CEOs

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Abstract

This article starts with an overview of the characteristics of chief executive officers (CEOs). I discuss the rising importance of general skills over firm-specific skills and the growing share of externally recruited CEOs. I also discuss possible reasons for the underrepresentation of women and the overrepresentation of family members in the corporate suite. I then review the three main explanations that have been put forward to explain the surge in CEO compensation over the past 30 years: principal-agent view, rent extraction view, and market-based view. I assess the strengths and weaknesses of each of these explanations in light of the existing empirical research. Finally, I review work on how entrenched CEOs or cognitively biased CEOs may cause corporate practices to deviate from the maximization of firm value.
1. INTRODUCTION

Perhaps no single group of individuals has received more attention than chief executive officers (CEOs). Much of this attention surely comes from the fact these individuals are perceived as the key decision-makers in corporations that account for most of the economic activity in modern economies. As with royalties, movie stars, or professional athletes, this group elicits a multifaceted fascination, part of which includes admiration. Most MBA students aspire to join the top corporate ranks, so they study and train in the hope of eventually leading a successful firm and making their mark on the economy. There is also envy because of the prestige, high social status, and high salaries reserved to this elite group. Sometimes, outrage is a part of this response, as fueled by the recent wave of corporate scandals and the feeling they triggered that many top executives are not doing their job properly and are being paid too much for it.

To a large degree, the research on CEOs I review in this article is a reflection of this multifaceted fascination. One strand of the literature has dealt with understanding how CEOs are “made” and what distinguishes them from those who will not make it to the top of the corporate hierarchy. Another strand has focused on issues related to CEO compensation: Are the large pay packages CEOs receive warranted or are they a sign that CEOs have captured the pay process? Finally, researchers have been interested in understanding when, if ever, CEOs make decisions that are in conflict with the interest of the shareholders they are supposed to represent.

Some clarification is required about the focus of this article, which is primarily on the empirical research. A vast theory literature in economics and finance already provides (mainly agency-theoretic) models of CEO compensation contracts, CEO decision-making process, or how the separation of ownership and control within firms may affect firm’s outcomes (such as their investment behavior or financing choices). Although a lot of this literature motivates the empirical work discussed below, I do not formally review this literature. Prendergast (1999) and Stein (2003) provide excellent reviews of much of this theoretical work. In addition, most of the empirical evidence I review is U.S. based. This is because the majority of the empirical research has been centered on CEOs of U.S. publicly traded corporations (for which good quality data are available), not because of a lack of interest in non-U.S. markets.

This article is organized in three main sections: In Section 2, I review what we know about what makes a CEO: What are CEO characteristics? How have they changed over time and why? I include a discussion of recent work on two subgroups of the population: family members and women, which have been over- and underrepresented, respectively, in corporate suites. Section 3 is the longest because it is tied to the bulk of the economics and finance research on CEOs. Here, I review some of the main arguments in the (still very current) debate on CEO compensation: What drives CEO compensation, and why has it increased so much over the past three decades (in the United States at least)? Section 4 takes a closer look at what CEOs do. In particular, I review the research that has documented how CEOs’ business decisions may differ from the value-maximizing objective, either because of agency conflicts inside the firm or because CEOs, like most other humans, suffer from systematic cognitive biases or limitations that lead them to make, despite best intentions, the wrong choices for shareholders.

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2. CEO CHARACTERISTICS

Readily available data sources have allowed researchers to classify CEOs across a set of fairly general demographic and professional background attributes. Some researchers have also tried to dig deeper into both the personal and professional backgrounds of CEOs by hand-collecting data from directories such as “Who’s Who in Business” or the business press or, in a few limited cases, by obtaining confidential information from parties directly involved in the CEO selection process. Nonetheless, our knowledge of what “makes” a CEO is still limited.

2.1. Firm-Specific Experience Versus General Skills

The best-documented trend about CEOs’ educational and professional background relates to the decline, at least over the past 30–40 years, in the importance of firm-specific experience and the parallel rise in the importance of general managerial skills. Frydman (2007) provided a list of the 50 largest publicly traded firms in 1960 and collected biographical data for the three highest paid executives at these firms from 1936 to the early 2000s. She uncovered various facts that are consistent with the rise of general skills over firm-specific skills among this group of executives. She documented a rapid increase in the share of MBA graduates from approximately 10% in 1960 to more than 50% by the end of the century; earlier in the century, top executives were more likely have obtained technical degrees in science and engineering or law degrees.

Frydman also showed that occupational mobility has increased steadily over the course of the century. She used prior job titles to infer whether a CEO ever had a sales, production, human resources, finance, or law-related position and defined occupational mobility as a count of these different positions. On average, CEOs from the early part of century had worked in only one sector, whereas CEOs from the later part of the century had worked in two sectors. Reminiscent of Lazear’s (2002, 2004) findings regarding entrepreneurs’ educational and professional background, modern-day CEOs are more likely to be generalists.

Finally, Frydman documented a U-shape pattern for mobility across firms. In the late 1930s, the average top executive had worked at two and a half other companies; by the 1950s and 1960s, this number was down to one. By the end of the century, the mobility of top executives across firms was back to its pre-World War II level, with only one in four top executives having worked at the same company for his or her entire career. Several other studies have confirmed Frydman’s findings for the most recent decades using larger samples of firms. For example, using the Forbes data, which covers all S&P 500 firms, Murphy & Zabojnik (2006) showed that the share of newly appointed CEOs with an MBA degree rose from 13.8% in the 1970s to 28.7% in 1990s.

Why would the importance of general skills have increased so much over time? Several explanations, few of which have been formally tested, have been proposed: First, modern firms rely on increasingly complex financial arrangements and instruments. More sophis-

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1. The finding of a decline in mobility across firms in the first half of the century has been confirmed in other data sets. Newcomer (1955) studied the professional background of presidents and board chairmen for the largest companies in 1900, 1925, and 1950—approximately 400 executives in each year. She found that the fraction of these executives who were hired from outside went from 50% in 1900 to 20% in 1950.

2. The Forbes annual surveys dates back to 1970 and covers the 500 largest companies by revenues, income, total assets, or market capitalization, analyzing approximately 800 companies each year.
ticated corporate and marketing strategies are also needed for corporations to remain competitive. These forces may make MBA graduates who have been broadly trained in these various fields better CEOs than would be graduates from more technically oriented disciplines.

Second, changes in the organizational structure of firms may have increased the relative value of broad general managerial skills over more narrow technical skills. For example, Rajan & Wulf (2006) studied changes in the organizational structure of more than 300 firms in the United States between 1986 and 1999, focusing on the structure of the hierarchy at senior management level. One of their key findings is that the firms are becoming flatter at the top. In particular, the number of managers reporting directly to the CEO has increased over time, from approximately four at the beginning of their sample period to more than seven by the end. Although part of this increase in CEO span of control is a reflection of the growth of firms and the addition of new positions, this trend seems more than just a mechanical relationship: Over time, a larger share of division heads are reporting directly to the CEO and intermediary positions (such as chief operating officers and chief administrative officers) are being eliminated. Rajan and Wulf conjecture about the causes of these changes. They discuss a possible information technology explanation: As a recent theoretical model by Garicano (2000) suggests, reduction in the cost of both acquiring knowledge and communicating information may result in an increase in the scope of control for upper-level managers. They also discuss the role of increased competitive pressures in the product market, which may have rendered the tall corporate hierarchies of the past too slow for this new environment [Guadalupe & Wulf (2008) provide some empirical support for this causal channel]. Whatever the cause, the flattening of firms at the top suggests that current-day CEOs may require a broader set of skills as they directly interact with a larger set of employees within their organization.

2.2. Externally Recruited CEOs

Frydman (2007) showed that the increase in across-firm mobility since the 1970s is also reflected in a rising share of newly appointed CEOs that are recruited from the outside: only 15% in the 1970s but close to 30% in the 1990s. Murphy & Zabojnik (2006) found a similar trend among S&P 500 firms: Externally recruited CEOs accounted for 14.9% of all newly appointed CEOs in 1970s, 17.2% in the 1980s, and 26.5% in the 1990s (see also Huson et al. 2001). Studying a broader group of senior executives at the largest 100 companies in the world (Fortune 100) in 1980 and 2001, Capelli & Hamori (2004) also found that executives in 2001 had spent approximately five years fewer in their current organization and were more likely to have been externally recruited.3

The growing share of externally recruited CEOs can be viewed as a natural outgrowth of the changes in the relative demand for general versus firm-specific skills. As general skills become more valuable, the search for the successor to the current CEO can extend beyond internal candidates. Thus, a more active market for CEOs emerges where firms are competing for general talent (Frydman 2007; Murphy & Zabojnik 2004, 2007).

3Interestingly, Capelli & Hamori (2004) also found the 2001 executives to be younger, reaching their top positions approximately four years faster than the 1980 executives. In contrast, Murphy & Zabojnik (2006) did not find any trend in age at CEO appointment in the Forbes data: The average newly appointed CEO was 53 years old in the 1970s and 54 years old in the 1990s.
However, not all observers of the current external CEO labor market agree that this market has resulted in a superior allocation of managerial talent. In an influential book, Khurana (2002) leverages his field-based knowledge to provide a more sociological perspective on the CEO market. Khurana argues that this market is far from being a market in the “classical” sense. Instead, he views the external CEO search process as constrained by various groups and institutions (quick-tempered and sometimes poorly informed active investors, opinionated media and analysts, or misused executive search companies), with a lot of managerial talent being wasted. For example, the rise of the business press has introduced new rules according to which an individual’s ability to charm journalists and command their attention becomes a relevant factor in order to be considered a worthy candidate for the CEO position. And because previous association with a firm of high repute tends to drive admiration by the media, financial analysts, or active investors (regardless of the CEO’s contribution to such repute), many boards are fighting over the same limited sets of external CEOs. Whereas one might think that executive search companies would help undo this process, Khurana argues otherwise. Based on a series of interviews with headhunters, Khurana comes to the conclusion that executive search companies do not help boards in searching for new or unknown talent; instead their role seems more to legitimize the succession choices these boards had already made and to mediate and coordinate the discussions between the boards and their preferred candidate for the CEO position.

As discussed below, these conflicting views about how the external CEO market operates (competitive market for the best talent versus a socially constrained process) are related to the conflicting views on what has driven the sharp rise in CEO pay over the past few decades. Even though Khurana’s work is based mainly on interviews and field observations, this work raises a lot of exciting questions about how managerial talent is identified by firms and allocated across them.

A recent paper by Kaplan et al. (2008) takes a first step in this direction by analyzing a sample of 300 CEO candidates for firms involved in private equity transactions. Their data set includes information on a wide range of individual characteristics, including information about functional expertise as well as psychological traits (such as interpersonal skills or motivation). They studied who gets selected and how the selected candidates’ characteristics relate to subsequent performance. One of their more intriguing findings, reminiscent of Khurana’s argument, is that “softer” interpersonal and team-related skills may be overly stressed in the selection process: They found that CEOs who score higher on these skills are associated with more negative subsequent performance. Despite the difficulties inherent in this kind of analysis (e.g., the database’s reliance on an endogenously selected set of candidates), a better understanding of the process by which boards measure talent and then evaluate and select CEOs remains an area of worthy consideration for future research.

2.3. Underrepresentation of Female CEOs

Bertrand & Hallock (2001) documented the underrepresentation of women among the five highest-paid executives in Execucomp’s (S&P 1500) firms over the period

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4 Much of the literature in management science attempts to relate senior managers’ characteristics to firm performance. This literature is based on the “upper echelons” theory put forth by Hambrick & Mason (1984), who argue that a firm’s top management team characteristics are important determinants of its performance; see Finkelstein & Hambrick (1996) and Carpenter et al. (2004) for a review of the related empirical work.
1992–1997. Approximately 2.5% of the executives in their sample were female. The underrepresentation is especially severe at the very highest levels of the corporate ladder: Women occupied only 0.5% of the available CEO or chairmen of the board positions. They also showed that this occupational segregation, coupled with a relative concentration of top female executives in smaller firms, explains a substantial share of the raw 45% gender gap in earnings over that time period. Wolfers (2006) studied a longer time period (1992–2004). He documented an increasing number of female CEOs, from 4 in 1992 to 34 by the end of the sample period (this number plateaued in the early 2000s). However, even with these recent gains, women represented only 1.3% of the CEOs in the years observed in his sample.

Why do so few women become CEOs? One possible explanation is related to pipeline issues: Substantial participation by women in MBA programs is a recent phenomenon, so insufficient time may have passed for there to be enough women with formal business management training to reach the CEO and other chief-level ranks of large publicly traded corporations. Less than 5% of individuals graduating from U.S. MBA programs in 1970 were women. However, by 1980, nearly 30% of those graduating from a U.S. MBA program were women; by 2000, more than 40% of new MBA graduates were women. That the growth rate in the share of female CEOs has been markedly slower does, however, contradict this explanation.

Aside from pipeline issues, two main explanations have been proposed for this apparent glass ceiling. First is the possibility that the corporate and financial sectors are particularly prone to discriminating against women. Shareholders (or at least their board representatives) may be willing to sacrifice some profits to avoid promoting women to the top corporate echelons. Talented businesswomen may also find it difficult to get recognized by boards that continue to be male dominated. Additionally, male CEOs may prefer to groom other males as their potential successors. For example, Bell (2005) found that women-led firms (i.e., firms where the CEO or the chairman of the board is a woman) have a higher share of female executives in the other five highest-paid positions and pay these female executives more than do firms led by men. However, these findings are difficult to separate from other explanations that are more consistent with profit maximization. For example, female executives may have a comparative advantage in some industrial sectors, which could explain why female CEOs are disproportionately more likely to work with other women.

A second possibility claims that all relevant stakeholders are profit maximizing but the share of female CEOs is inefficiently low because of some systematically downward biased beliefs about the ability of female CEOs (see Wolfers 2006). Earlier findings by James & Lee (2007) support this explanation: They found large negative abnormal stock returns (-3% on average) following news of the appointment of new female CEOs, compared with much smaller negative abnormal returns (-0.5% on average) following the appointment of new male CEOs. These findings convey the market’s low expectations about the ability of female CEOs, but Wolfers is interested in whether such low expectations are warranted. To test this hypothesis, Wolfers compared the excess returns associated with holding shares in companies led by women relative to shares in companies led by men. If beliefs about the

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5Compustat’s Executive Compensation database (Execucomp) contains compensation and basic demographic information for the five highest-paid executives in all S&P 500, Mid-Cap 400, and Small-Cap 600 companies (known as the S&P 1500). These firms account for approximately 80% of the total market cap of all U.S. publicly traded firms.
ability of female CEOs are systematically biased downward, one would expect shares in the former to perform better. Instead, various estimation methods show lower, not higher, returns for women-led companies. Because of the small number of women-led firms, the estimates are noisy, leaving the door open for future research on how key corporate and market players (including investors and analysts) perceive top female executives.

Another explanation for the lack of women in top executive positions, and CEO positions in particular, relates to the career-family trade-off women face. This trade-off may be particularly binding in corporate jobs, which often require long work hours and travel. Bertrand et al. (2008) offer suggestive evidence of the first-order relevance of this trade-off for the relative career achievement of women with MBAs. Their study focuses on the earnings path of alumni from a top U.S. MBA program and identifies the key correlates to the gender gap in earnings. Even though human capital factors are relevant (women have slightly lower grades and are less likely to take finance courses, both of which are strongly correlated with future earnings), most of the gender gap in earnings can be attributed to gender differences in labor supply. When employed, women work fewer hours per week and are more likely to have taken some time out of work since graduation. Bertrand et al. (2008) found huge wage penalties for taking any work leave, consistent with the view that a continuous commitment to the workforce is a *sine qua non* condition to reach the top in corporate America. These researchers also documented that family considerations are a key driver of these gender differences in labor supply. Women without children work nearly as much and have nearly as much actual experience as men in their graduating cohort. Mothers, and especially those with high-earning spouses, are most likely to take work leaves and reduce their working hours. Men’s working hours and experience are largely unrelated to their parental status. Although these findings do not rule out discrimination as an explanation for the glass-ceiling phenomenon, they do suggest that women’s ability to hold top-level jobs is primarily constrained by either their desire to spend time with family or the continued relevance of strong gender norms in terms of the allocation of childcare duties, both of which may constrain career advancement given a working environment that offers limited tolerance for anything less than full commitment to work.

### 2.4. Prevalence of Family CEOs

Some recent work has drawn researchers’ attention to the prevalence of family-controlled businesses around the world. La Porta et al. (1999) studied 23 different countries and showed that families control more than 50% of publicly traded firms with at least $500 million in market capitalization in those countries. Family control does not require that the CEOs running these firms be family members; however, this is often the case. Why are so many firms managed by family members? What is the implication of family management for the firm’s performance?

From a theoretical perspective, the relationship between firm performance and family management is ambiguous (Bertrand & Schoar 2006). On the one hand, family managers may have more incentive to see their firms succeed because of the higher financial stakes they face through family ownership (e.g., better alignment of incentives between owners and managers); this could also be true because of the more personal links these CEOs have with their business. Family CEOs may also be more long-term oriented and less myopic in their search for investment opportunities, caring about the inheritance they will pass on to the next generation rather than about boosting their image as they consider moving to
another firm (Stein 1989). Family management, and the trust that binds family members, may also be a solution to the weak legal institutions (poor governance structures, limited protection of shareholder rights) that characterize many countries around the world (Burkart et al. 2003). Finally, family members may be the best managers for a family business because of a superior transmission of the business knowledge and business assets, including social networks, between family members.

On the other hand, the appointment of family members as CEOs may be based on considerations other than firm performance. Nepotism, or the desire by a family CEO to be succeeded by a descendant, may introduce some nonmonetary objectives in the CEO selection process at family firms. Members of one’s kinship network may be preferred to more talented nonfamily managers. The fact that family firms may not be looking for the most talented successors to the current CEO is also reflected in the cultural norms that seem to dictate CEO succession events in many parts of the world, from primogeniture to more equal sharing norms across all (male) descendants of the CEO.

Several papers have applied these theoretical views to the data. The bulk of the empirical evidence points toward a negative relationship between family management and firm performance when the CEOs are descendants of the business founder(s). Morck et al. (2000) and Villalonga & Amit (2006) studied publicly traded firms in Canada and the United States, respectively, and found lower performance for firms managed by CEOs who inherited their positions. Bertrand et al. (2009) studied 93 of the largest business groups in Thailand. They found that the involvement of multiple sons in the family business is associated lower performance, especially when the founder is dead, suggestive of the value-destroying conflicts that may emerge when equally powerful family members are sharing control. Bloom & Van Reenen (2007) studied management practices in a sample of medium-sized firms in the United States, France, and Germany. They found firms that are managed by descendants of the founder to be more poorly managed (e.g., have management practices that are systematically correlated with lower performance).

Whereas the work discussed above is based mainly on cross-sectional evidence and therefore subject to omitted variable concerns, a couple of recent papers provide an even stronger basis for the claim that CEOs who inherit their position underperform. Pérez-González (2006) studied more than 300 CEO successions in a sample of S&P 1500 firms with concentrated ownership or founding family involvement. He classified approximately one third of these successions are family successions, e.g., the newly appointed CEO is related by blood or marriage to the departing CEO, the founder, or the largest shareholder of the corporation. He performed an event-study analysis of the immediate stock-market response to the appointment of a family CEO versus nonfamily CEO. Firms that announce the appointment of an unrelated CEO experience positive abnormal returns, whereas firms that announce the appointment of a related CEO experience no abnormal returns. Even more interesting is the comparison of change in accounting performance before and after successions for family versus nonfamily CEOs. Focusing on 3-year averages around the succession date, Pérez-González found a 0.2% increase in operating performance for nonfamily successions compared with a nearly 2% decrease for family successions.

6Although this indicates that family successions are still prevalent in the United States, Newcomer (1955) showed that they are on the decline, at least during the first half on the twentieth century. Twenty-six percent of the presidents and board chairmen in her 1900s sample had their father or some other close relative previously working on the same company; this share was down to 11% in 1950.
Indicative of a nepotistic view under which family CEOs are appointed regardless of their talent or merit, Pérez-González found that operating performance declines by more than 4% when the family successor did not attend a top-ranked undergraduate institution.

Bennedsen et al. (2007a) provided an even better test of the causal effect of inherited CEO positions on firm performance. Their paper focuses on more than 5000 CEO successions in limited liability (publicly and privately held) firms in Denmark. What makes this data set especially appealing is the information the authors have about the family structure of both the departing and incoming CEOs in each of these succession events. This rich information allows the authors to exploit a creative instrument to generate exogenous variation in the family succession decision. Specifically, they found a strong (first-stage) relationship between family succession and the gender of the firstborn child of the departing CEO: Family successions occur ~30% of the time when the firstborn child is a female but close to 40% of the time when the firstborn child is a male. Their instrumental variable results show that family successions cause a decline in operating profitability of at least 4%. This negative performance effect is especially pronounced in more skill-intensive, faster growing industries, where one would expect the value added by talented CEOs to be especially high.

3. ARE CEOs PAID TOO MUCH?

The hottest debate surrounding CEOs may be whether they are paid too much. This debate has been fueled by the dramatic increase in the compensation of the CEOs of U.S. publicly traded corporations over the past three decades. Much academic literature has tried to make sense of the trends in CEO compensation. Much of this literature has been U.S.-centric, both because the most extreme changes in CEO pay appear to have occurred in the United States, and because of data availability. We start this section with a historical perspective on executive pay; we then review the main theories that have been proposed to explain the rise in CEO pay and discuss their relevance in light of the existing empirical evidence.

3.1. Historical Perspective on CEO Pay

Most of the research on CEO pay has focused on the post-1991 period, when this information became readily available for the United States through Execucomp (S&P 1500). A few studies also use the Forbes database, which goes back to 1970 but covers a more limited set of companies. Although constructing a longer time series is not impossible (the Securities and Exchange Commission has imposed disclosure requirements for top-paid officers at publicly traded firms since its inception in the 1930s), such a process is exceedingly time intensive as it requires hand-collecting data from historical proxy statements and 10-K reports on a company-by-company and year-by-year basis. Frydman & Saks (2007) engaged this process to offer a unique longer-term perspective on top executive pay. Specifically, they identified the publicly traded firms with the largest value of total sales in 1940, 1960, and 1990 (for a total of approximately 100 firms) and hand-collected data on the pay (including salary, bonus, long-term incentive payments, and the value of stock-option grants, but not pension and other perks) of top officers at these firms for all available years between 1936 and 1991; Execucomp was used to extend this panel to the post-1991 period. Most of their analysis focuses on the three highest officers in a given year at each firm.
The trends they uncovered in this sample are summarized in Figure 1. In real terms, the pay of the median top officer in their sample declined until the early 1950s. Between the early 1950s and the mid-1970s, the pay of top officers increased at a very slow rate (an average of less than 1% per year). Only after that did top executives’ pay start to rise sharply, reaching an average annual growth rate of more than 10% in the late 1990s. Frydman & Saks (2007) also compared the pay of the median officer in their sample to average earnings per full-time equivalent workers from the National Income and Product Accounts (see Figure 1). Strikingly, this inequality measure declined until the mid-1970s, at which point it took a sharp turn. By 2005, the median officer earned 110 times the average worker’s earnings (compared with less than 30 times in the early 1970s). They also found that the growth of CEO pay was significantly more rapid than that of the other top officers in their sample: The median ratio of CEO pay to that of the other two highest-paid officers was stable at approximately 1.4 until the early 1980s. Since then, the ratio began to rise, reaching 2.6 in the early 2000s. This unique look into historical data confirms how exceptional the past three decades have been in terms of CEO compensation in the United States.

The trends in pay since the early 1970s have been documented for a much wider set of firms, using both the Forbes and Execucomp databases. See, for example, Figure 2 (adapted from Frydman & Saks, 2007).
from Jensen et al. 2004), which is based on the Forbes data. As evident in this figure, stock-option grants have played a large role in the dramatic rise in CEO pay since the 1970s, but they have not been the only factor: Cash remuneration (i.e., salary and bonus) has, on average, tripled since 1970 (Murphy & Zabojnik 2004).

3.2. What Explains the Surge in CEO Pay?

Below, I describe the main explanations that have been put forward for the surge in CEO compensation and discuss the relevance of these explanations in light of the empirical evidence.

3.2.1. Principal-Agent View. A principal-agent model of CEO pay permeates the early work on CEO compensation (see, for example, Murphy 1999). In this model, principals (shareholders and the directors that represent them) must delegate control of the firm to an agent (the CEO) who may be unwilling to work hard and whose objectives may not be fully aligned with those of the firm’s principals. Incentive contracts, where pay is in part determined by company performance, offer a partial solution to this agency problem. Because these incentive contracts expose the CEO to some risks, the CEO needs to be compensated to be willing to take on those risks through some base level of compensation. Accordingly, the sharp increase in the level of CEO compensation that has occurred in the recent past can be linked to the greater risks CEOs are facing as their compensation package has become more tightly linked to firm performance, mainly owing to the increased use of stock options. In fact, the shift toward more stock options in the past couple of decades may have been in part dictated by early and widely cited academic studies.
(Jensen & Murphy 1990a,b) that analyzed CEO compensation through the principal-agent view and concluded that the pay incentives CEOs faced in the 1970s and 1980s were too weak (Jensen et al. 2004).

The principal-agent view of CEO pay, and of the rise in CEO pay in particular, has been criticized. Questions have arisen as to whether the apparent correlation between pay and performance is an accurate reflection of a causal relationship between CEOs exerting greater effort and their compensation for that additional effort. This critique goes back to an early finding in the literature regarding CEO pay: the lack of relative performance evaluation, or lack of an indexation of a firm’s performance to that of other firms in its industry in terms of CEO pay (Gibbons & Murphy 1990). This criticism has been made repeatedly with regard to stock-option packages. If stock options are meant to provide incentives to CEOs, why are CEOs getting returns from these option grants even when their firms are performing only as well as (or even below) the rest of the market? In other words, why are executive options written as a function of raw returns? (See Hall & Murphy 2003 for some accounting- and tax-related arguments for this lack of indexation of stock options.)

Bertrand & Mullainathan (2001) reinforced this point by comparing the estimated sensitivity of CEO pay to overall firm performance to the estimated sensitivity of pay to components of the firm performance that are arguably not influenced by CEO effort. Using the oil industry as an example, they showed that the performance of oil companies is strongly correlated to oil price, a variable not likely influenced by the effort of an individual CEO. They then compared the estimated sensitivity of oil CEOs’ compensation to their firm performance (a la Jensen-Murphy) to the sensitivity of their compensation to the part of their firm performance that is only due to fluctuation in the price of oil (“pay-for-luck”). Bertrand & Mullainathan (2001) found these two estimated sensitivities to be statistically the same, in clear contrast with the view that the pay-for-performance sensitivity reflects the shareholders’ intention to reward CEOs for high effort. Garvey & Milbourn (2006) extended this research and showed that the pay-for-luck relationship may be asymmetric (e.g., CEOs are paid for good luck but not blamed for bad luck).

Another frequently mentioned argument against the view that pay compensation packages are optimally designed by boards to provide incentives is the fact that CEOs are given much freedom to undo these incentives: CEOs are allowed to sell the stocks and options they are granted; they may also engage in other hedging transactions that negate the incentives the board has provided.

Finally, Frydman & Saks (2007) discussed how the historical trends in the level of CEO pay as well as the correlation between CEO pay and firm performance only imperfectly fit with an agency theory interpretation. They divided their panel into various decades and estimated separate pay-for-performance sensitivities. They estimated both a Jensen-Murphy measure (i.e., regression of annual dollar change in CEO wealth on annual dollar change in shareholder value) and a value-at-stake measure (i.e., regression of annual dollar change in CEO wealth on annual firm return) that is not as subject to a mechanical downward trend over time due to stock-market growth. They found a trend upward over all decades in the value of equity at stake measure, whereas the Jensen-Murphy measure shows a U-shape pattern, reaching a low in the 1970s and increasing quickly in the 1980s and 1990s. So, on the one hand, and consistent with an agency view, they found a stronger correlation between pay and performance over the past three decades than in previous decades; this correlation may have required compensating increases in pay level. On the
other hand, they also found periods of increased pay for performance prior to the 1970s (when using the value of equity at stake measure) that were not accompanied by substantial changes in the level of compensation.

CEOs could be incentivized through mechanisms other than pay. Some studies have focused on the relationship between CEO turnover and firm performance, and how this relationship has changed over time. Using the Forbes data from 1971 to 1994, Huson et al. (2001) found an increase in the frequency of forced turnover over that period but no systematic change in the relationship between forced turnover and firm performance. Kaplan & Minton (2006) focused on a more recent period (1992–2005) and another set of large companies (Fortune 500). The later years of their sample (post-1998) seem characterized by higher turnover rates (the trend is, however, far from monotonic) as well as higher average sensitivities of board-driven turnover to various measures of firm performance. Not apparent is a systematic increase in turnover frequency between 1992 and 1998 to match the dramatic increase in CEO compensation over that period.

3.2.2. Rent Extraction View (Captured Boards and Stupid Boards). Bebchuk and various coauthors have advocated a managerial power hypothesis for the surge in CEO pay [see Bebchuk & Fried (2004) for a summary of these arguments]. Under this hypothesis, company boards have been captured by the CEO and are not representing the interest of the company’s shareholders. Even though some board members may have large ownership stakes in the company, many reasons exist as to why at least some board members may prefer to work for the CEO rather than for the shareholders of the company. First, the CEO may influence the board appointment process, often serving on the nomination committee and therefore having the ability to oppose the appointment or reappointment of an unfriendly board member.7 For example, Shivdasani & Yermack (1999) found than when CEOs serve on the nominating committee (or no nominating committee exists), firms appoint fewer independent outside directors; also, the stock market responds more positively to the appointment of an independent director when the CEO is not involved in the selection process. Core et al. (1999) found greater CEO compensation in firms where the CEO is involved in the nomination of new directors.8 Evidence on interlocking boards also suggests some possible gift exchange, for example, a board member will be friendly to the CEO in the hope that the CEO will reciprocate when the roles are reversed.9

Even without any strategic interest in working for the CEO, board members who serve on remuneration committees may not have enough at stake to work hard to obtain the right information, build the relevant expertise, or negotiate as needed, thereby leaving CEOs with a lot of power to set their own pay. Even in the case of outside CEOs who may not yet have a direct influence on the board, negotiations over compensation may be limited, resulting in levels of compensation that are too high. For example, Jensen et al. (2004) claim that negotiations about pay typically occur after the externally recruited

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7 Bebchuk & Fried (2004) noted that directors in the largest 200 firms received $152,000 annually.
8 Chhaochharia & Grinstein (2009) found large decreases in CEO compensation in firms affected by Sarbanes-Oxley–inspired legislations that required that a majority of independent directors serve on the board.
9 For example, Hallock (1997) found that CEOs of Forbes 500 firms who led interlocked firms earn significantly higher compensation. After controlling for firm and CEO characteristics and ignoring interlocks that are related to business relationships, Hallock found that the return to interlock is approximately 17%.
CEO has landed the job and the board is eager to close the deal. Khurana (2002) presents a similar argument.

Some researchers have also started to investigate the role played by compensation as well as other consultants in the pay-setting process, isolating them as another source of CEO power. Many boards rely heavily on the advice of these consultants (Finkelstein & Hambrick, 1996), even though they are typically retained by the company management (and not by the remuneration committee) and thus essentially work for the CEO. For example, Jensen et al. (2004) discussed the incentives of compensation consultants to please the CEO with their pay recommendation so that they are retained for other, more lucrative, engagements regarding company-wide pay issues. Compensation consultants may also have played a key role in the upward spiral and contagion effects in CEO compensation through the use of “competitive” benchmarking tools and the practice of labeling pay levels below the median in a firm's size category as “below market,” whereas pay levels above the median are described as “competitive.” Taking a first look at the data on the use of compensation consultants (since 2006, the SEC requires publicly traded corporations to provide information on the consultants that provide advice on executive compensation), Murphy & Sandino (2008) indeed found a positive correlation between executive (and director) pay and the use of compensation consultants. However, they found no evidence consistent with the conflict of interests described above. In fact, among firms that use compensation consultants, they found higher, not lower, executive pay when the compensation consultants are exclusively focused on executive compensation issues.

Bertrand & Mullainathan (2001) provide some evidence consistent with a link between managerial power and rent extraction. Specifically, they found that the above-discussed empirical relationship between CEO compensation and shocks to firm performance that are outside of the control of the CEO (e.g., an oil firm's profits increase owing to an increase in the price of oil or to another positive industry shock) is concentrated in firms without large (at least 5%) shareholders. Bertrand & Mullainathan (1998) also found increases in CEO pay after the passage of antitakeover statutes that protect firms from hostile takeovers; again, this effect appears to be concentrated in firms that lack large shareholders.

Probably the main criticism raised against the rent-extraction view is that it does not match well with the time-series evidence. As argued, for example, in Murphy & Zabojnik (2004), CEOs may have always been interested in extracting rent so it is not clear why CEO pay would suddenly start to increase in the 1970s. Moreover, many would argue that most aspects of the corporate governance of U.S. firms have improved since the 1970s (see, for example, Holmström & Kaplan 2001, Hermalin, 2005), which would reduce the power CEOs have over board members. Shivdasani & Yermack (1999) also reported declining involvement of CEOs in board-nominating committees in a sample that covers the mid-1990s. Finally, even though many U.S. states passed legislation during the 1980s that weakened the discipline imposed through the hostile-takeover mechanism, a potentially compensating source of discipline has been implemented through increased product market competition, either domestic or international (see Giroud & Mueller 2007).

One response to these criticisms is that stock-option innovation may be the countervailing force that can reconcile the historical trend in CEO pay with the managerial power hypothesis, especially for the 1990s. Tax laws enacted in 1994 effectively made stock options less expensive than cash compensation by imposing that nonperformance-based compensation in excess of $1 million paid to top company officers were no longer deduct-
ible as corporate compensation expense; no such limit was applied to performance-based compensation. Although the evidence on the direct impact of this new tax rule is mixed (see, for example, Rose & Wolfram 2000, 2002), it may have constituted an implicit endorsement of stock options by the government and this endorsement may have triggered its rapid propagation (Hall & Murphy 2003). Stock options may have offered CEOs a unique opportunity to obtain additional compensation without much backlash from shareholders and the rest of the public. The incentive component of stock-based compensation may also have made it more acceptable to shareholders to give huge financial packages.

In addition, discerning the true value of these options may be difficult for the public as well as board members. Hall & Murphy (2003) argue that the greater use of stock options reflects the fact that many directors, fixating on the accounting numbers, did not really understand the true economic cost of these options for shareholders. The lack of cash outlay and of accounting charges made many board members perceive these options as a “freebie” that could be layered on top of cash compensation. In other words, stock options may have provided an innovative tool to “camouflage” additional rent extraction from the public, shareholders, and even board members (Bebchuk & Fried 2004).10

Also, as argued by Bebchuk & Grinstein (2005), the stock-market boom of the 1990s may have weakened the outrage constraint and driven the especially dramatic increase in CEO pay over that decade. Perhaps shareholders were fooled into thinking that the additional incentives generated by stock-based compensation were driving the increase in market valuations, which gave executives and directors a good excuse to provide even more of them. In addition, the stock-market boom may have been one force operating toward the weakening corporate governance during the 1990s. Jensen et al. (2004) further argue that the overvaluation of many firms during that time period weakened the market for corporate control: They ask, who wants to take over an overvalued company, eliminate its overvaluation, and make a profit?

It is also possible that the 1970s coincided with the beginning of a shift in social norms toward the acceptability of extreme salaries, which also contributed to a relaxation of the outrage constraint. In particular, Piketty & Saez (2003, 2006) argue that nonmarket mechanisms, such as labor market institutions or social norms, are needed to understand the evolution of CEO pay as well as the pay of others at the very top of the income distribution. They studied time series of the top U.S. income shares in the United States using data from individual tax returns. Similar to the results of Frydman & Saks (2007), they found a U-shape pattern over the course of the twentieth century. Top income shares were flat until World War II, dropped during the war, and did not start recovering until the early 1970s, reaching at the end of the sample period a higher level than before World War II. They believe this pattern, and especially the lack of a recovery until the early 1970s, provides indirect evidence for the role of nonmarket mechanisms such as social norms or labor market institutions. They argue that the Great Depression and World War II strongly affected Americans’ views on inequality, which were reflected in the introduction of very high top marginal income tax, the creation of large redistributive programs, and the rise in unionization, all of which socially constrained the rise of the pay at the top of the income distribution.

Levy & Temin (2007) elaborated on the institutional changes that took place in the 1970s and may have been the root of the reversal of the previously existing social norms.

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10A new FASB rule (SFAS 123R) that requires firms to recognize stock-option costs based on the options’ grant-date fair value became effective for public firms in 2005.
They argue that the policy response to the stagflation environment of the 1970s led to the abandonment of many of the institutions that had been put in place after World War II and their replacement by institutions that made the labor market especially vulnerable to extreme outcomes (the demise of unions, deregulation of most industries, lower minimum wages, and lower marginal tax rates). Current U.S. social norms regarding the acceptability of unequal outcomes, they would claim, are embedded in the formal institutions that emerged in the 1970s.

Research trying to establish a direct link between labor market institutions (or social norms) and CEO pay is somewhat limited. Looking across both countries and firms in the United States, DiNardo et al. (2000) found a negative cross-sectional relationship between CEO pay and unionization. However, changes in unionization (across either countries or firms in the U.S.) are not associated with opposite changes in CEO compensation. In fact, some of their results point in the opposite direction: Unionization and CEO pay move in the same direction in some of their U.S. samples.

3.2.3. Market-Based Mechanisms. A few recent papers have proposed a drastically different interpretation for the rise in CEO pay. Although some CEOs may be paying themselves, such examples represent the exceptions; instead, market forces may be dictating the rise in CEO compensation. Both Murphy & Zabojnik (2004, 2006) and Frydman (2007) argue that the market has played an increasingly important role in setting CEO compensation because a growing share of CEOs are externally recruited as the demand for CEOs shifts away from firm-specific skills toward more general skills. This shift has intensified the competition among firms for managerial talent, resulting in higher equilibrium compensation in the CEO market.

The bull market of the 1990s may also have affected the supply and demand for managerial talent. On the demand side, established firms may have had to compete with a growing number of technology companies. As argued in Himmelberg & Hubbard (2000) and Hubbard (2005), increases in market valuation may have generated an increased demand for top-quality managers (and a need to provide stronger incentives to these managers) given the larger financial stakes. On the supply side, rising salaries on Wall Street (Kaplan & Rauh 2007) may have raised outside options for general managers.

Gabaix & Landier (2008) expanded some of the arguments in Himmelberg & Hubbard (2000) and provided an elegant competitive model of CEO compensation to account for most of the rise in CEO compensation since the early 1970s (also see Tervio 2008). Their model relies on a production function where managerial talent has a multiplicative effect on firm performance and one talented manager cannot be replaced by a team of managers of similar aggregate talent. This finding implies positive assortative matching between managerial talent and firm size; the best manager should be assigned to the largest firm in the economy. An additional set of assumptions about the distribution of firm size, the distribution of managerial talent, and constant returns to scale in CEO talent allows them to calibrate their model and leads to the prediction that the elasticity of average CEO compensation to average firm size at a given point in time should be equal to 1. This, they say, is exactly in line with the recent historical trend. According to their calculation, the average market value of the largest 500 firms in the United States has increased by 500% between 1980 and 2003 and average CEO compensation in those firms (excluding pension benefits and other nonmonetary perks) has also increased by approximately 500% over the same time period.
This influential paper has already been subject to several criticisms, many of which can be found in Gordon & Dew-Becker (2008). Despite the assertion by Gabaix and Landier that their model predicts the 1980–2003 trends with good accuracy, their own analysis (see figure 1 in their paper) indicates the fit is rather tenuous for the 1970–1980 period. Specifically, average CEO pay increased at a much higher rate over that period than did the size of average firms. The historical data in Frydman & Saks (2007) reveals that the Gabaix and Landier model does not fit well for the pre-1970 period. Specifically, there was stagnation in CEO compensation in the 1950s and 1960s despite the growing size of firms. Frydman & Saks (2007) estimated a dramatic change in the relationship between CEO compensation and average firm size over their sample period: Although that relationship has been nearly one to one since 1975, it was only one tenth to one third in the prior 30 years. It is possible that market-based mechanisms did not matter until the late 1970s when a sharp increase in the demand for general managerial talent arose. However, the evidence in Frydman (2007) does not support such a view. The move toward more general skills has been steady over the course of the century, but the change in pay has not (i.e., compensation remained flat until the 1970s when it began to increase dramatically). Another possibility remains: Until the early 1970s, more egalitarian labor market institutions and social norms may have constrained the market-clearing mechanisms that Gabaix & Landier (2008) describe from fully operating (e.g., Piketty & Saez 2003, Levy & Temin 2007).

Even when one ignores the longer time series, the fit of the model by Gabaix and Landier to the post-1980 period is quite sensitive to both sample selection and variable definition issues. After making various improvements in the construction of both the CEO and firm samples, Nagel (2008) replicated the time-series analysis of Gabaix and Landier. Following these improvements, the model by Gabaix and Landier accounts for only one third to half of the rise in CEO pay since the 1980s. Both Gordon & Dew-Becker (2008) and Frydman & Saks (2007) commented on the fact that the fit of the model by Gabaix and Landier is strongly dependent on the proxy they chose for firm size. Their model does much more poorly when average market capitalization is replaced with average sales (specifically, the growth in average market capitalization over the past 30 years has been much larger than growth in average sales).

Some of the theoretical assumptions underlying the Gabaix and Landier model raise questions, some of which are discussed by the authors. Their model also does not address the process through which managerial talent is discovered and the best managers end up in the largest firms. Ranking the quality of, say, tennis players may be easy; more difficult to envision is how a similar ranking is established for CEOs. Furthermore, the empirical basis has not been established for the assumed distribution of managerial talent that is essential to the prediction of unit elasticity between average pay and average firm size. Using a research sample in which the same CEO was followed across different firms over time, Bertrand & Schoar (2003) found large effects of individual CEOs on firm performance that appear to be in contradiction with the assumption Gabaix and Landier make about the distribution of managerial talent and/or the assumption that CEOs are optimally assigned across firms on the basis of their talent.

Finally, Gabaix & Landier (2008) assumed the change in the distribution of firm size is exogenous. Yet, there is a long-standing view in the agency literature that discusses how CEOs and other top executives may strategically alter firm size to their advantage: Jensen (1986) discussed that a good reason for CEOs to make acquisitions may be an attempt to increase their pay. Harford & Li (2007) showed that large acquisitions are followed by
large increases in compensation for CEOs that remain in place at least one year following the acquisition. Bliss & Rosen (2001) found a similar pattern in the banking sector, even when the bidding-company stock price declines postmerger [but see Avery et al. (1998) for contrasting findings]. Bebchuk & Grinstein (2007) showed that the relationship between firm expansion and CEO pay increase is not limited to expansion due to acquisition. They found that a given CEO’s expansion decision (in terms of number of shares outstanding or number of employees) led to a subsequent increase in that CEO’s compensation. Interestingly, they also showed that this relationship is asymmetric: If a given CEO increases firm size, he gets an increase in pay; a parallel reduction in size does not significantly lead to a reduction in pay. This asymmetry, they argue, is hard to reconcile with the market-based model of CEO pay. Although an increase in firm size may dictate an increase in pay (the market may infer that the acquiring CEO is talented) or an increase in incentives given that more value is now at stake, the question remains why a reduction in firm size does not likewise trigger lower pay or lower the need for strong incentives. Instead, as Bebchuk & Grinstein (2007) discuss, such an asymmetry may be more consistent with the benchmarking rules that compensation consultants recommend to the board. Because benchmarking is tied to size, an increase in firm size changes the reference group for pay setting to a group of a larger firms with higher paid executives; because benchmarking is based on prior pay, a subsequent reduction in firm size does not undo the effect of the earlier increase in size.

3.3. Managerial Power in Pay Setting: The Backdating Scandals

Is rent extraction by CEO just noise around a mainly market-driven CEO compensation process? We believe that some recent work by Lie (2005) and Heron & Lie (2006, 2007) on the “backdating” scandals help make the point that fraudulent behavior and CEO capture of the pay process is a more general phenomenon. According to Lie’s estimates, which we discuss below, backdating occurred in as many as 30% of firms.

Because the value of an option is higher if the exercise prize is lower, executives should prefer being granted options when the exercise prize is at its lowest. The backdating of stock options is a practice through which CEOs (and other top executives) choose a favorable date (i.e., when stock price was low) that precedes the current date for when stock options were supposedly granted. Backdating would not be illegal if it were clearly communicated to shareholders, adequately accounted for in both earnings and taxes, and no document was forged, but this is rarely true in practice, making most instances of backdating illegal.

Yermack (1997) was the first to note some suspicious stock-price patterns around the time stock options are granted. In particular, he found that stock price tends to rise around the time options are granted, which he conjectured reflected on strategic market timing by insiders that have private information on future price increases. However, Lie (2005) and Heron & Lie (2007) convincingly argued that more than market timing is at play and that some fraudulent behavior must be occurring. Specifically, Lie (2005) examined approximately 6000 option awards issued between 1992 and 2002, many of which he classified as scheduled (within one week of the one-year anniversary of the prior award) or unscheduled. Computing abnormal returns around the date of the option grants, Lie found decline in stock prices prior to the award (especially sharp close to the award date) and a reversal immediately after the award (e.g., during the first 10 days after the awards, average abnormal returns are +2%). This U-shape pattern is especially pronounced for unscheduled awards. The fact that the reversal in stock price happens almost immediately after the
options are granted is hard to reconcile with a market-timing explanation unless insiders are able to predict very-short-term movement in stock price.

Two additional pieces of evidence strengthen the case for a backdating interpretation. First, Lie (2005) documented the same U-shape dynamics for market-wide stock movements: Awards are more likely to occur either after or before relatively bad market return. The fact that awards seem to be timed as a function of future market movements is more difficult to reconcile with a private-information story unless the firm’s managers have some unique information about the rest of the market. Second, Heron & Lie (2007) exploited a 2002 Sarbanes and Oxley rule requiring option grants to be reported within two business days of grant receipt. They found that approximately 80% of the postaward abnormal returns documented earlier had disappeared after this new ruling. Whatever abnormal returns remained were concentrated among executives reporting on the second day and executives failing to report within the two-day periods; there were no abnormal returns when the grants were reported within one day.

Because compensation committees are supposed to administer option awards, these findings provide indisputable evidence that some executives have power over their compensation committees and use that power to backdate option awards to a more favorable date. But how many CEOs have that power? Many, according to Heron & Lie (2006), who propose a method to estimate the aggregate amount of backdating. Their method is based on the assumption that, in the absence of backdating (or other market timing—which we believe to be minimal given the two-day ruling results), the distribution of the difference between the returns for a given number of days after the grant and the returns for the same number of days before the grant should be centered roughly at 0. On the basis of this method, they estimated that 19% of unscheduled, at-the-money option grants to CEOs, presidents, and chairmen of the board were backdated. At the firm level, they estimated that close to 30% of firms that granted stock options to top executives between 1996 and 2005 (equal to more than 2000 firms) manipulated one or more of these grants. Bebchuk et al. (2006) and Bebchuk et al. (2007) further established some correlation between the presence of such “lucky” (e.g., favorably timed) stock-option grants and various firm and CEO characteristics; in particular, lucky grants are more common among firms that do not have a majority of independent directors, when the CEO has a longer tenure, and when the CEO captures a larger share of the top-five executives’ compensation. In summary, this work establishes that CEOs’ ability to set their own pay, or at least influence their pay-setting process, may be more widespread than what advocates of a market-based view of CEO compensation would argue.

### 3.4. Perks

Both cash and equity-based forms of CEO compensation have been widely studied because they are readily available through Execucomp. However, many CEOs (and other employees) also receive nonmonetary forms of compensation, often referred to as perks (e.g., the personal use of the company jet or the chauffeur-driven car). Because perks are hard for shareholders (and researchers) to observe, it is easy to understand why they have often been proposed as an obvious way through which entrenched CEOs divert resources from their companies’ shareholders (Jensen & Meckling, 1976).

Yermack (2006) studied the personal use by Fortune 500 CEOs of company aircraft, as disclosed in the companies’ annual proxy statements. His main finding is that the personal
use of corporate aircraft is associated with an initial negative market response at the time this information is disclosed and further substantial underperformance in the future (more than can be directly explained by the induced aircraft-related expenses). Interestingly though, and unlike what standard agency theory would predict, Yermack did not find personal use of aircraft to be related to the CEO’s ownership stake in the company; personal use of aircraft also appears unrelated to monetary compensation. These findings, Yermack concluded, are consistent with “various theories of managerial shirking in the presence of lavish perks,” but they may also reflect on some strategic timing of disclosures, with CEOs waiting until they have obtained the perks before releasing negative company news.\(^{11}\)

In contrast, Rajan & Wulf (2006) offer efficiency-enhancing explanations for perks. Perks, they argue, may operate as motivating status goods; perks may also increase productivity when they exploit opportunities that are not being fully internalized (such as social interactions in the company dining room) or they may be timesaving (as when the commercial airport is far away). Their empirical evidence, which is based on survey information for 15 categories of perks for a sample of approximately 300 companies) is more mixed: They found that firms protected from takeovers by business combination statutes offer more perks and that the presence of a large institutional investor sometimes reduces perks, but they also found that CEOs are more likely to have access to the company plane when access to commercial flights is limited because of the location of the company headquarters.

4. WHAT DO CEOS DO?

Under a competitive market for CEOs such as described in Gabaix & Landier (2008), one would not expect individual CEOs to matter much in terms of firm decisions or firm performance. Also, even if the allocation of managerial talent to firms is not optimal, CEOs may not impact firm outcomes because of the many organizational and environmental constraints that limit the amount of discretion they have (Hannan & Freeman 1977).

Yet, much literature shows these assumptions do not bear out in practice: Hambrick & Mason (1984) argued, using their upper echelon theory in the management science literature, that CEOs (and other senior executives) affect firm outcomes. Several researchers have also found a systematic effect of sudden CEO death on subsequent firm performance. An event study analysis by Johnson et al. (1985) found positive abnormal returns after the death of a founder CEO but negative abnormal returns after the death of a nonfounder CEO. In a large sample of Danish firms, Bennedsen et al. (2007b) found declines in operating profitability after the death of a CEO, which are especially strong in fast-growing, R&D-intensive sectors. They also found that the death of a relative of the CEO systematically reduces operating performance, suggesting if some of a CEO’s attention or effort is taken away because of a loss in his or her family, the firms suffers.

Although one could still argue that these studies capture just random or temporary shocks, evidence such as that in Bertrand & Schoar (2003) suggests otherwise. Bertrand &

\(^{11}\)Malmendier & Tate (2009) discussed a similar theme of “managerial shirking in the presence of lavish perks”. They studied firm performance following CEO’s receipt of status-boosting awards (such as being singled out by the business press as one of the best performing CEOs). They found a performance decline following such awards relative to a matched sample of firms with CEOs who did not win awards. The strongest award effects are concentrated in firms with weaker corporate governance.
Schoar (2003) constructed a manager-firm-matched panel data enabling them to track the same top managers across multiple firms over time. They found significant heterogeneity in investment and financial decisions, as well as in operating performance, across top managers. They also found managerial styles differed along observable managerial characteristics: On average, older managers are more conservative; those with an MBA degree are more aggressive. In another study, Adams et al. (2005) found more performance variability in firms where the CEO has more decision-making power (e.g., CEO is the founder, CEO is the only insider on the board, or the CEO holds multiple job titles).

If CEOs do have discretion, how will the way they exercise this discretion impact firm practices (and firm outcomes)? I review two main lines of work to answer this question: The first focuses on the agency conflicts within the firm, with CEOs expressing their own preferences at the cost of reducing firm value. The second focuses on the cognitive limitations and biased beliefs of CEOs, which may lead them to make, despite their best intentions, the wrong choices for shareholders.

4.1. Entrenched CEOs

CEOs that are imperfectly monitored by boards and/or somewhat isolated from takeover pressures not only may influence their own pay, but also may make corporate decisions that are not fully aligned with shareholders’ interests. A large body of literature in corporate finance has studied the agency conflicts that may exist between managers and shareholders. I here review some of the themes that have emerged from this literature (for a comprehensive review of both the theoretical and empirical literature on this topic, see Stein 2003).

Theorists have conjectured about how poorly controlled managers may misbehave. The view that has received the most attention is that managers have empire-building preferences (Baumol 1959, Williamson 1964). This view conjectures that uncontrolled managers benefit from increasing firm size beyond what is optimal for shareholders, either by engaging in low-return internal investment projects or acquiring other firms despite the lack of clear synergies. This view underlines the free cash-flow model by Jensen (1986) and the idea that debt may be used as a way to minimize the agency costs associated with CEOs’ inclination to overinvest. Empire-building tendencies may also manifest themselves through excess employment or even via the selection of overly qualified workers. In contrast, entrenched managers may prefer to opt for an easier and quieter life, e.g., the monopolists described by Hicks (1935). They may put less effort into the identification of potential investment projects or acquisition targets. They may also prefer to avoid the often difficult decisions that are required to run the tight ship that shareholders are expecting; this includes avoiding conflictual relationships with workers by being softer in wage bargaining or by letting underperforming plants operate for too long.

Most of the existing empirical evidence on empire-building tendencies is related to merger and acquisition decisions. Lewellen & Loderer (1984) and Loderer et al. (1985) found that firms are less likely to undertake acquisitions that reduce their stock prices when the top managers at these firms hold large fractions of the company’s stock. Morck et al. (1990) found returns from especially low–bidding firms for unrelated acquisitions, which could be consistent with the view that CEOs may not build an empire purely for the sake of growing their company, but instead to insure the stability of their job.

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12As discussed above, higher compensation may be a motivation for such empire-building preferences, but social prestige and hubris are also relevant.
Bertrand & Mullainathan (1999, 2003) exploited the passage of antitakeover legislation by U.S. states as a source of variation in the strength of corporate governance across firms over time. They failed to find any evidence of increases in firm size after the passage of the antitakeover laws, as would have been predicted by the empire-building view of CEO preferences. However, they did find patterns of investment and disinvestment, in particular, plant creation and destruction, that are very suggestive of the quiet-life view. They showed that the rate of both plant creation and plant destruction declined once managers are better protected from takeover threats. Bertrand & Mullainathan (1999, 2003) also showed that workers’ wages increased after the passage of the antitakeover laws. This pattern seems to apply to both blue collar and white collar workers, but it is particularly pronounced for white collar workers with whom CEOs are more likely to be socially associated.¹³

On a related topic, Landier et al. (2009) found that divisions of companies located in the same state as the corporate headquarters experience fewer layoffs and are less likely to be divested. This is especially true when the corporate headquarters are located in less-populous areas, a proxy for how likely the headquarter managers are to have social contacts with the employees of those divisions. Despite the many possible interpretations for these findings, they are consistent with the view that top executives prefer to avoid the economically rational but personally difficult decision of firing workers.

CEOs and other senior executives may also have career-related concerns (e.g., planning their next move to another, larger company) that could lead them to try to boost short-term outcomes at the cost of the longer-term health of the company they currently lead (Stein 1989). There is some evidence, mainly from the accounting literature, that firms’ real activities are distorted owing to such short-term mentality or myopia. Dechow & Sloan (1991) found that CEOs reduce spending on R&D toward the end of their tenure to increase short-term earnings. Roychowdhury (2006) found evidence of distortions in pricing and production to avoid reporting annual losses (e.g., temporary price discounts to increase sales, overproduction to lower the reported cost of goods sold).

There is also work that links earnings management through discretionary accruals or other accounting manipulations to corporate governance measures and CEO incentives. Yu (2006) found that firms with stronger external governance (those with higher institutional holdings, those more exposed to takeover pressures) manage earnings less. In addition, Healy (1985) presented evidence consistent with the view that discretionary accruals are being used to game earnings-based bonus schemes. Bergstresser & Philippon (2006) showed that earnings manipulation through discretionary accruals is more common when CEOs have a greater share of equity-based (stock and option) compensation.

4.2. Cognitively Challenged CEOs

A relatively new and growing literature in behavioral corporate finance attempts to demonstrate that top managers, like other individuals, may suffer from systematic biases in their decision-making process that may impact firm outcomes [for recent reviews of this

¹³Giroud & Mueller (2007) studied heterogeneity in the effects of the same set of antitakeover laws across relatively competitive industries. They found evidence for a quiet life in that input costs, wages, and overhead costs all increase after the passage of the laws while capital expenditures are unaffected. Most interestingly, they found that these effects are limited to less-competitive industries. In other words, their findings suggest that product market competition is a powerful tool to control managerial slack.
literature, see Baker et al. (2007)). The main difference between this line of work and the work discussed above on managerial preferences is that in the former, managers do not actively act against the interests of shareholders. Rather, managers have biased beliefs or suffer from other cognitive limitations that lead them to make decisions that may not be optimal for shareholders.

Most of the research so far has focused on optimism and overconfidence. This work builds on a large literature in psychology that shows that individuals have a tendency to consider themselves as above average. Overconfidence is also associated, and possibly reinforced, by attribution error: One takes credit for successes but attributes failures to others or the environment. Business-school students and corporate executives are far from immune from such overconfidence (see, for example, Larwood & Whittaker 1977, Camerer & Lovallo 1999). Managers of startup firms also display excess optimism when evaluating the future prospects of their business. For example, Cooper et al. (1988) reported that a majority of entrepreneurs think that their startup is more likely to succeed than their peers’ startups, with only a small minority thinking they face relatively lower odds of succeeding.

A much harder task for researchers has been to document whether and how those biased beliefs translate into actual corporate decisions. One of the main challenges has been to construct reasonable proxies for optimism and overconfidence for a wide range of executives. Malmendier & Tate (2005a,b) proposed a creative approach that relies on an argument based on “revealed beliefs”: They exploited CEOs’ personal portfolio transactions. Because their human capital is already invested in their company, CEOs should aim to diversify their portfolio whenever possible, by selling their company stocks and exercising vested options when they are “in the money.” In practice, many CEOs do not employ these tactics: They hold on to “in the money” options beyond the vesting period and also often buy, rather than sell, company stocks. Malmendier & Tate (2005a, 2008) exploited this fact to categorize CEOs into rational and overconfident groups.

Starting with such a categorization, Malmendier & Tate (2005a) researched possible impacts on investment and financing decisions. They predicted that overconfident CEOs will always feel that the market is undervaluing their company. These CEOs will therefore be unwilling to issue shares to finance new investment projects. Instead, they will tap into internal resources to finance more projects. Thus, Malmendier & Tate (2005a) predicted that overconfident CEOs will show greater investment-cash flow sensitivity. They found this prediction supported by the data, especially for firms that are equity dependent.

Malmendier & Tate (2008) turned their focus to acquisition decisions and the outcome of these acquisitions (including stock-market performance). They found that CEOs who categorize as overconfident are more likely to conduct mergers at any point in time. The effect is particularly strong for firms with lots of internal resources (as predicted by their theory) and for diversifying acquisitions. In addition, the stock market appears to react more negatively to merger announcements made by overconfident CEOs.

There is some limitation to this work—a reflection of the difficulty in isolating measures of overconfidence in a large sample of active CEOs. Most importantly, CEO personal portfolio transactions may also proxy for some private information the CEO has about his company. Interestingly, Malmendier & Tate did not find that CEOs who hold “too much” equity in their company earn abnormal returns by doing so—in fact, they found some evidence to the contrary. Finally, Malmendier & Tate (2005b, 2008) showed that their findings are robust to using an alternative measure of CEO overconfidence that is...
based on how the media portrays the CEOs (e.g., Is the CEO described by the business press as “confident” and “optimistic,” or as “cautious” and “conservative”).

I believe that the literature covering CEO bias is just developing. Many other biases, such as representativeness, mental accounting, or status-quo, have been well documented in the psychology literature: These could also be applied to the study of how CEOs shape corporate decisions. The challenges, similar to those faced by Malmendier and Tate, will be in finding ways to measure these psychological attributes for a wide range of CEOs and to articulate the specific mechanisms through which these biases will translate into suboptimal corporate decisions.

5. DIRECTIONS FOR FUTURE RESEARCH

CEOs have been extensively studied. Yet, a lot remains to be learned. Although much is known about the biographical characteristics of those who make it to the top echelons of corporate America, a deeper understanding of the broader profile of those who will eventually become CEOs is still needed. Are CEOs made or born? Recent work by Oyer (2008) showed how luck shapes the career of investment bankers. Specifically, Oyer showed that MBA students who graduated during a stock-market boom are not only much more likely to start their career on Wall Street, but also much more likely to still be working on Wall Street many years after graduation (and earn substantially more than those that graduated in a stock-market bust.) How common is good luck (e.g., joining the “right” company at the junior level, meeting the “right” contact person on the golf course or at the kids’ birthday party) in the careers of those who will eventually become CEOs?

If CEOs are at least partly born rather than fully made by circumstances, are there specific personality traits that are systematically related to becoming a corporate leader? Consider overconfidence, for example. On the one hand, overconfidence may be a necessary attribute to making it to the top: Overconfident people may command more respect and be less prone to giving up when they receive negative feedback. On the other hand, overconfident individuals may, as discussed above, make many mistakes on the way up and eventually get wiped out. Also consider charisma. There are a lot of anecdotes describing CEOs as especially charismatic individuals, but there is little understanding of whether this is a general phenomenon and what specific personal attributes are the markers of charisma. More generally, there is great value in a research agenda such as that currently developed by Sapienza, Zingales, and various co-authors (see, for example, Maestripieri et al. 2008). Sapienza and Zingales have been collecting information on a battery of cognitive and psychological attributes (including measures of competitiveness, emotional intelligence, trustworthiness, risk aversion, and overconfidence,) for a full class of MBA students, e.g., a group that is homogenous in terms of educational attainment and prior experience. As years progress, they will be able to track the careers of these individuals and inform us of what helped or hindered their climb within the corporate suite.

We also see much value in better understanding the process through which boards select CEOs. Khurana’s (2002) work offers a fascinating description of this process. Building a more systematic and quantitative analysis using a large sample size on the

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14 Some research in management science has also attempted, with limited success, to correlate CEO charisma with firm performance. A main difficulty in this research, besides small-sample issues, has been to establish a causal link from charisma to performance. See, for example, Waldman et al. (2001) and Agle et al. (2006).
CEO search process; understanding how boards measure, identify, and evaluate “talent;” and gaining further insight on the role played by third parties such as the media, analysts, or executive search companies would greatly foster our comprehension of who runs corporations and why.

Finally, it is most likely that the topic of CEO pay will stay high on researchers’ agendas for the near future. A set of recent, Sarbanes Oxley–inspired legislations and disclosure rules offer additional testing grounds to discriminate between the various theories that have been proposed for the surge in CEO pay. It is also likely that researchers will start turning some of their attention outside of the United States; for example, mounting concerns about managerial pay in various European counties and proposals for additional regulation are emerging. Finally, and hypothetically, the current debacle on Wall Street could set the stage for a larger institutional reversal, with more regulation on and outside of Wall Street, and a return to social norms in the United States that are less accepting of unequal outcomes—all of which could have important repercussions on the CEO labor market.

DISCLOSURE STATEMENT
The author is not aware of any biases that might be perceived as affecting the objectivity of this review.

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