value of -\$100). Shareholders in a \$1 billion all-equity firm will have no incentive to pursue this negative NPV investment, because they will bear 100% of both the gains and losses. But, suppose the firm has only \$100 million in equity, and \$900 million in debt. Equity holders receive 100% of the upside, but their downside liability is limited to the value of their initial

²³ Several early studies, including Murphy (1985) and Gibbons and Murphy (1992), used the “pay-performance elasticity,” defined as the percentage change in current compensation associated with a percentage change in company performance. While the pay-performance elasticity reflects how boards adjust current compensation to changes in performance, it ignores the CEO’s portfolio of stock and options and therefore does not measure CEO incentives. Edmans, Gabaix and Landier (2009) suggest a measure where the change in CEO wealth from stock and option holdings is divided by the CEO’s current compensation rather than the CEO’s total wealth; this measure is proportional to the wealth-performance elasticity to the extent that CEO wealth is proportional to current compensation. As emphasized by Murphy (1999), the empirical advantage of elasticity measures is that they are typically independent of firm size. In contrast, the Jensen-Murphy “effective ownership” percentage is predictably smaller for CEOs of larger firms.

equity stake (\$100 million). Thus, from the perspective of the equity holders, the project has a net present value of +\$150 million.

The conflict of interest between shareholders and debtholders – dubbed the “Agency Cost of Debt” by Jensen and Meckling (1976) – has led several researchers to measure risk-taking incentives by leverage ratios and to prescribe CEO pay structures that include debt as well as equity.²⁴ However, it is worth noting that it is not leverage *per se* that creates risk-taking incentives, but rather the limited liability feature of equity. For example, the shareholders in the example in the prior paragraph would have incentives to take the negative NPV project even if the firm was a \$100 million all-equity firm; in this case losses greater than \$100 million would be borne by the government or society, etc., and not by debtholders. It is also worth noting that the severity of the risk-taking incentives depends on the maximum downside risk compared to the dollar amount of equity, and not the value of equity compared to the overall value of equity plus debt. The *level* of debt is important only to the extent that is available to fund risky negative NPV projects.

Since the value of a stock option (or the value of equity in a leveraged firm) increases monotonically with stock-price volatilities, options (and limited liability) provide incentives for executives to increase such volatilities. In Section 2.2.1, the calculations for pay-performance sensitivities for stock options depended on the Option Delta, defined as the change in the value of a stock option associated with an incremental change in the stock price. Similarly, the calculations for pay-volatility sensitivities for stock options depend on the Option Vega, typically defined as the change in the value of a stock option associated with one percentage-point increase in the stock-price volatility (e.g., from 30% to 31%). Option Vegas are typically highest when stock prices are near the option’s exercise price.

Following Fahlenbrach and Stulz (2011)’s analysis of executive compensation and the financial crisis, I consider two option-based measures for incentives to increase stock-price volatilities:

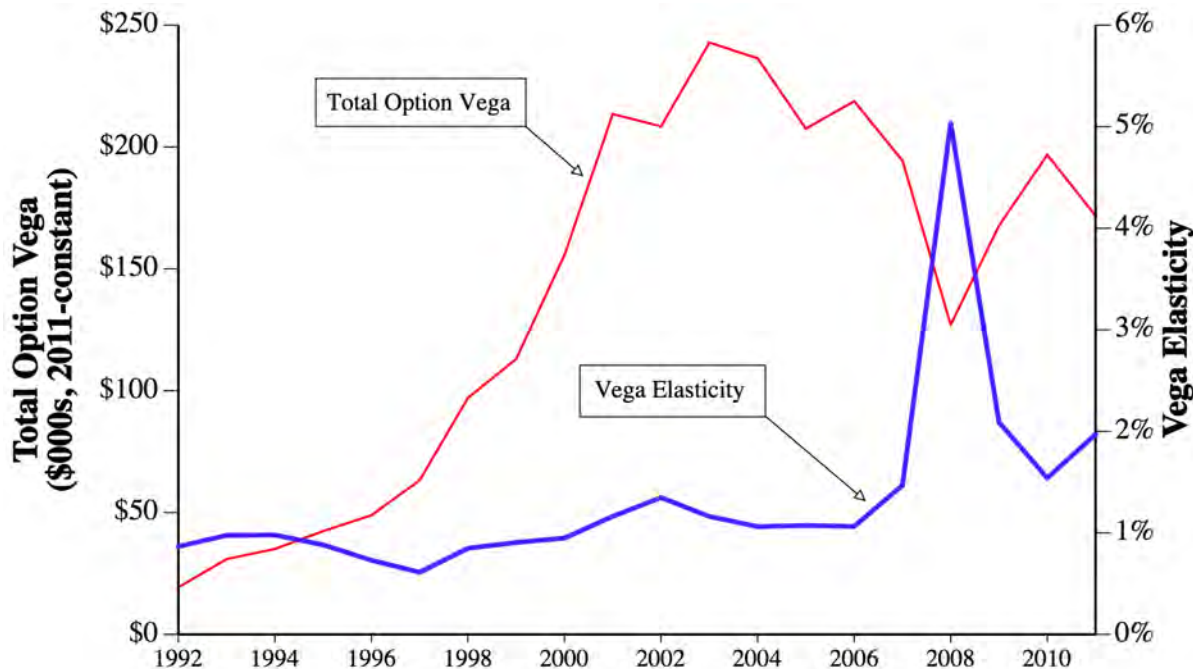
Total Option Vega = Change in value of outstanding options for a one percentage-point increase in volatility.

²⁴ See, for example, Sundaram and Yermack (2007); Edmans and Liu (2011); Edmans, “How to Fix Executive Compensation,” *Wall Street Journal* (2012). “Debt compensation” typically consists of deferred compensation or nonqualified defined-benefit pension plans, where the executive joins other unsecured creditors in bankruptcy.

Vega Elasticity = Percentage change in value of outstanding options for a one percentage-point increase in volatility.

Figure 2.10 shows the time trends in the two measures of pay-volatility sensitivities for the median executive in a S&P 500 firm from 1992-2011. The left-hand axis reports the Total Option Vega, which reached its peak in 2003 (when the median CEO gained \$243,000 by increasing volatility by one percent), and plummeted in 2008 to \$127,000 for a one percent increase in volatility. The right-hand axis reports the percentage change in option values associated with a one percent increase in volatility. This “Vega Elasticity” remained relatively constant from 1992 to 2007 at around 1.0 (indicating that a one percentage-point increase in volatility would increase the value of CEO option holdings by about 1%). The Vega Elasticity jumped to over 5.0% in 2008, falling to 2.0% by 2011.

The differences in the two measures in Figure 2.10 reflect the effect of stock-market movements and, in particular, the market crash at the end of 2008 and the partial rebound by 2011. When stock prices fell (as they did abruptly in 2008, across all sectors of the economy), the options fell out of the money, which implies that the Option Vega for each option becomes smaller (remember that the Option Vega is highest when the stock price is close to the exercise price). But, it turns out that, as stock prices fall, the value of the options held fall even faster than the Option Vega. As a result, the value of options that are out-of-the-money increase more in percentage terms (but less in dollar or euro terms) as volatility increases.

Figure 2.10 Option-based incentives to increase volatility by CEOs in S&P 500 Firms, 1992-2011

Note: The Total Option Vega is defined as the change in value of outstanding options for a one percentage-point increase in volatility. Vega Elasticity is defined as the percentage change in value of outstanding options for a one percentage-point increase in volatility.

One troublesome fact apparent from Figure 2.10 is that the two vega measures – both legitimate measures for risk-taking incentives – move in opposite directions in market downturns. There is no accepted methodology on measuring incentives for risk in executive option portfolios, or in executive equity positions in leveraged firms, or in executive contracts more generally.²⁵ Until the recent financial crisis – when compensation policies were blamed for contributing to the meltdown – there had been little focus on the role of compensation policies in providing incentives to take risks.

Finally, while the current controversy over executive incentives has focused on excessive risk taking, it is worth noting that the challenge historically has been in providing incentives for executives to take *enough* risk, not too much risk. Executives are typically risk-averse and undiversified with respect to their own companies' stock-price performance. On the other hand, shareholders are relatively diversified, placing smaller bets on a larger

²⁵ Although there is little theoretical guidance on the appropriate measure of risk-taking incentives, Alex Edmans (in private correspondence) suggests that the appropriate measure likely depends on the CEO's cost of increasing volatility. In particular, the Total Option Vega is likely the correct measure if the cost to increase volatility has an additive effect on CEO utility, while the Vega Elasticity is likely correct if the cost has a multiplicative effect. Dittmann and Yu (2011) propose an alternative measure related to the ratio of vega to delta.

number of companies. As a result, executives will inherently be “too conservative” and want to take fewer risks than desired by shareholders. Stock options (or other plans with convex payouts) have long been advocated as ways to mitigate the effects of executive risk aversion by giving managers incentives to adopt rather than avoid risky projects (see, for example, Hirshleifer and Suh (1992)). Similarly, there is a long history of attempts to document an empirical relation between such convexities and actual risk-taking incentives, and the results have been relatively modest.²⁶

2.3. *(Dis)Incentives from Bonus Plans*²⁷

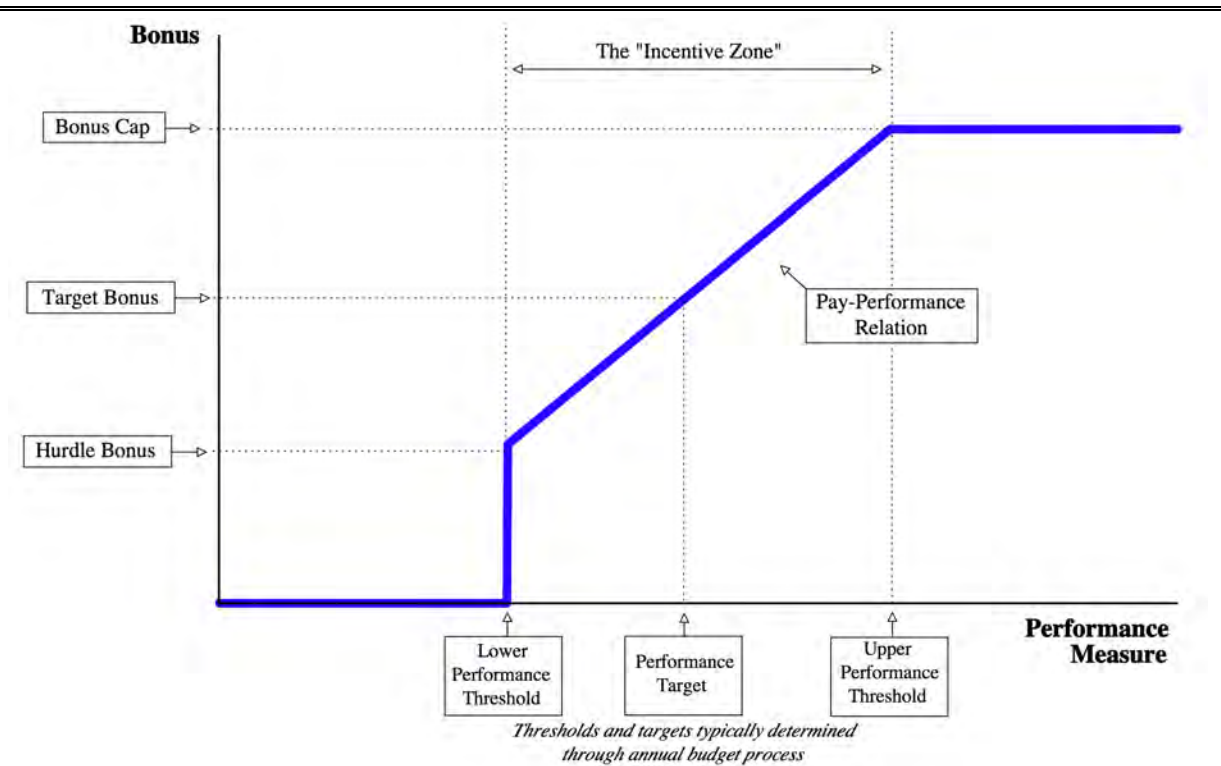
Most discussions about incentives for US CEOs focus exclusively on equity-based incentives, since changes in CEO wealth due to changes in company stock prices dwarf wealth changes from any other source (Hall and Liebman (1998); Murphy (1999)). However, from a behavioral perspective, annual and multi-year bonus plans based on accounting measures may be as important as equity in actually directing the activities of CEOs and other executives. Consider the following:

- Incentive plans are effective only if the participants understand how their actions affect the payoffs they will receive and then act on those perceptions. While CEOs likely understand how to increase accounting income (by increasing revenues and decreasing costs of goods sold), they often do not understand how their actions affect company stock prices. Therefore, bonus plans may well provide stronger incentives than equity-based plans, even though their magnitude is smaller.
- Most bonus plans are settled in cash soon after the results are tallied (e.g., after the year-end audited financials). The immediacy and tangibility of these cash awards may well provide stronger incentives than the distant and uncertain paper gains in unvested equity plans.

Unfortunately, while CEOs may indeed be motivated by their bonus opportunities, they are not necessarily motivated to increase firm value. The problems lie in the design of the typical bonus plan, illustrated in Figure 2.11. Under the typical plan, no bonus is paid until a

²⁶ DeFusco, Johnson and Zorn (1990) find some evidence that stock-price volatility increases, and traded bond prices decrease, after the approval of executive stock option plans. Similarly, Agrawal and Mandelker (1987) find some evidence that managers of firms whose return volatility is increased by an acquisition have higher option compensation than managers whose volatility declined

²⁷ This section draws heavily from Murphy (1999) and Murphy and Jensen (2011).

Figure 2.11 A Typical Bonus Plan

Note: Under a typical bonus plan, a performance target and a target bonus for meeting that performance are set. Upper and lower performance thresholds are established which create an “incentive zone” within which the bonus increases with performance. Bonuses do not vary with performance outside the range established by the Lower and Upper Performance thresholds. A Hurdle Bonus is often paid when the executive reaches the lower performance threshold. The bonus can increase linearly with performance in the incentive zone (as shown here) or it can increase at a decreasing rate or an increasing rate (that is, the line can be convex or concave).

lower performance threshold or hurdle is achieved, and a “hurdle bonus” is paid at this lower performance threshold. The bonus is usually capped at an upper performance threshold; after this point increased performance is not associated with an increase in the bonus. The thresholds are routinely determined by the firm’s annual budgeting process. The range between the lower and upper performance thresholds (labeled the “incentive zone” in the figure), is drawn as linear but could be convex (bowl-shaped) or concave (upside-down bowl-shaped). The “pay-performance relation” (denoted by the heavy blue line) is the function that shows how the bonus varies throughout the entire range of possible performance outcomes.

In spite of substantial variability across companies and industries, short-term and long-term bonus plans can be characterized in terms of the three basic dimensions suggested by Figure 2.11: performance measures, performance thresholds (that is, targets, benchmarks, or standards), and the structure of the pay-performance relation. Design flaws in any of these dimensions can provide incentives to withhold effort, to shift earnings and cash flow

unproductively from one period to another (or otherwise manipulate earnings), to use capital inefficiently, and to destroy information critical to the effective coordination of disparate parts of large complex firms.

2.3.1. Problems with non-linear pay-performance relations

Researchers have long acknowledged that non-linear incentive plans cause predictable problems.²⁸ For example, executives capable of producing well above the upper performance threshold in Figure 2.11 have incentives to stop producing once they “max out” on their bonuses. In addition, they will do their best to transfer performance results that could have been realized this period into a later period.

Similarly, but potentially worse, is the effect of the discontinuity at the lower performance threshold in Figure 2.11. Executives who believe they cannot achieve at least this level of performance this year will either stop producing or “save” performance for next year by delaying revenues or accelerating expenses. Moreover, if executives see that they are not going to make the bonus pool this year, they are better off to take an even bigger hit this period (since there is no bonus penalty for missing the lower threshold by a lot instead of a little) so they can do even better next period—what accountants have called the “big bath” phenomenon. On the other hand, executives who are struggling to make the lower threshold, but still believe they can make that threshold, have incentives (provided by the threshold bonus) to do whatever is necessary to achieve the lower threshold. Their actions commonly include destroying value by loading the distribution channel so as to recognize revenues earlier, unwisely reducing R&D and required maintenance expenditures, and (in some cases) outright accounting fraud. Each of these actions shifts reported profits from next period to the current period, but does so at an unnecessary cost to the firm.

In both of these cases, the non-linearities provide incentives for CEOs to “manage earnings.” In particular (and assuming that performance is measured by earnings), the bonus plan in Figure 2.11 provides incentives to “smooth earnings” (by shifting earnings from next period when below the lower threshold and shifting earnings to next year when above the upper threshold), while occasionally taking a “big bath” (when it is not possible, even with manipulation, to get earnings above the lower threshold).

²⁸ The pioneering empirical paper is Healy (1985), who found that executives use discretionary accrual charges to shift earnings to a later period whenever performance exceeds the upper performance threshold. Holmstrom and Milgrom (1987) provide the classic theoretical justification for linear contracts based on specific modeling assumptions; Edmans (2011) provide more general conditions for linearity.

In addition to earnings management, non-linearities also affect risk-taking behavior. In particular, when the pay-performance relation is concave (so that lower performance is penalized more than higher performance is penalized), executives can increase their total bonus payouts by reducing the variability of their performance. Conversely, convex pay-performance relations increase risk-taking incentives. Financial economists have suggested that boards purposely add convexity to CEO pay contracts to offset the reluctance of risk-averse CEOs to invest in risky (but profitable) projects.²⁹ More recently, some academics (as well as Congress and the popular press) have alleged that convexities in banking bonuses (where positive performance is rewarded, but negative performance is not penalized) led to excessive risk-taking that, in turn, facilitated the 2008-2009 financial crisis.

The problems with non-linearities are mitigated by eliminating caps on the upside, and finding ways to implement and enforce “negative” bonuses on the downside.³⁰ While it is difficult to force CEOs to write checks back to the company after a bad year, negative bonuses can be partially implemented by basing pay on multi-period cumulative performance (Holmstrom and Milgrom (1987)) or by deferring current compensation into bonus banks that can be used to fund future negative bonuses (Stewart (1991)). Another indirect way to impose negative bonuses is by reducing base salaries and offering enhanced bonus opportunities (through reduced bonus thresholds).

2.3.2. Problems with performance benchmarks

Bonuses are usually not, in practice, based strictly on a performance measure, but rather on performance measured relative to a performance benchmark (Murphy (2000)). Examples include net income measured relative to budgeted net income, EPS vs. last year’s EPS, cash flow vs. a charge for capital, performance measured relative to peer-group performance, or performance measured against financial or nonfinancial strategic “milestones.” Performance targets (one form of benchmarks) typically correspond to the level of performance required to attain the executive’s “target bonus.”

When bonuses are based on performance relative to a benchmark, executives can increase their bonus either by increasing performance or lowering the benchmark. Performance benchmarks therefore create predictable problems whenever the participants in the bonus plan can affect the benchmark. For example, when benchmarks are based on

²⁹ Classic papers include Hirshleifer and Suh (1992) and Guay (1999).

³⁰ See Murphy and Jensen (2011) for an extended discussion and examples of these practices.

meeting budget, executives with bonuses tied to budgeted performance targets have strong incentives to low-ball the budget. Boards (and supervisors throughout the management hierarchy) understand these incentives and generally push for higher budgets than those suggested by executives. The result is a familiar and predictable “budget game” that ultimately in which parties that ultimately destroys the information critical to coordinating the disparate activities of a large complex organization (Jensen (2003)).

As another example, when benchmarks based on prior performance (such as bonuses based on growth or improvement), plan participants understand that increased performance this year will be penalized through higher benchmarks the next year, will naturally take account of these dynamics when deciding how hard to work and what projects to undertake in the current year. Similarly, when bonuses are based on performance measured relative to that of colleagues, participants can increase their bonuses by sabotaging co-executives (Lazear (1989), Gibbons and Murphy (1990)). Benchmarks based on industry peers provided incentives to selecting “weak” industries or peers, or stay too long in a defective industry (Dye (1992)).

The problems with benchmarks based on budgets, prior-year performance, co-workers, and other internally manipulable measures can be mitigated by “externalizing” the benchmark; that is, by basing the benchmark on objective measures beyond the direct control of the plan participants. In Murphy (2000), I showed that companies using external benchmarks (which I defined as benchmarks based on fixed numbers or schedules, industry performance, or the cost of capital) were less likely to manage fourth-quarter earnings than were companies with internal benchmarks. However, I was unable to explain satisfactorily cross-sectional differences in the use of internal and external benchmarks, or why nearly 90% of the sample of 177 firms based benchmarks on budgets or prior-year performance.

2.3.3. Problems with performance measures

The problem of inappropriate performance measures is illustrated succinctly by the title of Steven Kerr’s famous 1975 article, “On the folly of rewarding A, while hoping for B” (Kerr (1975)). Paying salespeople commissions based on revenues, for example, provides incentives to increase revenues regardless of the costs or relative margins of different products. Likewise, paying rank-and-file workers “piece rates” based on units produced provides incentives to maximize quantity irrespective of quality, and paying a division head based solely on divisional profit leads the division head to ignore the effects of his decisions on the profits of other divisions. Similarly, paying CEOs based on short-run accounting

profits provides incentives to increase short-run profits (by, for example, cutting R&D) even if doing so reduces value in the long run.

Conceptually, the “perfect” performance measure for a CEO is the CEO’s personal contribution to the value of the firm.³¹ This contribution includes the effect that the CEO has on the performance of others in the organization, and also the effects that the CEO’s actions this year have on performance in future periods. Unfortunately, the CEO’s contribution to firm value is almost never directly measurable; the available measures will inevitably exclude ways that the CEO creates value, and include the effects of factors not due to the efforts of the CEO, or fail to reveal ways that the CEO destroys value. The challenge in designing incentive plans is to select performance measures that capture important aspects of the CEO’s contributions to firm value, while recognizing that all performance measures are imperfect and create unintended side effects.

While companies use a variety of financial and non-financial performance measures in their annual CEO bonus plans, almost all companies rely on some measure of accounting profit such as net income, pre-tax income, or operating profit. Accounting profit measured over short intervals is not, however, a particularly good measure of the CEO’s contribution to firm value, for several reasons. First, CEOs routinely make decisions (such as succession planning or R&D investments) that will increase long-run value but not short-run profit. Second, accounting profits (like equity-based measures) are invariably influenced by factors outside of the control of the CEO, including the effects of business cycles, world oil prices, natural disasters, terrorist attacks, etc. Third, while the measures of accounting profits typically used in bonus plans take into account both revenues and expenses, they ignore the opportunity cost of the capital employed. The use of these accounting measures provides incentives to invest in any project that earns positive accounting profits (not just those that earn more than the cost of capital), and provides no incentives to abandon projects earning positive accounting profits that are less than those required to cover their cost of capital.

³¹ In his classic paper on optimal contracts, Holmstrom (1979) considers a case where the principal (i.e., the shareholders) know precisely what action they want the agent (i.e., the CEO) to take, but cannot observe whether the CEO in fact took that action. Holmstrom shows that the optimal contract will include any performance measures that are useful (or “informative”) in determining whether the CEO took the prescribed action. This so-called “informativeness principle” was widely embraced by many academics who used it as the theoretical justification for analyzing performance measures used in CEO contracts. However, as emphasized in Holmstrom (1992) and implicit in Holmstrom and Milgrom (1991), the informativeness principle is not applicable in the realistic multi-tasking case where the shareholders do not know precisely what actions they want the CEO to take, and indeed entrust their money to self-interested CEOs specifically because CEOs have superior skill or information in making investment decisions.

Exacerbating the problems with accounting-based performance measures in bonus plans is the fact that they are often expressed as ratios (e.g., earnings per share, return on assets, return on equity, return on capital, etc.). Executives participating in such plans can increase their bonus either by increasing the numerator (accounting profits) or by decreasing the denominator (e.g., shares, assets, equity, invested capital). For example, a CEO paid based on return on capital would prefer a \$100 million project earning a 40% return to a \$1 billion project earning a 25% return, even though the latter creates more wealth (as long as the cost of capital is less than 22%).

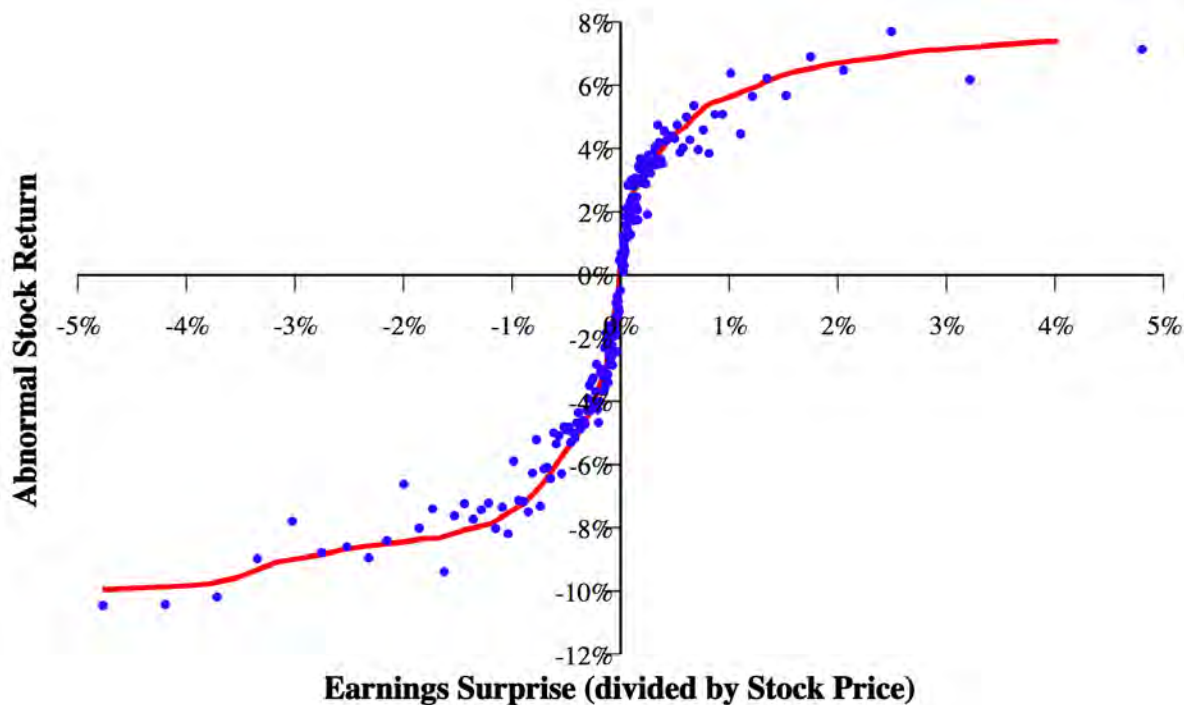
2.4. *(Dis)Incentives from Capital Markets*³²

The typical accounting-based bonus plan depicted in Figure 2.11 provides incentives to focus on short-run accounting returns at the expense of long-run value creation, and to manipulate or smooth earnings by unproductively shifting revenues and expenses across reporting periods. Conceptually, this problem is mitigated by shifting from accounting- to equity-based plans: if markets are efficient, then the equity markets should punish executives for playing the “earnings management game.” However, equity markets can exacerbate rather than mitigate the problem, by providing executives with incentives to take actions to meet or beat analyst and market expectations for earnings or certain key performance benchmarks.

Figure 2.12 shows the relation between the magnitude of the quarterly abnormal stock return and quarterly earnings surprises measured by the earnings forecast error, based on 172,247 firm-quarter observations over the period 1984-2010.³³ The earnings forecast error is defined as the difference between actual announced earnings per share and the median analyst forecast for quarterly earnings thirteen trading days prior to the end of the quarter, divided by the closing stock price for the quarter. Abnormal returns reflect the cumulative return from twelve days before to one day after the earnings announcement, less the buy-and-hold return from the associated Fama-French 5x5 portfolio (based on size and book-to-market ratios). Accounting data are from Compustat, returns and share prices from CRSP, and earnings forecasts are from I/B/E/S.

³² See Jensen and Murphy (2012) for a more-detailed treatment of the analysis in this section.

³³ The data and analysis underlying Figure 2.12 were generously provided by David Huelsbeck.

Figure 2.12 Abnormal Stock Returns in Response to Quarterly Earnings Surprises

Note: The graph plots quarterly abnormal returns for growth and value firms as a function of earnings surprise at the end of the quarter. Forecast error is measured as the earnings surprise relative to the quarter-end stock price. Data are from I/B/E/S database for the final month of the fiscal quarter for which earnings is being forecast. Each “dot” represents averages for 200 portfolios ranked by the earnings surprise. Sample size is 172,247 firm-quarter observations in the period 1984-2010. The line depicts the moving average.

Note: Data and analysis provided by David Huelsbeck.

As shown in Figure 2.12, stock prices react strongly and positively to small positive earnings surprises: when a firm produces earnings that beat the consensus analyst forecast by 1% the stock price rises on average by about 5.5%. Similarly, stock prices react strongly and negatively to small negative earnings surprises: when a firm misses its forecast by 1% stock prices fall by nearly 8%. But there is not much additional stock-price reaction to larger surprises (those greater than plus or minus 1% of the stock price at the end of the final month of the fiscal quarter for which earnings are being forecast). This “S-curve” feature of stock-price responses to earning surprises has been well documented in the literature (see, for example, Skinner and Sloan (2002) and Bartov, Givoly and Hayn (2002)).

As emphasized by Jensen and Murphy (2012), the relation between a firm’s top-management team and the capital markets has resulted in an equilibrium that replicates many counterproductive aspects of budget or target-based bonus systems discussed in conjunction with Figure 2.11. For executives holding large quantities of stock and stock options, Figure 2.12 portrays the non-linear pay-performance relation that defines how meeting, beating or

missing analyst forecasts affects the value of their equity-based holdings. In particular, executives subject to such stock price responses to quarterly earnings surprises have incentives to beat analysts forecasts by a small amount (an earnings surprise that amounts to no more than 1% of the quarter end stock price), but not by *too much* because the payoff from beating the forecast by a lot is not much higher than the payoff for beating it by 1%. Moreover, if an executive is going to miss the forecast, the executive may as well miss it by a *lot* since the additional penalty paid for a large miss is not much higher than for a 1% miss. Note also that manipulating this quarter's earnings to miss analyst earnings forecasts by a *lot* (e.g., by shifting revenues from this quarter to the next quarter, or moving expenses from next quarter to this quarter) also provides increased ability to executives to beat *next* quarter's earnings forecast.

Following the accounting scandals in the early 2000s, several researchers have documented that executive option and equity holdings are higher in companies that restate their earnings or are accused of accounting fraud. The results are mixed. Efendi, Srivastava and Swanson (2007) and Burns and Kedia (2006), for example, document that firms with CEO's who have large amounts of "in-the-money" options are much more likely to be involved in restatements. Bergstresser and Philippon (2006) provide evidence that the use of discretionary accruals to manipulate reported earnings is more pronounced at firms where the CEO's potential total compensation is more closely tied to the value of stock and option holdings. Johnson, Ryan and Tian (2009) conclude that firms accused of fraud have significantly greater incentives from unrestricted stockholdings than control firms do, and unrestricted stockholdings are their largest incentive source. Erickson, Hanlon and Maydew (2006) find in logistic regressions that the probability of being accused of fraud by the SEC is related to stock-based compensation, but find no differences between the fraud firms and a "matched" sample of firms not accused of fraud.

Temptations to manipulate the expectations market will clearly be higher for executives holding large quantities of stock and options that can be sold or exercised before markets adjust to the "real" information. Therefore, the natural remedy to mitigate manipulation is to impose longer vesting periods on restricted stock and options and holding requirements on unrestricted stock.³⁴ However, there is little evidence that executives actually exercise and sell large fractions of their exercisable options or sell large fractions of their unrestricted

³⁴ See, for example, Edmans, et al. (2012) and (in the context of the financial crisis) Bhagat and Bolton (2011).

stock holdings prior to restatements or indictments. The ominous hypothesis is that executives focused on the expectations market are not following a “pump and dump” strategy (which can be controlled by imposing longer vesting and holding requirements), but rather that they are legitimately confused about the difference between increases in the short-run stock price and true value creation.

3. How We Got There: A Brief History of CEO Pay

3.1. Introduction

Most recent analyses of executive compensation have focused on efficient-contracting or managerial-power rationales for pay, while ignoring or downplaying the causes and consequences of disclosure requirements, tax policies, accounting rules, legislation, and the general political climate. A central theme of this study is that government intervention has been both a response to and a major driver of time trends in executive compensation over the past century, and that any explanation for pay that ignores political factors is critically incomplete.

As will become evident in this Section, there have been two broad patterns for government intervention into CEO pay. The first pattern is aptly described as knee-jerk reactions to isolated perceived abuses in pay, leading to disproportionate responses and a host of unintended and undesirable consequences. As an example discussed below in Section 3.6.1, outrage over a single \$4.1 million change-in-control payment in 1982 led to strict limitations on all golden parachutes for top executives, which in turn led to a host of unintended consequences including an explosion in the use of golden parachutes, tax gross-up provisions, and employment agreements; the rules also encouraged shorter vesting periods for stock awards and early exercise of stock options. The second pattern – best described as “populist” or “class warfare” – arises in situations where CEOs (and other top executives) are perceived to be getting richer when lower-level workers are suffering. The associated attacks on wealth in these situations gave rise to disclosure rules in the 1930s, limits on tax deductibility for CEO pay in the early 1990s, and wide-ranging pay regulations in the 2010 Dodd-Frank Act. Beyond these two broad patterns, indirect intervention in the form of accounting rules, securities laws, broad tax policies, and listing requirements have also had direct impact on the level and composition of CEO pay.

Calling this second pattern “class warfare” is a bit simplistic, since (relative to other developed economies) Americans have historically been unusually tolerant of income inequality arising from exceptional efforts, ideas, and abilities. Underlying much of the outrage – and suggestive of the managerial-power hypothesis – is the perception that executive pay is “rigged” and not reflective of productivity and not set in a competitive market for managerial services.³⁵ Nonetheless, it is instructive to recognize that demands to reform (or punish) CEO pay are concentrated in “third parties” angry with perceived levels of excessive pay, and not shareholders concerned about insufficient links between pay and performance.

3.2. *Executive compensation before the Great Depression*³⁶

The history of executive compensation in the United States naturally parallels the history of executives. While the vast majority of business enterprises before 1900 were small and run by owners, a new class of “salaried middle managers” emerged in a variety of industries (such as railroads and steel) with relatively large and complex firms. However, even these larger firms were typically run by founders, descendents of founders, or individual with large blocks of equity: there was no obvious need for executive incentive plans that tied pay to corporate performance.

Between 1895 and 1904, nearly two thousand small manufacturing firms combined to form 157 large corporations. Management responsibility in many of these new firms shifted from owners to professional executives who had management skills but no meaningful equity stakes. Over the next two decades, the void in incentives was filled by the emergence of bonuses tied to corporate profits. By 1928, nearly two thirds of the largest industrial companies offered executive bonus plans; bonuses accounted for 42% of 1929 total executive compensation in companies with plans (Baker (1938)). While compensation was generally modest, the highest bonuses rivaled amounts even in nominal terms not seen again until the late 1970s. For example, as discussed below, Bethlehem Steel’s CEO Eugene Grace received a bonus of \$1.6 million for 1929 performance (over \$20 million in inflation-adjusted 2011 dollars).

³⁵ While the recent Occupy Wall Street movement is insufficiently organized to speak with a single voice, a plausible interpretation of their attack on Wall Street pay (and CEO pay, more generally) is the perception that pay is rigged; see, for example, Taibbi, “Politics: OWS’s Beef: Wall Street Isn’t Winning - It’s Cheating,” *Rolling Stone* (2011).

³⁶ The material in this subsection is largely drawn from Wells (2010) and Wells (2011).

In spite of the increasing magnitude of the highest CEO bonuses, executive pay was not particularly controversial during the 1920s. Part of the nonchalance reflected the fact that there were no public disclosures of pay for individual executives: the bonuses at Bethlehem Steel, for example, came to light as a result of a 1930 lawsuit unrelated to compensation. Most reports at the time were speculative, based on vague descriptions of company-wide bonus formulas that would allow estimates of aggregate but not individual bonuses. Moreover, the economy was robust, unemployment was low, and shareholder returns were high, factors that would provide a safe harbor for high executive pay for the next 90 years.

In July 1930, during a lawsuit attempting to block Bethlehem's takeover of Youngstown Sheet & Tube Co., Bethlehem Steel's CEO was forced to reveal that he received a bonus of \$1,623,753 for 1929, while six vice presidents received \$1.4 million in aggregate.³⁷ The revelations – coming at the beginning of the Great Depression – sparked a variety of shareholder lawsuits demanding that the executives return up to \$36.5 million in bonuses received since 1911. The same year, shareholders sued American Tobacco for details on its stock subscription plan, resulting in revelations that the company's CEO netted \$1.2 million from an incentive plan that allowed him to purchase company stock at deeply discounted prices.³⁸ Wells (2010) (p. 712) concludes that “the Bethlehem Steel and American Tobacco revelations, combined no doubt with a Depression-generated disgust with corporate management, fueled public perceptions that executive compensation was both excessive and the product of self-dealing.”

3.3. *Depression-era Outrage and Disclosure Requirements (1930s)*

We have become accustomed to the idea that shareholders – and the public in general – have a right to know the details of the compensation paid to top executives in publicly traded corporations. However, the initial push for pay disclosure was not driven by shareholders but rather by “New Deal” politicians outraged by perceived excesses in executive compensation.

In 1933 Franklin D. Roosevelt became president, ending three terms and twelve years of Republican government and ushering in the New Deal in a country recovering from the

³⁷ “\$1,623,753 Grace's Bonus For 1929: Bethlehem President Testifies At Merger Trial To Receiving This Amount,” *Wall Street Journal* (1930); “Bonus Figures Given At Trial: Six Vice Presidents Of Bethlehem Received \$1,432,033 In 1929,” *Wall Street Journal* (1930).

³⁸ In particular, American Tobacco's George Hill was allowed to purchase 13,440 shares of company stock at its \$25 “par value” at a time when shares were trading for about \$120. See “G. W. Hill Got Bonus of \$1,200,000 Stock,” *New York Times* (1931).

Great Depression. In the April prior to the 1932 election – in the face of proposed bailout loans from the governments Reconstruction Finance Corporation (RFC) – the Interstate Commerce Commission demanded that all railroads disclose the names of executives making more than \$10,000 per year.³⁹ The disclosed pay levels outraged the new Administration, and in May 1933 the RFC required railroad companies receiving government assistance to reduce executive pay by up to 60%.⁴⁰ Ultimately, the U.S. Senate authorized the Federal Coordinator of Transportation to impose an informal (but uniformly complied with) cap of \$60,000 per year for all railroad presidents.

The mandated pay disclosures for railroad executives sparked the interest of other US regulators. By mid-1933 the Federal Reserve began investigating executive pay in its member banks, the RFC conducted a similar investigation for non-member banks, and the Power Commission investigated pay practices at public utilities. In October 1933, the Federal Trade Commission (FTC) requested disclosure of salaries and bonuses paid by all corporations with capital and assets over \$1 million (approximately 2,000 corporations).⁴¹ Business leaders questioned whether the FTC had the legal authority to compel such disclosures, but were reminded that, “Congress in its present temper would readily authorize” whatever the FTC wanted.⁴² Executives were particularly incensed that the FTC would demand such closely guarded information without any explanation of how the information would be used and without any confidentiality guarantees.

Following the Securities Act of 1934, the responsibility for enforcing pay disclosures for top executives in publicly traded corporations was consolidated into the newly created Securities and Exchange Commission (SEC). In December 1934, the SEC issued permanent rules demanding that companies disclose the name and all compensation (including salaries, bonuses, stock, and stock options) received by the three highest-paid executives. The securities of companies not complying with the new regulations by June 1935 would be

³⁹ “Railroad Salary Report: I.C.C. Asks Class 1 Roads About Jobs Paying More Than \$10,000 a Year,” *Wall Street Journal* (1932).

⁴⁰ The required reductions ranged from 15% (for executives earning less than \$15,000) to 60% (for executives earning more than \$100,000. See “RFC Fixed Pay Limits: Cuts Required to Obtain Loans,” *Los Angeles Times* (1933); “Cut High Salaries or Get No Loans, is RFC Warning,” *New York Times* (1933).

⁴¹ See Robbins, “Inquiry into High Salaries Pressed by the Government,” *New York Times* (1933) and “President Studies High Salary Curb: Tax Power is Urged as Means of Controlling Stipends in Big Industries,” *New York Times* (1933). In addition to investigating corporate executive pay, President Roosevelt personally called attention to lavish rewards in Hollywood, resulting in a provision added to the moving-picture code that imposed heavy fines on companies paying unreasonable salaries.

⁴² “Federal Bureau Asks Salaries of Big Companies’ Executives,” *Chicago Daily Tribune* (1933).

removed from exchanges. Several companies, including U.S. Steel, pleaded unsuccessfully for the SEC to keep the data confidential, arguing that publication “would be conducive to disturbing the morale of the organization and detrimental to the best interests of the registrant and its stockholders.”⁴³

Under the Securities Act, details on executive pay are disclosed in company proxy statements issued in connection with the company’s annual shareholders meeting. Ultimately, these disclosures have provided the fodder for all subsequent pay controversies. Proxy statements for companies with December fiscal closings are typically issued in late March or early April, triggering a deluge of pay-related articles in the popular and business press each Spring. *Forbes* and *Business Week* began offering extensive lists of the highest-paid executives in 1970. *Fortune* and the *Wall Street Journal* quickly followed suit, and by now most major newspapers conduct their own CEO pay surveys for companies based in their local metropolitan areas).

While the SEC has no direct power to regulate the level and structure of CEO pay, the agency *does* determine what elements of pay are disclosed and how they are disclosed. The SEC has routinely expanded disclosure requirements from year to year, with major overhauls in 1978, 1993, 2006, and 2011. The first proxy statements issued after the formation of the SEC were typically about three-to-five pages long, with less than one page devoted to executive compensation. By 2007, the average proxy statement exceeded 70 pages, nearly all focused on compensation.⁴⁴

Under the theory that sunlight is the best disinfectant, the SEC’s disclosure rules have long been a favorite method used by the SEC and Congress in attempts to curb perceived abuses and excesses in executive compensation. Indeed, most additions to disclosure requirements over time – including perquisite disclosure in the 1970s, enhanced option grant disclosures in the 1993, and actuarial pension values in 2006 – reflect policy responses to relatively isolated abuses. However, there is little evidence that enhanced disclosure leads to reductions in objectionable practices: for example, perquisites increased as executives learned what was common at other firms, and options exploded following the 1993 rules.

⁴³ “U.S. Steel Guards Data on Salaries: Sends details confidentially to SEC head with request that they be kept secret,” *New York Times* (1935).

⁴⁴ The average length of 2007 proxy statements for the 100 largest firms (ranked by revenues) was 62.8 pages (ignoring appendices). In 2006 – before the 2006 disclosure rules – the average length was 45 pages.

The demand for disclosure reflects both legitimate shareholder concerns and public curiosity. While disclosure can conceptually facilitate better monitoring of outside directors by shareholders, the public curiosity aspect of disclosure imposes large costs on organizations. The recurring populist revolts against CEO pay, for example, could not have been waged without public pay disclosure. Public disclosure effectively ensures that executive contracts in publicly held corporations are not a private matter between employers and employees but are rather influenced by the media, labor unions, and by political forces operating inside and outside companies. These “uninvited guests” to the bargaining table have no real stake in the companies being managed and no real interest in seeing companies managed well so they serve all the claimants on the firm including consumers, debt and equity holders, employees and communities. However, as will become evident throughout this Section, these third parties have affected both the level and structure of executive pay through tax policies, accounting rules, direct legislation, and other rules and regulations stretching back nearly a century. These important but often ignored costs of disclosure must be weighed against the benefits (better monitoring of directors) in determining the optimal amount of pay disclosure for top managers.

3.4. The Rise (and Fall) of Restricted Stock Options (1950-1969)

In the 1920s, the U.S. income tax was new, the use of stock options was new, and no one had figured out whether options would be taxed: (1) as compensation when options are exercised (and hence taxed as ordinary income for the individual, and representing a deductible business expense for the company); or (2) as capital gains when the stock purchased upon exercise were ultimately sold (and hence taxed at a lower capital gains rate for the individual, with the company forgoing deductibility). It took nearly twenty years for this issue to be resolved. The major case study at the time involved a May 1928 option grant to the CEO of a chain of movie theaters. After a large six-month run-up in the stock price following the grant, the CEO exercised his options in October 1928 and subsequently sold the shares in 1929 and 1930, paying capital gains taxes (12.5%) on the proceeds. The Bureau of Internal Revenue (the predecessor of the Internal Revenue Service (IRS)) held that he owed ordinary income taxes on the spread at exercise (25% in 1928). The taxpayer appealed the decision, and nearly nine years later the Circuit Court of Appeals agreed with the taxpayer, concluding that a taxable gain is realized only when the shares are sold and not

when the option is exercised.⁴⁵ However, the Bureau appealed this decision, and in another nine years the Supreme Court ruled in favor of the Bureau in a similar case, concluding in 1945 that the gain upon exercise is compensation, thereby taxable as ordinary income.⁴⁶

By 1950, the tax issue surrounding stock options was a big deal: the highest marginal tax rates on ordinary and corporate incomes had swelled to 91% and 42% (from 25% and 12% in 1928, respectively), compared to a capital gains rate of 25% (from 12.5% in 1928). Moreover, while the Supreme Court required taxes to be paid immediately upon exercise, the 1934 Securities Act required executives to hold shares acquired through option exercises for at least six months before they could sell.⁴⁷ For example, suppose an executive acquired one share of stock at an exercise price of \$10 when the market price is \$25. To finance the exercise and pay the taxes, the executive would need to pay \$23.65 (i.e., the exercise price plus 91% of the exercise-date spread), but could not raise the amount by selling shares.

As part of the Revenue Act of 1950, a business-friendly Congress unhappy with the recent Supreme Court decision created a new type of stock options called “restricted stock options” that would be taxable not upon exercise but only when the shares were ultimately sold (and then taxed as capital gains). Restricted stock options solved the tax-timing problem, since taxes were not owed until the stock was sold (at least six months following the exercise date). Given the tax rates at the time, restricted stock options also became a relatively efficient way to convey after tax compensation to executives. For example, at a 91% tax rate on ordinary income and 50.75% corporate tax rate, it cost shareholders \$5.47 in after-tax profit to give the executive \$1 in after-tax income.⁴⁸ In contrast (and for simplicity ignoring the timing issues), when the pay is taxed as capital gains rather than ordinary income, it cost shareholders only \$1.33 to convey \$1 in after-tax income to the executive (even though shareholders forfeit the deduction).

The passage of the 1950 Act launched a predictable wave of new option plans. In 1950 approximately 4% of the companies listed on the New York Stock Exchange (NYSE) had

⁴⁵ *Rossheim v. Commissioner*, 92 F. 2d 247 (1937).

⁴⁶ *Commissioner v. Smith*, 324 U.S. 177 (1945).

⁴⁷ To deter insider trading, Section 16b of the 1934 Securities Act requires that any profit realized by an officer or director in the purchase or sale of an equity security within a six-month period be returned to the company.

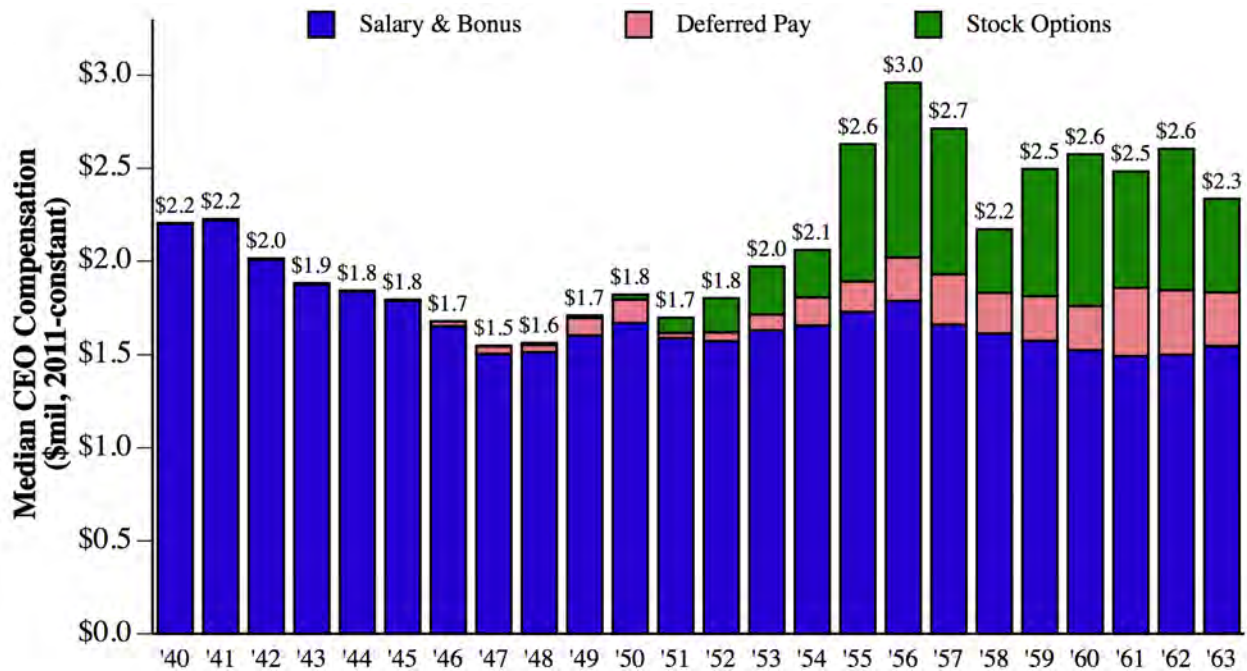
⁴⁸ At a 91% tax rate, the CEO must receive \$11.11 before tax to realize \$1 after tax. But, at a 50.75% corporate tax rate, paying \$11.11 in deductible compensation costs reduces after-tax profits by only \$5.47.

option plans for their top executives; by June 1951 the number had tripled to 12%.⁴⁹ In their study of the fifty largest firms in 1940 and 1960, Frydman and Saks (2010) estimate that the fraction of executives holding stock options increased from less than 10% in 1950 to over 60% by 1960. Grant sizes also grew: the grant-date value of options for those executives receiving options increased from about 10% of total compensation in the early 1950s to over 20% of total compensation by the early 1960s.

Figure 3.1 shows the average level and structure of compensation for CEOs in 50 large manufacturing firms, based on data from Lewellen (1968).⁵⁰ The stock option data – compiled long before the availability of option-pricing methodologies such as Black and Scholes (1973) – are based on appreciations in the annual spread between the market and exercise prices of outstanding options. Since Lewellen measures options at their appreciated values, the trend in Figure 3.1 reflects, in part, general stock-market movements over this time period. After adjusting for inflation, salaries and bonuses fell from \$2.2 million in 1940 to about \$1.5 million (in 2011-constant dollars) from 1947 to 1963. Total compensation, including deferred compensation and stock options, peaked at \$2.9 million in 1956. Negligible before 1951, options grew to over 30% of compensation by 1956, falling to about a fifth of total compensation by 1963.

⁴⁹ Mullaney, “Parley Here Indicates the Continued Spread in Industry of Stock Purchase Option Plans,” *New York Times* (1951). The percentages are based on average of 840 NYSE-listed firms in 1950 and 876 in June 1951.

⁵⁰ Lewellen (1968) reports both the pre-tax and after-tax values for salaries and bonuses, but only the after-tax values for stock options and deferred compensation. The pre-tax values for stock options after 1950 are determined by dividing the after-tax value by .85 (Lewellen uses a 15% effective tax rate for options). The pre-tax value for deferred compensation (and for options prior to 1950) are estimated by dividing the after-tax value by $(1-t^*)$, where t^* is one-half of the implied average tax rate for salaries and bonuses. For example, if Lewellen reports pre-tax and after-tax salaries and bonuses of \$240,000 and 80,000, respectively, suggesting an average tax rate of 60%, we would calculate pre-tax deferred compensation using a tax rate of 30%.

Figure 3.1 Trends in before-tax CEO Compensation in 50 Large Manufacturing Companies, 1940-1963

Note: The figure is based on the Lewellen (1968) study of 50 large manufacturing firms, adjusted to 2011 dollars using the Consumer Price Index. The value of stock options is based annual calculations of the spread between the market and exercise prices. The before-tax value of deferred pay and stock options are estimated from Lewellens after-tax calculations.

Since restricted stock options were taxed at a much lower rate than salaries, the trend in Figure 3.1 understates the growing importance of options on an after-tax basis. In particular, Lewellen estimates that options accounted for nearly half of total after-tax compensation in 1956, falling to a third of total after-tax compensation by 1963.

By the summer of 1951, there was a growing backlash against the perceived escalation in restricted stock option plans. In August 1951, the Salary Stabilization Board conducted a series of hearings on whether stock options should be considered compensation under the Defense Production Act and therefore subject to regulation by the Stabilization Board.⁵¹ In November 1951, the Stabilization Board ruled that restricted stock options could be granted without the Board's approval as long as the option met certain conditions (including an exercise price of at least 95% of the grant-date stock price; restricted options with an exercise price as low as 85% of the stock price could be issued, but would be considered increases in

⁵¹ "Salary Board's Panel to Study Stock Option in Top Executive Pay," *Wall Street Journal* (1951); "Options Defended at Salary Hearing: Restricted Stock Plans Called Neither Inflationary Nor Compensatory by 8 Men," *New York Times* (1951); "Options on Stocks Scored at Hearing: Majority of Witnesses Call it Inflationary and Unfair to Small Stockholders," *New York Times* (1951); "Salary Board Urged to Ban Stock Option Plans Until End of Emergency," *Wall Street Journal* (1951); "Stock Options: Industry Says Salary Board Should Keep Its Hands Off Employee Plans," *Wall Street Journal* (1951).

salary subject to regulation).⁵² The Board's ruling was followed by a second wave of option plans, and by June 1952 nearly 17% of the NYSE firms had adopted plans.⁵³ In July 1952 the Salary Stabilization Board was disbanded.

Many of the options granted in the early 1950s fell underwater in the 1953 post-Korean War recession. As part of the Revenue Act of 1954, Congress modified the restrictions on restricted stock options by officially sanctioning variable-price options, in which the exercise price of a previously granted option could be lowered if it turned out that the market price of the optioned stock declined subsequent to the granting of the option. In addition, where the 1950 Act put no limits on the expiration terms of options, the 1954 Act limited exercise terms to 10 years (which continues to be the most common term for options granted through current times). While the popularity of stock options decreased briefly during the bear market in 1957,⁵⁴ the use of stock options continued to trend upwards: by 1961 68% of the NYSE firms had option plans.⁵⁵

During the 1960 recession, as new option grants were falling out of favor given the declining stock market, companies began exploiting the provision of the 1954 Act allowing repricing of options by either resetting exercise prices or by canceling existing options and replacing them with new options with lower exercise prices. This practice became highly controversial in the early years of the Kennedy Administration, leading to a series of Congressional hearings aimed at repealing the favorable tax treatment for restricted stock options.⁵⁶ In 1961, the President demanded that Congress remove the favorable tax treatment for options, instead taxing options as ordinary income upon exercise (most of which would be subject to the 91% top marginal tax rate). The issue was debated in Congress for the next two years, and the controversy intensified in late 1963 and early 1964 when it was revealed that executives at Chrysler had realized \$4.2 million in gains from exercising stock options in

⁵² "Rules are Issued on Stock Options," *New York Times* (1951).

⁵³ "One in 6 Companies Gives Stock Options," *New York Times* (1952).

⁵⁴ "Ailing Options: Stock Market Decline Dulls Allure of Plans For Company Officials," *Wall Street Journal* (1957).

⁵⁵ The 1961 survey is described in Stanton, "Cash Comeback: Stock Options Begin to Lose Favor in Wake of Tax Law Revision," *Wall Street Journal* (1964).

⁵⁶ "Options on the Wane: Fewer Firms Plan Sale of Stock to Executives at Fixed Exercise Prices," *Wall Street Journal* (1960); "Congress and Taxes: Specialists Mull Ways to Close 'Loopholes' in Present Tax Laws," *Wall Street Journal* (1959); "House Group Hears Conflicting Views on Stock Option Taxes," *Wall Street Journal* (1959).

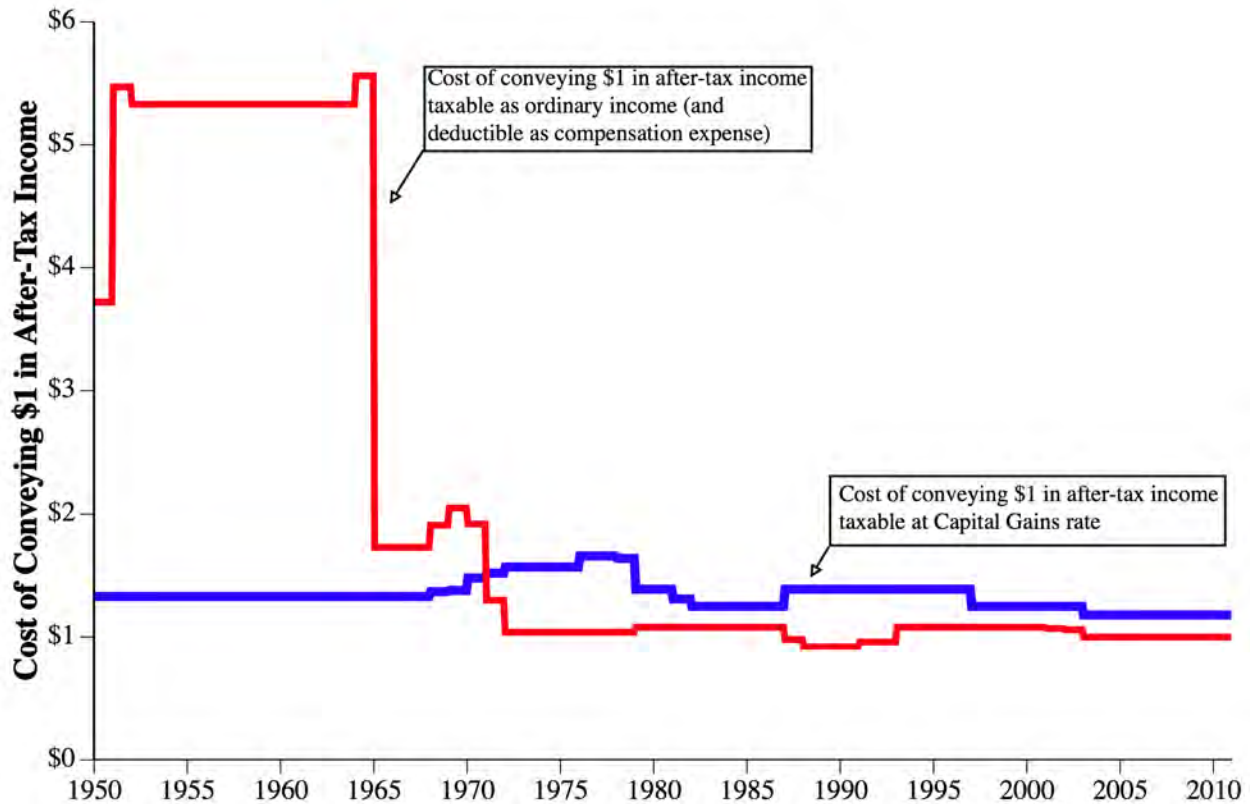
1963, and had sold nearly 200,000 shares acquired through earlier exercises.⁵⁷ Ultimately, as part of the Revenue Act of 1964, Congress stopped short of removing the favorable tax status of restricted stock options, but took several steps that substantially reduced their attractiveness. In particular, under the new law:

- Executives were required to hold stock acquired through option exercises for three years (rather than six months) in order to be taxed at the lower capital gains rate.
- Exercise prices could be no less than 100% (rather than 85%) of the grant-date market prices.
- The maximum option term was reduced from ten years to five years.
- The option price could not be reduced during the term of the option, nor could an option be exercised while there is an outstanding option issued to the executive at an earlier time. (This provision was designed to halt the practice of repricing options or canceling out-of-the-money options and replacing them with options with lower exercise prices.)

To distinguish options meeting these new requirements from restricted options granted under the Revenue Act of 1950 provisions, the 1964 Act referred to new grants as “qualified stock options” rather than restricted stock options.

Finally (but perhaps most importantly), the 1964 law reduced the top marginal tax rate on ordinary income from 91% to 70%, which significantly reduced the attractiveness of restricted options over cash compensation. Figure 3.2 provides a historical comparison of the tax advantages of restricted or qualified stock options relative to cash compensation or non-qualified stock options (in which the gains upon exercise are taxed as ordinary income for the recipient, and deductible as a compensation expense to the company). As a result of the 1964 tax law, the after-tax cost to investors of conveying an after-tax dollar to the CEO in cash compensation fell from \$5.56 to \$1.73, while the cost of conveying an after-tax dollar in restricted or qualified stock options (taxed as capital gains) remained at \$1.33.

⁵⁷ “Chrysler Chairman Defends Option Plan, Offers to Discuss It With Federal Officials,” *Wall Street Journal* (1963); “Chrysler Officers Got Profit of \$4.2 Million On Option Stock in ‘63,” *Wall Street Journal* (1964); “Chrysler Officers’ Sale of Option Stock Could Stir Tax Bill Debate,” *Wall Street Journal* (1963); “House Unit Seen Favoring Curbs on Stock Options,” *Wall Street Journal* (1963); “Senate Unit Votes to Tighten Rules on Stock Options,” (1964).

Figure 3.2 The Tax Acts of 1964 and 1969 reduced the tax advantages of restricted or qualified stock options

Note: The figure shows the after-tax cost to investors of conveying an incremental \$1 in after-tax income under two tax regimes: (1) ordinary compensation (taxable to the recipient at the top marginal rate for earned income (t_e), and deductible by the firm at the top marginal rate for corporate income (t_c)), and (2) capital gains (taxable to the recipient at the capital gains rate (t_g), but not deductible by the firm). The cost for ordinary income is computed as $(1-t_c)/(1-t_e)$, while the cost for capital gains is $1/(1-t_g)$.

The popularity of qualified stock options fell as a result of the 1964 tax law⁵⁸ and collapsed following the Tax Reform Act of 1969. In addition, the 1969 Act defined gains from exercising restricted or qualified options as a tax preference item subject to a new Alternative Minimum Tax (AMT) on high wage earners.⁵⁹ The 1969 Act gradually reduced the top marginal tax rate on earned income from 77% in 1969 to 50% by 1972, reduced the corporate tax rate from 52.8% to 48%, and raised the top capital gains tax rate from 25% in 1969 to 36.5%. Once the new rates were fully implemented (and ignoring AMT issues), it

⁵⁸ See Stanton, "Cash Comeback: Stock Options Begin to Lose Favor in Wake of Tax Law Revision," *Wall Street Journal* (1964). Stock options briefly resurged in 1966, following a 25% increase in the Dow Jones average from 1964 to early 1966 (Elia, "Opting for Options: Stock Plans Continue in Widespread Favor Despite Tax Changes," *Wall Street Journal* (1967)).

⁵⁹ In particular, if the option gains exceed 50% of the executive's total income (including option gains), the amount of the option gain over 50% would be treated as fully taxable ordinary income. The AMT was passed following revelations that 155 high-income households took deductions that reduced their federal tax liabilities to zero.

cost investors approximately \$1.04 in after-tax profit to convey an incremental \$1 in after-tax income to the CEO through cash compensation or non-qualified stock options, and \$1.57 to convey \$1 in qualified stock options. Thus, for executives and companies in the highest tax brackets, qualified stock options became tax disadvantageous compared to non-qualified stock options, and (as illustrated in Figure 3.2) have remained so throughout the early 2000s. Indeed, Hite and Long (1982) provide evidence that the 1969 Act explains the dramatic shift from qualified stock options to non-qualified stock options that took place during the early 1970s. Restricted or qualified stock options – which had been the dominant form of long-term incentives for two decades – virtually disappeared.

3.5. *Wage-and-Price Controls and Economic Stagnation (1970-1982)*

3.5.1. *America, Land of the Freeze*

In August 1971, in an ultimately (and predictably) unsuccessful attempt to control inflation, President Nixon imposed a 90-day freeze on commodity prices and wages (including executive pay). In December 1971 – in what was called Phase Two of the Nixon wage-and-price controls – the Pay Board established by Congress imposed a limit of 5.5% for increases in executive pay (the limit being binding for company-defined groups of executives, but not necessarily for individual executives).⁶⁰ The Nixon wage-and-price controls were not the first time that levels of executive compensation were explicitly limited by legislation, but were the first time such controls were imposed in a peacetime economy. In particular, the World War II-era Stabilization Act of 1942 froze wages and salaries (for executives as well as other labor groups) at their September 15, 1942 level. The Stabilization Act expired in 1946, but was replaced during the Korean War by the Salary Stabilization Boards established in May 1951 as part of the Defense Production Act of 1951. Similar to the Nixon controls, the Korean War Salary Board set a 6% limit on pay increases for each company's executives taken as a group; the limits were lifted when the Board was quietly disbanded in July 1952.⁶¹

In a debate (and outcome) eerily similar to what would happen two decades later during the Clinton Administration, concerns that the Nixon wage controls would significantly

⁶⁰ Hunt, "Board Agrees on Tightening of Standards on Executive Pay, Increases Topping 5.5%," *Wall Street Journal* (1971).

⁶¹ "Old Wage Board Exits: New Unit to Take Over with Reduced Powers," *Wall Street Journal* (1952).

reduce executives incentives led to a series of compromises (or loopholes, depending on one's perspective).⁶² In particular, while bonuses were generally limited to the amount paid in any one of the last three years plus 5.5%, the limit did not apply to existing sales incentives, commission and production-incentive programs. Moreover, companies could petition to adopt new incentive plans as long as they were directly related to increased productivity. As a result, scores of companies introduced performance-based bonus plans tied to accounting data or revenues, or converted their existing plans into plans exempt from the limits.

Non-qualified stock options were allowed under the Nixon controls only if the plan was shareholder-approved, if the aggregate number of options granted did not increase from the prior three years, and if the exercise price was at least 100% of the grant-date market price. Non-qualified options were treated as wages and salaries under the Nixon controls, and were valued at 25% of the fair-market value of the shares underlying the option.⁶³ This valuation approach represents an interesting (albeit short-lived) historical footnote, since it was imposed a year before Black and Scholes (1973) and decades before companies began routinely placing a value on options when making compensation decisions.

The median continuing CEO in the *Forbes 800* received a 4.5% increase in cash compensation in 1971 (below the Nixon limit), 6.0% in 1972, and 8.1% in 1973 (both above the Nixon limit).⁶⁴ Since the government-mandated limits on pay raises applied only to executives taken as a group and not individual executives, companies routinely raised CEO pay by reducing pay (or offering smaller raises) to lower-level executives.⁶⁵ In August 1973, to stop companies from raising CEO pay above the 5.5% limit, the Nixon Administration imposed the 5.5% limit on the more-narrowly defined group of executives identified in

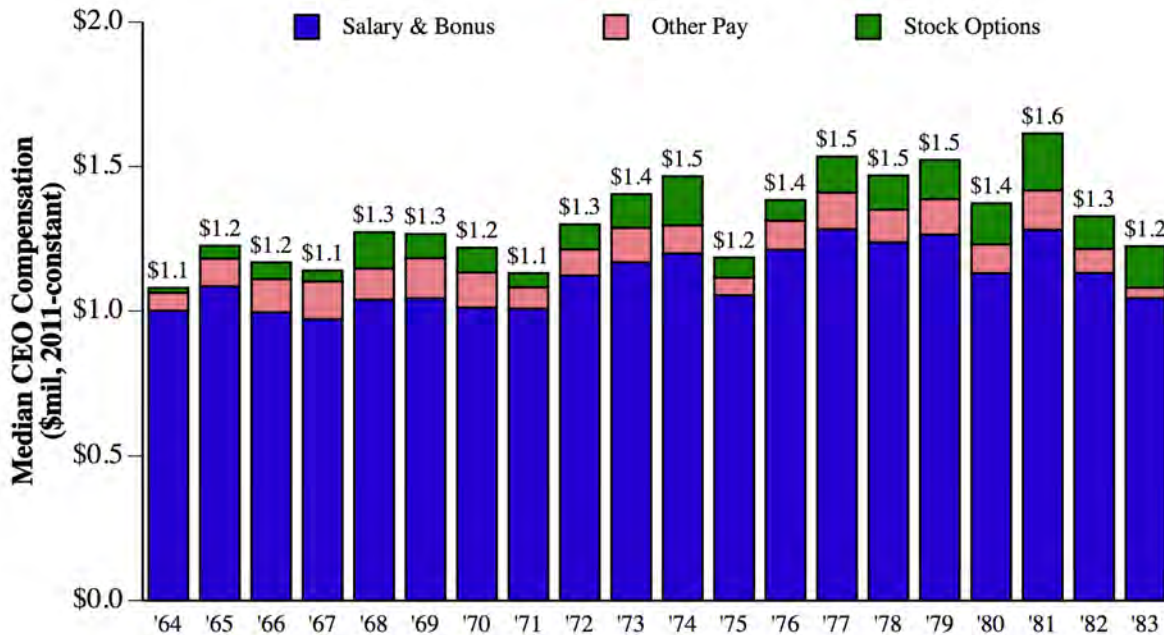
⁶² Jensen, "Bonuses Rise Through Loopholes," *New York Times* (1972). For the complete text of the executive compensation provisions, see "Board's Text on Executive Compensation," *Wall Street Journal* (1971).

⁶³ Valuation is based on testimony by Richard McNamar, director of the Pay Boards office of economic policy. See Calame, "Executives' Pay Faces Going-Over By Wage Board," *Wall Street Journal* (1972).

⁶⁴ The calculations are based on annual compensation surveys published in *Forbes* covering the largest 500 companies ranked by revenues, assets, market capitalization, and employees (about 800 companies are listed in one or more of these *Forbes* rankings annually).

⁶⁵ "Government Moves to Hold Executives to 5.5% Pay Boosts," *Wall Street Journal* (1973).

Figure 3.3 Trends in before-tax CEO Compensation in 73 Large Manufacturing Companies, 1964-1982



Note: The figure is based on data from the Murphy (1985) study of executive pay in 73 large manufacturing firms, adjusted to 2011 dollars using the Consumer Price Index. Stock options are valued on grant-date using the Black and Scholes (1973) formula.

company proxy statements. The wage-and-price controls expired in May 1974, in spite of Administration efforts to retain limits on executive compensation.⁶⁶

CEO pay rose significantly after the wage controls were lifted in May 1974. The median continuing CEO in the *Forbes 800* received an 11.1% increase in nominal cash compensation in 1974, double the average limit under the Nixon controls. From 1973 through 1979, the median cash compensation for CEOs in the *Forbes 800* increased by 12.2% each year (doubling from \$162,000 to \$324,000), significantly exceeding the average annual inflation rate of 8.5%.

Figure 3.3 shows the average level and structure of compensation for CEOs in 73 large manufacturing firms from 1964 to 1982, based on data from Murphy (1985) and inflation-adjusted to 2011-constant dollars. To my knowledge, this was the first comprehensive study of executive pay that measured stock options as the grant-date value using the Black and Scholes (1973) approach. In nominal terms (that is, before adjusting for inflation), median CEO pay in the 73 firms in Figure 3.3 nearly tripled from \$148,900 in 1964 to \$569,550 in

⁶⁶ “Business Groups Oppose Nixon Control Plan, Intensify Their Efforts to Abolish Restraints,” *Wall Street Journal* (1974); “Nixon Halts Push to Retain Some of Phase 4 Controls,” *Wall Street Journal* (1974).

1982. However, after adjusting for inflation (which averaged over 6.5% annually over this period), median real CEO pay increased only by about 23% over this 18-year period, or about 1.2% per year. Stock options accounted for 2% of total pay for the average CEO in 1964; the use of options had grown to 12% of pay by 1981. Both the level of pay and the use of stock options fell during the 1981-1982 recession.

3.5.2. *The Controversy over Perquisites*

While cash compensation escalated (at least in nominal terms) during the 1970s, the use of stock options was relatively stagnant. Part of the declining popularity of options reflected the change in tax policies in 1964 and 1969 that made qualified stock options less attractive, coupled with their outright prohibition in 1976 (see below). More importantly, though, was the prolonged stagnation in the stock market, driven in part by the oil-price shocks of 1973 and 1977. In particular, the nominal value of the bellwether Dow Jones average was basically flat from the beginning of 1965 through the early 1980s (falling from 903 in January 1965 to below 800 by mid-January 1982, and only surpassing 1050 on one day over these seventeen years). While executives continued to receive periodic option grants during this time (once every three years was typical), many of the grants replaced options that expired worthless or options that were cancelled and reissued with a lower exercise price.

The void in compensation created by worthless stock options was quickly filled by a plethora of new plans designed to provide more predictable payouts, including: book-value plans (where executives receive dividends plus the appreciation in book values); long-term performance plans (with payouts based on long-term earnings growth targets); and guaranteed bonuses (with payouts guaranteed independent of performance).⁶⁷ In addition, since the Nixon wage-and-price controls restricted salaries but not company-provided benefits, companies began relying to a greater extent on shareholder-subsidized perquisites or perks such as low-interest loans, yachts, limousines, corporate jets, club memberships, hunting lodges and corporate retreats at exotic locations.

⁶⁷ Ricklefs, "Sweetening the Pot: Stock Options Allure Fades, So Firms Seek Different Incentives," *Wall Street Journal* (1975); Hyatt, "No Strings: Firms Lure Executives By Promising Bonuses Not Linked To Profits," *Wall Street Journal* (1975); Ricklefs, "Firms Offer Packages of Long-Term Incentives as Stock Options Go Sour for Some Executives," *Wall Street Journal* (1977).

By the mid-1970s, perceived abuses attracted the ire of shareholder activists, the SEC and the IRS.⁶⁸ In December 1975, the IRS circulated a draft of proposed regulations specifying which fringe benefits could be excluded from an executive's taxable income. A long-held general rule excluded from taxable income benefits arising from the ordinary course of business that do not cost the employer anything extra (such as family members accompanying an executive on the corporate jet). The proposed rule imposed tax liabilities for these and other fringe benefits if the benefits were available only to the most highly compensated executives.

The attack on perquisites escalated in 1977 as President Carter famously rallied against companies taking deductions for the three-martini lunch, yachts and hunting lodges maintained to entertain business associates, first-class air travel, and fees paid to social and athletic clubs and money spent on sports and theater tickets.⁶⁹ Congress resisted implementing most of Carter's reforms as part the Revenue Act of 1978 (in large part because it would potentially affect their *own* consumption of perquisites) but agreed to eliminate deductions for entertainment facilities.⁷⁰

In August 1977, the SEC issued Interpretive Release #5856 stating that the value of perquisites be included as compensation in proxy statements.⁷¹ In justifying the new disclosures, SEC enforcement chief Stanley Sporkin argued that the "excesses just got to the point where it became a scandal."⁷² The disclosures in the 1978 proxy statements fueled the fire by focusing even more attention on perquisites.⁷³ The information on perquisites was

⁶⁸ See, for example, Bender, "The Executive's Tax-Free Perks: The IRS Looks Harder at the Array of Extras," *New York Times* (1975a); Bender, "Fringe Benefits at the Top: Shareholder Ire Focuses on Loan Systems," *New York Times* (1975b); Blumenthal, "Misuse of Corporate Jets by Executives is Drawing More Fire," *New York Times* (1977); Schellhardt, "Perilous Perks: Those Business Payoffs Didn't All Go Abroad; Bosses Got Some, Too; IRS and SEC Investigating Loans and Lush Amenities Provided for Executives; An Eye on Hunting Lodges," *Wall Street Journal* (1977).

⁶⁹ Rankin, "Incentives for Business Spending Proposed in Corporate Package," *New York Times* (1978); "Excerpts From Carter Message to Congress on Proposals to Change Tax System," *New York Times* (1978).

⁷⁰ Zimmerman, "Washington Word: Don't Do as We Do But Do as We Say: For Bureaucrats, Lawmakers, Hard Times Aren't Here; Limousines and Free Trips," *Wall Street Journal* (1975).

⁷¹ "Personal-Use Perks For Top Executives Are Termed Income: SEC Says Valuable Privileges Will Have to be Reported As Compensation by Firms," *Wall Street Journal* (1977).

⁷² Jensen, "Executives' Use of Perquisites Draws Scrutiny," *New York Times* (1978).

⁷³ Examples include: Joseph, "U.S. Industries Faces Queries on its Perks At Annual Meeting," *Wall Street Journal* (1978); Metz, "Close Look Expected At Executive Perks in Proxy Material: SEC Stress on Disclosure Is Linked to Coming Tales of Holder-Assisted Goodies," *Wall Street Journal* (1978); Penn, "Ford Motor Covered Upkeep for Elegant Co-Op of Chairman: Questions Arise on Personal Vs. Business Use of Suite in Posh New York Hotel," *Wall Street Journal* (1978).

expanded significantly in 1979 proxy statements, when the SEC implemented its first major revision in proxy disclosures since the 1930s. Also in 1979, the IRS issued significant new auditing guidelines aimed at detecting and taxing executive perquisites. McGahran (1988) argues that the new SEC disclosures made it easier for the IRS to detect (and tax) fringe benefits, and presents some evidence that fringe benefits decreased, while cash compensation increased, as a result of the SEC and IRS actions.

The ongoing attack on perquisites was reflected in the contemporaneous early academic literature on agency theory. For example, the “agency problem” introduced by Jensen and Meckling (1976) focused on managerial consumption of non-pecuniary benefits such as “the physical appointments of the office” and “the attractiveness of the secretarial staff.” Similarly, Alchian and Demsetz (1972) conclude that companies allow personal consumption of corporate (or university) property (such as “privileges, perquisites, or fringe benefits”) because the cost of detecting and punishing such “turpitudinal peccadilloes” is larger than the benefits from prohibiting the activity.

3.5.3. There’s no Accounting for Options

The restricted and qualified stock options created by the 1950 and 1964 Revenue Acts were not formally considered compensation and therefore companies did not record an expense for such options for either tax or accounting purposes. The switch to non-qualified options in the 1970s – which were considered compensation for tax purposes – raised a new question: how should options be accounted for in company income statements? One possibility was to follow the tax code by recognizing an accounting expense at the time an option is exercised. But, in spite of its simplicity, this method is inconsistent with the basic tenet of accounting that expenses should be matched to the time period when the services associated with those expenses were rendered. Rather, the tenet suggested that options should be expensed over their term based on the grant-date value of the option. At the time, however (and for a long time to come) there was no accepted way of placing a value on an employee stock option.

In October 1972, the Accounting Principles Board (APB) – the predecessor to the current Financial Accounting Standards Board (FASB) – issued APB Opinion No. 25, “Accounting for Stock Issued to Employees.” Under APB Opinion No. 25, the compensation expense associated with stock options was defined as the (positive) difference between the stock price and the exercise price as of the first date when both the number of options granted and the exercise price become known or fixed. The expense for this spread between the price

and exercise price – called the intrinsic value – was amortized over the period in which the employee is prohibited from exercising the option.⁷⁴ Under this rule, there was no charge for options granted with an exercise price equal to (or exceeding) the grant-date market price, because the spread is zero on the grant date.

The accounting treatment of options cemented the dominance of the traditional stock option (an option granted with a five- or ten-year term with an exercise price equal to the grant-date market price) and discouraged companies from offering more novel option plans. For example, APB Opinion 25 imposes a higher accounting charge for options with an exercise price indexed to the stock-price performance of the market or industry, because the exercise price is not immediately fixed. Similarly, it imposes a higher accounting charge for options that only become exercisable if certain performance triggers are achieved, because the number of options is not immediately fixed. Finally, it imposes an accounting charge for options that are issued in the money but not for options issued at the money – a feature that became especially significant three decades later in the scandals involving backdating.

3.5.4. *The Rise (and Fall) of Stock Appreciation Rights*

Under Section 16(b) of the Securities Act of 1934, executives must return any profits realized from buying and selling (or selling and buying) shares of their company's stock within any period of less than six months. This constraint was not problematic for executives exercising restricted or qualified stock options, since the provisions of the 1951 and 1964 Revenue Acts already required executives to hold shares for six months (for restricted options) or three years (for qualified options) before trading. However, the six-month holding period was particularly troublesome for non-qualified options, since executives were required to pay ordinary income tax based on the date the option is exercised and not when the underlying shares were sold.⁷⁵ Given the depressed stock market in the 1970s, the taxes due upon exercise were often greater than value of the shares when they became tradable.

In December 1976, the SEC formally exempted stock appreciation rights (SARs) from the Section 16(b) short-swing profit prohibition.⁷⁶ Executives holding a SAR are entitled to

⁷⁴ This period is often called the vesting period but this terminology is misleading since vesting implies that the executive is free to sell the option or keep it if he leaves the firm, as opposed to being able only to exercise the option.

⁷⁵ The executive could defer the taxes during the six-month holding period, but would still owe taxes on the gain on the exercise date even if stock prices fell over the subsequent six months.

⁷⁶ "SEC Exempts Rights To Stock Appreciation From 'Insider' Curbs," *Wall Street Journal* (1976)

receive the appreciation on one share of stock. Like stock options, SARs had a pre-determined term but executives were generally free to exercise their SARs at any time prior to the end of this term (after some minimum time had elapsed). Prior to the December 1976 ruling, there was considerable debate about whether SARs would be subject to the short-swing rule and therefore the proceeds from the exercise of the rights would have to be returned to the company. After the SEC ruling, SARs provided a way for executives to reap the benefits of exercising non-qualified options without being subject to the six-month holding requirement.⁷⁷ As a result of the ruling, many companies replaced their option grants with SAR grants, or issued tandem SARs and options, which allowed the executive to decide which to exercise. For the next fifteen years, SARs became a ubiquitous component of long-term compensation for most executives.

Jumping ahead a bit, in May 1991 the SEC declared that the six-month holding period begins when options are granted, and not when executives acquire shares upon exercise. Therefore, as long as the executive has held the option for at least six months, he is allowed to immediately sell the shares acquired when options are exercised. This new ruling eliminated the primary advantage of SARs over non-qualified options and, as a result, SARs largely disappeared from existence. In addition, the SEC rule effectively encouraged the practice – commonplace today – of selling shares immediately upon exercise.⁷⁸

The rise and ultimate fall of SARs is a tribute to the cleverness of companies in finding ways around rules that disadvantage executives and companies (in this case, the six-month holding requirement).⁷⁹ Moreover, the experience shows how seemingly innocuous government interventions (in this case, the 1976 and 1991 SEC rulings) can have a major impact on the composition of executive compensation.

⁷⁷ There was one major disadvantage of SARs over non-qualified options: companies granting SARs were required to record an accounting charge for the evolving value of the SARs, while there was typically no accounting charge for options.

⁷⁸ Peers, “Executives Take Advantage of New Rules on Selling Shares Bought With Options,” *Wall Street Journal* (1991).

⁷⁹ A related innovation in the late 1980s was the “Stock Depreciation Right,” which provided cash payments to executives exercising options if stock prices fell during the six month holding period. (See Crystal, “The Wacky, Wacky World of CEO Pay,” (1988)).

3.5.5. *Qualified Stock Options resurrected, but no one cares*

The Revenue Acts of 1964 and 1969 significantly reduced the attractiveness of restricted/qualified stock options, but did not prohibit new grants. As part of the Revenue Act of 1976, Congress allowed executives to retain and exercise grants made prior to May 20, 1976, but banned all future grants of qualified stock options. Since existing grants had a maximum five-year term, the last grant of qualified options was set to expire on May 19, 1981.

As 1981 approached, Congress resurrected a new form of qualified options (now called Incentive Stock Options or ISOs) as a last-minute addition to the Economic Recovery Tax Act of 1981.⁸⁰ ISOs carried many of the restrictions common for qualified stock options (holding periods after exercise, minimum exercise prices, etc.), and in addition were limited to \$100,000 per executive per year (calculated as the stock price multiplied by the number of options on the date of grant). While ISOs have continued to be popular in the 2000s for middle-level managers (where the \$100,000 limitation is not binding) and for companies without taxable profits (where loss of deductibility for ISOs is not costly), virtually all options granted to CEOs and other top executives since 1972 have been non-qualified stock options.

3.5.6. *Bigger is Better (Paid)*

Almost half of the cross-sectional variation in cash compensation in the United States between 1970 and 1982 was explained by company size (usually measured by firm revenues), and the highest-paid executives routinely were at the helm of the largest conglomerates and largest steel, automotive, and oil companies. Year-to-year changes in cash compensation were also largely driven by increases in company size. And non-monetary aspects of compensation – including power, prestige, board memberships and community standing – were also positively linked to increases in firm size. The strong relation between CEO pay and company size gave CEOs substantial incentives to increase company size, while the decline of equity-based incentive plans gave them little incentive to increase company share prices. It is noteworthy that the implicit incentives to increase company revenue help explain the unproductive diversification, expansion and investment programs in the 1970s, which in turn further depressed company share prices.

⁸⁰ Bettner, "Incentive Stock Options Get Mixed Reviews, Despite the Tax Break They Offer Executives," *Wall Street Journal* (1981).

Although CEO pay and bottom-line corporate profitability remained relatively stagnant from 1970-1982, productivity did not. Spurred in part by the oil-price shocks of 1973 and 1977, this period brought significant technological advances that improved productivity, declines in regulation, and increases in global trade significant enough to constitute what Jensen (1993) calls the “Modern Industrial Revolution.” By the early 1980s, most sectors in the U.S. economy were saddled with increasing excess capacity, implying that the sectors had more capital and labor than required to maintain current levels of production. The root causes of the excess capacity differed across industries. In the oil sector, for example, the five-fold increase in the inflation-adjusted price of crude oil let firms to launch massive capacity-increasing exploration and development projects in anticipation of continued price increases; the sector was stuck with the capacity when demand dropped and prices tumbled to pre-shock levels. Technological change dramatically increased capacity for computing firms, while increased competition from non-unionized entrants created excess capacity in a variety of industries ranging from steel to groceries.

By definition, investment in an industry with excess capacity is a negative net-present-value project, since the industry already has more capital and labor than can be productively employed. Indeed, firms with excess capacity can either increase output with the same workforce, or maintain current output with a smaller workforce. However, the 1970s conglomerates and other large companies typically chose to neither increase output (given low market demands) nor decrease their workforce (since pecuniary and non-pecuniary rewards for CEOs were both tied to company size). Moreover, by the end of the 1970s, most these companies were generating huge amounts of cash, far in excess of that required to fund available positive net present value projects. CEOs, loathe to distribute excess cash back to shareholders, responded by wasting huge amounts of free cash flow through unwise diversification and investment programs.⁸¹

3.6. The Emerging Market for Corporate Control (1983-1992)

3.6.1. Golden Parachutes and Section 280(G)

The executive compensation practices of the 1970s provided few incentives for executives to pursue value-increasing reductions in excess capacity and disgorgements of

⁸¹ Jensen (1986a) defines free cash flow as cash flow in excess of that which can be reinvested at returns equal to or better than the cost of capital.

excess cash. Equity-based compensation (mostly in the form of stock options) accounted for only a small fraction of CEO pay (Figure 3.3) and the options that existed often were underwater or expired worthless. Annual bonuses – the dominant form of compensation-based incentives – were focused on beating annual budget targets rather than creating long-run value. Performance-based terminations were almost non-existent and – since the vast majority of CEO openings were filled by incumbents rather than outside hires – the managerial labor market was similarly ineffective in disciplining poor performance.

Boards of directors, typically dominated by corporate insiders (in influence if not in numbers), had little reason to reduce corporate waste as long as the companies were delivering positive nominal profits. However, pressures to improve performance and disgorge cash were ultimately introduced by the capital markets, including “hostile takeover” artists such as Carl Icahn, Irwin Jacobs, Carl Lindner, David Murdock, Victor Posner, Charles Bluhdorn, and T. Boone Pickens. At the time, these takeover artists were known pejoratively as “corporate raiders,” though history has shown they were a positive force in creating substantial amounts of value for shareholders of target firms while reallocating resources to higher-valued uses.⁸² Sometimes this wealth was created by the post-merger activities of the raiders (such as firing incompetent incumbent managers and selling non-productive assets). At other times the wealth was created by responses to the takeover threat (such as spending cash to repurchase shares or to purchase competitors, causing resources to leave the sector and allowing shareholders to find more productive uses for their cash).

The takeover market was complemented by the emergence of leveraged buyouts (LBOs): going-private transactions financed by debt using the target firm’s future cash flows as collateral. Debt created value by providing commitments that the firm would pay its cash flows to debtholders, reducing the amounts available for executives to waste (Jensen (1986a)). Debt also taught executives that capital is costly (since the interest cost of debt capital was more obvious than the implicit, though larger and largely unrecognized, cost of equity capital), leading to reductions in inventories and working capital. The emergence of LBOs and leveraged recapitalizations (in which the firm leverages the capital structure while staying public) created substantial amounts of shareholder value in firms with stable cash flows and no productive alternative uses for their cash, characteristics of many of the mature and declining sectors in the early 1980s.

⁸² See Holderness and Sheehan (1985) for an analysis of how the first six on this list improved operating results and shareholder values, and Fischel (1995) for an analysis of how T. Boone Pickens facilitated the restructuring of the oil sector.

While employment in companies targeted by hostile takeovers or LBOs was modestly reduced (which was productive given the presumptive excess capacity), the individuals most vulnerable to job losses were incumbent executives opposed to the changes in control. Innovations designed to thwart takeovers included greenmail payments (repurchase of the raiders' stock at above market prices), standstill agreements (bribes so that the raider does not purchase additional stock), staggered boards (where directors serve overlapping terms, making it difficult for a proxy fight to gain a majority), supermajority rules (requiring more than 50% votes to approve a merger) and poison pills (where shareholders get special rights when there is a takeover bid). But, perhaps the most notorious innovation was the "golden parachute" which provided direct payments to executives following a successful change in control. In most cases, the payment required both the change-of-control and the loss of a job (hence, called "double-triggered" since two things had to happen); in other cases (single-triggered) the change-of-control itself was sufficient to trigger the payment, regardless of job loss.⁸³

Whether change-of-control agreements facilitate or thwart takeovers remains a matter of debate and rests in the details. On one hand, as emphasized by Jensen (1986b), such agreements facilitate takeovers by providing bribes to existing managers to acquiesce to the change in control. On the other hand, such agreements can significantly increase the cost of takeovers for prospective acquirers, especially if the agreements cover dozens or hundreds of executives who have no plausible influence over the takeover decision. In any case, the existence of the apparent bribes paid to top executives (but not to shareholders in general) attracted the ire of a Congress already skeptical of hostile takeovers and their benefits.

Change-in-control arrangements became controversial following a \$4.1 million payment to William Agee, the CEO of Bendix. In 1982, Bendix launched a hostile takeover bid for Martin Marietta, which in turn made a hostile takeover bid for Bendix. Bendix ultimately found a "white knight" and was acquired by Allied Corp., but only after paying CEO Agee the golden parachute. The payment sparked outrage in Washington, but Congress could not ban golden parachute payments outright, because such a ban would pre-empt state corporation laws. Congress does, however, control the tax laws, which allow corporations to

⁸³ In regulations associated with the TARP bailouts in 2008-09, Congress redefined golden parachutes to refer to any severance payment in connection with an executive departure, regardless of whether the departure was related to a change of control. In contrast, the golden parachute label prior to the TARP bailouts required a change of control, but did not require departure. For example, accelerated vesting of restricted stock or accelerated exercisability of stock options upon a change of control was considered part of the parachute payment, even if the executive retained his or her job.

deduct compensation from income only if the payments represent reasonable compensation for services rendered. By defining particular types or dollar amounts of compensation as unreasonable, Congress can directly determine whether compensation is deductible for corporate tax purposes.

Congress attempted to discourage golden parachutes by adding Sections 280(G) and 4999 to the tax code as part of the Deficit Reduction Act of 1984. Section 280(G) of the Code provides that, if change-in-control payments exceed three times the individuals base amount, then *all* payments in excess of the base amount are nondeductible to the employer. Also, Section 4999 imposes a 20% excise tax on the recipient of a parachute payment on the amount of payment above the base amount. The base amount is typically calculated as the individuals average total taxable compensation (i.e., W-2 compensation, which include gains from exercising stock options) paid by the company over the prior five years.

Because of the complexity of what appears to be a simple rule, modest increases in parachute payments can trigger substantial tax payments by both the company and executive. For example, suppose an executive with five-year average taxable compensation of \$1 million receives a golden parachute payment of \$2.9 million, which is less than three times the \$1 million base amount.⁸⁴ In this case, the entire \$2.9 million parachute payment would be deductible by the company, and would be taxable as ordinary income to the executive. In contrast, suppose that the golden parachute payment was \$3.1 million, which is more than three times the \$1 million base amount. Under Section 280(G), the company would not be able to deduct \$2.1 million (of the \$3.1 million parachute payment) as a compensation expense, and (under Section 4999) the executive would owe \$420,000 in excise taxes (i.e., 20% of \$2.1 million) in addition to ordinary income taxes on the full \$3.1 million parachute payment.

The new Section 280(G) impacted executive compensation in several ways. First, the new law led to a proliferation in change-in-control agreements, which had previously been fairly rare. The Deficit Reduction Act was signed into law on July 18, 1984. By 1987, 41% of the largest 1,000 corporations had golden parachute agreements for its top executives, and the prevalence of golden parachutes increased to 57% in 1995 and to 70% by 1999.⁸⁵ In addition, the standard golden parachute payment quickly became the government prescribed

⁸⁴ The golden parachute payment includes not only cash payments but also the value of accelerated vesting of stock and options, as long as the payment is contingent on a change of control or ownership of the company.

⁸⁵ Alpern and McGowan (2001); Alpern and McGowan (2001), p. 6.

amount of three times base compensation. By 1991, 47.5% of CEO golden parachute arrangements specified a multiple of three times base pay, and by 1999 71% specified three times base pay. Thus, the rule designed to limit the generosity of parachute payments has led to both a proliferation and a standardization of Golden Parachute payments in most large corporations. Apparently compensation committees and executives took the regulation as effectively endorsing such change-in-control agreements as well as the payments of three times average compensation (which quickly became the standard).

Second, Section 280(G) (and the corresponding Section 4999) gave rise to the “tax gross up,” in which the company offset the tax burden of the 20% excise tax by paying an additional amount for the tax (and the tax on the additional amount).⁸⁶ The percentage of agreements that included gross-up provisions increased from 38% in 1991 to over 82% by 1999.⁸⁷ This gross-up concept was subsequently applied to a variety of executive benefits with imputed income taxable to the executive, such as company cars, club memberships, and personal use of corporate aircraft.

Third, Section 280(G) also provided incentives for companies to shorten vesting periods in stock option plans, and incentives for executives to exercise stock options even earlier than they would normally be exercised. Consider two otherwise identical executives with golden parachutes paying three times base compensation and holding identical options. Suppose that one of the executives exercises a year prior to the change in control, while the other holds until the change in control. Since base compensation under Section 280(G) includes gains from exercising options, the first executive can receive a higher parachute payment before triggering the excise tax, thus increasing the benefits from early exercise. Moreover, unexercisable stock options routinely become vested (or exercisable) upon a change in control, and the value of these options is defined by the IRS as part of the parachute payment subject to the excise taxes. Therefore, companies and executives can reduce change-in-control related tax liabilities by shortening the time until options become exercisable, and by exercising early and therefore reducing the incentive effects of those plans.

⁸⁶ For example, continuing with the example above, suppose the CEO owed \$420,000 in excise taxes (i.e., 20% of the \$2.1 million excess benefit). If the CEO had a gross-up clause (and assuming a marginal tax on ordinary income of 50% on top of the 20% excise tax), he would receive a gross-up payment of \$1.4 million and a total change-in-control payment of \$4.5 million, leaving him with after-tax income of \$1.55 million (which is what he would have received without an excise tax).

⁸⁷ Alpern and McGowan (2001), p. 7-8.

Similarly, unvested restricted stock routinely become vested upon a change in control, and the value of these shares upon vesting is defined by the IRS as part of the parachute payment subject to the excise taxes. Thus, companies can also reduce change-in-control related tax liabilities by shortening the vesting period for restricted stock.

Finally, but perhaps most importantly, the 1984 tax laws regarding Golden Parachutes appear to have triggered the proliferation of Employment Agreements for CEOs and other top-level executives in most large firms since the mid-1980s. In particular, Section 280(G) applies only to severance payments contractually tied to changes of control, while individual CEO employment agreements typically provide for severance payments for *all* forms of terminations without cause, including (but not limited to) terminations following control changes. Therefore, companies can circumvent the Section 280(G) three-times-base-compensation limitations (at a potentially huge cost to shareholders) by making payments available to all terminated executives, and not only those terminated following a change in control. Indeed, Graef Crystal (when he was still a leading compensation consultant) predicted the unintended consequences of the enactment of these tax provisions in his 1984 opinion piece in the *Wall Street Journal*:

But will Congress's new reforms really curb those who want to offer excessive compensation? Not necessarily. Congress has, as usual, made an opening move in a corporate chess game and neglected to consider its opponents countermoves. Instead of having a contract that covers only a change of control, some companies may now implement all-embracing employment contracts that guarantee a person employment (or what he would have earned had he continued to be employed), for say, five years, and under all circumstances. You won't see one word in that contract about payments in the event of a change of control, and the net effect will be to give the executive more than he would have had had Congress not given free rein to its passions.⁸⁸

In summary, although Section 280(G) was meant to reduce the generosity of parachute payments, the government action appears to have increased the prevalence of: (i) change-in-control plans; (ii) tax gross-ups; (iii) early exercise of stock options; (iv) short vesting periods for restricted stock and stock options; and (v) employment agreements. Each of these outcomes both reduces the incentive effects of incentive compensation for CEOs and other executives and increases the costs of these plans to their firms.

⁸⁸ See Crystal, "Manager's Journal: Congress Thinks It Knows Best About Executive Compensation," *Wall Street Journal* (1984).

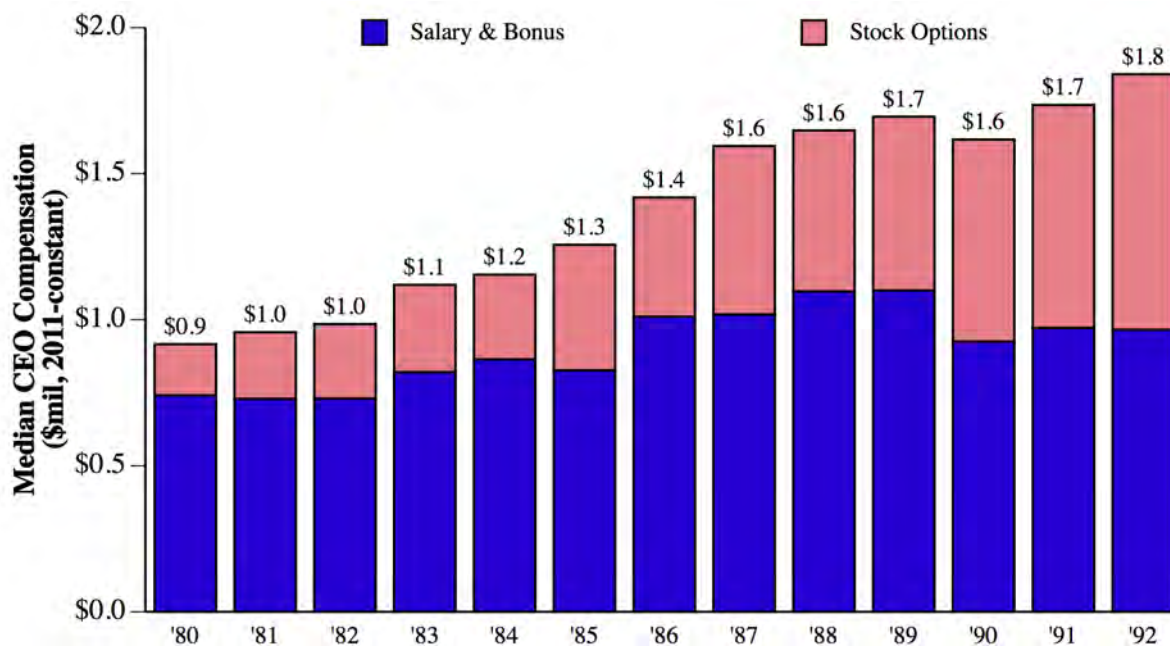
3.6.2. *The Shareholder Awakening*

The emerging market for corporate control had pronounced effects on the U.S. stock market. After nearly two decades of stagnation, the Dow Jones Industrial Average rallied from below 800 to over 2700 between mid-1982 and mid-1987 (i.e., appreciating nearly 30% per year for five years). While the largest beneficiaries were shareholders in firms that became takeover targets, the rally was broad based and lifted share prices across a wide range of firms and industries. However, executives vigorously (and often successfully) fought takeovers in the 1980s by adopting anti-takeover provisions and by lobbying for political protection (Holmstrom and Kaplan (2001)). Therefore, in spite of the gains to shareholders (or perhaps because of the redistribution in wealth resulting from these gains), hundreds of bills were introduced in Congress to curb takeovers and highly leveraged transactions (Fischel (1995)).

Court decisions and legislation in the late 1980s (coupled with the October 1987 stock market crash) brought the hostile takeover market in the United States to a virtual halt. The high-yield debt market was crippled by the indictment and subsequent guilty pleas of Michael Milken and Drexel Burnham Lambert and by restrictions on high-yield debt holdings imposed on savings institutions, commercial banks, and insurance firms, and by major punitive changes in the U.S. bankruptcy law that made it uneconomic to reorganize troubled firms outside of bankruptcy.

But, the lessons of the wealth creations learned from the takeover wave resonated with shareholders. In 1985, Robert Monks founded Institutional Shareholder Services to provide proxy-voting services to institutional shareholders. In 1986, corporate raider T. Boone Pickens founded the United Shareholders Association focused on improving governance and compensation. Academics increasingly argued that traditional management incentives that focused on company size, stability, and accounting profitability destroyed rather than created value, and recommended that executive pay be tied more closely to company value through increases in stock options and other forms of equity-based incentives. These pressures began having an impact: non-equity-based CEO pay continued to grow in real terms after the mid-1980s, but became a smaller part of the total compensation package. For the first time since the 1950s, stock options re-emerged as the dominant form of incentives compensation.

Figure 3.4 shows the median level and average structure of CEO compensation from 1980-1992, based on Hall and Liebman (1998). Total grant-date compensation is defined as the sum of salaries, bonuses, and the grant-date value of stock options using the Black and Scholes (1973) formula. The annual sample size varies between 365 and 432 firms, and is

Figure 3.4 Median Grant-date Compensation for CEOs in Hall and Liebman (1998), 1980-1992

Note: The figure is based on data from the Hall and Liebman (1998) study of executive pay in approximately 500 large U.S. firms (the annual sample size varies between 365 and 432 firms). Total compensation, adjusted to 2011 dollars using the Consumer Price Index, includes salaries, bonuses, and stock options valued on the grant-date using the Black and Scholes (1973) formula. Pay composition percentages for each year based on the annual sample averages for the two components.

representative of the population of the large U.S. firms. The percentage composition is defined by dividing the average salary and bonus (or options) by the average total compensation for each year.⁸⁹ As shown in the figure, inflation-adjusted median pay levels doubled from 1980 to 1992 from \$946,000 to \$1,900,000. The increase in pay primarily reflects the increase in stock option grants, which accounted for nearly half of total aggregate CEO pay by 1992.

Although the takeover and LBO market had been largely shut down by political forces, investors and executives began recognizing that value is created through reducing excess capacity or by reversing ill-advised diversification programs. As emphasized by Holmstrom and Kaplan (2001), stock options allowed executives to share in the value created by internal restructurings: “Shareholder value became an ally and not an enemy.”

⁸⁹ The percentage compositions in Figure 3.4 are not strictly comparable to those in Figure 2.4 or Figure 3.3, and overstate the percentage of compensation in options relative to the methodology used elsewhere in this study.

3.6.3. *Controversial pay leads to sweeping new disclosure rules*

Between October 13-19, 1987, the Dow Jones Average dropped nearly 800 points (from 2508 to 1738), losing 30% of its value in a week. Executive stock options, which had only recently become an important part of pay, were suddenly underwater. Companies responded by repricing existing options or by significantly increasing the size of their post-crash option grants (Saly (1994)).

The October 1987 crash turned out to be short-lived: by August 1989 the Dow Jones reached an all-time high of 2735, hitting 3000 by July 1990. Stock options issued both before and after the crash were well in the money and becoming exercisable. Large manufacturing firms – still sorting out the excess capacity issues of the 1970s – were downsizing and laying off workers, to the delight of shareholders but attracting the ire of Congress, labor unions, and the media. The combination of valuable options, robust stock markets, and the 1990-1991 recession provided the perfect recipe for a populist attack on executive pay.

The CEO pay debate achieved international prominence during the 1990-1991 recession. The controversy heightened with the November 1991 introduction of Graef Crystal's (1991) exposé on CEO pay, *In Search of Excess*, and exploded following President George H. W. Bush's pilgrimage to Japan in January 1992 (accompanied by an entourage of highly paid U.S. executives). What was meant to be a plea for Japanese trade concessions dissolved into accusations that U.S. competitiveness was hindered by its excessive executive compensation practices as attention focused on the huge pay disparities between top executives in the two countries.⁹⁰

In response to growing outrage, legislation was introduced in the House of Representatives disallowing deductions for compensation exceeding 25 times the lowest-paid worker, and the Corporate Pay Responsibility Act was introduced in the Senate to give shareholders more rights to propose compensation-related policies. The SEC preempted the pending Senate bill in February 1992 by requiring companies to include non-binding shareholder resolutions about CEO pay in company proxy statements,⁹¹ and announced sweeping new rules in October 1992 affecting the disclosure of top executive compensation in the annual proxy statement. Among other changes, the SEC's new 1992 disclosure rules required companies to produce (a) a Summary Compensation Table summarizing the major

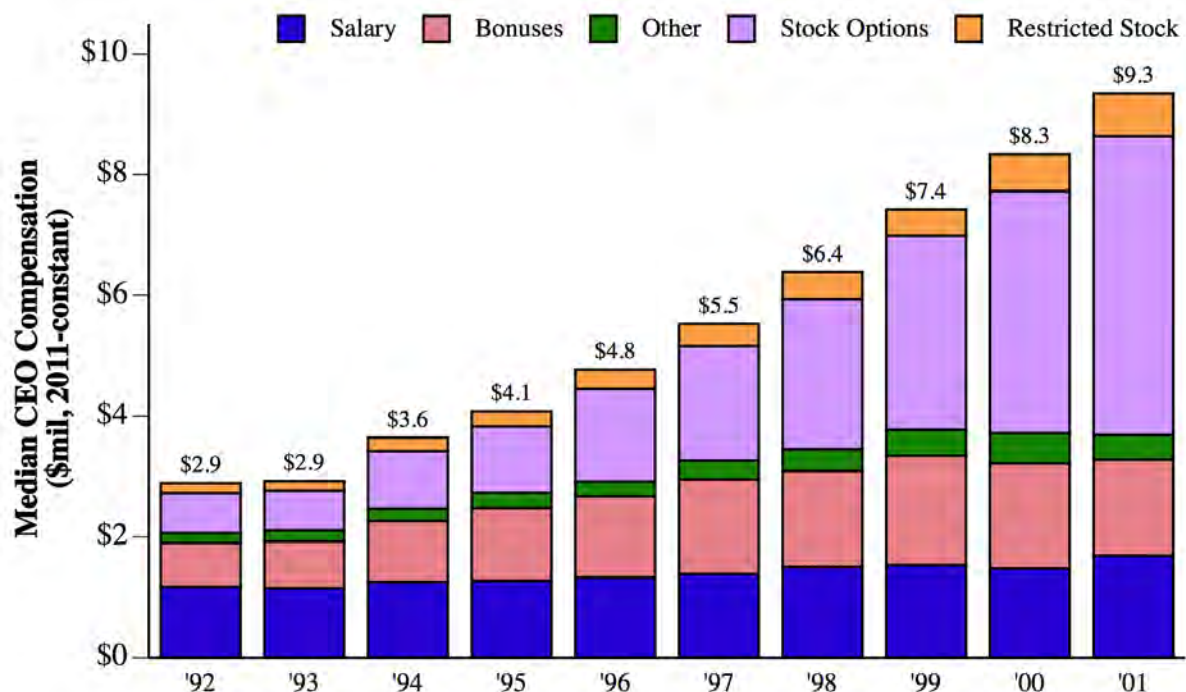
⁹⁰ "SEC to Push for Data on Pay of Executives," *Wall Street Journal* (1992).

⁹¹ "Shareholder Groups Cheer SEC's Moves on Disclosure of Executive Compensation," *Wall Street Journal* (1992).

components of compensation received by the CEO and other highly paid executives over the past three years; (b) tables describing option grants, option holdings, and option exercises in greater detail; (c) a chart showing the company's stock-price performance relative to the performance of the market and their peer group over the prior five fiscal years; and (d) a report by the compensation committee describing the company's compensation philosophy. Overall, the new rules dramatically increased the information available about stock option grants and holdings, and the performance graph cemented the idea that the objective of the firm was to create shareholder value.

3.7. The Stock Option Explosion (1992-2001)

As shown in Figure 3.5 (and Figure 2.3 and Figure 2.6), the median pay for CEOs in S&P 500 firms more than tripled between 1992 and 2001, driven by an explosion in the use of stock options. CEO incentive compensation in the early 1990s was split about evenly between options and accounting-based bonuses. By 1996, options had become the largest single component of CEO compensation in S&P 500 firms, and the use of options was even greater in smaller firms (and especially high-tech start-ups). By 2000, stock options accounted for more than half of total compensation for a typical S&P 500 CEO.

Figure 3.5 Median Grant-date Compensation for CEOs in S&P 500 Firms, 1992-2001

Note: Median pay levels (in 2011-constant dollars) based on ExecuComp data for S&P 500 CEOs. Total compensation (indicated by bar height) defined as the sum of salaries, non-equity incentives (including bonuses), benefits, stock options (valued on the date of grant using company fair-market valuations, when available, and otherwise using ExecuComps modified Black-Scholes approach), stock grants, and other compensation. Other compensation excludes pension-related expenses. Pay composition percentages defined as the average composition across executives.

The escalation of stock-option grants cannot be explained by a single factor. Instead, I believe that there are six main factors that fueled the explosion in stock options:

- *Shareholder pressure for equity-based pay;*
- *SEC holding-period rules;*
- *SEC option disclosure rules;*
- *Clinton's \$1 million deductibility cap;*
- *Accounting rules for options;*
- *NYSE listing requirements.*

In this section, I will discuss each of these factors in rough chronological order (referring to prior discussions when appropriate), and indicate how they contributed to the option explosion.

3.7.1. *Shareholder Pressure for Equity-Based Pay*

As discussed in Section 3.6.2, the decline in takeover activity in the late 1980s corresponded to the rise in shareholder activism. This new breed of activists – including many of the largest state pension funds – demanded increased links between CEO pay and shareholder returns. The activists were joined by academics such as Jensen and Murphy (1990a), who famously (or infamously) argued “It’s not *how much* you pay, but *how* that matters.” Jensen and Murphy (1990b) showed that CEOs of large companies were paid like bureaucrats in the sense that they were primarily paid for increasing the size of their organizations, received small rewards for superior performance, even smaller penalties for failures, and that the bonus components of the pay packages showed very little variability, less even than the variability of the pay of rank-and-file employees. They concluded that compensation committees and boards should focus primarily on the incentives provided by the pay package rather than the level of pay, and were joined by shareholder activists such as the United Shareholders Association in advocating more stock ownership and more extensive use of stock options

Companies responded by taking Jensen and Murphy’s mantra a bit too literally: adding increasingly generous grants of stock options on top of already competitive pay packages, without any reduction in other forms of pay and showing little concern about the resulting inflation in pay levels.

3.7.2. *SEC Holding Period Rules*

When an executive exercises a non-qualified stock option, the executive pays the exercise price and owes income tax on the gain. As discussed in Section 3.6.2, SEC rules in effect May 1991 required executives to hold shares acquired from exercising stock options for at least six months. The executive could defer the taxes during the six-month holding period (leading many executives to exercise after June 30, pushing the tax liability to the following year), but would still owe taxes on the gain on the exercise date even if stock prices fell over the subsequent six months. This rule implies that executives cannot finance the exercise by selling shares acquired in the exercise, and executives exercising stock options therefore faced both significant short-run cash-flow problems (from paying the exercise price) and increased risk.

Before May 1991, the SEC defined the exercise of an option as a “stock purchase” reportable by corporate insiders on Form 4 within 10 days following the month of the transaction. On May 1, 1991, in response to demands for more transparency of option grants,

the SEC defined the *acquisition* rather than the exercise of the option as the reportable stock purchase. As a consequence of this change, the six-month holding period required by the Securities Act's "short-swing profit" rule now begins when options are granted, and not when executives acquire shares upon exercise. Therefore, as long as the options are exercised more than six months after they are granted, the executive is free to sell shares immediately upon exercise. This ruling significantly increased the value of the option from the standpoint of the recipient.

3.7.3. *The Clinton \$1 million Deductibility Cap*

The controversy over CEO pay became a major political issue during the 1992 U.S. presidential campaign.⁹² Bill Clinton promised to end the practice of allowing companies to take unlimited tax deductions for excessive executive pay; Dan Quayle warned that corporate boards should curtail some of these exorbitant salaries paid to corporate executives that were unrelated to productivity; Bob Kerry called it unacceptable for corporate executives to make millions of dollars while their companies were posting losses; Paul Tsongas argued that excessive pay was hurting America's ability to compete in the international market; and Pat Buchanan argued "you can't have executives running around making \$4 million while their workers are being laid off."

After the 1992 election, president-elect Clinton re-iterated his promise to define compensation above \$1 million as unreasonable, thereby disallowing deductions for all compensation above this level for all employees. Concerns about the loss of deductibility contributed to an unprecedented rush to exercise options before the end of the 1992 calendar year, as companies urged their employees to exercise their options while the company could still deduct the gain from the exercise as a compensation expense.⁹³ In anticipation of the loss of deductibility, large investment banks accelerated their 1992 bonuses so that they would be paid in 1992 rather than in 1993. In addition, several publicly traded Wall Street firms, including Merrill Lynch, Morgan Stanley, and Bear Stearns, announced that they were considering returning to a private partnership structure if Clinton's plan were implemented.⁹⁴

⁹² "Politics and Policy—Campaign '92: From Quayle to Clinton, Politicians are Pouncing on the Hot Issue of Top Executive's Hefty Salaries," *Wall Street Journal* (1992)

⁹³ Chronicle Staff and Wire Reports, "Big Earners cashing in now: fearful of Clinton's tax plans, they rush to exercise their options," *San Francisco Chronicle* (1992)

⁹⁴ Siconolfi, "Wall Street is upset by Clinton's support on ending tax break for 'excessive' pay," *Wall Street Journal* (1992)

By February 1993, President Clinton backtracked on the idea of making *all* compensation above \$1 million unreasonable and therefore non-deductible, suggesting that exemptions would be granted if the company could meet (not yet developed) federal standards proving that the executive improved the firm's productivity.⁹⁵ In April, details of the considerably softened plan began to emerge.⁹⁶ As proposed by the Treasury Department and eventually approved by Congress as part of the Omnibus Budget Reconciliation Act of 1993, Section 162(m) of the tax code applies only to public firms and not to privately held firms, and applies only to compensation paid to the CEO and the four highest-paid executive officers as disclosed in annual proxy statements (compensation for all others in the firm is fully deductible, even if in excess of the million-dollar limit). More importantly, Section 162(m) does not apply to compensation considered performance-based for the CEO and the four highest-paid people in the firm.

Performance-based compensation, as defined under Section 162(m), includes commissions and pay based on the attainment of one or more performance goals, but only if (1) the goals are determined by an independent compensation committee consisting of two or more outside directors, and (2) the terms of the contract (including goals) are disclosed to shareholders and approved by shareholders before payment. Stock options generally qualify as performance based, but only if the exercise price is no lower than the market price on the date of grant. Base salaries, restricted stock vesting only with time, and options issued with an exercise price below the grant-date market price do not qualify as performance based.

Under the IRS definition, a bonus based on formula-driven objective performance measures is considered performance based (so long as the bonus plan has been approved by shareholders), while a discretionary bonus based on *ex post* subjective assessments is not considered performance based (because there are not predetermined performance goals). However, the tax law has been interpreted as allowing negative but not positive discretionary payments: the board can use its discretion to pay less but not more than the amount indicated by a shareholder-approved objective plan.

In enacting Section 162(m), Congress used (or abused) the tax system to target a small group of individuals (the five highest-paid executives in publicly traded firms) and to punish shareholders of companies who pay high salaries. Indeed, the stated objective of the proposal

⁹⁵ Freudenheim, "Experts see tax curbs on executives' pay as more political than fiscal," *New York Times* (1993); Ostroff, "Clinton's Economic Plan Hits Taxes, Payrolls and Perks," (1993).

⁹⁶ Greenhouse, "Deduction proposal is softened," *New York Times* (1993).

that evolved into Section 162(m) was not to increase tax revenues but rather to reduce the level of CEO pay. For example, the House Ways and Means Committee described the congressional intention behind the legislation:

Recently, the amount of compensation received by corporate executives has been the subject of scrutiny and criticism. The committee believes that excessive compensation will be reduced if the deduction for compensation (other than performance-based compensation) paid to the top executives of publicly held corporations is limited to \$1 million per year.⁹⁷

Ironically, although the objective of the new IRS Section 162(m) was to reduce excessive CEO pay levels by limiting deductibility, the ultimate result (similar to what happened in response to the golden parachute restrictions) was a significant *increase* in CEO pay. First, since compensation associated with stock options is generally considered performance-based and therefore deductible (as long as the exercise price is at or above the grant-date market price), Section 162(m) encouraged companies to grant more stock options. Second, while there is some evidence that companies paying base salaries in excess of \$1 million lowered salaries to \$1 million following the enactment of Section 162(m) (Perry and Zenner (2001)), many others raised salaries that were below \$1 million to exactly \$1 million (Rose and Wolfram (2002)). Finally, companies subject to Section 162(m) typically modified bonus plans by replacing sensible discretionary plans with overly generous formulas (Murphy and Oyer (2004)).

It is difficult to argue with the principle that companies should only be able to deduct compensation expenses for services rendered. However, the \$1 million reasonableness standard is inherently arbitrary and has not been indexed for either inflation (+66% from 1993-2011) or changes in the market for executive talent: compensation plans that seemed excessive in 1993 are considered modest by current standards. More importantly, Section 162(m) disallows deductions for many value-increasing plan designs. For example, Section 162(m) disallows deductions for restricted stock or for options issued in the money, even when such grants are accompanied by an explicit reduction in base salaries. In addition, Section 162(m) disallows deductions for discretionary bonuses based on a board's subjective assessment of value creation. I suspect that many compensation committees have welcomed the tax-related justification for not incorporating subjective assessments in executive reward systems. After all, no one likes receiving unfavorable performance evaluations, and few

⁹⁷ 1993 U.S. Code Congressional and Administrative News 877, as cited in Perry and Zenner (2001)

directors enjoy giving them. It is therefore not surprising that directors are often unwilling to devote the time and the personal effort and courage to provide accurate, frank and effective performance appraisals of CEOs and other top executives. But, by failing to make the appraisals, directors are breaching one of their most important duties to the firm.

Moreover, Section 162(m) has distorted the information companies give to shareholders. In particular, in order to circumvent restrictions on discretionary bonuses, companies have created a formal shareholder-approved plan that qualifies under the IRS Section 162(m) while actually awarding bonuses under a different shadow plan that pays less than the maximum allowed under the shareholder-approved plan. These shadow plans often have little or nothing to do with the performance criteria specified in the shareholder-approved plans. As a consequence, the bonus plans and the performance metrics described in company proxy statements are not necessarily reflective of the actual formulas and performance measures used to determine bonuses.

Finally, it is worth noting that Section 162(m) is highly discriminatory, applying only to the compensation received by the top five executive officers, and applying only to publicly traded companies and not to private firms or partnerships. Ultimately, arbitrary and discriminatory tax rules such as Section 162(m) have increased the cost imposed on publicly traded corporations and have made going-private conversions more attractive.

3.7.4. *There's (still) no Accounting for Options*

The 1972 APB Opinion 25 – which defined the accounting treatment for stock options as the spread between the market and exercise price on the grant date – pre-dated Black and Scholes (1973), which offered the first formula for computing the value of a traded call option. Academic research in option valuation exploded over the next decade, and financial economists and accountants became increasingly intrigued with using these new methodologies to value, and account for, options issued to corporate executives and employees.

In 1984, the Financial Accounting Standards Board (FASB) floated the idea that companies account for employee stock options using the so-called minimum value approach.⁹⁸ By June 1986, the FASB idea had evolved into a proposal with the important

⁹⁸ The minimum value approach is identical to the value of a forward contract to purchase a share of stock at some date in the future at a pre-determined price (that is, an option without the option to refrain from buying when the price falls below the exercise price). For example, the minimum value of an option on a non-dividend-paying stock is calculated as the current stock price minus the grant-date present value of the exercise price.

change that the accounting charge would be based on the fair market value (e.g., the Black-Scholes value) and not a minimum value. The proposal was vehemently opposed by all of the Big Eight accounting firms, the American Electronics Association (including more than 2,800 corporate members), the Financial Executives Institute, the Pharmaceutical Manufacturers Association, and the National Venture Capital Association.⁹⁹ Many of the criticisms focused on the complexity of the Black-Scholes formula, as exemplified by the following quote from Joseph E. Connor, chairman of Price Waterhouse:

Corporate America rightfully is skeptical of any standard that depends upon complex pricing models that provide partial and debatable answers. Yet after two years of fruitless efforts, the FASB persists in trying to turn this ivory-tower notion into a usable standard. The compensation element is a mirage, tempting to the imagination but impossible to touch. The board should turn its attention to more productive areas.¹⁰⁰

Ultimately, and without fanfare, FASB tabled its 1986 proposal before submitting an exposure draft.

In late 1991, Senator Carl Levin (D-Michigan) attempted to bypass FASB by introducing the Corporate Pay Responsibility Act requiring companies to take a charge to their earnings to reflect the cost of option compensation packages; as noted in Section 3.6.3, the bill also directed the SEC to require more disclosure for stock option arrangements in company proxy statements. Although Levin's bill was ultimately shelved, it provided pressure for renewed FASB focus on option expensing.

In April 1992, FASB voted 7-0 to endorse an accounting charge for options, and issued a formal proposal in 1993. The proposal created a storm of criticism among business executives, high-tech companies, accountants, compensation consultants, the Secretary of the Treasury, and shareholder groups.¹⁰¹ In March 1994, more than 4,000 employees from 150

Thus, the value of a ten-year option granted with an exercise price of \$30 when the grant-date market price was \$25 would be $V = \$25 - \$30/(1+r)^{10}$, where r is the risk-free rate.

⁹⁹ See, for example, Rudnitsky and Green, "Options Are Free, Aren't They?," *Forbes*, (August 26, 1985); Gupta and Berton, "Start-up Firms Fear Change in Accounting," *Wall Street Journal* (1986); Gupta and Berton, "Start-up Firms Fear Change in Accounting," *Wall Street Journal* (1986); Fisher, "Option Proposal Criticized," *New York Times* (1986); Eckhouse, "Tech Firms' Study: Accounting Rule Attacked," *San Francisco Chronicle* (1987)

¹⁰⁰ Connor, "There's No Accounting for Realism at the FASB," *Wall Street Journal* (1987).

¹⁰¹ See, for example, Berton, "Business chiefs try to derail proposal on stock options," *Wall Street Journal* (1992); Harlan and Berton, "Accounting Firms, Investors Criticize Proposal on Executives' Stock Options,"

Silicon Valley firms rallied against the accounting change, calling on the Clinton Administration to block the proposal because it would restrict job creation and economic growth. Even President Clinton, usually a critic of high executive pay, waded into the debate by expressing that it would be unfortunate if FASB's proposal inadvertently undermined the competitiveness of some of America's most promising high-tech companies.¹⁰² In the aftermath of the overwhelmingly negative response, FASB announced it was delaying the proposed accounting change by at least a year, and in December 1994 it dropped the proposal.

In 1995, FASB issued a compromise rule, FAS 123, which *recommended* but did *not require* that companies expense the fair market value of options granted (using Black-Scholes or a similar valuation methodology). However, while FASB allowed firms to continue reporting under APB Opinion 25, it imposed the additional requirement that the value of the option grant would be disclosed in a footnote to the financial statements. Predictably, only a handful of companies adopted FASB's recommended approach. As I will discuss below in Section 3.8.4, it wasn't until the accounting scandals in the early 2000s that a large number of firms voluntarily began to expense their option grants.

The accounting treatment of options promulgated the mistaken belief that options could be granted without any cost to the company. This view was wrong, of course, because the opportunity or economic cost of granting an option is the amount the company could have received if it sold the option in an open market instead of giving it to employees. Nonetheless, the idea that options were free (or at least cheap) was erroneously accepted in too many boardrooms. Options were particularly attractive in cash-poor start-ups (such as in the emerging new economy firms in the early 1990s), which could compensate employees through options without spending any cash. Indeed, providing compensation through options allowed the companies to generate cash, since when options were exercised the company received the exercise price and could also deduct the difference between the market price and exercise price from its corporate taxes. The difference between the accounting and tax treatment gave option-granting companies the best of both worlds: no accounting expense on the company's books, but a large deduction for tax purposes. When coupled with the May

Wall Street Journal (1992); "Bentsen Opposes FASB On Reporting Stock Options," *Wall Street Journal* (1993); Berton, "Accounting Rule-Making Board's Proposal Draws Fire," *Wall Street Journal* (1994); Harlan, "High Anxiety: Accounting Proposal Stirs Unusual Up roar In Executive Suites," *Wall Street Journal* (1994).

¹⁰² "Clinton Enters Debate Over How Companies Reckon Stock Options," *Wall Street Journal* (1993).

1991 rule eliminating holding requirements after exercise, stock options had important perceived advantages over all other forms of compensation.

As both an illustration of how accounting affects compensation decisions, and as an interesting episode in its own right, consider how a change in accounting rules affected option repricing. On December 4, 1998, FASB announced that repriced options issued on or after December 15, 1998 would be treated under “variable accounting,” meaning that the company would take an accounting charge each year for the repriced option based on the actual appreciation in the value of the option. FASB issued its final rule in March 2000 as FASB Interpretation No. 44, or FIN 44, indicating that FASB did not consider this a new rule but rather a re-interpretation of an old rule. In particular, FASB reasoned that the “fixed accounting” under APB Opinion 25 (in which the option expense was equal to the spread between the market and exercise price on the first date when both the number of options granted and the exercise price become known or fixed) did not apply to companies that have a policy of revising the exercise price.

Companies with underwater options rushed to reprice those options in the 12-day window between December 4-15, 1998.¹⁰³ Indeed, Carter and Lynch (2003) document a dramatic increase in repricing activities during the short window, followed by dramatic declines; Murphy (2003) shows that repricings virtually disappeared after the accounting charge. Many companies with declining stock prices circumvented the accounting charge on repriced options by canceling existing options and re-issuing an equal number of options after waiting six months or more. But this replacement is not neutral. It imposes substantial risk on risk-averse employees since the exercise price is not known for six months and can conceivably be *above* the original exercise price. In addition, canceling and reissuing stock options in this way provides perverse incentives to keep the stock-price down for six months so that the new options will have a low exercise price. All of this scrambling to avoid an accounting charge!

3.7.5. *SEC Option Disclosure Rules*

The most widely debated issue surrounding the SEC’s 1992 disclosure rules was how stock options would be valued in both the Summary Compensation Table and in the Option Grant table. The SEC wanted a total dollar cost of option grants so that the components in the

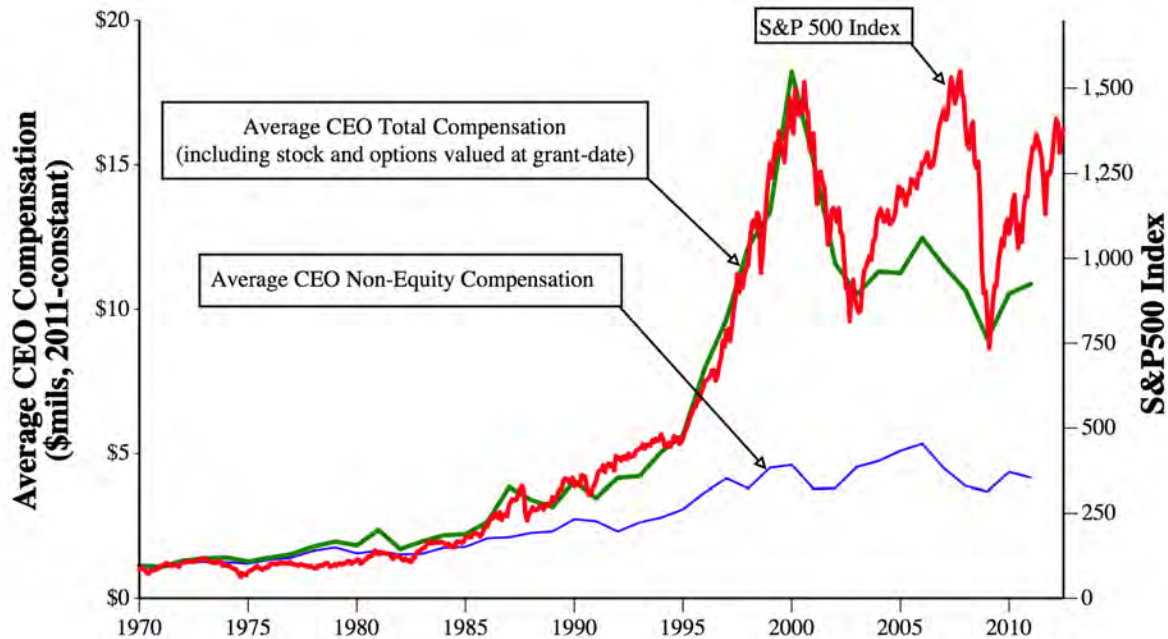
¹⁰³ Johnston, “Fast Deadline On Options Repricing: As of Next Tuesday, It’s Ruled an Expense,” *New York Times* (1998).

Summary Compensation Table could be added together to yield a value for total compensation, and lobbied for calculating option cost using a Black-Scholes (1973) or related approach. The SEC's proposal was vehemently opposed by high option-granting firms (especially from the Silicon Valley and Boston's 128 corridor) and (more surprisingly) by compensation consulting and accounting firms. Ultimately, a compromise was struck: the Summary Compensation Table would include the number, but not the cost, of options granted, thus defeating the SEC's objective of reporting a single number for total compensation. In addition, companies would have a choice in the Option Grant to report either the Black-Scholes grant-date cost or the *potential* cost of options granted (under the assumption that stock prices grow at 5% or 10% annually during the term of the option).¹⁰⁴

From the perspective of many boards and top executives who perceive options to be nearly costless, or indeed deny that options have value when granted, the only way they can quantify the options they award is by the number of options granted. The focus on the quantity rather than the cost of options is further solidified by the SEC's 1992 disclosure rule and also by institutions that monitor option plans. For example, under the current listing requirements of the New York Stock Exchange and the National Association of Security Dealers (NASD), companies must obtain shareholder approval for the total number of options available to be granted, but not for the cost of options to be granted. Advisory firms (such as Institutional Shareholder Services) often base their shareholder voting recommendations on the option "overhang" (that is, the number of options granted plus options remaining to be granted as a percent of total shares outstanding), and not on the opportunity cost of the proposed plan. Therefore, boards and top executives often implicitly admit that the *number* of options granted imposes a cost on the company, while at the same time denying that these options have any real dollar cost to the company.

The focus on the quantity rather than the cost of options granted helps explain a puzzling result in the executive pay literature (e.g., Hall and Murphy (2003)): the near-perfect correlation between the S&P 500 Index and average grant-date CEO pay. Figure 3.6 depicts the correlation between the S&P 500 Index and average CEO pay between 1970 and 2011. As shown in the figure, while "non-equity compensation" is at most weakly related to the performance of the overall stock market, total compensation was almost perfectly

¹⁰⁴ Based on a sample of approximately 600 large companies granting options to their CEOs during fiscal 1992, Murphy (1996) shows that about one-third of the companies reported grant-date values, while the remaining two-thirds reported potential values. Companies with higher dividend yields and lower volatilities (both factors that decrease Black-Scholes values) were significantly more likely to report Black-Scholes rather than potential values.

Figure 3.6 Grant-Date Pay for CEOs in S&P 500 Firms vs. S&P 500 Index, 1970-2011

Note: The S&P 500 Index is a capitalization-weighted index of the prices of 500 large-cap common U.S. stocks; the figure depicts monthly values. Compensation data are based on all CEOs included in the S&P 500, using data from Forbes and ExecuComp. CEO total pay includes cash pay, restricted stock, payouts from long-term pay programs and the value of stock options granted (using company fair-market valuations, when available, and otherwise using ExecuComp's modified Black-Scholes approach). Equity compensation prior to 1978 estimated based on option compensation in 73 large manufacturing firms (based on Murphy (1985)), equity compensation from 1979 through 1991 estimated as amounts *realized* from exercising stock options during the year, rather than grant-date values. Non-equity incentive pay is based on actual payouts rather than targets. Dollar amounts are converted to 2011-constant dollars using the Consumer Price Index. .

correlated until 2003, when the “bull market” from 2003-2007 was associated with relatively modest increases in average CEO pay.

We would expect *realized* compensation to vary with the overall market, since the gains from exercising non-indexed stock options will naturally increase with the market. But, the compensation data in Figure 3.6 are based on the *grant-date* cost of the options, and not the amounts realized from exercising options. If compensation committees focused on the grant-date cost of options, we would expect the number of options granted to decrease when share prices increase, and would expect no systematic correlation between the average pay and average market returns. However, if compensation committees focused on the number of options (e.g., granting the same number of options each year, as opposed to the same “value” of options each year), we would obtain the pattern in Figure 3.6. Because the grant-date Black-Scholes cost of an option is approximately proportional to the level of the stock price, awarding the same number of options after a doubling of stock prices amounts to doubling the cost of the option award. Therefore, if the number of options granted stayed constant over

time, the cost of the annual option grants would have risen and fallen in proportion to the changes in stock prices.

If my interpretation of the data is correct, then the focus on the quantity (rather than cost) of options changed around 2002-2003. As I will argue below in Section 3.8.4, companies began voluntarily expensing the cost of options in 2002, both in response to the recent accounting scandals and in anticipation of mandated expensing in 2006. In addition, in 2006 the SEC changed its disclosure rules to require option costs (rather than the number of options) in the Summary Compensation Table.

3.7.6. *New York Stock Exchange Listing Requirements*

Another contributing factor to the explosion in stock options – both to top executives and lower-level employees – was a 1998 change or “clarification” to New York Stock Exchange (NYSE) listing requirements. Under listing rules in affect at the time, companies needed shareholder approval for equity plans covering top-level executives, but did not need approval for broad-based plans. While the SEC had not been clear on how “broad-based” was defined, the general understanding was that such plans involved equity or option grants to employees below the executive level.

In January 1998, the NYSE quietly filed with the SEC a proposal clarifying definition of a “broad-based” plan as any plan in which (1) at least 20% of the company’s employees were eligible to participate, and (2) at least half of the eligible employees were neither officers nor directors. The definition was a “safe harbor” (i.e., sufficient but not necessary): plans meeting the two criteria were presumed to be broadly based (and therefore could be introduced without shareholder approval), while plans falling outside these parameters would be considered on a case-by-case basis. The SEC received no letters questioning the proposed rule during the “public comment” period, and the ruling was approved and took effect on April 8, 1998. The final ruling was a surprise to shareholder advocates and institutions, who admitted to being embarrassed to have missed the proposal filing, and furious that it had been “buried” in the federal register and listed as a “crpytic notice” on the SEC’s website.¹⁰⁵ Many observers speculated that the new rule was designed to lure NASDAQ companies to the NYSE, and most feared it would “open the floodgates” for executive stock options, since companies couple avoid a shareholder vote by rolling their management plans into new

¹⁰⁵ Bryant, “New Rules on Stock Options By Big Board Irk Investors,” *New York Times* (1998); Scipio, “NYSE Opens Option Loop Hole,” *Investor Relations Business* (1998).

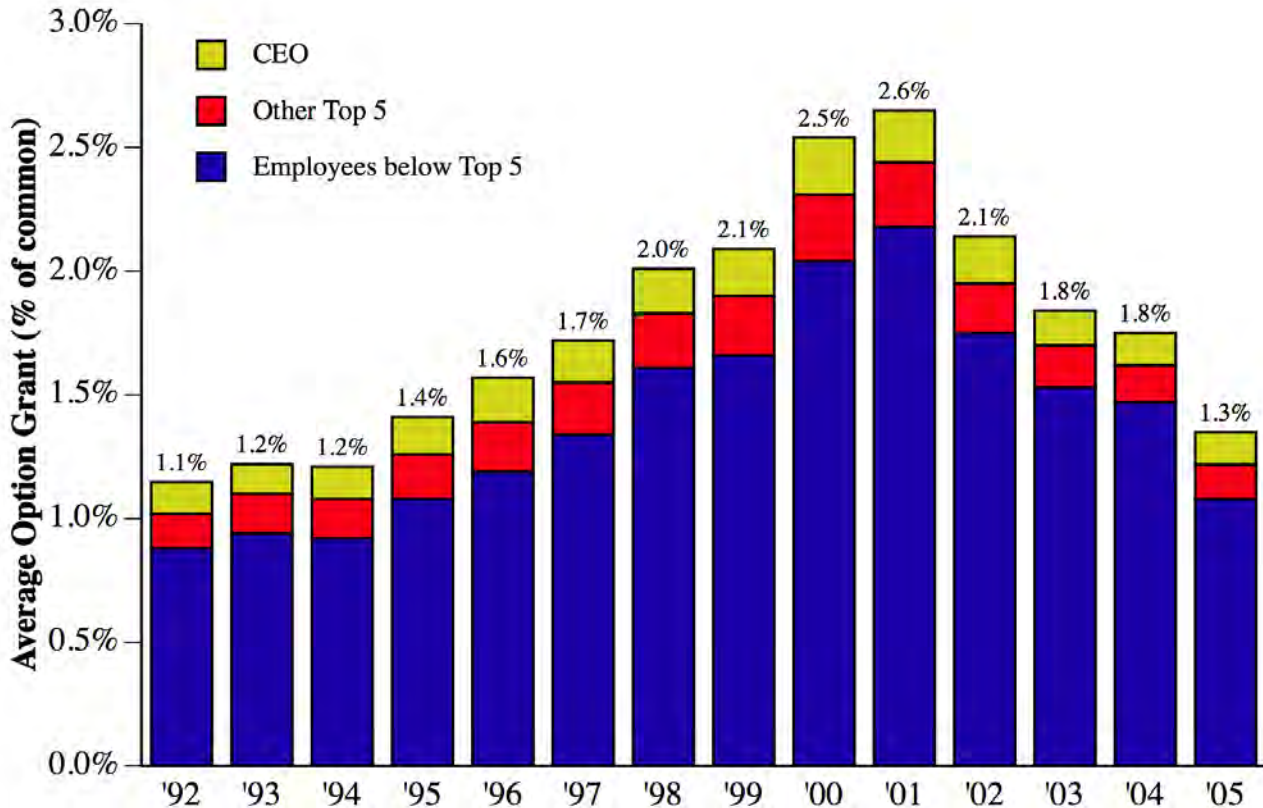
broader-based plans. Consistent with my conclusions in Section 3.7.5, shareholder criticism focused exclusively on the dilutive effect of the option plans, on not on the transfer of value from shareholders to employees.

The NYSE – facing a barrage of criticism over its new rule – reopened the comment period (this time receiving 166) and created a task force to consider the new comments and make further suggestions. In June 1999, based on the recommendations of the task force, the NYSE issued “interim” new rules. Under the revised rules, the majority of the firm’s non-exempt (e.g., non-managerial) employees (rather than 20% of all employees) must be eligible to participate, and the majority of options granted must go to non-officers (rather than the majority of the participants being non-officers). The new rule was an “exclusive test” rather than a safe harbor.

The new rules were enacted as companies faced growing political pressure to push grants to managers and employees at lower levels in the organization.¹⁰⁶ Several bills that encouraged broad-based stock option plans were introduced in Congress, including the Employee Stock Option Bill of 1997 (H.R. 2788) to ease the restrictions on qualified Incentive Stock Options granted to rank-and-file workers. At the same time, employees clamored for broad-based grants, but only if the company would promise that other components of their compensation would not be lowered. As a result of these pressures, the number and cost of options granted grew substantially.

¹⁰⁶ See, for example, Flanigan, “It’s Time for All Employees to Get Stock Options,” *Los Angeles Times* (1996), who argued that all employees should receive options if top executives receive options.

Figure 3.7 Grant-Date Number of Employee Stock Options (measured by % of company shares) in the S&P 500, 1992-2005

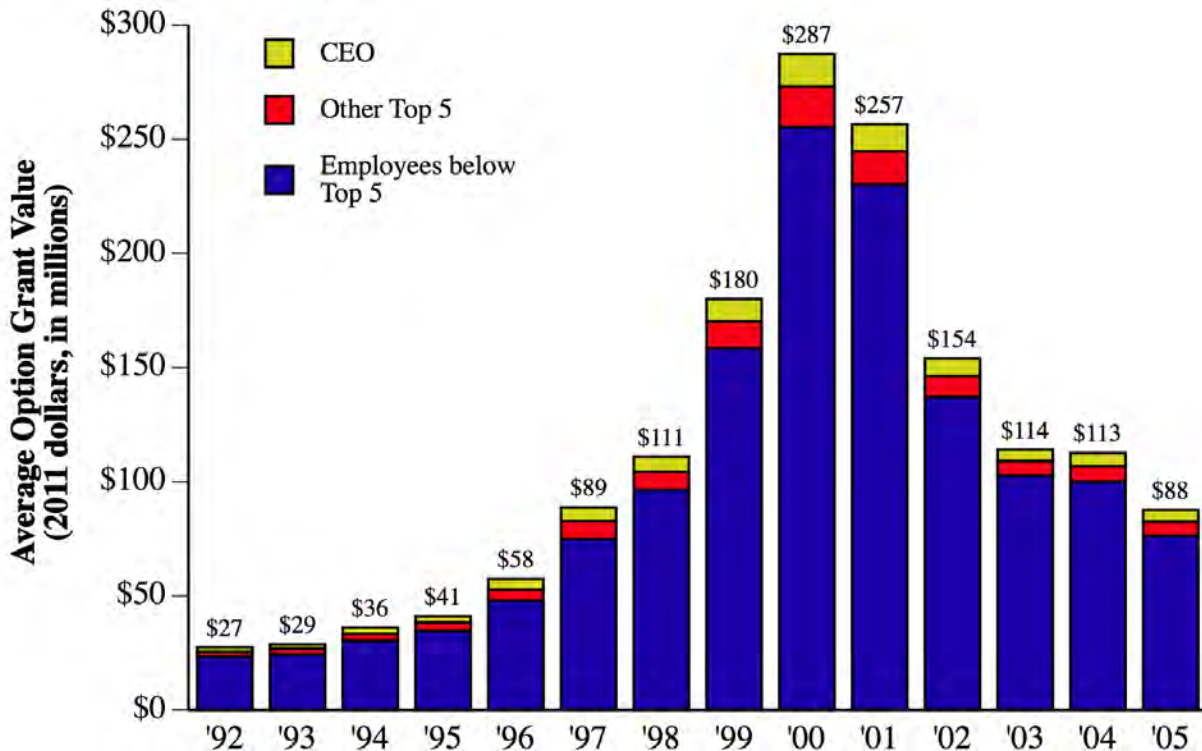


Note: Figure shows the grant-date number of options as a percent of total common shares outstanding granted to all employees in an average S&P 500 firm, based on data from S&Ps ExecuComp database. Grants below the Top 5 executives are estimated based on Percent of Total Grant disclosures. Companies not granting options to any of their top five executives are excluded.

Figure 3.7 shows the average annual option grants as a fraction of total common shares outstanding. In 1992, the average S&P 500 company granted its employees options on about 1.1% of its outstanding shares. In 2001, in spite of the bull market that increased share prices (that, in turn, increased the value of each granted option), the average S&P 500 company granted options to its executives and employees on 2.6% of its shares. By 2005, annual grants as a fraction of outstanding shares fell below 1995 levels to 1.3%.

Figure 3.8 shows the average inflation-adjusted grant-date values of options awarded by the average firm in the S&P 500 from 1992-2005.¹⁰⁷ Over this decade, the value of options granted increased from an average of \$27 million per company in 1992 to nearly

¹⁰⁷ Options granted to lower-level executives and employees are estimated by dividing the options granted to the proxy-named executives by the percentage of all options that are granted to the proxy-named executives. Under the disclosure rules after 2006, the SEC no longer requires companies to report the percentage of all option awards that went to the proxy-named executives, and therefore my estimates of grants across the company end in 2005.

Figure 3.8 Grant-Date Values of Employee Stock Options in the S&P 500, 1992-2005

Note: Figure shows the grant-date value of options (in millions of 2011-constant dollars) granted to all employees in an average S&P 500 firm, based on data from S&Ps ExecuComp data. Grants below the Top 5 are estimated based on Percent of Total Grant disclosures; companies not granting options to any of their top five executives are excluded. Grant-values are based on company fair-market valuations, when available, and otherwise use ExecuComps modified Black-Scholes approach.

\$300 million per company in 2000, falling to \$88 million per company in 2005. Ignored in the news coverage and controversy over stock options awarded to CEOs and the next four highest-paid executives is the fact that employees and executives ranked below the top five have received between 85% and 90% of the total option awards.

Over the 14-year 1992-2005 time period, the average S&P 500 companies awarded nearly \$1.6 billion worth of options to its executives and employees (or nearly \$800 billion across all 500 companies). What is generally unappreciated is that in this process the average S&P 500 company transferred through options approximately 25% of its total outstanding equity to its executives and employees.¹⁰⁸

¹⁰⁸ The 25% calculation simply sums the annual percentages in Figure 3.8. This calculation overstates the transfer of equity to the extent that some options are forfeited or expire worthless, and understates the transfer of equity to the extent that the overall base of shares expands as options are exercised or as the company offers additional shares.

Broad-based option grants were particularly generous in “new economy” firms and in firms below the S&P 500. Hall and Murphy (2003) show that the average new-economy firm in the S&P 500, S&P MidCap 400 and S&P SmallCap 600 granted options on 5.8% of its stock *annually* to employees below the top five between 1993 and 2001 (compared to only 2.3% annually in “old economy” firms). In 2000 alone, the average employee (below the top five) in the new-economy sector received options with a Black-Scholes value of \$32,000.¹⁰⁹

The backlash against the explosion in option grants grew following the 2000 burst in the Internet bubble, when companies granted even more options at a lower price so that employees were not penalized for poor performance. Shareholder activists concerned about dilution pressured the NYSE to reconsider their rules. In late 2002, the NYSE and NASDAQ passed uniform new rules requiring shareholder approval for *all* equity plans, with no exemption for broad-based plans. The new rules – which also required shareholder approval for option repricings – were approved by the SEC and went into effect in July 2003.

3.8. The Accounting and Backdating Scandals (2001-2007)

3.8.1. Accounting Scandals and Sarbanes-Oxley

Accounting scandals erupted across corporate America during the early 2000s, destroying the reputations of once-proud firms such as Enron, WorldCom, Qwest, Global Crossing, HealthSouth, Cendant, Rite-Aid, Lucent, Xerox, Tyco International, Adelphia, Fannie Mae, Freddie Mac, and Arthur Andersen. In the midst of these scandals, Congress quickly passed the sweeping Sarbanes-Oxley Act in July 2002, setting or expanding standards for accounting firms, auditors, and boards of directors of publicly traded companies. The Act was primarily focused on accounting irregularities and not on compensation. However, Congress could not resist the temptation to use the new law to further regulate executive pay.

First, in direct response to the forgiveness of certain corporate loans given to executives at Tyco International, Section 402 of Sarbanes-Oxley prohibited all personal loans to executives and directors, regardless of whether such loans served a useful and legitimate business purpose. For example, prior to Sarbanes-Oxley, companies would routinely offer loans to executives to buy company stock, often on a non-recourse basis so that the executive

¹⁰⁹ The average grant value is determined by dividing the total value of grants in each industry (after excluding grants to the top five executives) by the total number of employees in the industry

could fulfill the loan obligations by returning the purchased shares.¹¹⁰ Similarly, companies attracting executives would routinely offer housing subsidies in the form of forgivable loans, a practice made unlawful under the new regulations.¹¹¹ Finally, Sarbanes-Oxley is viewed as prohibiting company-maintained cashless exercise programs for stock options, where an executive exercising options can use some of the shares acquired to finance both the exercise price and income taxes due upon exercise.¹¹²

Second, Section 304 of Sarbanes-Oxley requires CEOs and CFOs to reimburse the company for any bonus or equity-based compensation received, and any profits realized from selling shares, in the twelve months commencing with the filing of financial statements that are subsequently restated as a result of corporate misconduct. This “clawback” provision of Sarbanes-Oxley – which was subsequently extended in the TARP legislation and Dodd-Frank Financial Reform Act discussed below – was notable mostly for its ineffectiveness. Indeed, in spite of the wave of accounting restatements that led to the initial passage of Sarbanes-Oxley, the first individual clawback settlement under Section 304 did not occur until more than five years later, when UnitedHealth Groups former CEO William McGuire was forced to return \$600 million in compensation.¹¹³ The SEC became more aggressive in 2009, launching two clawback cases (CSK Auto and Diebold, Inc.) where the targeted executives were not accused of personal wrongdoing.¹¹⁴

¹¹⁰ Indeed, it is easy to show that a traditional at-the-money stock option is equivalent to a non-recourse loan to purchase company stock at a zero interest rate with no downpayment. Loans to purchase stock that carry a positive interest rate or require an executive down payment are less costly to grant than traditional options, and deliver better incentives by both forcing executives to invest some of their own money in the venture and only providing payouts when the stock price appreciates by at least the interest charged on the loan. It is unfortunate that Congress prohibited these types of plans.

¹¹¹ Offering housing subsidies in the form of loans that are forgiven with the passage of time is preferable to a lump-sum subsidy, since the company can avoid paying the full subsidy if the executive leaves the firm before the loan is repaid or fully forgiven.

¹¹² Technically, cashless exercise programs are implemented by offering the executive a short-term bridge loan to finance the purchase of the shares, followed by open-market transactions to sell some of the shares to repay the loan. Subsequent to Sarbanes-Oxley, executives exercising options have turned to conventional banks for bridge-loan financing, significantly increasing the transaction costs and further diluting the shares outstanding (since under company-maintained programs, the company need only issue the net number of shares and not the full number of shares under option).

¹¹³ Plitch, “Paydirt: Sarbanes-Oxley A Pussycat On ‘Clawbacks’,” *Dow Jones Newswires* (2006); Bowe and White, “Record Payback over Options,” *Financial Times* (2007).

¹¹⁴ Berman, “The Game: New Frontier For the SEC: The Clawback,” *Wall Street Journal* (2010); Korn, “Diebold to Pay \$25 Million Penalty,” *Wall Street Journal* (2010).

Finally, Section 403 of Sarbanes-Oxley required that executives disclose new grants of stock options within two business days of the grant; before the Act options were not disclosed until 10 days after the end of the month when the option was granted. As discussed in the next section, this provision had the unintended but ultimately beneficial effect of curbing option backdating for top executives more than two years before the existence of backdating was discovered.

3.8.2. *Option Backdating*

In 2005, academic research by University of Iowa professor Erik Lie and subsequent investigations by the *Wall Street Journal* unearthed a practice that became known as option backdating.¹¹⁵ Under this practice, companies deliberately falsified stock option agreements so that options granted on one date were reported as if granted on an earlier date when the stock price was unusually low – commonly the lowest price in the quarter or in the year. Thus, options that were reported as granted *at* the money (that is, with an exercise price equal to the market price on the reported grant date) were in reality granted *in* the money (that is, with an exercise price well below the market price on the actual grant date). This unsavory practice violates federal disclosure rules, accounting and tax laws, and often violated the company’s own stock-option policies, as follows:

- Under SEC rules in effect since 1993, companies granting options with an exercise price different from the fair market price on the grant date are required to disclose this information to shareholders. Thus, companies backdating options should have informed shareholders that the options were actually issued with an exercise price less than the fair market value on the actual grant date.
- As discussed in Sections 3.5.3 and 3.7.1, under FASB rules in effect before 2006, companies would typically face an accounting charge for stock options only if the exercise price was set lower than the grant-date market price. Thus, companies that backdated options reported no accounting expense when the actual accounting expense should have been the spread between the market and exercise price (amortized over the

¹¹⁵ Key references include Lie (2005), Heron and Lie (2006b), Heron and Lie (2006a), Maremont, “Authorities probe improper backdating of options: Practice allows executives to bolster their stock gains; a highly beneficial pattern,” *Wall Street Journal* (2005), Forelle and Bandler, “Backdating probe widens as two quit Silicon Valley firm; Power Integrations Officials leave amid options scandal; 10 companies involved so far,” *Wall Street Journal* (2006), Forelle, “How Journal Found Options Pattern,” *Wall Street Journal* (2006), “Hot Topic: Probing Stock-Options Backdating,” *Wall Street Journal* (2006).

vesting period of the option). Companies backdating options are therefore not only falsifying option agreements, they are committing accounting fraud.

- As discussed in Section 3.7.3, compensation for proxy-named executives in excess of \$1 million is deductible only if the compensation is performance based under the definition of IRS Section 162(m). In order for payments related to stock options to be considered performance based, the options must meet several criteria including having an exercise price that is at least as high as the grant-date market price.¹¹⁶ Thus, assuming that the affected executives are subject to the \$1 million threshold, companies that backdated options are taking deductions for compensation that is not deductible.
- Finally, most shareholder-approved stock option agreements include provisions specifying that option exercise prices must be no less than 100% of the market price on the date of grant. Thus, companies with such provisions that backdate options are violating their own internal policies.

The *Wall Street Journal's* crusade against backdating triggered SEC investigations into more than 140 firms. By August 2009, the SEC had filed civil charges against 24 companies and 66 individuals for backdating-related offenses, and at least 15 people had been convicted of criminal conduct.¹¹⁷ In May 2007, Comverse Technology's former general counsel, William Sorin, pleaded guilty to a conspiracy charge and became the first corporate executive sent to prison for backdating executive and employee stock options; his boss (Comverse's founder and former CEO Kobi Alexander) fled to Namibia and is fighting extradition while remaining on the FBI's most wanted list.¹¹⁸ In January 2008, Brocade's former CEO, Gregory Reyes, became the first executive to go to trial and be convicted on backdating charges; Reyes was sentenced to 21 months in prison and ordered to pay a \$15 million fine. Brocade's former human resource executive was also convicted.¹¹⁹ Reyes' conviction was thrown out by the U.S. Court of Appeals in 2009, citing prosecutorial misconduct, but he was retried, reconvicted, and resentenced to 18 months in prison in June

¹¹⁶ If the amount of compensation the employee will receive under the grant or award is not based solely on an increase in the value of the stock after the date of grant or award (e.g., in the case of restricted stock, or an option that is granted with an exercise price that is less than the fair market value of the stock as of the date of grant), none of the compensation attributable to the grant or award is qualified performance-based compensation. Internal Revenue Service, Section 1.162-27.

¹¹⁷ Maremont, "Backdating Likely More Widespread," *Wall Street Journal* (2009).

¹¹⁸ Bray, "Former Comverse Official Receives Prison Term in Options Case," *Wall Street Journal* (2007); "Fugitive Mogul's Rent Coup," *New York Post* (2009).

¹¹⁹ Scheck and Stecklow, "Brocade Ex-CEO Gets 21 Months in Prison," *Wall Street Journal* (2008).

2010.¹²⁰ In addition to the SEC civil and criminal charges, scores of companies have restated their financials based on internal investigations into backdating, and many have settled class action or derivative suits brought by shareholders.

Some backdating cases were obvious in retrospect, such as Cablevision's award of backdated options to its vice chairman after his death in 1999.¹²¹ In most cases, however, executives would often go to lengths to hide the backdating practices from the company's auditors, shareholders, and tax authorities. For example, in its investigation of backdating at Sycamore Networks, the SEC uncovered an internal memo that discussed ways to alter employees hire dates so they could get options with lower exercise prices, and also evaluated the risk that the changes might be discovered by auditors.¹²² Executives at Mercury Interactive used WhiteOut to alter the dates on option documents, and joked about magic backdating ink.¹²³

As noted above in Section 3.8.1, changes in reporting requirements in 2002 essentially put an end to option backdating for top-level executives more than two years before academics and the media uncovered the practice. Between May 1992 and August 2002, option grants for corporate insiders were typically not disclosed until 10 days after the end of the month when the option was granted, providing substantial opportunity for manipulating grant dates. In August 2002, as part of the Sarbanes-Oxley Act, the SEC required executives receiving options to disclose those grants within two business days after the grant was made. Heron and Lie (2006a) and Narayanan and Seyhun (2005) show that the abnormal run-up in stock prices following reported grant dates (which they interpret as evidence of backdating) declined substantially after the new reporting rules, thus suggesting that the Sarbanes-Oxley Act had the unintended (but desirable) effect of stemming backdating practices.¹²⁴

¹²⁰ Egelko, "18 months for ex-Brocade CEO," *San Francisco Chronicle* (2010).

¹²¹ See Grant, Bandler and Forelle, "Cablevision Gave Backdated Grant To Dead Official," *Wall Street Journal* (2006).

¹²² Hechinger and Bandler, "In Sycamore Suit, Memo Points to Backdating Claims," *The Wall Street Journal* (2006). The internal memo is available at Sycamore Networks (2001).

¹²³ See Lee, "Option lawsuit give up details: Shareholders suing Mercury Interactive over timing of grants," *San Francisco Chronicle* (2007).

¹²⁴ The reporting requirements under Sarbanes-Oxley apply only to executive officers and directors, and there is evidence from SEC investigations that some companies continued backdating for lower-level employees subsequent to the August 2002. However, since grants to such employees are not publicly disclosed, it has not been possible to perform a comprehensive analysis of the practice.

By 2010, the SEC's investigations and prosecutions of backdating had wound down. New disclosure rules introduced in 2006 were designed to identify new backdating cases by requiring companies to report not only exercise prices for option grants, but also the grant-date market price, date of grant, and the date that the board approved the grant.¹²⁵ While there is no accepted count of the number of companies engaged in backdating (beyond the 24 companies formally charged by the SEC or the approximately 150 companies that have restated financials after internal investigations revealed backdating¹²⁶), academic research has suggested that the practice was widespread. Based on statistical analysis of exercise prices, Edelson and Whisenant (2009) estimate that as many as 800 firms engaged in the practice; other estimates have been as high as 2000.¹²⁷

In retrospect, while issuing options with exercise prices below grant-date market prices can be part of an efficient compensation structure, it is difficult to defend the practice of backdating and the ex post manipulation and falsification of grant dates. However, it is also difficult to defend the SEC's aggressiveness in prosecuting and criminalizing what would seem to be relatively minor books and records infractions. Consider the following:

- There is nothing illegal about setting exercise prices to the lowest price observed during a month or quarter (or any other price), as long as the company appropriately discloses the practice and (based on FASB rules in effect before 2006) records an accounting expense equal to the difference between the exercise price and the market price on the true grant date. In practice, however, very few firms issue options with exercise prices below market prices precisely because of the accounting charge associated with such options.
- Companies charged with backdating have restated their financials to reflect the actual spread between the exercise and market price. However, this remedy misses the point: the relevant alternative to backdating was *not* issuing in-the-money options and taking an accounting charge, but rather issuing a larger number of at-the-money options and avoiding the accounting charge. Therefore, under this relevant alternative, there would

¹²⁵ In the proxy disclosure rules in effect between 1993 and 2006, companies were required to report the expiration date for new grants, but not the grant date.

¹²⁶ Nicklaus, "Scandal left both sides sullied: Backdating undermined confidence, but some 'good guys' overreached," *St. Louis Post-Dispatch* (2010).

¹²⁷ Ryst, "How To Clean Up A Scandal," *BusinessWeek.com* (2006)

be no change in reported accounting expenses or earnings, but there would be an increase in the number of options granted.

- There is no evidence to my knowledge that companies engaged in backdating systematically overpaid lower-level employees receiving such grants, thus no evidence that backdating was associated with a large transfer of wealth from shareholders to employees.¹²⁸

The SEC prosecuted backdating cases with a zeal usually reserved for hardened criminals. Executives associated with backdating schemes were charged with myriad crimes, including filing false documents, securities fraud, and conspiracy to commit securities fraud. KB Homes former CEO Bruce Karatz, for example, faced up to 415 years in prison if convicted on all backdating-related charges including 15 counts of mail, wire, and securities fraud, four counts of making false statements in SEC filings, and one count of lying to his company's accountants. Mr. Karatz was ultimately convicted in April 2010 on two counts of mail fraud, one count each of making false statements in SEC filings and to his accountants and faced up to 80 years in prison.¹²⁹ Ultimately, however, Mr. Karatz was sentenced to five years probation (including eight months of house arrest), a \$1 million fine and 2,000 hours of community service.

The SEC's record of successful convictions has been far from perfect. Its suit against Michael Shanahan for backdating at Engineered Support Systems was dismissed midtrial when the judge determined that the SEC's case provided no evidence of fraud. Similarly, the SEC's high-profile case against Broadcom was dismissed amid claims of significant prosecutorial misconduct and lack of criminal intent.¹³⁰

3.8.3. *Enron and Section 409(A)*

Enron, like many other large companies, allowed mid-level and senior executives to defer portions of their salaries and bonuses through the company's non-qualified deferred compensation program. When Enron filed for Chapter 11 bankruptcy protection in December 2002, about 400 senior and former executives became unsecured creditors of the corporation,

¹²⁸ Bebchuk, Grinstein and Peyer (2010) show that CEOs receiving lucky grants (which they define as grants with exercise prices set at the lowest price during the grant month) have higher total compensation than CEOs without lucky grants.

¹²⁹ Wotapka, "Former CEO At KB Home Is Convicted," *Wall Street Journal* (2010).

¹³⁰ Henning, "Behind the Fade-Out of Options Backdating Cases," *New York Times* (2010).

eventually losing most (if not all) of the money in their accounts.¹³¹ However, just before the bankruptcy filing, Enron allowed a small number of executives to withdraw millions of dollars from their deferred compensation accounts. The disclosure of these payments generated significant outrage (and law suits) from Enron employees who lost their money, and attracted the ire of Congress.

As a direct response to the Enron situation, Section 409(A) was added to the Internal Revenue Code as part of the American Jobs Creation Act of 2004. In essence, the objectives of Section 409(A) were to limit the flexibility in the timing of elections to defer compensation in nonqualified deferred compensation programs, to restrict withdrawals from the deferred accounts to pre-determined dates (and to prohibit the acceleration of withdrawals), and to prevent executives from receiving severance-related deferred compensation until six months after severance. Section 409(A) imposes taxes on individuals with deferred compensation as soon as the amounts payable under the plan are no longer subject to a substantial risk of forfeiture. Individuals failing to pay taxes in the year the amounts are deemed to no longer be subject to the substantial forfeiture risk owe a 20% excise tax and interest penalties on the amount payable (even if the individual has not received or may never receive any of the income).

One of the notable features of Section 409(A) is that it significantly broadens the definition of deferred compensation. For example, annual bonuses or reimbursement of expenses paid more than two and a half months after the close of the fiscal year are considered deferred compensation subject to Section 409(A). Similarly, supplemental executive retirement plans (SERPs), phantom stock awards, stock appreciation rights, split-dollar life insurance arrangements, and individual employment agreements allowing deferral of compensation or severance awards are also (under some circumstances) considered deferred compensation subject to Section 409(A).

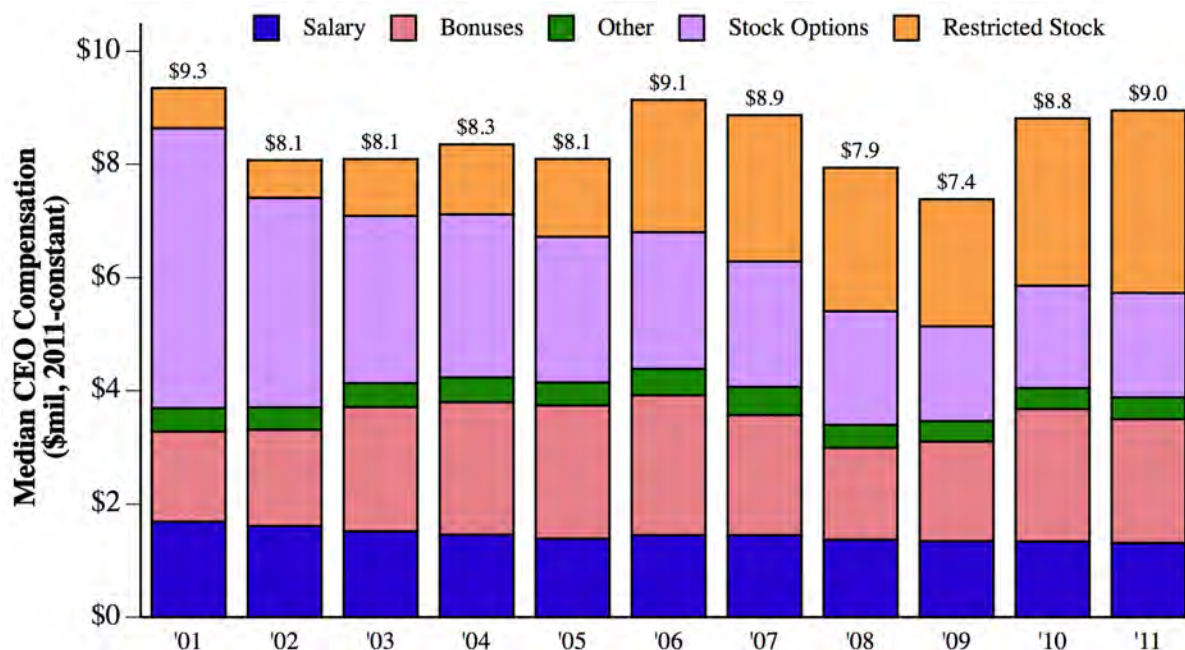
While developed as a response to the Enron situation, Section 409(A) was still being drafted when the option backdating scandals came to light. As a result, Congress defined discount options (i.e., options with an exercise price below the market price on the date of grant) as deferred compensation subject to Section 409(A). In particular, Section 409(A) requires discount options to have a fixed exercise date (that is, a date in the future when the option must be exercised). Unless the option holder pre-commits to the future date when the

¹³¹ Barboza, "Enron's Many Strands: Executive Compensation. Enron paid some, not all, deferred compensation," *New York Times* (2002).

option will be exercised, the holder is subject to a 20% penalty tax, in addition to regular income tax, plus possible interest and other penalties, regardless of whether the option is ever exercised.¹³² The new rule applied retroactively to options granted before 2005 but not vested as of December 31, 2004, and was explicitly designed to penalize senior executives receiving backdated options.

¹³² IRS guidance has not been clear with respect to the amount subject to the additional 20% penalty. For example, Morrison and Foerster (<http://www.mofo.com/news/updates/files/update02204.html>) has advised its clients that the amount subject to the penalty could be any of the following:

- the difference between the exercise price and the fair market value of the stock subject to the option measured on the date of grant of the option;
- the difference between the exercise price and the fair market value of the stock subject to the option measured on the date the shares subject to the option vest;
- the difference between the exercise price and the fair market value of the stock subject to the option measured on the date of exercise;
- the Black-Scholes value of the option measured on the date of grant of the option; or
- the Black-Scholes value of the option measured on the date the shares subject to the option vest.

Figure 3.9 Median Grant-date Compensation for CEOs in S&P 500 Firms, 2001-2011

Note: Median pay levels (in 2011-constant dollars) based on ExecuComp data for S&P 500 CEOs. Total compensation (indicated by bar height) defined as the sum of salaries, non-equity incentives (including bonuses), benefits, stock options (valued on the date of grant using company fair-market valuations, when available, and otherwise using ExecuComps modified Black-Scholes approach), stock grants, and other compensation. Other compensation excludes pension-related expenses. Pay composition percentages defined as the average composition across executives.

3.8.4. Accounting for Options (finally!) and the Rise of Restricted Stock

The first decade of the new century have brought several important changes in the level and composition of CEO pay. As shown in Figure 3.9, median grant-date total CEO pay in the S&P 500 declined from \$9.3 million in the peak year of 2001 to \$9.0 million in 2011, representing the first prolonged stagnation in CEO pay since the early 1970s. The decrease in pay primarily reflects both a substantial decline in the grant-date value of stock options, and a shift in the industry composition of the S&P 500. In 2001, the value of stock options at the award date accounted for 53 percent of the pay for the typical S&P 500 CEO. By 2011, options accounted for only 21 percent of total pay. Moreover, the decline in stock option grants in the early 2000s has been associated with an increase in stock grants, which accounted for 36% of average pay by 2011 (up from only 8% in 2001). The stock grants include a mixture of traditional restricted stock (vesting only with the passage of time) and performance shares (where vesting is based on performance criteria).

Figure 3.10 CEOs in S&P 500 Firms receiving equity-based compensation, 1992-2011

Note: Sample is based on all CEOs included in the S&P 500, based on S&P's ExecuComp database. Stock grants include both restricted and performance shares.

Figure 3.10 shows the percentage of S&P 500 companies that made stock option or restricted stock grants to their CEOs between 1992 and 2011. The percentage of companies granting options to their CEOs in each year increased from about 63% in 1992 to 87% by 2001, falling to 68% in 2011. Over the same time period, the percentage of companies making restricted stock or performance-share grants more than tripled from 25 percent to 82 percent. The trend suggests a substitution of stock grants for stock options, although more than half of the S&P 500 CEOs have received *both* options and restricted stock annually since 2006.

One obvious explanation for the drop in stock options and the rise in restricted stock since the early 2000s is the stock market crash associated with the burst of the Internet Bubble in 2000 and exacerbated by the terrorist attacks on the World Trade Center in 2001. In particular, the sharp market-wide decline in stock prices in the early 2000s left many outstanding options underwater and lowered executive expectations for the future increases in their company's stock prices. Indeed, in many cases, including Microsoft and Cablevision, current outstanding (but out-of-the-money) options were cancelled and replaced with restricted stock, often at terms very favorable to executives. Executives will naturally prefer

restricted stock to options when they have low expectations for future firm performance. While restricted stock will always retain some value as long as the firm is valued at greater than its liabilities, executives often expect that options granted in a declining market are likely to expire worthless.

Indeed, stock options have always become more popular when stock markets are trending upward (i.e., bull markets) and less popular when markets trend down (i.e., bear markets). As documented throughout this history of CEO pay, almost every recession over the past 60 years has been associated with a reduced use of stock options, and during the lackluster 1970s many firms replaced their option plans with new accounting-based bonus plans designed to provide more predictable payouts. However, the spike in the importance of restricted shares in 2006 (rising in Figure 3.9 from 17% to 26% of total pay from 2005) in a year with robust stock-market performance (the Dow Jones increased by 16% in 2006) suggests that the decline in stock options in favor of restricted shares reflects more than market trends. I believe the answer largely reflects changes in the accounting treatment of options.

The scandals that erupted across corporate America during the early 2000s focused attention on the quality of accounting disclosures, which in turn renewed pressures for companies to report the expense associated with stock options on their accounting statements. Before 2002, only a handful of companies had elected to expense options under FAS123; the remainder elected to account for options under the old rules (where there was typically no expense). In the summer of 2002, several dozen firms announced their intention to expense options voluntarily; more than 150 firms had elected to expense options by early 2003 (Aboody, Barth and Kasznik (2004)). Moreover, shareholder groups (most often representing union pension funds) began demanding shareholder votes on whether options should be expensed; more than 150 shareholder proposals on option expensing were submitted during the 2003 and 2004 proxy season (Ferri and Sandino (2009)). By late 2004, about 750 companies had voluntarily adopted or announced their intention to expense options. In December 2004, FASB announced FAS123R which revised FAS123 by *requiring* all U.S. firms to recognize an accounting expense when granting stock options, effective for fiscal years beginning after June 15, 2005.

In addition to requiring an accounting expense for all options granted after June 15, 2005, FAS123R required firms to record an expense for options granted *before* this date that were not yet vested (or exercisable) as of this date. To avoid taking an accounting charge for

these outstanding options, many firms accelerated vesting of existing options so that all options were exercisable by June 15, 2005 (Choudhary, et al. (2009)).

Under the accounting rules in place since 1972 (and continuing under FAS123R), companies granting traditional restricted stock (vesting only with the passage of time) recognize an accounting expense equal to the grant-date value of the shares amortized over the vesting period. Under FAS123R, the expense for stock options is similar to that of shares of stock: companies must recognize an accounting expense equal to the grant-date value of the options amortized over the period when the option is not exercisable. Option expensing (whether voluntarily under FAS123, or by law under FAS123R) significantly leveled the playing field between stock and options from an accounting perspective. As a result, companies reduced the number of options granted to top executives (and other employees), and greatly expanded the use of restricted shares.

The new accounting rules also facilitated another change long-desired by shareholder advocates: a switch from traditional time-lapse restricted stock to “performance shares” that vest only upon achievement of accounting- or market-based performance goals. Angelis and Grinstein (2011), for example, report that 52% of the 2007 restricted stock awards for CEOs in the S&P 500 were performance-based.

Under the 1972 rules, performance shares were expensed using “variable” rather than “fixed” accounting, meaning that the company would record an expense based on the grant-date stock price, and then record additional expenses reflecting the appreciation or depreciation of the performance share up until the date that the performance hurdle was achieved. Therefore, if the stock price increased between the grant and the achievement of the performance hurdle (which is typically the case), the accounting expense for performance shares was higher than the accounting expense for traditional time-lapse restricted stock. In contrast, under FAS123R fair-market-value accounting, the expense for performance shares is generally less than the expense for traditional restricted stock, because the company can take into account the severity of the performance hurdles when estimating the fair market value. In addition, while traditional restricted stock is considered non-performance-related under IRS Section 162(m) (and thus subject to the \$1 million deductibility cap), performance shares can be structured to be fully deductible.

3.8.5. *Conflicted Consultants and CEO Pay*¹³³

Most large companies rely on executive compensation consultants to make recommendations on appropriate pay levels, to design and implement short-term and long-term incentive arrangements, and to provide survey and competitive-benchmarking information on industry and market pay practices. In addition, consultants are routinely asked to opine on existing compensation arrangements and to give general guidance on change-in-control and employment agreements, as well as on complex and evolving accounting, tax, and regulatory issues related to executive pay.

Critics seeking explanations for high executive pay have increasingly accused these consultants as being (partly) to blame for the perceived excesses in pay. Concerns over the role of consultants led the Securities and Exchange Commission (SEC) – as part of their 2006 overhaul of proxy disclosure rules – to require companies to identify any consultants who provided advice on executive or director compensation; to indicate whether or not the consultants are appointed by the companies’ compensation committees; and to describe the nature of the assignments for which the consultants are engaged.

Initial results from the 2007 proxy season appeared to buttress the concerns of the critics. An October 2007 report issued by the Corporate Library, “The Effect of Compensation Consultants” (Higgins (2007)) concluded that companies using consultants offer significantly higher pay than companies not using consultants.¹³⁴ However, the cross-sectional correlation between CEO pay and the use of consultants does not imply that the consultants *caused* the high pay; it is equally plausible that companies with high pay are most likely to seek the advice of consultants. Indeed, Armstrong, et al. (2012) find no evidence of differences in pay between a sample of firms using consultants and a matched sample of firms not using consultants. Similarly, based on a time-series of 2006-2009 data, Murphy and Sandino (2012) find no evidence that firms increase pay after retaining consultants.

The SEC’s disclosure requirements were followed by Congressional hearings and a December 2007 report from the US House of Representatives Committee on Oversight and Government Reform, “Executive Pay: Conflicts of Interest Among Compensation Consultants” (Waxman (2007)). The Congressional hearings focused on consultants offering

¹³³ This section draws heavily from Murphy and Sandino (2010) and Murphy and Sandino (2012).

¹³⁴ Academic studies based on the first year of consultant disclosures – including Cadman, Carter and Hillegeist (2010), Armstrong, Ittner and Larcker (2012) and (early versions of) Murphy and Sandino (2010) – also documented significantly higher pay in companies using consultants.

a full-range of compensation, benefits, actuarial and other human resources services in addition to executive pay. The provision of these other services creates a potential conflict of interest because the decisions to engage the consulting firm in these more-lucrative corporate-wide consulting areas are often made or influenced by the same top executives who are benefited or harmed by the consultant's executive pay recommendations.

In response to the Congressional concerns, the SEC expanded its disclosure rules in 2009 to require firms to disclose fees paid to their executive compensation consultants whenever the consultants received more than \$120,000 for providing any other services to the firm beyond those related to executive and director pay. The SEC exempted from these requirements firms that retain at least one compensation consultant that works exclusively for the board, and also exempted disclosing consultants that affect executives' and directors' compensation only through providing advice related to broad-based plans that do not discriminate executives and/or directors from other employees. As discussed below in Section 3.10.2, the SEC disclosure rules were further expanded in 2012 (as part of the implementation of the Dodd-Frank Act) to require firms to disclose whether the work of the consultant has raised any conflict of interest and, if so, the nature of the conflict and how the conflict is being addressed.

The initial and expanded SEC disclosure rules were introduced without any evidence that "conflicted consultants" were, indeed, complicit in perceived pay excesses. Based on the initial year of consultant disclosures, Cadman, et al. (2010) find no evidence that CEO pay is related to consultant conflicts of interest. Based on similar data (supplemented with IRS and Department of Labor data identifying actuarial service providers), Murphy and Sandino (2010) find some evidence that CEO pay is modestly higher in firms where consultants provide other services. However, in subsequent time-series analyses, Murphy and Sandino (2012) show that the relation between conflicted consultants and CEO pay had become statistically and economically insignificant by 2008.

While the evidence suggests, at most, a modest link between conflicted consultants and CEO pay, the SEC disclosure requirements have resulted in dramatic changes in the compensation consulting industry. The largest full-service consulting firms in 2006 (Towers Perrin, Mercer, Hewitt, and Watson Wyatt) have experienced significant declines in market share among their S&P 500 clients, while the largest non-integrated firms focused only on executive compensation (Frederick Cook and Co. and Pearl Meyer) have increased market share. In addition, many of the top consultants from the full-service firms left to create their own "boutique" firms focused on advising boards. For example, consultants from Towers

Perrin and Watson Wyatt formed Pay Governance, consultants from Hewitt formed Meridian Compensation Partners, and consultants from Mercer formed Compensation Advisory Partners. The full-service firms have also consolidated: Towers Perrin and Watson Wyatt merged to create TowersWatson, while Hewitt was acquired by Aon.

As discussed by Murphy and Sandino (2010), the experience of the full-service consulting firms closely parallels the experience of accounting firms offering both auditing and consulting services. Concerns regarding conflicts when accounting firms offered services beyond auditing led not only to the Sarbanes-Oxley Act and to detailed disclosures of fees charged for auditing and non-auditing businesses, but also to the practice of companies avoiding using their auditors for other services. This practice has defined the industry, in spite of the fact that the auditors (with their vast firm-specific knowledge) might be the efficient provider of such services, and notwithstanding the fact that there was no direct evidence that these potential conflicts actually translated into misleading audits.

3.9. Pay Restrictions for TARP Recipients (2008-2009)

3.9.1. The Emergency Economic Stabilization Act (EESA)

On September 19, 2008 – at the end of a tumultuous week on Wall Street that included the Lehman Brothers bankruptcy and the hastily arranged marriage of Bank of America and Merrill Lynch – Treasury Secretary Paulson asked Congress to approve the Administration’s plan to use taxpayers’ money to purchase “hundreds of billions” in illiquid assets from U.S. financial institutions.¹³⁵ Paulson’s proposal contained no constraints on executive compensation, fearing that restrictions would discourage firms from selling potentially valuable assets to the government at relatively bargain prices.¹³⁶ Limiting executive pay, however, was a long-time top priority for Democrats and some Republican congressmen, who viewed the “Wall Street bonus culture” as a root cause of the financial crisis. Congress rejected the bailout bill on September 30, but reconsidered three days later after a record one-day point loss in the Dow Jones Industrial Average and strong bipartisan Senate support. The Emergency Economic Stabilization Act (EESA) was passed by Congress on October 3rd, and signed into law by President Bush on the same day.

¹³⁵ Solomon and Paletta, “U.S. Bailout Plan Calms Markets, But Struggle Looms Over Details,” *Wall Street Journal* (2008).

¹³⁶ Hulse and Herszenhorn, “Bailout Plan Is Set; House Braces for Tough Vote,” *New York Times* (2008).

When Treasury invited (or, in some cases, coerced) the first eight banks to participate in TARP, a critical hurdle involved getting the CEOs and other top executives to waive their rights under their existing compensation plans. At the time, the proposed restrictions seemed serious. For example, while Section 304 of the 2002 Sarbanes-Oxley Act required clawbacks of certain executive ill-gotten incentive payments, the Act only covered the CEO and chief financial officer (CFO), and only covered accounting restatements. While applying only to TARP recipients (Sarbanes-Oxley applied to all firms), the October 2008 EESA covered the top-five executives (and not just the CEO and CFO), and covered a much broader set of material inaccuracies in performance metrics. In addition, EESA lowered the IRS cap on deductibility for the top-five executives from \$1 million to \$500,000, and applied this limit to all forms of compensation (and not just non-performance-based pay). EESA also prohibited new golden parachutes agreements for the Top 5 executives, and capped payments under existing plans to 300% of the executives' average taxable compensation over the prior five years.

In a semantic change that will confuse students of executive compensation for years to come, EESA also formally defined "golden parachutes" as amounts paid in "the event of an involuntary termination, bankruptcy filing, insolvency, or receivership." Previously, the term "golden parachute" had referred exclusively (if not pejoratively) to payments made in connection with a change in control. Under IRS Section 280(G) (discussed above in Section 3.6.1), change-in-control payments exceeding 300% of executives' average taxable compensation over the prior five years were subject to significant tax penalties. Thus, EESA not only explicitly capped payments, but substantially expanded the events characterized as golden parachutes.

3.9.2. The American Reinvestment and Recovery Act (ARRA) amends EESA

In January 2009, reports began surfacing that Merrill Lynch distributed \$3.6 billion in bonuses to its 36,000 employees just before the completion of the merger with Bank of America: the top 14 bonus recipients received a combined \$250 million, while the top 149 received \$858 million (Cuomo (2009)). The CEOs of Bank of America and the former Merrill Lynch (neither of whom received a bonus for 2008) were quickly hauled before Congressional panels outraged by the payments, and the Attorney General of New York launched an investigation to determine if shareholders voting on the merger were misled about both the bonuses and Merrill's true financial condition. The SEC joined in with its own civil complaint, which sued the Bank of America but not its individual executives, and the

bank agreed to settle for \$33 million. However, a few weeks later a federal judge threw out the proposed settlement, insisting that individual executives be charged and claiming that the settlement did not comport with the most elementary notions of justice and morality.¹³⁷ In February 2010, the judge relented and reluctantly approved the settlement after it had been increased to \$150 million.¹³⁸

By the time the Merrill Lynch bonuses were revealed, the country had a new President, a new Congress, and new political resolve to punish the executives in the companies perceived to be responsible for the global meltdown. Indicative of the mood in Washington, Senator McCaskill (D-Missouri) introduced a bill in January 2009 that would limit total compensation for executives at bailed-out firms to \$400,000, calling Wall Street executives a bunch of idiots who were kicking sand in the face of the American taxpayer.¹³⁹

On February 4, 2009, President Obama's administration responded with its own proposal for executive-pay restrictions that distinguished between failing firms requiring exceptional assistance and relatively healthy firms participating in TARP's Capital Purchase Program. Most importantly, the Obama Proposal for exceptional assistance firms (which specifically identified AIG, Bank of America, and Citigroup) capped annual compensation for senior executives to \$500,000, except for restricted stock awards (which were not limited, but could not be sold until the government was repaid in full, with interest). In addition, for exceptional-assistance firms the number of executives subject to clawback provisions would be increased from 5 under EESA to 20, and the number of executives with prohibited golden parachutes would be increased from 5 to 10. In addition, the next 25 highest-paid executives would be prohibited from parachute payments that exceed one year's compensation).

Moreover – in response to reports of office renovations at Merrill Lynch, corporate jet orders by Citigroup, and corporate retreats by AIG – the Obama Proposal stipulated that all TARP recipients adopt formal policies on luxury expenditures. Finally, the Obama Proposal

¹³⁷ Scannell, Rappaport and Bravin, "Judge Tosses Out Bonus Deal – SEC Pact With BofA Over Merrill Is Slammed; New York Weighs Charges Against Lewis," *Wall Street Journal* (2009).

¹³⁸ Fitzpatrick, Scannell and Bray, "Rakoff Backs BofA Accord, Unhappily," *Wall Street Journal* (2010).

¹³⁹ Andrews and Bajaj, "Amid Fury, U.S. Is Set to Curb Executives' Pay After Bailouts," *New York Times* (2009).

required all TARP recipients to fully disclose their compensation policies and allow nonbinding Say-on-Pay shareholder resolutions.¹⁴⁰

In mid-February 2009, separate bills proposing amendments to EESA had been passed by both the House and Senate, and it was up to a small conference committee to propose a compromise set of amendments that could be passed in both chambers. On February 13th – as a last-minute addition to the amendments – the conference chairman (Senator Chris Dodd) inserted a new section imposing restrictions on executive compensation that were opposed by the Obama administration and severe relative to both the limitations in the October 2008 version and the February 2009 Obama Proposal. Nonetheless, the compromise was quickly passed in both chambers with little debate and signed into law as the American Recovery and Reinvestment Act of 2009 by President Obama on February 17, 2009.

Table 3.1 compares the pay restrictions under the original 2008 EESA bill, the 2009 Obama Proposal, and the 2009 ARRA (which amended Section 111 of the 2008 EESA). While the clawback provisions under the original ESSA covered only the top five executives (up from only two in SOX), the Dodd Amendments extended these provisions to 25 executives and applied them retroactively.¹⁴¹ In addition, while the original ESSA disallowed severance payments in excess of 300% of base pay for the top five executives, the Dodd Amendments covered the top 10 executives and disallowed *all* payments (not just those exceeding 300% of base). Most importantly, the Dodd Amendments allowed only two types of compensation: base salaries (which were not restricted in magnitude), and restricted stock (limited to grant-date values no more than half of base salaries). The forms of compensation explicitly prohibited under the Dodd amendments for TARP recipients include performance-based bonuses, retention bonuses, signing bonuses, severance pay, and all forms of stock options.

¹⁴⁰ TARP recipients not considered exceptional assistance firms could waive the disclosure and Say-on-Pay requirements, but would then be subject to the \$500,000 limit on compensation (excluding restricted stock).

¹⁴¹ The number of executives covered by the Dodd Amendments varied by the size of the TARP bailout, with the maximum number effective for TARP investments exceeding \$500 million. As a point of reference, the average TARP firm among the original eight recipient received an average of \$20 *billion* in funding, and virtually all the outrage over banking bonuses have involved banks taking well over \$500 million in government funds. Therefore, we report results assuming that firms are in the top group of recipients.

Table 3.1 Comparison of Pay Restrictions in EESA (2008), Obama Proposal (2009), and ARRA (2009)

Legislation or Proposal	Restrictions on Executive Compensation
<i>A. Limits on Pay Levels and Deductibility</i>	
Pre-EESA (IRS §162(m) (1994))	Limits deductibility of top-5 executive pay to \$1,000,000, with exceptions for performance-based pay
EESA (2008) All TARP Recipients	Limits deductibility of top-5 executive pay to \$500,000, with no exceptions for performance-based pay
Obama (2009) Exceptional Assistance Firms	In addition to deductibility limits, cash pay is capped at \$500,000; additional amounts can be paid in restricted shares vesting after government paid back
Obama (2009) Other TARP Recipients	Same as exceptional assistance firms, but pay caps can be waived if firm offers full disclosure of pay policies and a non-binding Say-on-Pay vote
ARRA (2009) All TARP Recipients	In addition to deductibility limits, disallows all incentive payments, except for restricted stock capped at no more than one-half base salary. No caps on salary.
<i>B. Golden Parachutes</i>	
Pre-EESA (IRS §280G (1986))	Tax penalties for change-in-control-related payments exceeding 3 times base pay
EESA (2008) Auction Program	No new severance agreements for Top 5
EESA (2008) Capital Purchase Program	No new severance agreements for Top 5, and no payments for top 5 executives under existing plans exceeding 3 times base pay
Obama (2009) Exceptional Assistance Firms	No payments for Top 10; next 25 limited to 1 times base pay
Obama (2009) Other TARP Recipients	No payments for top 5 executives under existing plans exceeding 1 times base pay
ARRA (2009) All TARP Recipients	No payments for Top 10 Disallows all payments (not just excess payments)
<i>C. Clawbacks</i>	
Pre-EESA (Sarbanes-Oxley (2002))	Covers CEO and CFO of publicly traded firms following restatements
EESA (2008) Auction Program	No new provisions
EESA (2008) Capital Purchase Program	Top 5 executives, applies to public and private firms, not exclusively triggered by restatement, no limits on recovery period, covers broad material inaccuracies (not just accounting restatements)
Obama (2009) All TARP Recipients	Same as above, but covers 20 executives
ARRA (2009) All TARP Recipients	Covers 25 executives for all TARP participants, retroactively

Finally, the Dodd amendments imposed mandatory Say-on-Pay resolutions for all TARP recipients. In early 2009 – not long after the Dow Jones Industrial Average hit its crisis minimum at about 6500 – shareholders had an opportunity to provide a non-binding vote of approval on the 2008 compensation received by the top executives at the TARP recipients (i.e., compensation for the year when these firms allegedly dragged the economy into a financial crisis). As an interesting historical footnote, none of the TARP recipients received a majority vote against its executive compensation levels and policies.

As another interesting historical footnote: while almost all attempts to regulate executive compensation have produced negative unintended side effects, the Dodd Amendments produced a positive one. In particular, many TARP recipients found the draconian pay restrictions sufficiently onerous that they hurried to pay back the government in time for year-end bonuses.

As draconian as the Dodd Amendments (triggered by the Merrill Lynch payments) were, things were about to get worse. The second flash point for outrage over bonuses involved insurance giant American International Group (AIG), which had received over \$170 billion in government bailout funds, in large part to offset over \$40 billion in credit default-swap losses from its Financial Products unit. In March 2009, AIG reported it was about to pay \$168 million as the second installment of \$450 million in contractually obligated retention bonuses to employees in the troubled unit. (The public outrage intensified after revelations that most of AIG's bailout money had gone directly to its trading partners, including Goldman Sachs (\$13 billion), Germany's Deutsche Bank (\$12 billion), and France's Société Générale (\$12 billion).) The political fallout was swift and furious: in the week following the revelations seven bills were introduced in the House and Senate aimed specifically at bonuses paid by AIG and other firms bailed out through TARP:

- H.R. 1518, the Bailout Bonus Tax Bracket Act of 2009 imposed a 100% tax on bonuses over \$100,000.
- H.R. 1527 imposed an additional 60% tax (on top of 35% ordinary income tax) on bonuses exceeding \$100,000 paid to employees of businesses in which the federal government has an ownership interest of 79% or more. (Not coincidentally, the government owned 80% of AIG when the bill was introduced.)
- H.R. 1575, the End Government Reimbursement of Excessive Executive Disbursements Act (i.e., the End GREED Act) authorized the Attorney General to seek recovery of and limit excessive compensation.

- H.R. 1577, the AIG Bonus Payment Bill required the Secretary of Treasury to implement a plan within two weeks to thwart the payment of the AIG bonuses, and required Treasury approval of any future bonuses by any TARP recipient.
- H.R. 1586 sought to impose a 90% income tax on bonuses paid by TARP recipients; employees would be exempt from the tax if they returned the bonus in the year received.
- S. 651, the Compensation Fairness Act of 2009, imposed a 70% excise tax (half paid by the employee and half by the employer) for any bonus over \$50,000 paid by a TARP firm.
- H.R. 1664, the Pay for Performance Act of 2009 prohibited any compensation payment (under existing as well as new plans) if such compensation: (1) is deemed unreasonable or excessive by the Secretary of the Treasury; and (2) includes bonuses or retention payments not directly based on approved performance measures. The bill also created a Commission on Executive Compensation to study and report to the President and Congress on the compensation arrangements at TARP firms.

Most of these bills were either stalled in committees or failed in a vote, although many features of H.R. 1664 were incorporated into the July 2010 Dodd-Frank Wall Street Reform bill discussed below. Therefore, the reason to list the bills above is not for their ultimate relevance to policy, but rather as evidence of Congressional outrage and a political resolve to punish Wall Street for its bonus practices.

While details on the compensation of the five highest-paid executive officers are publicly disclosed and widely available, banks have historically been highly secretive about the magnitude and distribution of bonuses for its traders and investment bankers. Indeed, since the SEC disclosure rules only apply to *executive officers*, the banks can have non-officer employees making significantly more than the highest-paid officers. Following the Merrill Lynch and AIG revelations, New York Attorney General Andrew Cuomo subpoenaed bonus records from the nine original TARP recipients, arguing that New York law allows creditors to challenge any payment by a company if the company did not get adequate value in return. His report – published in late July 2009 – was provocatively titled: No Rhyme or Reason: The Heads I Win, Tails You Lose Bank Bonus Culture.

Table 3.2 summarizes the distribution of bonuses for the nine original TARP recipients, based on data from the Cuomo (2009) report. The table shows, for example, that 738 Citigroup employees received bonuses over \$1 million, and 124 received over \$3 million, in

Table 3.2 2008 Earnings and Bonus Pools for Eight Original TARP Recipients

Corporation	2008 Earnings/ <i>(Losses)</i> (\$bil)	2008 Bonus Pool (\$bil)	Number of Employees Receiving Bonuses Exceeding		
			\$3 mil	\$2 mil	\$1 mil
Bank of America	\$4.0	\$3.3	28	65	172
Bank of New York Mellon	\$1.4	\$0.9	12	22	74
Citigroup	<i>(\$27.7)</i>	\$5.3	124	176	738
Goldman Sachs	\$2.3	\$4.8	212	391	953
J P Morgan Chase	\$5.6	\$8.7	>200		1,626
Merrill Lynch	<i>(\$27.6)</i>	\$3.6	149		696
Morgan Stanley	\$1.7	\$4.5	101	189	428
State Street Corp	\$1.8	\$0.5	3	8	44
Wells Fargo & Co.	<i>(\$42.9)</i>	\$1.0	7	22	62

Source: Cuomo (2009). Wells Fargo losses include losses from Wachovia (acquired in December 2008).

a year when the bank lost nearly \$30 billion. The 2008 bonus pools exceeded annual earnings in six of the nine banks; in aggregate the banks paid \$32.6 billion in bonuses while losing \$81.4 billion in earnings. Not surprising, the Cuomo report further fueled outrage over Wall Street bonuses on both Main Street and in Washington.

3.9.3. Treasury issues Final Rules and appoints a Pay Czar

The Dodd Amendments were signed into law with the understanding that the U.S. Treasury would work out the implementation details. In June 2009, Treasury issued its rulings, along with the simultaneous creation of the Office of the Special Master of Executive Compensation. The Special Master (colloquially known as the Pay Czar) had wide-ranging authority over all TARP recipients, but was particularly responsible for all compensation paid to the top 25 executives in the seven firms deemed to have required special assistance from the US government: Bank of America, Citigroup, AIG, General Motors, Chrysler, and the financing arms of GM and Chrysler.¹⁴²

Since taxpayers had become the major stakeholder in the seven special assistance firms, the government arguably had a legitimate interest in the firm's compensation policies. One

¹⁴² For the record, I (along with Lucian Bebchuk from Harvard) served as academic advisors to Kenneth Feinberg, the Special Master. However, that the fact advice was given does not imply that it was followed.

could imagine, for example, embracing an objective of maximizing shareholder value while protecting taxpayers, or perhaps maximizing taxpayer return on investment. However, the US Treasury instructed the Special Master to make pay determinations using the “public interest standard,” an ill-defined concept that allows too much discretion and destroys accountability for those exercising the discretion. For example, applying the public interest standard allows Congress to limit compensation they perceive as excessive, without evidence or accountability for the consequences. Similarly, invoking the public interest standard forced the Special Master to navigate between the conflicting demands of politicians (insisting on punishments) and taxpayer/shareholders (concerned with attracting, retaining, and motivating executives and employees). Ultimately, the Special Master catered to prevailing political and public sentiment, and severely penalized the executives in firms viewed as responsible for the meltdown by drastically reducing their cash compensation.

3.10. The Dodd-Frank Executive Compensation Reform Act (2010-2011)

In July 2010, President Obama signed into law the Dodd-Frank Wall Street Reform and Consumer Protection Act or Dodd-Frank Act, which was the culmination of the President and Congress’s controversial and wide-ranging efforts to regulate the financial services industry. In spite of its enormous length – the bill itself spans 848 pages – the Act leaves most of the details to be promulgated by a variety of government entities. Indeed, attorneys at DavisPolk (2010) calculate that the Act requires regulators from at least nine agencies to create 243 new rules, conduct 67 studies, and issue 22 periodic reports.

3.10.1. Pay Restrictions for Financial Institutions

While the pay restrictions in the TARP legislation apply only to banks receiving government assistance, the Dodd-Frank Act goes much further by regulating pay for *all* financial institutions (public or private, TARP recipients and non-recipients) including broker-dealers, commercial banks, investment banks, credit unions, savings associations, domestic branches of foreign banks, and investment advisors. Specifically, Part (a) of Section 956 of the Dodd-Frank Act requires all financial institutions to identify and disclose (to their relevant regulator) any incentive-based compensation arrangements that could lead to material financial loss to the covered financial institution, or that provides an executive officer, employee, director, or principal shareholder of the covered financial institution with excessive compensation, fees, or benefits. In addition, Part (b) of Section 956 of the Dodd-Frank Act prohibits financial institutions from adopting any incentive plan that regulators

determine encourages inappropriate risks by covered financial institutions, by (1) providing an executive officer, employee, director, or principal shareholder of the covered financial institution with excessive compensation, fees, or benefits; or (2) that could lead to material financial loss to the covered financial institution.

Since at least the early 1990s, there has always been a tension between shareholders (the firms legal owners) concerned about CEO incentives, and uninvited guests (such as politicians and labor unions) concerned about high levels of pay. After the TARP bailouts in the financial crisis, the analogous tension was between taxpayers (who wanted to be protected from excessive risks while receiving an appropriate return on their investment) and politicians who were outraged about perceived excesses in banking bonuses. Section 956(b) of the Dodd-Frank Act deliberately conflates these tensions, by explicitly defining excessive compensation as an inappropriate risk. Moreover, Section 956(a) of the Dodd-Frank Act requires banks to inform their regulators of compensation plans that provide excessive compensation, delegating to the regulators the Herculean task of defining what compensation is excessive (or, indeed, which risks are inappropriate).

The responsibility for implementing Section 956 of the Dodd-Frank Act fell jointly to seven agencies: the Securities and Exchange Commission (SEC), the Federal Reserve System, the Office of the Comptroller of the Currency, the Office of Thrift Supervision, the Federal Deposit Insurance Corporation, the National Credit Union Administration, and the Federal Housing Finance Agency. In March 2011, the seven agencies issued a joint proposal for public comment, modeled in part on Section 39 of the Federal Deposit Insurance Act. While the proposal stops short of explicitly limiting the level of executive compensation, it prohibits compensation that is unreasonable or disproportionate to the amount, nature, quality, and scope of services performed. In addition, the proposal calls for firms to identify individuals who have the ability to expose the firm to substantial risk, and demands that (for the larger institutions) such individuals have at least 50% of their bonuses deferred for at least three years; deferred amounts would be subject to forfeiture if subsequent performance deteriorates. Final rules were expected in late 2012.

3.10.2. Pay and Governance Reforms for all Publicly Traded Companies

While ostensibly focused on regulating firms in the financial services industry, the authors of the Dodd-Frank Act seized the opportunity to pass a sweeping reform of executive compensation and corporate governance imposed on all large publicly traded firms across all industries. The new rules include:

SAY-ON-PAY (SECTION 951). Shareholders will be asked to approve the company's executive compensation practices in a non-binding vote occurring at least every three years (with an additional vote the first year and every six years thereafter to determine whether the Say-on-Pay votes will occur every one, two, or three years). In addition, companies are required to disclose, and shareholders are asked to approve (again, in a non-binding vote), any golden parachute payments in connection with mergers, tender offers, or going-private transactions.

In January 2011 – and effective for the 2011 proxy season – the SEC adopted rules concerning shareholder approval of executive compensation and “golden parachute” compensation arrangements. Shareholders of 98.5% of the 2532 companies reporting 2011 results by July 2011 approved the pay plans; over 70% of the companies received more than 90% favorable support.¹⁴³ Similarly, shareholders of 98.2% of the 1875 companies reporting 2012 results by June 2012 approved the pay plans; 72% of the companies received more than 90% favorable support.¹⁴⁴ Twenty six of the 30 companies receiving less than 50% positive votes in 2011 passed in 2012, and year-over-year favorable votes increased by 14% for companies receiving between 50% and 70% favorable votes in 2011.

CLAWBACKS (SECTION 954). Companies must implement and report policies for recouping payments to executive based on financial statements that are subsequently restated. The rule applies to any current or former executive officer (an expansion of Sarbanes-Oxley, where only the CEO and CFO were subject to clawbacks), and applies to any payments made in the three-year period preceding the restatement (Sarbanes-Oxley only applied for the twelve months following the filing of the inaccurate statement).

The SEC had neither adopted nor proposed rules regarding the recovery of executive compensation by August 2012. However, Equilar reports that 86% of the Fortune 100 companies issuing proxy statements in 2012 had publicly disclosed clawback arrangements; in half of the companies the clawback triggers were related to financial restatements and ethical misconduct.¹⁴⁵

¹⁴³ Holzer, “A ‘Yes’ In Say On Pay,” *Wall Street Journal* (2011b).

¹⁴⁴ “2012 Say on Pay Results” Semler Brossy Consulting Group, LLC. Accessed 8/6/2012 at www.semlebrossy.com/sayonpay.

¹⁴⁵ *2012 Fortune 100 Clawback Report*, Equilar, Inc. August 2, 2012.

ADDITIONAL DISCLOSURES (SECTIONS 953, 955, 972). Companies must report the ratio of CEO compensation to the median pay for all other company employees. Companies must analyze and report the relation between realized compensation and the firm's financial performance, including stock-price performance. In addition, companies must disclose its policies regarding hedging by employees to protect against reductions in company stock prices. Finally, the Dodd-Frank Act requires companies to disclose their policies and practices on why the company chooses either to separate the Chairman and CEO positions, or combine both roles.

The SEC had neither adopted nor proposed rules regarding the disclosure of pay ratios, pay-for-performance, and hedging by August 2012.

COMPENSATION COMMITTEE INDEPENDENCE (SECTION 952). Following Sarbanes-Oxley (2002) requirements for Audit Committees, publicly traded companies are required to have compensation committees comprised solely of outside independent directors (where independence takes into account any financial ties the outside directors might have with the firm). In addition, companies must assess the independence of compensation consultants, attorneys, accountants, and other advisors to the compensation committees.

In June 2012, the SEC adopted final rules directing exchanges to establish listing standards guaranteeing that members of the compensation committee (or directors who oversee executive compensation matters in the absence of a committee) to be independent. While leaving the precise definition of "independence" to the exchanges, the final rule required exchanges to consider the director's source of compensation (including consulting or advisory fees) paid by the issuer, and whether the director is affiliated with the issuer, a subsidiary of the issuer, or an affiliate of a subsidiary of the issuer.

In addition, the new SEC rules require firms to ensure that compensation committees have authority and funding to retain compensation consultants. While neither the Act nor the June 2012 Final Rule issued by the SEC required compensation advisors to be independent, the SEC imposed a list of independence criteria that boards must consider in retaining a consultant. Finally, proxy statements issued in connection with annual shareholder meetings in 2013 and after must disclose whether the work

of the consultant has raised any conflict of interest and, if so, the nature of the conflict and how the conflict is being addressed.

PROXY ACCESS (SECTION 971). The Dodd-Frank Act authorized the SEC to issue rules allowing certain shareholders to nominate their own director candidates in the company's annual proxy statements.

The SEC issued its rules on Proxy Access in August 2010, but delayed implementation after lawsuits by the Business Roundtable and the US Chamber of Commerce claimed that the rules would distract management and advance special-interest agendas. In July 2011, the US Circuit Court of Appeals (Washington, DC) ruled in favor of the business groups and rejected the SEC's rule. As of August 2012, the SEC had not announced whether it would attempt to rewrite the rule in a way that would be acceptable to the Court.

It is too early to assess the ultimate effect of Dodd-Frank on executive compensation, since many of the rules have just been implemented or are still being written. However, based on experiences with similar rules, I can speculate on the ultimate impact.

SAY ON PAY. In mandating Say-on-Pay, the Dodd-Frank Act follows similar rulings for non-binding shareholder votes enacted in the United Kingdom in 2002 and later in Australia, Denmark, France, Portugal, Spain, and Sweden; the Netherlands and Norway went a step further by allowing *binding* shareholder votes. Say-on-Pay had long been a favorite objective of Democrats in Congress, and the Say-on-Pay Bill passed the House in April 2007 by a 2:1 margin. While the companion bill introduced in the Senate by then-Senator Obama was shelved prior to a vote, say was widely expected to become law following the 2008 presidential election, especially after Say-on-Pay was mandated for TARP recipients as part of the Dodd Amendments.

In spite of the support, however, there is modest evidence that Say-on-Pay results in important changes to compensation practices. In the United Kingdom (where we have the most data), there is some evidence that negative Say-on-Pay votes have led to some reductions in salary continuation periods in severance agreements and some changes in performance-based vesting conditions in equity plans, but no evidence that the votes have affected compensation levels (Ferri and Maber (2010)). In the United States, where shareholders voted on the compensation for TARP executives for the first time in early 2009, the plans were passed at all firms, with an average of 88.6% of the votes cast in favor of management. Among the TARP recipients garnering the strongest support were the Wall

Street firms whose compensation systems allegedly fostered the financial crisis, including Goldman Sachs (98%), AIG (98%), JPMorgan (97%), Morgan Stanley (94%), Citigroup (84%), and Bank of America (71%).¹⁴⁶

As emphasized in this chapter, regulation inevitably produces unintended consequences. The most obvious (and most negative) unintended consequence associated with Say-on-Pay reflects the increasing influence of proxy-advisory firms (primarily Institutional Shareholder Service (ISS)). To fulfill their required fiduciary duties to vote proxies, institutional investors routinely rely on ISS and other proxy-advisory firms for recommendations on how to vote on Say-on-Pay and other proxy matters. In turn, the proxy-advisory firms rely on a limited (and controversial) set of quantitative criteria to determine whether to offer positive or negative voting recommendations.¹⁴⁷ In a broad sample of Russell 3000 firms, Larcker, McCall and Ormazabal (2012) show: (1) the recommendations of the proxy-advisory firms do, indeed, affect voting outcomes; (2) anticipating this result, firms change their compensation policies to avoid negative recommendations; and (3) the market reaction to these changes is statistically negative.

Firms inherently face different competitive and incentive challenges, and there is neither a “one-size-fits-all” solution to these challenges, nor a limited set of quantitative criteria that can substitute for a careful and holistic assessment of compensation plans that takes into account company-specific situations and objectives. Ultimately, the benefits of adhering to the ISS criteria must be weighed against the cost associated with reduced innovation and flexibility in the provision of compensation and incentives.

COMPENSATION COMMITTEE AND ADVISOR INDEPENDENCE. The Dodd-Frank provisions on the independence of the compensation committee will have little practical effect for large companies, since the listing requirements of the NYSE and NASDAQ have required independent compensation committees since 2003, and the IRS has required independent compensation committees (for Section 162(m) purposes) since 1994. The provision related to the independence of compensation consultants, in combination with SEC disclosure rules

¹⁴⁶ Tse, “Shareholders Say Yes To Executive Pay Plans; Review Tracks Advisory Votes at TARP Firms,” *Washington Post* (2009). It is worth noting that shareholders voting in early 2009 were largely voting on 2008 compensation, before the implementation of the Dodd Amendments or the appointment of the Special Master.

¹⁴⁷ For critiques of the ISS methodology, see Wachtell-Lipton’s “Say on Pay 2012,” available at: <http://blogs.law.harvard.edu/corpgov/2012/07/14/say-on-pay-2012/> (accessed 8/6/2012).

introduced in December 2009, will encourage more committees to retain their own independent consultant in addition to the consultants engaged by management.¹⁴⁸

CLAWBACK PROVISIONS. The Sarbanes-Oxley experience shows that companies rarely try to recover erroneously awarded compensation from its CEO and CFO, often citing potential litigation costs and the feasibility of recouping money that has already been paid and taxed. The Dodd-Frank provision makes it more difficult for boards to shirk their responsibility to recovery erroneously awarded pay, and indeed likely subjects boards to shareholder litigation if they fail to even try.

RATIO OF CEO-TO-WORKER PAY. The most mischievous and controversial compensation provision in Dodd-Frank is the required disclosure of the ratio of CEO pay to the median pay of all employees. The calculation costs alone can be immense for large multinational or multi-segment corporations where payroll is decentralized: to compute the median the company needs an often non-existent single compensation database with all employees worldwide. More importantly, however, is what shareholders are supposed to do with this new information, or how they should determine whether a ratio is too high or too low. Ultimately, this provision reflects a belief in Congress that CEO pay is excessive and its sole purpose is the hope that disclosing the ratio will shame boards into lowering CEO pay.

PROXY ACCESS. Finally, potentially most important is the Proxy Access rule allowing shareholders to include their director nominees on the proxy alongside with the board's nominees. In issuing its rule in August 2010, the SEC limited access to shareholders who have held at least 3% of the company's stock for at least three years. One view is that Proxy Access will provide shareholders with a critical mechanism to replace poor directors with better ones. A more-cynical view – expressed by the *Wall Street Journal* and others – is that 3% was chosen as the sweet spot for labor unions and other politically motivated organizations who will use their leverage over the proxy statement to force companies to support political causes rather than increasing shareholder value.¹⁴⁹ In its July 2011 ruling rejecting the SEC's rule, the U.S. Circuit Court of Appeals (Washington, DC) issued a sharp rebuke to the SEC, saying that the SEC failed in analyzing the cost the rule imposes on

¹⁴⁸ The 2009 SEC disclosure rules require companies to disclose the fees paid to executive compensation consultants for any work beyond executive compensation (e.g., actuarial work, benefits administration, employee pay, etc.), but offers a safe harbor (i.e., no disclosure requirement) when the committee retains their own independent consultant. Interestingly, Murphy and Sandino (2010) find that levels of CEO pay are significantly higher in firms with consultants working exclusively for the compensation committee.

¹⁴⁹ "Alinsky Wins at the SEC," *Wall Street Journal* .

companies and in supporting its claim that the rule would improve shareholder value and board performance.¹⁵⁰

4. International Comparisons: Are US CEOs *Still* Paid More?¹⁵¹

4.1. *The US Pay Premium: What We Thought We Knew*

Among the best-known “stylized facts” about executive compensation is that CEOs in the United States are paid significantly more than similarly situated CEOs in foreign corporations (e.g., Abowd and Bognanno (1995), Abowd and Kaplan (1999), and Murphy (1999)). However – although widely accepted by academics, regulators, and the media – this stylized fact has *not* generally been based on consistent and comprehensive pay data across a large number of countries with controls for cross-country differences in firm characteristics. In particular, while the United States has required detailed disclosures on executive compensation since the 1930s, the majority of other countries have historically required reporting (at most) the aggregate cash compensation for the top-management team, with no individual data and little information on the prevalence of equity or option grants.

In fact, prior to 2000, only Canada (which mandated pay disclosures in 1993) and the United Kingdom (based on disclosure recommendations issued in 1995) required US-style full disclosure of CEO compensation (including details on equity grants). Based on data from 1993 to 1995, Zhou (2000) shows that US CEOs earned more than double their Canadian counterparts. Conyon and Murphy (2000) show that US CEOs earned almost 200% more than British CEOs in 1997, after controlling for industry, firm size, and a variety of firm and individual characteristics. Conyon, Core and Guay (2011a) show that the US versus UK Pay Premium had fallen to 40% by 2003 and plausibly disappears after adjusting for the risk associated equity-based compensation.

Other multi-country pay comparisons have typically relied on aggregate or average executive pay across groups of executives, usually excluding equity-based pay).¹⁵² For example, Conyon and Schwalbach (2000)‘s comparison of UK and German compensation

¹⁵⁰ Holzer, “Corporate News: Court Deals Blow to SEC, Activists,” *Wall Street Journal* (2011a).

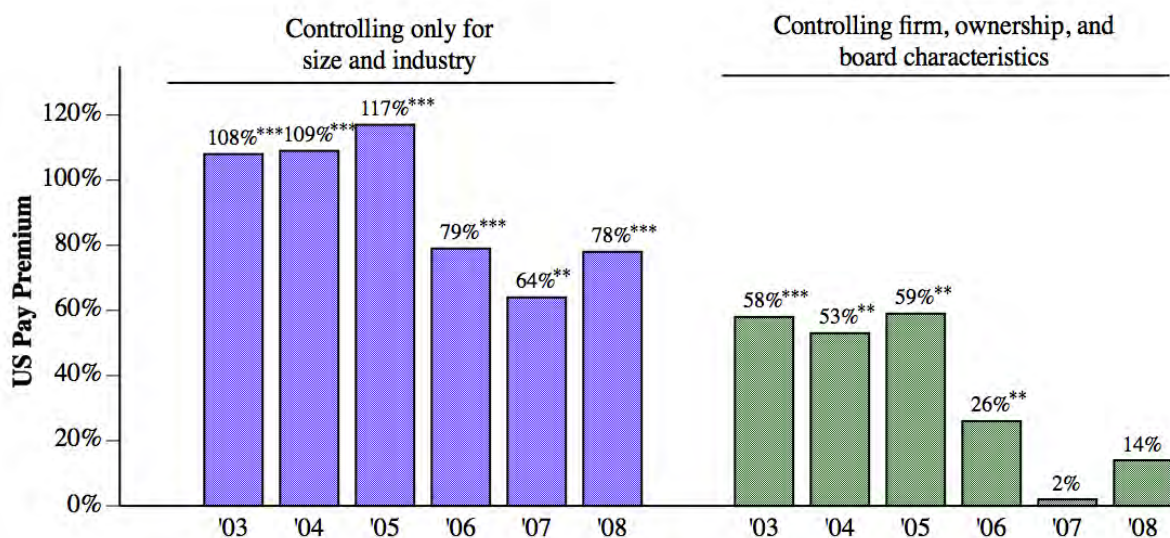
¹⁵¹ This section draws heavily from Fernandes, et al. (2012) and Conyon, et al. (2011b).

¹⁵² Single-country studies based on aggregate pay include Kaplan (1994) (Japan), Kato and Long (2005) (China), Fernandes (2008) (Portugal), and Kato, Kim and Lee (2006) (Korea).

from 1968-1994 focused on only cash compensation for the United Kingdom (because the study predated the UK recommendations on disclosing stock options) and average cash compensation for Germany (because German rules required only disclosing the total cash paid across the group of top managers). Similarly, Muslu (2008)'s study of the largest 158 European companies from 1999-2004 (based on hand-collected annual reports) presents a mixture of individual and aggregated compensation data. Bryan, Nash and Patel (2006) relied on SEC Form 20-F filings from 1994-2004 for foreign companies cross listing in the United States; however, cross-listed companies are only required to disclose compensation for individual executives if such disclosure is required in the home country, and as a result most of their analysis was based on average compensation for the management group.

Beyond the comparisons with Canada and the United Kingdom, and the handful of studies based on aggregate cash compensation data, much of what we know (or thought we knew) about international differences in CEO pay has been based on Towers Perrin's biennial *Worldwide Total Remuneration* reports, utilized (for example) by Abowd and Bognanno (1995), Abowd and Kaplan (1999), Murphy (1999), and Thomas (2008) (not coincidentally, the same cites as in the first paragraph). These international comparisons – which have typically suggested that US CEOs are paid more than twice the “going rate” for CEOs in other countries – are not based on “data” per se, but rather depict the consulting company's estimates of “typical” or “competitive” pay for a representative CEO in an industrial company with an assumed amount in annual revenues, based on questionnaires sent to consultants in each country. While crudely controlling for industry and firm size (by design), it is impossible using these surveys to control for other factors that might explain the US “pay premium,” such as ownership and board structure or individual CEO characteristics.

The disclosure situation has improved markedly over the past decade. Regulations mandating disclosure of executive pay were introduced in Ireland and South Africa in 2000 and in Australia in 2004. In May 2003, the European Union (EU) Commission issued an “Action Plan” recommending that all listed companies in the EU report details on individual compensation packages, and that EU member countries pass rules requiring such disclosure. By 2006, six EU members (in addition to the United Kingdom and Ireland) had mandated disclosure: Belgium, France, Germany, Italy, Netherlands, and Sweden. In addition, although not in the EU, Norway also adopted EU-style disclosure rules, and Switzerland demanded similar disclosure for the “highest-paid” executive.

Figure 4.1 The evolving (and disappearing) US Pay Premium

Note: The figure shows the US Pay Premium implied by regression $\ln(\text{CEO Pay})$ on a US dummy variable plus controls for industry and company revenues (left-hand panel) and also other firm characteristics, ownership structure, and board structure (right-hand panel) for each year from 2003 to 2008. The estimated

***, **, * indicates that the coefficient on the US premium on each underlying regression depicted above is significant at the 1, 5, and 10% levels, respectively.

Source: Fernandes, et al. (2012), Table 8.

4.2. *New International Evidence*

In my joint work with Nuno Fernandes, Miguel Ferreira and Pedro Matos (Fernandes, et al. (2012)) – based on recently available data from 14 countries with mandatory pay disclosures – we show that the stylized fact that US CEOs earn substantially more than foreign CEOs is wrong, or at least outdated. In particular, we show that the “US Pay Premium” became statistically insignificant by 2007 and largely reflects a risk premium for stock-option compensation (which remains more prevalent in the United States than in other countries).

In reaching our conclusion that the U.S. Pay Premium has become modest (or insignificant), we control not only for the “usual” firm-specific characteristics (e.g., industry, firm size, volatility, and performance) but also for governance characteristics that systematically differ across countries: ownership and board structure. Compared to non-U.S. firms, U.S. firms tend to have higher institutional ownership and more independent boards, factors associated with both higher pay and increased use of equity-based compensation. In addition, shareholdings in U.S. firms tend to be less dominated by “insiders” (such as large-

block family shareholders), factors associated with lower pay and reduced use of equity-based compensation.

Figure 4.1 traces the evolution of the U.S. pay premium from 2003-2008 (based on results in Table 8 of Fernandes, et al. (2012)). The premium is defined as $e^{\beta_1} - 1$ in the following regression, estimated annually for a pooled sample of U.S. and non-U.S. CEOs:

$$\text{Ln}(\text{CEO Pay}_i) = \alpha + \beta_1 (\text{U.S. Dummy}) + \beta_2 (\text{Firm Characteristics}_i) + \varepsilon_i.$$

The sample consists of between 1,426 and 1,532 U.S. firms and between 781 and 1,480 non-U.S. firms per year. U.S. data are extracted from ExecuComp, while non-U.S. data are based primarily on BoardEx and supplemented with hand-collect of company filings.

The “Firm Characteristics” in the left-hand panel of Figure 4.1 include only controls for company size (Ln(Revenues)) and industry (fixed effects for 12 Fama-French industries). As shown in the figure, the implied U.S. Pay Premium fell significantly from over 100% in 2003-2005 to less than 80% in 2006-2008. The right-hand panel includes additional controls for leverage, Tobin’s Q, stock volatility, stock returns, ownership structure (the fraction of shares held by insiders and institutions) and board structure (board size, independence, the average number of board positions held by each board member, and a dummy variable indicating that the CEO also holds the title of Chairman). As shown in the figure – after including these additional controls – the implied U.S. Pay Premium declined from nearly 60% in 2003 to only 26% in 2006 and 2% in 2007.

Figure 4.2 shows the international distribution of predicted 2006 CEO pay for a hypothetical firm with \$1 billion sales, based on the specification used for Figure 4.1 with the “U.S. dummy” replaced by a set of 14 country dummies. Panel A, in the spirit of the Towers Perrin estimates, controls only for firm size and industry, while Panel B controls for industry, firm characteristics, ownership, and board characteristics. The pay composition percentages are defined as the average composition across all CEOs for each country. The figure shows that U.S. CEOs earn substantially more than non-U.S. CEOs controlling only for size and industry. However, after controlling for firm, ownership, and board characteristics, we find effective parity in CEO pay levels among Anglo-Saxon nations (United States, United Kingdom, Ireland, Australia, and Canada) and also Italy.

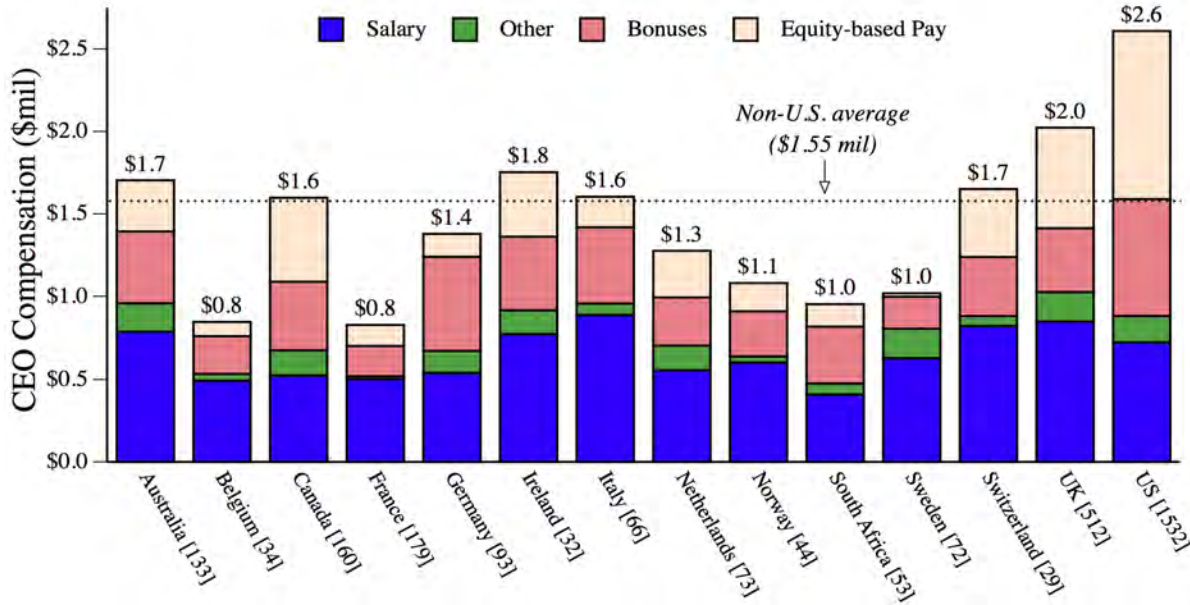
As an extension to the results in Figure 4.1 and Figure 4.2, we also compare international differences in risk-adjusted pay, using methodologies similar to that used above

in Section 2.1.2 and Figure 2.7.¹⁵³ Consistent with the conclusions of Conyon, et al. (2011a) (who use a different methodology and consider only U.S.-U.K. comparisons), we find that the risk-adjusted U.S. pay premium for 2006 is statistically insignificant after controlling for governance (but remains significant before such controls), and that risk-adjusted pay in the U.S. is significantly less than CEO pay in the United Kingdom and Australia, and insignificantly different from CEO pay in Canada, Italy and Ireland.

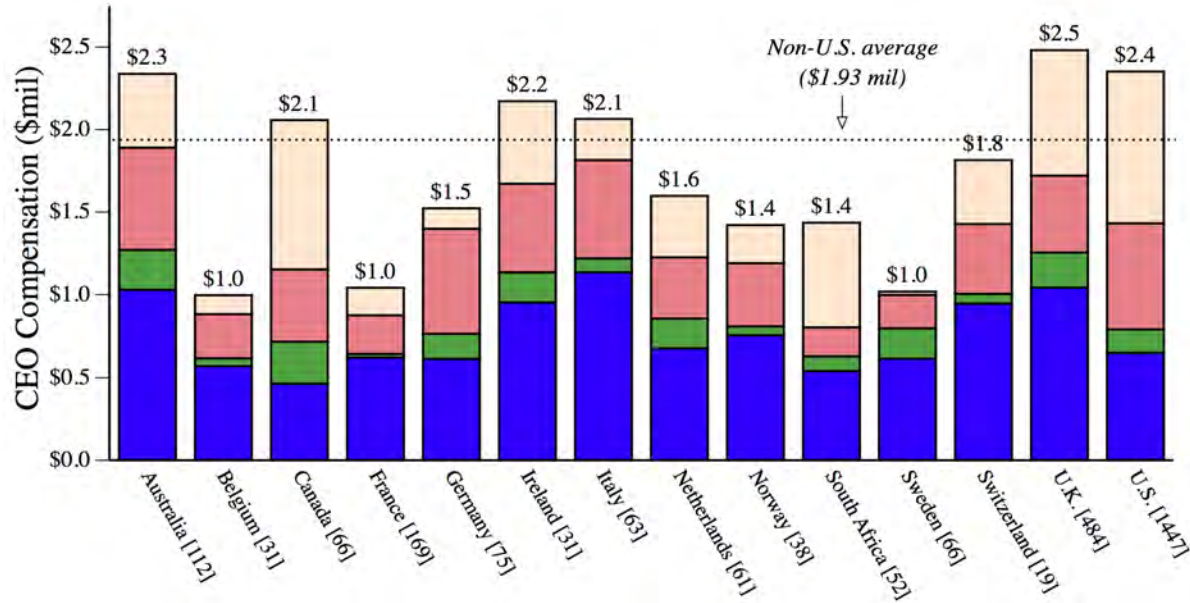
¹⁵³ Due to limitations with BoardEx data on CEO wealth for non-US CEOs, Fernandes, et al. (2012) make simplifying assumptions beyond those in Section 2.1.2.

Figure 4.2 2006 CEO pay after controlling for firm characteristics, ownership, and board structure

Panel A. Controlling only for sales and industry



Panel B. Controlling for sales, industry, and firm, ownership, and board characteristics



Note: The figure compares 2006 CEO pay in each country controlling for firm size (sales) and industry in Panel A, and controlling for size, industry, and firm, ownership, and board characteristics in Panel B. We regress the logarithm of total compensation on the logarithm of sales and 12 industry and 14 country dummies. For each country, we estimate the pay for a CEO running a hypothetical firm with \$1 billion in sales using the estimated coefficient for pay-size sensitivity and controlling for the “average” industry. The “non-U.S. average” is weighted by the number of firms in each country. The pay composition percentages are defined as the average composition across all CEOs for each country.

Source: Fernandes, et al. (2012), Figure 1.

In addition, we show that both the level and structure of 2006 pay for U.S. CEOs is insignificantly different from that of non-U.S. CEOs of “internationalized” firms, which we define as firms above the 75th percentile ranked by foreign institutional ownership, foreign sales (as a fraction of total sales), or board international diversity (defined as the number of different nationalities represented on the board of directors divided by the total board size). We also find insignificant differences between U.S. CEOs and non-U.S. CEOs in firms included in the 1,500-firm Morgan Stanley Capital International All Country World Index (routinely used as a benchmark for global equity mutual funds and used here as a proxy for foreign investor demand).

Finally, we find no significant differences in the level or structure of pay when U.S. CEOs are compared to non-U.S. CEOs of “Americanized” firms, which we define as firms cross-listed on U.S. exchanges (as a proxy for demand by U.S. investors) or above the 75th percentile ranked by U.S. institutional ownership, total acquisitions of U.S. companies between 1996–2005 (as a proxy for exposure to U.S. product and labor markets), and the fraction of directors who also sit on boards of companies headquartered in the United States (as a proxy for exposure to U.S. pay practices).

Overall, our evidence is inconsistent with the view that U.S. CEO pay is “excessive” when compared to that of their foreign counterparts, but rather reflects tighter links between CEO pay and shareholder performance in U.S. firms. First, we show that the U.S. pay premium is modest after controlling for firm, ownership, board, and CEO characteristics. Second, we demonstrate that it is misleading to examine cross-sectional or cross-country differences in the *level* of pay in isolation, without also examining differences in the *structure* of pay, namely the use of equity-based compensation. In fact, the firm, ownership, and board characteristics associated with higher pay are those associated with a larger fraction of equity-based pay. Third, we find that CEO pay levels and the use of equity-based compensation are positively related to variables routinely used as proxies for better monitoring and better governance, namely institutional ownership and board independence. Fourth, our findings suggest that the observed U.S. CEO pay premium reflects compensating differentials for the equity-based pay increasingly demanded by internationally diverse boards and shareholders. We find evidence that foreign and U.S. institutional shareholders are linked to a greater use of equity-based pay and higher pay levels in non-U.S. firms in which they invest. Finally, the convergence of U.S. and non-U.S. CEO pay levels since 2003 seems to be explained by the convergence of ownership structures and globalization of capital markets.

4.3. *Why do U.S. CEOs Receive More Options?*

Our finding that the U.S. pay premium largely disappears after controlling for the relative riskiness of U.S. pay packages potentially “explains” the pay differences but naturally leads to another question: Why do U.S. executives receive more equity-based compensation than their foreign counterparts?

While equity-based compensation has been a staple of U.S. compensation contracts for more than a half-century, the use of equity-based pay outside the United States is a relatively recent phenomenon. Panel A of Table 4.1 shows how the importance of equity-based pay has changed over time in the United States and in nine European countries using Towers Perrin’s *Worldwide Total Remuneration* (WWTR) surveys for the selected years 1984, 1988, 1992, 1996, 1999, 2001, and 2003. The data for the years 1992 to 1996 are based on the Abowd and Kaplan (1999) analysis of the WWTR surveys. As shown in Panel A, only France and the UK made extensive use of stock or options in the 1980s, and equity-based pay did not become common across Europe until the end of the 1990s. By 2003, Towers Perrin reports that equity-based pay accounts for between 10% and 20% of competitive pay for European CEOs, and for about half the pay of American CEOs.

As discussed earlier, the data in Panel A of Table 4.1 are not CEO pay “data” per se, but rather consulting company’s estimates of “typical” or “competitive” pay for a representative CEO in an industrial company, based on questionnaires sent to consultants in each country. In Panel B of Table 4.1, I provide my own estimates of equity-based pay for 2003–2008 based on actual grant-date values extracted from BoardEx (for Europe) and ExecuComp (for the United States). The actual averages for 2003 in Panel B are generally consistent with the consultant surveys in Panel A for the same year, increasing our confidence in both data sources. As shown in Panel B, the use of equity-based compensation has generally declined in continental Europe between 2003 and 2008, and has remained relatively constant in the United Kingdom at just under a third of total compensation. In contrast, the use of equity-based pay has increased in the United States.

Table 4.1 Stock-based pay (as a percentage of total pay) in Europe and the United States

<i>Panel A: Towers Perrin consultant surveys 1984–2003</i>							
	1984	1988	1992	1996	1999	2001	2003
Belgium	0.0%	0.0%	0.0%	0.0%	3.2%	11.6%	11.2%
France	12.3%	13.3%	15.6%	14.6%	14.3%	15.1%	16.0%
Germany	0.0%	0.0%	0.0%	0.0%	9.7%	13.5%	18.0%
Italy	0.0%	0.0%	0.5%	4.0%	9.1%	17.2%	15.1%
Netherlands	0.0%	0.0%	0.0%	0.0%	14.6%	16.7%	15.8%
Spain	0.0%	0.0%	0.0%	0.0%	16.0%	17.9%	19.2%
Sweden	0.0%	0.0%	0.0%	0.0%	6.8%	11.0%	10.7%
Switzerland	1.9%	1.9%	3.4%	3.6%	1.8%	0.0%	19.2%
United Kingdom	14.5%	14.6%	15.7%	15.0%	16.6%	19.1%	20.8%
United States	16.9%	28.3%	32.3%	28.7%	25.5%	44.8%	48.3%

<i>Panel B: BoardEx (non-U.S. firms) and ExecuComp (U.S. firms)</i>							
	2003	2004	2005	2006	2007	2008	
Belgium	na	16.7%	8.6%	9.5%	7.7%	11.5%	
France	17.6%	15.9%	16.0%	17.2%	17.8%	13.9%	
Germany	12.5%	8.7%	9.4%	9.3%	9.4%	9.0%	
Italy	11.5%	10.6%	15.7%	13.1%	5.7%	8.6%	
Netherlands	19.3%	16.3%	20.1%	21.7%	18.2%	15.8%	
Spain	0.0%	1.2%	0.0%	0.8%	5.3%	2.9%	
Sweden	3.7%	1.3%	1.5%	1.8%	1.5%	1.3%	
Switzerland	30.2%	21.5%	20.1%	26.6%	17.1%	12.0%	
United Kingdom	27.7%	27.7%	29.7%	31.0%	34.1%	30.6%	
United States	40.7%	42.0%	41.4%	39.5%	43.0%	47.1%	

Note: Data in Panel A are from Towers Perrin's Worldwide Total Remuneration reports (various issues), including 1984–1992 data reported by Abowd and Kaplan (1999). Data reflects Towers Perrin's estimate of competitive CEO pay for industrial companies with approximately U.S. \$300 million in annual revenues. Stock-based pay includes the grant-date expected value of option grants and annualized targets from performance share plans. Data in Panel B are from BoardEx and ExecuComp. The percentages in the table are constructed by first computing the average ratio of equity-based pay to total compensation for each CEO, and then averaging across CEOs.

Traditional agency theory suggests a finite number of factors that might explain a greater use of incentive-based pay among U.S. executives. First, U.S. CEOs may be less risk averse or have steeper marginal costs of effort than their non-U.S. counterparts, but to our knowledge there is no theory or empirical work suggesting such international differences in risk-aversion coefficients. Second, performance of non-U.S. firms might be measured with

substantially more noise than for U.S. firms, leading to lower pay-performance sensitivities and lower expected levels of pay. However, we find no evidence that cash flows or shareholder returns are systematically more variable in our sample of non-U.S. firms than in U.S. firms. Extensions of the traditional model to incorporate differences in both ability and in the marginal productivity of CEO effort might help reconcile the data, but only given the additional assumptions that executives are more able and more productive in the United States. Overall, there are no compelling agency-theoretic explanations for the relative reliance on equity-based compensation in the United States.¹⁵⁴

In unreported analysis, we attempt to explain international differences in the use of equity-based compensation by a variety of country-level variables routinely used in international studies of corporate governance to measure differences in the economic, law, and institutional environment of each country.¹⁵⁵ We find that CEO equity-based pay (and total pay) is more prevalent in common-law countries (La Porta, et al. (1998)) which in turn is largely defined by the United Kingdom and its former colonies, including (in our sample) Australia, Canada, Ireland, South Africa, and the United States, and countries with stronger investor protections and private control of self-dealing (Djankov, et al. (2008)) We also consider different aspects of a country's regulatory environment. We find a positive association between CEO equity-based pay and the levels of compensation disclosure and director liability (La Porta, Lopez-De-Silanes and Shleifer (2006)); note that the United States scores high in both indices. We find that equity-based pay is lower in countries with friendlier collective labor laws and countries where labor unions are more powerful (Botero, et al. (2004)), such as in Continental European countries (e.g., France and Germany). In contrast, differences in CEO pay are not explained by GDP per capita levels.

Ultimately, the cross-country differences in the prevalence of equity-based compensation may be driven by idiosyncratic events that in some cases encouraged, and in others discouraged, the use of stock options and restricted stock. For example, as documented in Section 3, America's reliance on stock options as the primary form of long-term compensation began in the 1950s as a result of tax policies designed to promote options, and declined in the late 1960s when the government reduced tax benefits. The early 1990s created a "perfect storm" for an explosion of option grants for not only executives but also

¹⁵⁴ Yermack (1995) shows that agency-theoretic variables have little explanatory value in predicting the use of equity-based compensation in a cross-section of US publicly traded firms.

¹⁵⁵ The limited number of countries in our sample (14) limits the statistical degrees of freedom for reliably identifying country-level determinants of pay practices.

lower-level managers and employees. The explosion in option grants continued unabated until the burst of the Internet bubble in 2000, followed by a series of accounting scandals that re-focused attention on the accounting treatment of options. Eventually, FASB mandated expensing, and companies moved away from options toward restricted stock.

Canyon, et al. (2011b) provide an analogous description of the evolution of equity-based pay in Europe. For example, the widespread adoption of stock-option plans in Europe initially emerged as governments provided tax incentives to encourage their use in the United Kingdom (in 1982), France (1984), and Italy (1998). Controversies in the United Kingdom in the 1990s involving perceived option excesses at recently privatized utilities led to a shift from options to restricted stock; concerns over excessive executive pay led France to revoke its tax subsidies on options in 1995, and Italy to revoke its tax subsidies in 2006. In Germany, option plans were not even legalized until 1996, and were still challenged in a series of high-profile lawsuits brought by a maverick college professor. In 1999, the Spanish government increased taxes on stock options after it was revealed that the CEO of the recently privatized telephone company was about to make a fortune exercising options.

In each country, ebbs and flows in option grants followed government intervention, usually reflecting tax or accounting policies and often reactions to isolated events or situations. Since the triggering events vary across countries, the nature of the government intervention – and the subsequent use of stock options – has also varied. The “perfect storm” that triggered the U.S. option explosion (i.e., the “six factors” explored in Section 3.7 above) has not been repeated elsewhere in the world, and therefore the use of options (and equity-based pay in general) continues to be much higher in the United States.

5. Towards a General Theory of Executive Compensation

The academic literature focused on explaining cross-sectional differences and time-series trends in executive compensation is roughly divided into two camps: the “efficient contracting” camp and the “managerial power” camp. The efficient-contracting camp maintains that the observed level and composition of compensation reflects a competitive equilibrium in the market for managerial talent, and that incentives are structured to optimize firm value. The managerial-power camp maintains that both the level and composition of pay are determined not by competitive market forces but rather by powerful CEOs, often working through or influencing captive board members. Most papers in the literature have adopted one approach or the other (often implicitly), and an increasing number of papers have treated

the two approaches as competing hypotheses, attempting to distinguish between them empirically.

Ultimately, viewing efficient contracting and managerial power as competing hypotheses to “explain” executive compensation has not been productive. First, the hypotheses are not mutually exclusive; indeed, the same institutions that have evolved to mitigate conflicts of interest between managers and shareholders (i.e., efficient contracting) have simultaneously allowed executives to extract rents (i.e., managerial power). For example, the first “line of defense” against agency problems are the outside members of the board of directors, elected by shareholders and responsible for monitoring, hiring, firing, and setting top-executive compensation. However, these outside board members – who pay executives with shareholder money and not their own – are in no sense perfect agents for the shareholders who elected them. Instead of viewing efficient contracting and managerial power as competing hypotheses, it is more productive to acknowledge that outside-dominated boards mitigate agency problems between managers and shareholders but create agency problems between shareholders and directors. Rigidly adopting either extreme hypothesis – that director incentives are fully aligned with shareholder preferences or with those of incumbent CEOs – will inevitably result in less interesting and less realistic conclusions.

More importantly, viewing executive compensation as a “horse race” between efficient contracting and managerial power ignores other forces that may be even more important in explaining trends in pay. A central theme of this study is that government intervention into executive compensation – largely ignored by researchers – has been both a response to and a major driver of time trends in CEO pay. The reason political influence on CEO pay adds an important new dimension to the agency problem is because the interests of the government differ significantly from those of shareholders, directors, and executives. In particular, Congressional (and, more generally, populist) outrage over executive pay is almost always triggered by perceived excesses in the *level* of compensation without regard to incentives and company performance, and the regulatory responses have also fixated on pay levels (albeit with little effect). In contrast, while shareholders have a legitimate concern over pay levels, their primary concern is whether executives have incentives to take actions that increase firm value, while avoiding value-destroying actions. Self-interested CEOs naturally prefer higher pay to lower pay. Directors, who are elected by shareholders but often selected by CEOs, appear to prefer better-aligned incentives but are not particularly interested in restraining pay levels.

5.1. *Agency Problems: Solutions and Sources*

The early 1900s witnessed the emergence of large publicly traded corporations with complex management structures that competed with and often displaced owner-managed and family-founded enterprises. Accompanying the rise in the “American Corporation” was the emergence of “professional executives” – non-owners hired to manage the firm’s assets on behalf of passive and dispersed owner-shareholders (Wells (2010)). As noted by Smith (1776) in the context of 18th-century British “joint-stock” companies:

“Being managers rather of other people’s money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own . . . Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company.”

The conflicts identified by Smith (1776) arising between the owners large publicly traded corporations and their hired executives is the quintessential “agency problem” explored by Berle and Means (1932) and Jensen and Meckling (1976). There are at least three versions of this agency problem:

- *The Agency Cost of Equity*, reflecting the fact that executives who own less than 100% of the shares of an all-equity firm will not make the same decisions (or “watch over it with the same anxious vigilance”) they would if they owned 100% of the shares. Executives (usually assumed to be risk averse) want to be paid more and to take actions that increase their own utility, while shareholders (usually assumed to be risk neutral, or close to it) are primarily concerned with providing executives with incentives to take actions that increase the value of their shares.

A variant of the Agency Cost of Equity is the “Agency Cost of Free Cash Flow” proposed by Jensen (1986a), reflecting the conflict of interest between executives and financial claimants on the disposition of cash flows in excess of those required to fund all positive net-present-value projects. While value is maximized by returning free cash flow to shareholders in the form of dividends or repurchases, empire-building executives prefer to retain and reinvest free cash flow unproductively in projects that destroy shareholder value. Debt financing mitigates free cash flow problems by pre-committing executives to pay out rather than retain future cash flows.

- *The Agency Cost of Debt*, reflecting the potential conflict of interest that exists between a company’s shareholders and its debtholders: shareholders in a leveraged firm prefer

riskier investments than those that would maximize firm value, while debtholders prefer safer investments than those that would maximize firm value.¹⁵⁶ In addition, dividends and other payouts to shareholders may harm debtholders by jeopardizing the company's ability to service its debt.

While the Agency Cost of Debt is clearly valid conceptually, there is very little empirical evidence that leverage indeed leads to excessive risk taking, for several reasons. First, precisely because these conflicts are well understood, the potential problem is mitigated through debt covenants and constraints on how the proceeds from debt financing can be used. Moreover, since the problem is "priced" into the terms of the debt (with debtholders charging higher interest rates in situations where executives have incentives to take higher risks), firms anticipating repeat trips to the bond market are directly punished for their risky behavior. The potential for conflicts are exacerbated, however, when the debtholders (or other fixed claimants, such as depositors) are protected against losses by the government. Such government guarantees can be explicit (such as FDIC insurance on deposits) or implicit (such as "Too Big To Fail" (TBTF) guarantees)). In these situations, the debtholders (or depositors) have little incentive to monitor management or enforce debt covenants, since the government is expected to cover losses.

While the labels on the various agency problems may be useful, they are all examples of the underlying agency conflict that arises when decision makers do not bear 100% of the wealth consequences of their decisions. As emphasized by Jensen (1993) there are four forces that mitigate agency problems between executives and the owners of large publicly traded corporations: (1) boards of directors; (2) capital markets; (3) the legal/political/regulatory system; and (4) product markets. However, while each of these forces can (and have) played a productive role in reducing agency conflicts, they also can (and have) created new problems, as follows.

¹⁵⁶ As discussed in Section 2.2.2, it is not leverage *per se* that creates risk-taking incentives, but rather the limited liability feature of equity. The severity of the risk-taking incentives depends on the maximum downside risk compared to the dollar amount of equity, and not the value of equity compared to the overall value of the firm.

5.1.1. *Boards of Directors*

The first line of defense against agency problems is the board of directors, elected by shareholders and responsible for monitoring, hiring, firing, and setting the compensation of the CEO and top-management team. For most of the prior century, boards were dominated by current executives and other corporate insiders. However, beginning with the shareholder movement in the 1980s (Section 3.6.2 above), firms have faced pressures for increased outsider representation on boards. By the end of the 1990s, the fraction of outside directors serving on the average board had increased to 80%, and the CEO was the sole insider in nearly half of all firms (Horstmeyer (2011)).

Conceptually, outside directors reduce agency problems by threatening errant executives with termination and by implementing incentive contracts that tie pay to value creation. The contracts that evolve from this setting will typically tie CEO pay to the creation of shareholder value, thus providing the theoretical justification for stock options, restricted stock, and other forms of equity-based compensation. Under the efficient-contracting hypothesis, the contracts will be those that maximize shareholder value, while paying the CEO enough “expected” compensation or utility to get him to take the job, and recognizing that CEOs will respond predictably to the incentives provided by the contract.¹⁵⁷

However, outside directors – who often own only a trivial fraction of their firm’s common stock – are in no sense perfect agents for the shareholders who elected them. Board members are “reluctant to terminate or financially punish poor-performing CEOs because [board members] personally bear a disproportionately large share of the non-pecuniary costs [of such terminations], but receive essentially none of the pecuniary benefits” (Baker, Jensen and Murphy (1988), p. 614). Similarly, board members are willing to over-compensate adequately performing CEOs, since they are paying with shareholder money and not their own. As documented by Fracassi and Tate (2012), even “outside” board members often share important social ties with incumbent CEOs, especially in cases with powerful CEOs who presumably influence the director-nomination process. The agency problems between shareholders and their elected representatives forms the basis of the “managerial-power hypothesis,” in which powerful CEOs are able to influence both the level and composition of their own compensation packages. However, as discussed in Section 5.2.1 below, the agency

¹⁵⁷ The optimal-contracting or principal-agent theory evolved contemporaneously to, but largely independent from, the agency-theory literature spawned by Jensen and Meckling (1976). Influential early theoretical work includes Ross (1973), Mirrlees (1976), Holmstrom (1979), Lazear and Rosen (1981), Holmstrom (1982) and Grossman and Hart (1983).

problems are perhaps even more apparent in situations not involving powerful incumbents, such as directors overpaying CEOs hired from the outside.

5.1.2. *Capital Markets*

As discussed in Section 3.6.1, the executive compensation practices of the 1970s provided few incentives for executives to pursue value-increasing reductions in excess capacity and disgorgements of excess cash. However, pressures to improve performance, disgorge cash, and create wealth were ultimately introduced by the capital markets. The takeovers in the 1980s – often financed with newly available high-yield debt – provided credible competition for poorly performing incumbent managers. Wealth was created by both the post-merger activities of the acquiring firms (such as firing incompetent incumbent managers) and by responses to the takeover threat (such as excess spending cash to repurchase shares). Debt created value by providing commitments that the firm would pay its cash flows to debtholders, reducing the amounts available for executives to waste.

Capital markets – in particular, shareholder activists and large-block institutional stockholders – have mitigated agency problems by pressuring companies to strengthen links between CEO wealth and company stock-price performance. Fernandes, et al. (2012), for example, show that the fraction of CEO pay delivered in the form of stock or options increases with institutional ownership. Hartzell and Starks (2003) show that CEO pay-performance sensitivities increase with the concentration of institutional ownership. In an international study, Aggarwal, et al. (2011) find that the performance-related CEO turnover also increases with institutional ownership.

Capital markets have also, however, contributed to agency problems by providing executives with incentives to take actions to meet or beat analyst and market earnings expectations. As discussed in Section 2.4 and shown in Figure 2.12, executives have incentives to beat analysts forecasts by a small amount but not by *too much* because the abnormal stock-price response from beating the forecast by a lot is not much higher than the response for beating it by a little. Moreover, if an executive is going to miss the forecast, the executive may as well miss it by a *lot* since the negative abnormal stock-price response for a large miss is not much higher than for a small miss.

More generally, as argued by Jensen and Murphy (2012) and Martin (2011), capital-market pressures teach executives to focus on the “expectations market” (in which investors bet on expectations of future performance) rather than the “real market” (in which goods and

services are produced and sold, and value is created or destroyed). Focusing on the expectation market is problematic because executives inherently have access to information about future prospects that are not publicly known and incorporated into stock prices. Executives with such a focus will be tempted to take actions that increase short-run stock prices at the expense of long-run value.

Temptations to manipulate the expectations market will clearly be higher for executives holding large quantities of stock and options that can be sold or exercised before markets adjust to the “real” information. As discussed in Section 2.4, there is substantial evidence that executive option and equity holdings are indeed higher in companies that restate their earnings or are accused of accounting fraud.¹⁵⁸ There is less evidence, however, that executives actually exercise and sell large fractions of their exercisable options or sell large fractions of their unrestricted stock holdings prior to restatements or indictments. The ominous hypothesis is that executives focused on the expectations market are not following a “pump and dump” strategy (which can be controlled by imposing longer holding requirements for shares), but rather that they are legitimately confused about the difference between increases in the short-run stock price and true value creation.

5.1.3. The Political, Legal, and Regulatory System

Agency costs are mitigated by laws prohibiting embezzlement, corporate theft, and fraudulent conveyance, as well as securities rules, regulations, and listing requirements designed to protect shareholders and other financial claimants. For example, the Securities Act of 1933 – which regulated new securities issues – sought to protect shareholders by mandating full disclosure of all information that a “reasonable shareholder” would require in order to make up his or her mind about the potential investment. The Securities Act of 1934 – which regulated secondary trading of securities – introduced in Section 16(b) the “short swing” profit rule (discussed above in Section 3.5.4) requiring executives to return any profits realized from buying and selling (or selling and buying) shares of their company’s stock within any period of less than six months. More sweeping (at least in its interpretation) was the anti-fraud provision Section 10(b) (and the corresponding SEC 10b-5 rule), which restricts insider trading, earnings manipulation, and price fixing. More recently, Regulation FD (August 2000) requires publicly traded companies to disclose material information to all

¹⁵⁸ See, for example, Efendi, Srivastava and Swanson (2007); Burns and Kedia (2006); Bergstresser and Philippon (2006); Johnson, Ryan and Tian (2009); and Erickson, Hanlon and Maydew (2006).

investors at the same time (rather than favoring certain investors). While there are substantive arguments for allowing trading on material nonpublic information (since new information is more quickly introduced into the market), insider-trading rules are generally believed to benefit shareholders by reducing self-dealing by unscrupulous executives.

In addition to the general Securities Acts, the government has directly regulated the composition of the board of directors. Since 1994, companies have been required to have compensation committees consisting solely of independent directors in order for any pay to be exempt from the \$1 million deductibility cap. In 1999, full independence of the auditing committee was required for all NYSE-listed firms; this requirement was extended to all firms in the 2002 Sarbanes-Oxley Act. In 2003, NYSE and NASDAQ listing requirements tightened the definition of independence and mandated that boards of listed firms have a majority of outside directors; the NYSE further required full independence for the compensation and nominating committees.

Critics hoping that independence requirements would reduce levels of executive pay have been disappointed. Both the level of pay and the use of equity-based compensation increase with the fraction of outsiders on the board; Fernandes, et al. (2012) show that pay levels increase with board independence even after controlling for the risk associated with higher incentives. The evidence is therefore consistent with the hypothesis that directors – paying with shareholder money and not their own – prefer better-aligned incentives but are not particularly interested in restraining pay levels. The evidence is also consistent with directors not fully understanding (or believing) the opportunity cost of equity-based compensation (see Section 5.2.3 below).

Moreover, evidence that board independence “improves” pay is elusive. Bizjak and Anderson (2003) analyze the level and structure of compensation for CEOs who sit on their companies’ compensation committees (a relatively common occurrence before the early 1990s). Most critics of CEO pay (including Bebchuk-Fried and many shareholder activists) are horrified by the idea that the CEO could be a member of his own compensation committee, and would predict that such CEOs would inflate their own pay with few constraints.¹⁵⁹ And yet, Bizjak and Anderson (2003) find that the CEOs sitting on their own compensation committees earn substantially less (and not more) than other CEOs, have significant shareholdings and are typically company founders or their family members. These

¹⁵⁹ While it was relatively common for CEOs to sit on their own compensation committees, I am unaware of any instances where the CEO was actually allowed to vote on his or her individual compensation package.

CEOs sit on their compensation committees not to inflate their own salaries, but rather to influence the level and structure of pay for their subordinates. Prohibiting such CEOs from sitting on (or chairing) their compensation committees harms shareholders, and illustrates a cost of the “one-size-fits-all” nature of corporate governance regulation.

In addition to general securities laws and independence requirements, this study has chronicled the history of government intervention into executive compensation. Over the past 80 years, Congress has imposed tax policies, accounting rules, disclosure requirements, direct legislation, and other rules designed explicitly to address perceived abuses in executive compensation. With few exceptions, the regulations have been either ineffective or counterproductive, typically increasing (rather than reducing) agency problems and pay levels, and leading to a host of unintended consequences. For example, the 1984 laws introduced to reduce golden parachute payments led to a proliferation of change-in-control arrangements, employment contracts, and tax gross-ups. Similarly, a variety of rules implemented in the early 1990s are largely responsible for fueling the subsequent option explosion, and the enhanced disclosure of perquisites in the 1970s is generally credited with fueling an escalation in the breadth of benefits offered to executives.

The emerging conclusion is that the myriad attempts to regulate CEO pay have been mostly unblemished by success. Part of the problem is that regulation – even when well intended – inherently focuses on relatively narrow aspects of compensation allowing plenty of scope for costly circumvention. An apt analogy is the Dutch boy using his fingers to plug holes in a dike, only to see new leaks emerge. The only certainty with pay regulation is that new leaks will emerge in unsuspected places, and that the consequences will be both unintended and costly.

Another part of the problem – as suggested above in the context of CEOs sitting on their firm’s compensation committees – is that government regulation inevitably imposes a “one-size-fits-all” solution to a perceived problem. For example, as I emphasize in Murphy (2012), claims (unfounded or not) that the banking bonus culture created incentives to take excessive risks were relevant at most for a relatively small number of large publicly traded Wall Street security brokers and dealers (along with some large commercial banks with significant investment banking operations). And yet, the Dodd-Frank provisions designed to reduce such incentives in the future were imposed on all public and private financial institutions, including broker-dealers, commercial banks, investment banks, credit unions, savings associations, domestic branches of foreign banks, and investment advisors.

A larger part of the problem is that the regulation is often mis-intended. The regulations are inherently political and driven by political agendas, and politicians seldom embrace “creating shareholder value” as their governing objective. While the pay controversies fueling calls for regulation have touched on legitimate issues concerning executive compensation, the most vocal critics of CEO pay (such as members of labor unions, disgruntled workers and politicians) have been uninvited guests to the table who have had no real stake in the companies being managed and no real interest in creating wealth for company shareholders. Indeed, a substantial force motivating such uninvited critics is one of the least attractive aspects of human beings: jealousy and envy. Although these aspects are seldom part of the explicit discussion and debate surrounding pay, they are important and impact how and why governments intervene into pay decisions.

5.1.4. *Product Markets*

While competition in the product market can theoretically either reduce or increase agency problems (see Hart (1983) and Scharfstein (1988), respectively), companies that cannot compete in the product market cannot survive. The product market, therefore, provides inevitable discipline for value-destroying managers, but only after most of the value has been destroyed. Moreover, relying on product markets to discipline managers encourages managers to view “survival” rather than value-creation as their governing objective.

5.2. *“Competing” Hypotheses to explain the increase in CEO pay*

The unparalleled rise in CEO pay from the mid-1980s through 2001 – propelled primarily by increases in the grant-date value of option awards – generated a great deal of academic, popular, and political attention. As noted, most papers in the literature have offered either the “managerial power” or “efficient contracting” explanations for the increase; see Frydman and Jenter (2010) for a useful and thoughtful review. A third set of explanations – most closely associated with Murphy (2002) – maintains that options exploded in the 1990s because decisions over options were made based on the “perceived cost” of options rather than on their economic cost. This section summarizes and critiques all three approaches, focusing on salient features of CEO pay that can, and cannot be explained under the approach. In addition, I explore the government’s role in pursuing social policy that favored stock options for both top-level executives and lower-level employees.

Before assessing how well the various theories explain the recent trends in CEO pay, it is useful to summarize what those trends are (that is, what the theories need to explain):

- Median expected pay for CEOs in the S&P 500 increased an average of 4.3% annual (after inflation) from 1983-1991, and by an average of 15.7% annually between 1991 and 2001.
- Most of the increase in pay between 1991 and 2001 reflects increases in the value of stock options granted.
- The “stock option explosion” was not limited to CEOs: 95% of the option grants went to lower-level executives and employees, and the trends in CEO options mirrored trends for options to lower levels.
- Median CEO pay has largely leveled-off since 2001. Over the same time period, firms have reduced their reliance on stock options and greatly increased their use of restricted stock and performance shares.

Therefore, any compelling theory of trends in CEO compensation must not only explain the increase in pay levels but must also address explicitly its most prominent feature: the escalation in stock options from the mid-1980s through 2001. Better still, the theory should be consistent with the explosion in broad-based option programs, the leveling of pay after 2001 and the emerging dominance of restricted stock.

5.2.1. *Managerial Power*

The “managerial power” approach begins with the self-interested executives envisioned by Berle and Means (1932) and Jensen and Meckling (1976) and adds a new element: the ability of these executives to influence both the level and composition of their own compensation packages, often (if not invariably) at the expense of shareholders. One of the early contributors to this view is David Yermack, who has argued that CEOs extract rents from shareholders by timing their option grants to occur just before the release of good news (Yermack (1997)), by insider trading through their family charitable foundations (Yermack (2009)), through lucrative severance and change in control provisions (Hartzell, Ofek and Yermack (2004); Yermack (2006b)), and by consuming excessive perquisites (Yermack (2006a)).

The researchers most closely associated with the managerial-power approach are Lucian Bebchuk and Jesse Fried, who have argued in a series of papers that both the level and composition of pay are determined not by competitive market forces but rather by

captive board members catering to rent-seeking entrenched CEOs.¹⁶⁰ In addition, the authors argue that the CEO's ability to extract rent is limited by outside scrutiny and criticism (the "outrage constraint"), and CEOs respond by extracting rents through difficult-to-observe or assess forms of compensation rather than through increased base salaries. They use their model to explain several common features of executive compensation plans, including the use (and misuse) of compensation consultants, the prevalence of stealth compensation (pensions, deferred pay, perquisites, and loans), gratuitous severance payments, and stock options that are uniformly granted at the money and not indexed for the market or industry.

Can managerial power explain the trends in CEO pay? There is no doubt that executives (like the rest of us) are self-interested and would prefer higher compensation to lower compensation. There is also little doubt that – while CEOs are never explicitly involved in setting their own pay (even those sitting on their own compensation committees) – CEOs have subtle ways of influencing the compensation committee and the pay-setting process.¹⁶¹ However, as emphasized by Holmstrom and Kaplan (2003) and Frydman and Jenter (2010), there is no evidence that boards have become weaker or more captive over time. Indeed, every measure of board independence has improved since the mid-1980s. As discussed in Sections 5.1.1, the fraction of outside directors serving on the average board had increased to 80% by the end of the 1990s, and the CEO was the sole insider in nearly half of all firms. Since IRS Section 162(m) in 1993 (which required independence as a prerequisite for deductibility), most compensation committees have been fully independent. The 2003 NYSE listing requirements and 2010 Dodd-Frank Section 952 are appropriately characterized as tightening the definition from "independent" to "really independent" to "really, really independent," reflecting a mistaken belief that true independence can be measured by an objective standard applicable across all publicly traded companies without regard to the individual director. The increase in board independence during the 1990s should reduce managerial influence over pay, suggesting that the trends in CEO pay over the period were not driven by managerial power. In addition, the secular increase in disciplinarily

¹⁶⁰ See, for example, Bebchuk and Fried (2004a); Bebchuk and Fried (2004b); Bebchuk, Grinstein and Peyer (2010); Bebchuk, Fried and Walker (2002); Bebchuk and Fried (2003); Fried (2008a); Fried (2008b); Fried (1998).

¹⁶¹ For example, Murphy (1999) observes that while "outside board members approach their jobs with diligence, intelligence, and integrity . . . judgment calls tend systematically to favor the CEO. Faced with a range of market data on competitive pay levels, committees tend to error on the high side. Faced with a choice between a sensible compensation plan and a slightly inferior plan favored by the CEO, the committee will defer to management. Similarly, faced with a discretionary choice on bonus-pool funding, the committee will tend to over- rather than under-fund."

firings of poorly performing CEOs (Kaplan and Minton (2011); Huson, Parrino and Starks (2001)) offers no evidence that boards are becoming systematically more passive over time.

Moreover, it is worth noting that many of the most generous and widely criticized option and severance payouts over the past two decades have been the direct result of formal employment agreements negotiated with external candidates, and not deals reached with powerful incumbents. Indeed, Murphy and Zábajník (2008) attribute the increase in executive pay to the increased prevalence of hiring CEOs from outside the firm. During the 1970s, under 15% of newly appointed CEOs were hired externally. By the late 1990s, nearly a third of all CEO appointments came from outside of the firm, suggesting increasing competition in the managerial labor market. While the Murphy-Zábajník results (discussed in the next section) are often cited as evidence for the “efficient-contracting” approach, they are also consistent with directors systematically overpaying (and over-protecting) CEOs brought in from outside the firm.

In fact, compensation committees almost invariably pay “too much” for newly appointed CEOs, especially for those hired from outside the firm. Corporate directors seeking new CEOs from outside typically hire a professional search firm to identify qualified candidates for the position (Khurana (2002a); Khurana (2002b)). The pool of qualified candidates is narrowed through extensive research, background and reference checks, and interviews until a single individual is selected for the position. Negotiations over pay typically begin only after the favored candidate is identified and told that he or she is to be the new CEO. Indeed, many times negotiations are still on-going when the appointment is announced publicly. At this point the board is effectively locked in to the particular candidate CEO, which dramatically shifts the bargaining power to the seller (the candidate) rather than the buyer (the firm). This procedure is a reasonable way to identify top candidates when “price” is not an issue, but is clearly a recipe for systematically paying too much for managerial talent.

The tendency to pay too much and to pay it in the wrong way is exacerbated by potential CEOs who hire skilled contracting agents to negotiate on their behalf. In contrast, compensation committees rarely retain their own expert negotiators. The outcome is what one would expect in a game where there is such a clear mismatch: no matter how well intentioned, the typical compensation committee is no match against a professional negotiator, and overly generous pay packages become ubiquitous. But, often the problem is worse: the incoming CEO (and his professional agent) negotiate not with the compensation

committee but rather with the company's general counsel or head of human resources, knowing they will report to the CEO when the contracting is complete.

Overpaying newly hired CEOs is an agency problem caused by directors paying the new hires with shareholder money rather than their own. It is not, however, a "managerial power" problem, since the board is not captive and these are arms' length negotiations with a non-incumbent CEO candidate. The distinction is important because the policy prescriptions are different: the solution to overpaying new hires is to strengthen the negotiation process, while the solution to managerial power is to weaken the incumbent CEO's influence. More importantly, the "problem" of overpaying (and over-protecting) new hires may be small compared to the costs of selecting the wrong CEO.

In any case, hiring managerial talent from either inside or outside the firm is expensive, and the price of talent increased significantly during the 1990s and early 2000s. Kaplan and Rauh (2010) and Kaplan (2008), for example, present evidence that the increased pay for top executives is comparable to pay trends for top lawyers, investment bankers, hedge-fund managers, venture capitalists, private-equity managers, and athletes. The rise in incomes for top talent in these disparate sectors – most with active and mobile labor markets – cannot plausibly be explained by managerial power. It seems unproductive to attribute gains in these other sectors to competitive market forces while inventing a different explanation for the rise in CEO pay. Indeed, the secular increase in external CEO appointments documented by Murphy and Zábajník (2008) suggests that the managerial labor market is becoming more rather than less competitive.

Can managerial power explain the growth in the use of stock options? Bebchuk, et al. (2002) suggest that firms can "camouflage" excessive pay by substituting stock options for cash compensation, under the theory that such grants are difficult to value and are easy to hide in annual disclosures. Under disclosure rules effective before 1992, information on option grants was indeed difficult to obtain.¹⁶² However, the centerpiece of the sweeping new disclosure rules introduced in October 1992 focused on option grants, and two new

¹⁶² In September 1983, the SEC had reduced the amount of information companies needed to disclose on executive stock options. From 1978 to 1983, the "summary compensation table" in the proxy statement included not only cash compensation but also the number of new options granted and the increase in the intrinsic value of options held. Under the 1983 "paperwork reduction" rules, the summary compensation table included only cash compensation, the number of options granted was moved to later in the proxy, and information on outstanding options (and changes in the value of outstanding options) was eliminated. For details on the new rules, see Hudson, "SEC Rules Allow Concerns to Curb Pay Disclosure: Companies Likely to Divulge Less on Executive Fees, Incentives, and Stock Options," *Wall Street Journal* (1983).

tables were added to the proxy statements to describe the details of both the grant and the number and value of options held at the end of the year. Bebchuk, et al. (2002) would predict that options grants would fall as the amount of information increased. However, option grants escalated (rather than fell) following the new rules.

Bebchuk and Grinstein (2005) attempt to provide a managerial-power explanation for the 1990s increase in stock options as follows. First, they argue that the stock market boom weakened the outrage constraint, giving executives more latitude to increase their own pay. Second, they argue that increasing compensation in the form of options caused less outrage than increasing base salaries, not because of “camouflage” but because options offered the possibility of improved incentives. When the market declined in 2000-2002, the outrage constraint strengthened as investors became less forgiving of perceived managerial over-reaching, stemming the escalation in both pay and the use of stock options. Bebchuk and Grinstein (2005) use this framework to explain the correlation between CEO pay and general stock-price movements, as illustrated in Figure 3.9 in Section 3.7.5. Their framework would therefore also predict an increase in pay and options during the 2003-2007 bull market, and yet pay increases were modest and options were declining over this period. They could, of course, provide arguments for the existence of an “outrage constraint” for this period that would explain why pay levels moderated and options were replaced by restricted stock. This points to a basic problem with the Bebchuk and Grinstein (2005) explanation (and the managerial-power hypothesis more generally): there is no principled way to refute any trend in pay given the authors’ flexible (and unmeasurable) definition of both the “outrage constraint” and its importance.

5.2.2. *Efficient Contracting*

The “efficient contracting” camp maintains that the observed level and composition of compensation reflects a competitive equilibrium in the market for managerial talent, and that incentives are structured to optimize firm value. The survey article by Edmans and Gabaix (2009) considers optimal-contracting explanations for the pay practices criticized under the managerial power camp, and the survey article by Frydman and Jenter (2010) discuss how these theories can predict increases in CEO pay over time.

Unlike the “managerial power” camp, the “efficient contracting” camp is not neatly characterized by a well-defined set of authors or articles. The modern executive compensation literature paralleled the emerging agency theory literature, and the majority of CEO pay papers written since the 1980s have been explicitly or implicitly based on agency

or optimal-contracting theories. Indeed, the managerial-power approach largely evolved as researchers – perhaps beginning with Jensen and Murphy (1990b) and Yermack (1995) – uncovered anomalies seemingly inconsistent with optimal contracts.

Can efficient contracting explain the trends in CEO pay? Beyond optimal incentive contracts, the efficient-contracting approach includes market equilibrium models of managerial productivity, matching, and sorting that predict secular increases in CEO pay. For example, Murphy and Zábojník (2008) and Frydman (2007) offer general equilibrium models attributing the increase in executive pay to the increased prevalence of hiring CEOs from outside the firm. In particular, both papers attribute the trend toward outside hiring as reflecting gradual changes in the nature of the CEO job, modeled as a shift in the relative importance of general “managerial capital” (human capital specific to CEO positions) over firm-specific capital (reflecting skills, knowledge, contacts, and experience valuable only within the organization). The shift in the relative importance of general vs. firm-specific managerial capital leads to fewer promotions, more external hires, and an increase in equilibrium average wages for CEOs relative to the wages of lower-level workers. Ultimately, while it is plausible that the increased prevalence of outside hiring will increase average wages (if nothing else, employers must always pay a premium when hiring from outside compared to promoting from within), it is less plausible that the doubling of outside hiring from the 1970s to the 2000s could lead to such a huge increase in real CEO pay over this time period.

Alternatively, Gabaix and Landier (2008) build an equilibrium model in which the marginal product of managerial ability increases with firm size (so that it is optimal to assign the most talented managers to the largest firms). As shown by Rosen (1981) and Rosen (1982), such assortative matching produces equilibrium wages that are convex in ability, such that small increases in ability can lead to large increases in wages (since the CEO is assigned to a larger firm). Gabaix and Landier (2008)‘s key insight is that the wage of a CEO will depend not only on firm size, but also on the size distribution of all firms in the relevant market: as the average firm becomes larger, managerial marginal products increase and competition for scarce managerial talent will bid up compensation. In particular, they show that a shift in the size distribution of firms will lead to a proportional shift in compensation, and conclude that “the six-fold increase in CEO pay between 1980 and 2003 can be fully attributed to the six-fold increase in market capitalization of large U.S. companies.”

Gabaix and Landier (2008)‘s results are consistent with the near-perfect correlation between CEO pay and general stock-price movements observed from 1980-2002 (see Figure

3.6 in Section 3.7.5). However (and similar to the critique of Bebchuk and Grinstein (2005) above), their results are not consistent with time trends in CEO pay and the stock market since 2002. In addition, while their insights on the size distribution are potentially important, their focus on market capitalization as the size measure is problematic since it conflates size, stock-price performance, and the vagaries of the market. Few would argue, for example, that Apple was really the largest firm in the world economy in 2012 (and yet their market value by early 2012 eclipsed that of Exxon-Mobil, PetroChina, and Royal Dutch Shell). Similarly, Volkswagen was not the second-largest firm on the planet for a couple of days in late October 2008 after its stock price increased 350% over a two-day period (before tumbling by 60% over the following week).¹⁶³ While average CEO pay may have moved roughly proportionately with average market capitalization between 1980-2003, it far outpaced the growth in more traditional measures of size. For example, average revenues for the 500 largest U.S. firms ranked by revenue grew only by 50% after inflation from 1980-2003, while average employment for the 500 largest U.S. employers grew only by 19%.¹⁶⁴

Can efficient contracting explain the growth in the use of stock options? The CEOs in most market-equilibrium models (including Murphy and Zábajník (2008), Frydman (2007), Gabaix and Landier (2008), and the informal model in Kaplan and Rauh (2010)) contribute only ability and not effort. Therefore, there is no role for incentives and thus no obvious reason why the increase in pay would come in the form of increased equity-based compensation (or, in particular, in stock options and why the preferred form of equity incentives would shift to restricted stock after 2002). To “explain” trends in CEO pay, it is not enough to predict increases in the level of pay, independent of dramatic changes in its composition. Indeed, as discussed above in Section 2.1.2, CEOs naturally demand a “risk premium” for accepting stock options in lieu of safer forms of compensation, and this risk premium will increase when the CEO is less diversified (i.e., when holding more shares of stock, or when the value of option portfolios increase relative to other wealth). Therefore, any increase in stock options will naturally be associated with an increase in total compensation, especially in a rising market. As shown in Figure 2.7 in Section 2.1.2, median risk-adjusted CEO pay actually fell from 1998 to 2001 (at least given the assumptions in the

¹⁶³ Zuckerman, Strasburg and Esterl, “VW’s 348% Two-Day Gain Is Pain For Hedge Funds,” *Wall Street Journal* (2008).

¹⁶⁴ The Top 500 are for all U.S.-based firms in Compustat. Using the same methodology, I find that the average market value (including debt and equity) for the 500 largest U.S. firms grew by 300% between 1980 and 2003, substantially less than the 500% alleged by Gabaix and Landier (2008). I am unable to reconcile the difference.

figure), even as the median unadjusted pay was exploding. In fact, the puzzle to be solved in Figure 2.7 is not why pay levels increased in the late 1990s (because they actually *declined* after adjusting for risk), but rather why risk-adjusted pay levels increased dramatically from 2002-2007, as companies replaced risky stock options with less risky restricted stock, without substantial declines in the grant-date fair-market value of pay.

Optimal-contracting theory (i.e., the subset of efficient-contracting predicting that incentives are structured to optimize firm value) offers few explanations for the increase in equity-based pay (i.e., increases in pay-performance sensitivities) in the 1990s. Consider, for example, the benchmark model where firm value is given by $y = a + \varepsilon$, where a is executive effort expended at a convex cost $c(a)$, and ε is (normally distributed) uncontrollable noise, $\varepsilon \approx N(0, \sigma^2)$. Moreover, suppose that managerial contracts take the simple linear form $w(x) = s + bx$, where s is a fixed salary and b is the sharing rate (or “pay-performance sensitivity”). Assuming that the executive has exponential utility, $U(x) = -e^{r(W-c(a))}$, where r is the executive’s absolute risk aversion and $c(a)$ is the convex disutility of effort, the optimal sharing rate is given by:¹⁶⁵

$$b = \frac{1}{1 + r\sigma^2 c''}.$$

Traditional contracting theory therefore suggests a finite number of factors that might explain higher incentives among CEOs in the 1990s. First, perhaps CEOs became less risk or effort averse in the 1990s, but to my knowledge there is no theory or empirical work suggesting such declines in risk- or effort-aversion parameters. Second, perhaps CEO performance became estimated with less noise in the 1990s. While potentially consistent with the increase in director independence (if taken as a proxy for board monitoring), most measures of cash-flow or shareholder-return volatility increased rather than decreased over this time period.

Alternatively, suppose that firm value is given by $y = \theta a + \varepsilon$, where the primary source of uncertainty is variations in θ (i.e., managerial productivity assumed to be observed by the CEO but not by directors or shareholders). Zábajník (1996) and Prendergast (2002) show that optimal pay-performance sensitivities increase with the volatility of θ (incentives are more important when the CEO has private information about his or her marginal productivity). Again, to my knowledge there is no theory or empirical work suggesting that CEO marginal productivity became more volatile during the early 1990s.

¹⁶⁵ For similar (but more general) derivations of the optimal pay-performance sharing rate, see Lazear and Rosen (1981), Holmstrom and Milgrom (1991), Gibbons and Murphy (1992), and Milgrom and Roberts (1992).

Moreover, optimal-contract theories must explain not only the increase in equity-based compensation, but why that increase came almost entirely in the form of stock options as opposed to restricted shares or other equity-based instruments. Several papers have attempted, with only limited success, to provide theoretical justification for stock options. For example, traditional principal-agent models based on constant relative risk aversion and lognormally distributed stock prices (e.g., Hall and Murphy (2002); Dittmann and Maug (2007)), suggest that – when salaries can be adjusted – contracts with restricted shares or options granted in-the-money are generally superior to contracts with at-the-money options.¹⁶⁶

Ultimately, the most compelling optimal-contracting explanation for the increase in equity-based compensation in the 1990s is that contracts were *suboptimal* before the 1990s, and got better. As explored above in Sections 3.5.6 and 3.6, year-to-year changes in executive pay in the 1970s largely reflected changes in company revenues (rather than performance), contributing to unproductive diversification, expansion and investment programs. The takeover and LBO market of the 1980s demonstrated vast potential for value creation in previously inefficient firms, leading academics, institutions, and shareholder advocates to demand that pay be more closely tied to shareholder performance. As emphasized by Holmstrom and Kaplan (2001), stock options allowed executives to share in the value created by internal restructurings that reduced excess capacity or reversed ill-advised diversification programs. The growing importance of shareholder activists and large institutional investors (Gompers and Metrick (2001)) increasingly pressured firms to tie pay more closely to stock-price performance. Stock options also became the currency of choice for high-tech start-ups, rich with ideas but (allegedly) short of cash or sources of capital. As a result, the popularity of options soared with the stock market during the 1990s, to the benefit of shareholders and executives alike. In fact, part of the increase in options during the 1990s plausibly reflects the fact that they seemed to be working: corporate boards and top managers began to associate option grants with successful company performance, especially during the high-tech and Internet boom of the late 1990s. Indeed, the increase in options coupled with the renewed focus on shareholder value creation may help explain the overall growth in stock market during this period.

¹⁶⁶ Contracting models justifying the use of stock options rather than stock typically focus on optimal risk taking rather than (or in addition to) effort incentives (see, for example, Hirshleifer and Suh (1992) and Edmans and Gabaix (2011)).

This optimal-contracting explanation for stock options cannot, however, explain the magnitude of the explosion, and why it came in the form of options rather than stock. Consider, for example:

- The increase in stock options for top-level executives was associated with no discernable decrease in other forms of compensation (such as base salaries, bonuses, or benefits). To my knowledge, there is not an efficient-contracting theory that predicts stock options to be added “for free” on top of what were presumably competitive compensation packages.
- Most contracting models would predict that the number of options granted would decline as stock prices increase, since the Black-Scholes cost of granting at-the-money options increases proportionately with the stock price. However, the number of options (as a fraction of outstanding common stock) increased rather than decreased during the 1990s, leading to a near-perfect correlation between average option grant-date values and stock-market indices between 1980 and 2002 (see Figure 3.6).
- Beginning in 2002, and especially since 2006, restricted stock has replaced stock options as the dominant form of equity-based compensation (and, indeed, is now the largest single component of compensation for the typical CEO in S&P 500 firms). To my knowledge, there is not an efficient-contracting theory that predicts this switch.

Even more difficult for the optimal-contracting camp is explaining why so many options were granted to so many employees well below the executive suite (see Figure 3.7 and Figure 3.8). Since non-tradable stock options are an unusually inefficient method of conveying compensation (see Section 2.1.2), the incentive benefit from stock options must exceed the substantial difference between the company’s opportunity cost of granting options and the “value” of those options from the perspective of risk-averse undiversified employees. While there may be efficient-contracting justifications for granting options to top-level executives and other critical employees who can directly impact company stock prices (such as R&D scientists), there is (to my knowledge) no compelling incentive theory explaining option grants for rank-and-file employees.

Existing theories of broad-based option plans focus not on incentives but on other aspects of the employment relation. Oyer (2004), for example, argues that broad-based options may help satisfy participation constraints when reservation wages are correlated with the “market” and when it is costly to adjust other terms of employee compensation. Oyer and Schaefer (2005) and Bergman and Jenter (2007) argue that it might be optimal to grant options rather than cash when employees are irrationally optimistic about company

prospects. Core and Guay (2001) argue that firms grant options to lower-level employees as a substitute for cash compensation, and document a greater use of options for firms facing financing constraints.¹⁶⁷ Babenko, Lemmon and Tserlukevich (2011) argue that financially constrained firms rely on cash inflows from employee option exercises to finance investments.

The common failing in the aforementioned theories of broad-based stock option plans is neither recognizing nor incorporating the substantial difference between the company's cost and the employee's value of non-tradable stock options. For example, Oyer (2004) offers no compelling argument or evidence that options are an efficient substitute for flexible employment terms (indeed, he largely ignores the efficiency cost of options, and assumes that contract adjustments are prohibitively costly),¹⁶⁸ and Core and Guay (2001) and Babenko, et al. (2011) implicitly hold but provide no theoretical or conceptual evidence for the implausible assumption that risk-averse undiversified employees are efficient sources of capital. Bergman and Jenter (2007) suggest that firms can reduce compensation costs by paying over-optimistic employees with (potentially overvalued) options, but provide no evidence that options are offered as a substitute for other forms of compensation. Indeed, all these models ignore the fact that most broad-based option plans were layered on top of existing compensation arrangements, and were not substitutes for cash compensation. The dominant option granters in the 1990s were not small cash-poor internet start-ups (where a compelling incentive-based rationale for broad-based options can be made), but rather large cash-rich giants such as Microsoft, Intel, Cisco, and Apple.

5.2.3. *Perceived Cost*

In a series of papers – admittedly garnering less traction than either the “managerial power” and “efficient contracting” approaches – I’ve suggested an alternative explanation for the growth of option-granting in the 1990s: decisions over options were made based on the “perceived cost” of options rather than on their economic (or “opportunity”) cost.¹⁶⁹ When a company grants an option to an employee, it bears an economic cost equal to what an outside

¹⁶⁷ In contrast, Ittner, Lambert and Larcker (2003) find that companies with *greater* cash flows use options more extensively.

¹⁶⁸ Indeed, Oyer (2004) should predict that stock options are a particularly *ineffective* substitute for *downward* adjustments in employment terms (presumably firms face fewer short-run costs of adjusting in employees' favor).

¹⁶⁹ See, in particular, Murphy (2002), Murphy (2003), and Hall and Murphy (2003).

investor would pay for the option. But, it bears no outlay of cash, and (prior to the 2006 changes in accounting rules) bears no accounting charge. Moreover, when the option is exercised, the company (usually) issues a new share to the executive, and receives both the exercise price and (for non-qualified stock options) a tax deduction for the spread between the stock price and the exercise price. These factors make the “perceived cost” of an option much lower than the economic cost.

From the perspective of many boards and top executives who perceive options to be nearly costless – or indeed deny that options have value when granted – the only way they can quantify the options they award is by the number of options granted. During the 1990s, the focus on the quantity rather than the cost of options was further solidified by the institutions that monitor option plans. For example (see Section 3.7.5), SEC disclosure rules in place between 1992 and 2006 required companies to report only the number of, rather than the value of, options granted in the “Summary Compensation Table”, the primary or most visible compensation table in the company’s annual proxy statement. Similarly (see Section 3.7.6), under the pre-2003 NYSE listing requirement companies must obtain shareholder approval for the total number of options available to be granted, but not for the cost of options to be granted.¹⁷⁰ In addition, advisory firms (such as Institutional Shareholder Services) often base their shareholder voting recommendations primarily on the option “overhang” (that is, the number of options granted plus options remaining to be granted as a percent of total shares outstanding), and not on the opportunity cost of the proposed plan. Therefore, boards and top executives often implicitly admitted that the *number* of options granted imposes a cost on the company, while at the same time denying that these options have any real dollar cost to the company.

In addition, boards and top executives understand that options, when exercised, dilute the shareholdings of current equity holders. The number of options granted is included in fully diluted shares outstanding and therefore increased grants will decrease fully diluted earnings per share. Thus the negative consequences associated with these reductions in earnings per share also vary with the number of options granted, and not with the dollar-cost of the grants, and are consistent with the observed excessive focus on the number of options awarded and outstanding and not their dollar cost to the firm.

¹⁷⁰ In addition, as discussed in Section 3.7.6, under the pre-2003 listing requirements, companies did not need shareholder approval for options that would be issued broadly to executives and employees throughout the organization, but only for option grants that would be concentrated among the highest-level executives.

The perceived-cost view of stock options explains why options were granted in such large quantities to large numbers of executives and employees and also explains why the grant-date opportunity cost of options rose dramatically and subsequently declined with the stock market from 1980-2003 as shown in Figure 3.6 in Section 3.7.5. If boards focused only on the number of options granted, and the number of options granted stayed constant or varied positively with stock market performance, then the cost of the annual option grants would rise and fall in proportion to the changes in stock prices.

The perceived-cost view also explains why the relation between executive pay and the S&P 500 Index shown in Figure 3.6 weakened beginning in 2003. As discussed in Section 3.8.4, while FAS 123R required firms to expense their options beginning in 2006, many firms began voluntarily expensing in early 2003. Expensing options brings the perceived cost of options more in line with their opportunity cost, and companies responded to the robust stock market from 2003-2007 by decreasing the number of options granted as stock prices increased (rather than increasing the quantity of options as happened from 1993-2001). Moreover, expensing brings the accounting treatment of options in line with the accounting treatment of restricted stock, explaining the shift from options towards restricted stock.

Finally, the perceived-cost view explains many prevalent features of stock options offered by the managerial-power camp as evidence for their position. For example, Bebchuk, et al. (2002) cite the scarcity of “indexed options” (i.e., options where the exercise price adjusts over time to market- or industry-wide price indices) as evidence for the managerial power hypothesis. However, prior to the 2006 imposition of FAS 123R, indexed options were subject to an accounting charge while traditional options were not, increasing the relative perceived cost of indexed options. Similarly, Bebchuk, et al. (2002) suggest that firms use uniform option terms (e.g., granting options “at the money”) because diverging from normal practice by granting in-the-money options would spark outrage. Under the perceived-cost view, companies grant at-the-money options to avoid the accounting expense associated with in-the-money options. Indeed, the unsavory practice of “backdating” (in which firms granted in-the-money options but retroactively set the exercise date so the options appeared to be granted at the money; see Section 3.8.2) allowed firms to convey a given level of compensation without an accounting charge using fewer options than would be required without backdating. While the apparently common practice subsequently became “criminalized,” many of the participants at the time viewed the practice as a minor accounting transgression that saved the shareholders a little dilution.

The perceived-cost view is readily acknowledged by practitioners and compensation consultants, but is usually denied or dismissed by financial economists because it implies systematic suboptimal decision-making by managers and a fixation on accounting numbers that defies economic logic. But executives often respond to accounting concerns in ways that seem irrational to economists. For example (as discussed in Section 3.7.4), the practice of repricing options following stock downturns virtually disappeared in December 1998 after an accounting expense was imposed on repriced options, illustrating how companies respond to accounting rules that have no effect on company cash flows. Similarly (as discussed in Section 3.8.4), firms accelerated the exercisability of existing options in advance of the implementation of FAS 123R in order to avoid an accounting charge for previously granted but unexercisable options; such acceleration hurts shareholders by reducing retention incentives and allowing executives to unwind their equity positions. As another example (only slightly beyond the executive compensation arena), companies systematically scaled back retiree healthcare benefits after FASB required companies to record a current accounting charge for anticipated future medical costs.¹⁷¹ The new accounting rule apparently increased the perceived cost of these benefits, putting them more in line with their actual economic cost, and as a result companies reduced benefit levels.

While the perceived-cost approach can explain why so many options were granted to so many people (because options were free, or at least cheap), it cannot explain why the explosion in grants started in earnest in the early 1990s: after all, the accounting and tax rules governing non-qualified stock options had been in place since 1972. In addition, before the May 1991 ruling that allowed stock acquired by exercising options to be immediately sold (see Sections 3.5.4 and 3.7.2), companies routinely granted Stock Appreciation Rights (typically subject to an accounting charge) rather than stock options (typically subject to no accounting charge), suggesting that the choice of equity-based incentives were not solely driven by accounting considerations.¹⁷²

More fundamentally, the problem with the perceived-cost approach is that stock options are, of course, neither free nor even cheap to grant. Indeed, non-tradable options are an unusually expensive way to convey compensation to risk-averse and undiversified employees

¹⁷¹ See Amir (1993), Espahbodie, Strock and Tehranian (1991), and Mittelstaedt, Nichols and Regier (1995) for descriptions and analyses of FAS 106 (*Employers' Accounting for Postretirement Benefits Other than Pensions*).

¹⁷² In particular, the accounting expense for SARs reflected the appreciation in stock prices from the grant date through the exercise date.

(Hall and Murphy (2002); Section 2.1.2 above). A tempting theory – consistent with the managerial power approach – is that executives fully understood the opportunity cost of options but duped gullible directors into believing they were free. However, this explanation is inconsistent with the fact that 95% of options were granted below the CEO level: it seems implausible that the CEO would support such a huge transfer of wealth from shareholders to employees for a modest increase in his or her own compensation.

More plausible is the idea that executives and directors simply misunderstood the nature of opportunity costs. There is ample evidence that executives routinely ignore the opportunity cost of equity capital, leading firms to excess capacity and inefficient levels of inventories, cash and working capital. Indeed, the “Economic Value Added” programs that became popular in the 1990s were explicitly designed to teach managers about the opportunity cost of equity capital. If executives have a hard time grasping the opportunity cost of equity, they will have an even harder time grasping the opportunity cost of a derivative on that equity, especially when told that the “cost” is not the accounting cost but rather is estimated using a seemingly arcane theoretical formula. It is worth recalling that – while the Black-Scholes methodology was twenty years old by the early 1990s and was increasingly being used in academic research on executive compensation – it had only recently gained limited traction among compensation consultants, and was not considered a useful tool in most corporate human resources departments.

5.2.4. *Politics of Pay*

A central theme in this study has been the futility of “explaining” CEO pay without explicit consideration of the causes and consequences of government intervention into executive compensation over the past century. The option explosion in the 1990s, which in turn caused the escalation in pay levels that spawned both the efficient-contracting and managerial-power literatures, is a prime example of this futility. In Section 3.7, I discuss six factors that I believe contributed to the 1990s explosion in stock options (and hence the escalation in pay):

- *Shareholder pressure for equity-based pay.* The takeover and LBO market of the 1980s demonstrated vast potential for value creation in previously inefficient firms, leading academics, institutions, and shareholder advocates to demand that pay be more closely tied to shareholder performance.

- *SEC holding-period rules.* In 1991, the SEC determined that shares acquired by exercising options could be sold immediately upon exercise (effectively eliminating the six-month holding requirement).
- *SEC option disclosure rules.* In 1992, the SEC required disclosure of only the number of options granted, and not the value of options granted. The new rules pre-empted a popular Senate bill demanding a single dollar value for total compensation (which, in turn, required a dollar-valuation for options).
- *Clinton's \$1 million deductibility cap.* In 1993, Section 162(m) (which ironically was imposed to reduce levels of executive pay) provided a safe harbor for stock options, by exempting options from the \$1 million deductibility limit.
- *Accounting rules for options.* In 1995, after pushing for expensing the “fair-market value” of stock options, FASB backed down and allowed options to be granted without an accounting expense to the company (thus preserving the illusion that options were nearly costless to grant).
- *NYSE listing requirements.* Under listing rules in during the 1990s, companies needed shareholder approval for equity plans covering top-level executives, but did not need approval as long as a sufficient percentage of eligible employees were non-executives. Therefore, companies could bypass shareholder votes by granting options to lower-level employees as well as executives.

The first of these factors (“shareholder pressure for equity-based pay”) is consistent with the efficient-contracting explanation (at least the version of the theory that contracts were suboptimal before the 1990s, and got better). However, the remaining factors reflect government intervention into the pay process, often as unintended consequences of attempts to curb perceived excesses in executive pay (and executive stock options in particular).

For example, the May 1991 SEC rules that allowed executives to sell shares immediately after exercising options was an unintended consequence of an attempt to curb excessive grants. As discussed in Section 3.7.1, corporate insiders are required to report stock purchases and sales on SEC Form 4, but were not (before May 1991) required to report option grants. To provide more transparency for option grants, the SEC redefined the “stock purchase” as the date the option was granted rather than when it was exercised (thus triggering Form 4 disclosure of grants within 10 days of the end of the month when options were granted). As a result of this new definition, the six-month holding period required by

the Securities Act started when the option was granted and not when it was exercised, allowing immediate sales upon exercise and greatly enhancing the appeal of options.

Similarly, Bill Clinton's campaign promise to limit deductibility of executive pay covered all forms of pay, and was only later modified to exempt deductibility limitations for pay tied to productivity. After substantial debate, stock options with an exercise price at or exceeding the grant-date market price were defined as related to productivity, while options with a lower exercise price were (arbitrarily) defined as non-performance related. But, as discussed in Section 3.7.3, the intent of the Congressional sponsors of the ultimate legislation was to reduce "excessive compensation," and not to promote the use of stock options.

However, the government faced an interesting political quandary: while it sought to curb perceived excesses in executive pay and options, it simultaneously sought to encourage firms to issue options to lower-level employees. For example, in its 1992 disclosure rules, the SEC required firms to report not only the number of options granted to each proxy-named executive, but also report that number as a percentage of options granted to all employees. The sole purpose of this requirement – similar to the Dodd-Frank requirement to report the ratio of CEO pay to the pay of the median employee – was to encourage (or "shame") companies into spreading awards more equally across the organization.

The NYSE listing requirements – which required shareholder approval for executive option plans but not broad-based option plans – were also designed to encourage option grants to lower-level employees. As discussed in Section 3.7.6, until January 1998 it had generally assumed that "broad-based plans" excluded substantial grants to top executives, which limited their use. The "clarifications" in 1998 (revised in 1999) defined how companies could grant top-executive options without approval, so long as a sufficient percentage of either the eligible employees or options granted were below the top-executive level. As a consequence, grants to both executives and lower-level employees escalated.

Similarly, FASB's 1995 compromise (which allowed companies to continue to grant options without an accounting expense, while recommending expensing fair market values) was driven primarily by concerns expensing's implications for lower-level grants (and not concerns for top executives). Countering Carl Levin's (D-MI) Corporate Pay Responsibility Act requiring option expensing (Section 3.7.4), bills were introduced in both the House and Senate against expensing. In May 1994, the U.S. Senate passed (by a 88-9 vote) a non-binding "sense of Congress" resolution demanding FASB to drop its expensing proposal,

claiming that expensing would affect the ability of companies to raise capital, create jobs, and attract the best employees.¹⁷³ The Senate was joined by the Clinton administration – in no means an advocate of high CEO pay – concerned that FASB’s proposal would hurt the competitiveness high-tech companies.¹⁷⁴

The political obsession for broad-based option programs continued into the early 2000s, even as the popularity of options waned due to stock-market declines and pressures towards voluntary expensing (Section 3.8.4). Advocates of broad-based plans in Congress, fearing that fair market-value accounting for options would end of option grants to low-level employees, introduced several (ultimately shelved) bills to protect such programs, including:

- The Workplace Employee Stock Option Act of 2002. (H.R. 5242), which provided incentives for broad-based option programs by allowing employees to purchase options and stock through pre-tax payroll deductions, and providing accelerated tax deductions for employers.
- The Rank-and-File Stock Option Act of 2002 (S. 2877), which limited the tax deduction companies could take if a stock-option program was not broad based.

These bills, and several others, were shelved in committee and the factors that had encouraged broad-based options were reversed:

- NYSE and NASDAQ listing rules revised in 2003 required shareholder approval for all option plans (including broad-based plans);
- The SEC’s 2006 disclosure rules required disclosure of grant-date values (and dropped the disclosure of the option grants to top executives as a percentage of all option grants);
- FASB revised its accounting rules effective for most companies in fiscal 2006, mandating the expensing of options at their grant-date fair market value.

Ultimately and predictably, these changes curtailed the practice of broad-based option plans: firms that already had such plans granted fewer options, and virtually no firms without plans introduced one. Indeed, as evident from Figure 3.7 in Section 3.7.6 the average number of

¹⁷³ “U.S. Senate backs resolution to remove option plan,” *Reuters News* (1994).

¹⁷⁴ “Clinton Enters Debate Over How Companies Reckon Stock Options,” *Wall Street Journal* (1993).

options granted by firms to all employees in the S&P 500 fell by half from 2001 to 2005 (from 2.6% of outstanding shares each year in 2001 to 1.3% in 2005).

5.3. Explaining Executive Compensation: It's Complicated

My objective in writing this study is to provide “context” for both research in executive compensation and the ongoing debate over pay. Executive compensation has evolved over time in response to changes in both economic and political environments. Most recent analyses of executive compensation have focused on efficient-contracting or managerial-power rationales for pay, while ignoring or downplaying the causes and consequences of disclosure requirements, tax policies, accounting rules, legislation, and the general political climate. A central theme of this study is that government intervention has been both a response to and a major driver of time trends in executive compensation over the past century, and that any explanation for pay that ignores political factors is critically incomplete.

As an important example, the growth in stock options in the 1990s spawned a major literature focused on explaining both cross-sectional and time-series trends in equity-based compensation for U.S. CEOs. This literature has largely ignored the importance of political factors. However, the initial popularity of stock options was a direct result of government policies in the 1950s (Section 3.4), as was the explosion (and subsequent implosion) of options in the 1990s and 2000s, respectively (Sections 3.7 and 3.8.4). Similarly, the contrasting evolution of stock options for U.S. CEOs and their foreign counterparts is largely explained by political rather than economic factors (Section 4.3).

Indeed, what makes CEO pay both interesting and complicated is the fact that the efficient contracting, managerial power, and political paradigms co-exist and interact. In introducing plans that tie pay more strongly to performance as demanded by shareholders, directors routinely agree to pay more than necessary to compensate for the increased risk. Self-interested CEOs seek employment protection through overly generous severance provisions; directors acquiesce believing that the probability of failure is low (and because it is not their money anyway). When compensation failures occur (such as those overly generous severance payments), Congress gets outraged, triggering disproportionate reforms with little regard for shareholders or value creation. In turn, companies and their executives respond by circumventing or adapting to the reforms, usually in ways that increase pay levels and produce other unintended (and typically unproductive) consequences.

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