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INCREASED CEO IMPACT OR RAMPANT ROMANTICIZATION?  
SHIFTS IN CEO IMPACT, PERCEPTIONS OF IMPACT,  
AND MANAGERIAL DISCRETION IN THE UNITED STATES, 1950-2009

A Dissertation in  
Business Administration

by

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## **ABSTRACT**

How has CEO impact and beliefs about their impact changed in the United States over the period between 1950 and 2009? While others have studied these topics, most research considers just a small snapshot in time. However, it may be that the potential for CEO impact and stakeholder beliefs about their impact vary greatly across different time periods. In this dissertation I considered these possibilities. First, in Chapter 2, I develop theoretical arguments related to media coverage, CEO hiring and tenure, the business environment, and CEO compensation and make the case that certain actors believe CEOs became increasingly important determinants of firm outcomes in the period between 1950 and 2009. Building on this theoretical view, I then argue that these changes in beliefs will be reflected in market reactions to unexpected CEO death. I conclude Chapter 2 with an empirical test of this idea and find that the magnitude of market reaction (either positive or negative) to unexpected death has grown over time. The results are consistent with the idea that certain actors believe in an increasingly impactful CEO. In Chapter 3, I argue that changes in beliefs about CEO impact are at least partially based on a real and tangible increase in their impact on firm outcomes. In outlining a series of social and macroeconomic trends, I theoretically describe how CEOs have gained managerial discretion which ultimately results in increased impact on firm outcomes. In Chapter 4, I empirically test these ideas on a 59-year sample of 30 industries and more than 1000 firms. I find evidence that CEO impact has changed in significant but complicated ways that provide partial support for my theories. Namely, CEO impact has increased steadily in recent years. However, their impact was highest in the period between 1950 and 1965 before declining rapidly in the late 1960s. Despite the steady increases since, CEO impact has not yet reached levels seen in the earliest period of this study. In Chapter 5 I discuss the implications of these results.

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Viewed through a lens somewhat clouded by years of selective memory, I'm not exactly sure when I first gave thought to pursuing a career in academia. However, I have an astonishingly clear recollection of the moment when it became a serious thought rather than just some fleeting idea rooted in an idealized – but far from realistic – view of academic life. That moment occurred over an odd weekend during my Executive MBA program when we had class at the Ritz Carlton in Philadelphia, rather than at our more humble home at the Gregg Center. Over lunch one afternoon, my classmates and I were giving Professor Dennis Sheehan, the director of the program, a healthy ribbing about the great life he had in academia – flexible hours, great pay, and, of course, tenure. Somewhere in that conversation I half-jokingly said I had given some thought to becoming a professor – of course not really knowing what that entailed. At the end of the weekend, Dennis brought up my comment and asked if I was serious, to which I responded “sure, to the extent I could get my PhD without giving up the lifestyle I currently have, the house I just gutted and remodeled, and without asking my wife to give up the job she loves – sure, I'd love to get a Ph.D. and become a university professor.” When I inquired as to why he asked, Dennis responded, in a somewhat disappointed tone, with “because I thought you would be good at it.” The seed was firmly planted but the timing wasn't right. After hiring me to run the Executive MBA program for a few years, it was Dennis who again prodded me out of a comfortable, yet stagnant life and back into seriously considering the Ph.D. program. Dennis, I'm still not sure what you saw to think I could possibly be good at this business, but I am glad you brought it up. I certainly wouldn't have taken the first step, let alone completed the journey, without your friendship and encouragement. I just hope I can live up to whatever it was you saw in me to make the suggestion in the first place.

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## CHAPTER 1: INTRODUCTION

*Iacocca's ascent signaled a dramatic change in American culture. Prior to him, the popular image of the CEO had been of a buttoned-down organization man, pampered and well paid, but essentially bland and characterless. The idea of the businessman as an outsized, even heroic, figure seemed like the legacy of a long-forgotten past...[but] by the time of the '90s boom, CEOs had become superheroes, accorded celebrity treatment and followed with a kind of slavish scrutiny that Alfred P. Sloan could never have imagined. Dennis Kozlowski and Bernie Ebbers reaped what Iacocca had sown. "In the 1980s, there was a sea change in the way the media and the culture at large responded to CEOs," says Jim Collins, author of the seminal studies of business history *Built to Last* and *Good to Great*. "And you can pinpoint that change to one single event: the publication of the Iacocca book. That was the moment when it became clear that everything was different." (Surowiecki, 2002)*

How much do leaders affect organizational outcomes? While this question seems relatively simple, it has been debated across a wide spectrum of the social sciences (Blau & Scott, 1962; Carlyle, 1849; Gamson & Scotch, 1964; Grusky, 1963; Hannan & Freeman, 1977; Lieberman & O'Connor, 1972; Pfeffer, 1981; Tolstoy, 1869; Weber, Henderson, & Parsons, 1947; Weiner & Mahoney, 1981) and the issue is far from settled. While some argue that leaders have a limited impact on firm outcomes because of institutional and inertial forces (DiMaggio & Powell, 1983; Hannan & Freeman, 1984), others claim that executives wield extensive influence over their organizations because of the important decisions they make (Child, 1972), with outcomes often quite dependent on the ability and past experiences of managers (Hambrick & Mason, 1984; Pfeffer & Davis-Blake, 1986). The unifying view of managerial discretion argues that leadership matters more in circumstances where there is greater freedom or latitude of managerial action (Hambrick & Finkelstein, 1987). While this view has contributed to a greater understanding of leader influence on numerous outcomes, it is a decidedly static view. Largely missing from the discussion is any consideration of the possibility that macro-societal, political,

and economic trends have impacted discretion and, thus, the amount of influence leaders have on their organizations (for an exception see Hambrick, Finkelstein, Cho, & Jackson, 2005).

The opening quote, above, suggests that the nature and role of CEOs changed in an instant during the early 1980s. With the election of Ronald Reagan as president, a wave of deregulation in response to the economic malaise of the 1970s, the rash of hostile corporate takeovers, and the rise of celebrity CEOs, such as Iacocca, one could certainly point to this period of time and assume it was the one and only defining moment that has led to the current conception of the typical American CEO. However, below I will argue that the nature and influence of American CEOs has been steadily changing for decades, with the early 1980s representing one of the more poignant moments in this evolution. Further, I will argue many of the changes occurring around this time can be traced back to mid-century as the American economy grew out of the great depression with the economic boom following World War II. Among them is the changing influence and impact of CEOs.

While research has given limited attention to the changing nature of CEO influence and discretion, I will argue that society has formed an opinion on the matter. In many ways, CEOs in the 1990s and 2000s are given more attention, often glorified, sometimes vilified, and, as I will argue, viewed to have an increasingly greater influence over firm-level outcomes, especially as compared to those CEOs who served in the 1950s and 1960s. As noted in the opening quote above, following World War II, CEOs were viewed as company men (Whyte, 1956) (and they were nearly always men) who typically rose up the ranks within the firm and through an orderly succession process to serve as fairly obscure stewards of the assets entrusted them (Vancil, 1987). Predictability, stability, and continuity were certainly implicit, if not explicit, goals of succession. “Top managers tended to be integrated with the business organizations that

employed them” (Lazonick & O'Sullivan, 2000:24) and they were nearly always hired from the management pool within the firm.

During succession today, firms often search for so called “charismatic” or “transformational” leaders who can seize control, motivate, enact change, and, either save a firm from problems of the past or take a firm to new heights of success (Gabarro, 1987; Khurana, 2002). In doing so, boards, as well as observers, seem to believe that CEOs can sweep in and have a large effect on firm outcomes, even more so today than during the 1950s. Increasingly, CEOs are hired from outside the firm, face greater risk of dismissal, and are often afforded the attention typical of entertainment and sports stars (Kaplan & Minton, 2006; Khurana, 2002). Both stock analysts and the media bestow great attention to the hiring, daily actions, and departure of CEOs and are quite suggestive of a link between the CEO and firm performance (Hayward, Rindova, & Pollock, 2004; McCombs & Shaw, 1972; Pfeffer, 1981). Even a relatively unassuming CEO, such as Warren Buffet, who manages a portfolio of firms in a somewhat detached manner, is afforded near rock-star status with shareholder meetings held in an 18,000 seat arena (with overflow attendance reaching more than 35,000 in some years) rather than the more traditional settings of a smaller conference facility (Jordon, 2008; Shell, 2008).

In short, while research assessing the relative impact of leaders has failed to consider how this may have changed, a mounting body of evidence is, at very least, suggestive of increased attention and focus on the CEO and of a general belief that CEOs have a larger effect on firm outcomes today than in the decades immediately following World War II. Left unaddressed, however, is an assessment of the accuracy or validity of these perceptions or beliefs and actual CEO influence. More specifically, a simple question remains: Is the greater attention paid to CEOs, and any belief in their increasing impact, related to an actual increase in their influence



over firm-level outcomes, or is this attention simply an extreme case of leadership romance (Meindl, Ehrlich, & Dukerich, 1985)?

### **Increased romance or increased CEO effect?**

Has CEO influence changed over the last 60 years? Only two relatively simple answers are possible. First, it may be that the increased focus on CEOs is unwarranted. Following from the literature on the romance of leadership (Meindl et al., 1985), implicit leadership theories (Rush, Thomas, & Lord, 1977; Staw & Ross, 1980), and the fundamental attribution error (Ross, 1977), it may be that any increase in attention or focus on CEOs is nothing more than the natural human inclination to attribute outcomes to volitional causes. In the search for an explanation for the record economic growth of the late 20<sup>th</sup> century, the extreme breakout performances of firms like GE, Microsoft, and Google on the positive side as well as one-time leaders like Sears Roebuck and Yahoo on the negative side, and the more recent economic difficulties within the financial services industry and greater economy, we may unreasonably over-associate CEOs with firm-level outcomes. For example, in proposing the idea of “Romance of Leadership”, Meindl and colleagues (Meindl et al., 1985) found a positive relationship between positive firm performance and attributions to firm leaders in media coverage. While there was a similar relationship with poor performance, it was not nearly as strong as on the positive side. In short, both extremely good and bad outcomes are overly attributed to leaders, though the relationship with good outcomes is stronger.

On the other hand, it may be that this increased attention and belief in CEO impact is directly related, at least in part, to an actual rise in CEO impact. In the 1950s, firm leaders were generalized as “Organizational Men” seemingly indoctrinated from early career onward to

conform to the normative expectations of the day (Whyte, 1956). In discussing the organizational testing that contributed to the selection of the management class Whyte argued:

*Neither in the questions nor in the evaluation of them are the tests neutral; they are loaded with values, organizational values, and the result is a set of yardsticks that reward the conformist, the pedestrian, the unimaginative-at the expense of the exceptional individual without whom no society, organization or otherwise, can flourish (1956: 182).*

Mid-level managers and the top-level executives promoted from their ranks were trained to conform to a perspective that espoused management as a profession in line with the self regulated fields of medicine, the law, and the clergy (Khurana, 2007). With this came a set of responsibilities that tended towards stability and maintenance of the organization. For example, Barnard's view of "executive work" focused on the "specialized work of maintaining the organization in operation" (Barnard, 1968:215) with a heavy emphasis on communication, the selection of top executives, establishing incentives, and the communication of purpose. Implicit to Barnard's view was that a firm would persist. Left out of his discussion was any reference to an environment undergoing constant change or to CEOs undertaking radical initiatives that would sharply transform the face of a firm. Instead, Barnard focused on establishing a fit between corporate policy and existing conditions, with the resulting policies intended to have a relatively enduring nature. In short, leaders in this earlier era faced a great number of forces and norms restricting discretion, or latitude of managerial action, while stressing conformity and stability.

Contrasted with the business environment since at least the 1980s, these views seem quaintly outdated. Today, the chief executive officer is often seen as the face of a firm. Numerous modern CEOs, such as Steve Jobs, Bill Gates, Jack Welch, Sam Walton, and Lee Iacocca, are near household names. Modern CEOs are both more visible and, seemingly, more glorified. CEO ratings, rankings, and profiles are commonly featured in both popular press and

business oriented publications. Tied to this attention, there seems to be an implicit assumption by many that these men and women greatly influence every facet of a firm's operations and are exclusively responsible for the entirety of firm performance.

Instead of focusing on continuing existence of the firm, contemporary CEOs seem just as likely to consider piloting a firm towards radical change, reinvention through large risks, and even non-existence through the sale of the entire firm as a means to extract the greatest value for shareholders (or, quite often, themselves). While great gains are sometimes had, failure or even bankruptcy is possible as well. In short, with CEOs expected and encouraged to take bold action, firm outcomes, both good and bad, may be even more dependent on the decisions and influence of leaders than was the case just 60 years ago.

### **Dissertation Overview**

In this dissertation, I investigate both the perceptions and nature of CEO impact on firm outcomes and how they have changed in US firms since World War II, as a result of numerous societal and macro-economic shifts. In Chapter 2 I document increases in the perception of CEO influence using existing literature. Specifically I argue that the evolution of media attention, CEO tenure, hiring, and termination, CEO compensation arrangements, and perceptions about the general business environment have led to the increasing glorification (or, conversely, vilification) of CEOs between 1950 and 2009 and a belief that they have had an increasing impact on firm outcomes over the same time period. I test this hypothesis through an empirical study assessing the magnitude of market reaction (rather than direction of reaction) to unexpected CEO death. If there is a perception that CEOs matter more in one time period than in another, the magnitude of market reactions to sudden and unexpected CEO death ought to reflect this view.

In Chapter 3 I argue that the increase in attention and perceptions of CEO impact are rooted in an increase in managerial discretion (Hambrick & Finkelstein, 1987), which allowed CEOs to have a greater impact on firm outcomes. With the rise in agency theory and management driven by the conception of maximizing shareholder value, the decline of unionization, and the introduction of lucrative incentive-driven pay packages, CEOs were encouraged to take bold actions rather than maintain the status quo. Documenting these and other trends, this essay provides a set of theoretical and historical arguments supporting the premise that managerial discretion has increased over this period, thus leading to increased CEO effects.

In Chapter 4 I empirically test if the perceptions of increased CEO impact accurately reflect an increase in discretion and CEO impact or simply reflect an extreme case of attribution error or romance of leadership. To do this, I extend the classic Lieberman and O'Connor (1972) study to assess the proportion of variance in firm strategy and performance outcomes attributable to CEOs using a dataset covering the years between 1950 and 2008. Specifically, I assess the proportion of variance explained by the "CEO effect" in both firm performance and various strategic choice outcomes. In short, this essay sheds light on the question: how has the relative impact of CEOs changed between 1950 and 2008.

In the final chapter of the dissertation, I discuss the results, especially in light of the combined findings from the two empirical studies, address limitations, and provide some suggestions for future research.

I focus on the timeframe of the past 60 years, or 1950 – 2008, for three specific reasons. First, a large amount of data for this period is readily available using sources such as Compustat and CRSP (Center for Research in Security Prices). Accounting data prior to this time is especially limited. Second, the original study in this space, by Lieberman and O'Connor (1972),

used a sample timeframe of 1946 through 1965. Matching this period as closely as possible will provide for accurate comparison to the findings of that study. Finally, using data from much earlier will confound results with both the Great Depression and the industrial impact of World War II.

## CHAPTER 2:

### CEO GLORIFICATION AND PERCEPTIONS OF CEO IMPACT, 1950 - 2009

How has society's view of CEOs changed? Warren Buffet attracts more than 30,000 people to his annual shareholder's meeting (Jordon, 2008; Shell, 2008). The price of Apple stock drops precipitously on rumors that Steve Jobs might be sick and bounces back when they are refuted (Nocera, 2008; Quinn, 2008). Analysts, the media, and investors all attach great meaning to CEO succession, while looking for a savior to deliver a firm from the troubled performance of the past (Khurana, 2002). CEO compensation more than doubled between 1993 and 2000 while the percent of earnings paid out to the top five executives at the average firm went from 5% to 10% by 2003 (Bebchuk & Grinstein, 2005). CEOs face an increased risk of termination and serve, on average, just 7 years as compared to about 10 in the 1970s (Kaplan & Minton, 2006). CEOs routinely grace the cover of publications in business and popular culture, while their biographies and autobiographies often rank among the best-selling books.

These are just some of the indicators suggesting that CEOs receive greater attention and glorification today than they did 40 or 50 years ago. Along with increases in the volume of attention, below I argue that that much of this increased attention is laden with attributions of increased CEO impact as well. That is, some constituencies seem to believe that CEOs have become increasingly important determinants of firm outcomes, good or bad. After developing a theoretical set of arguments about perceptions of CEO impact, I conclude this chapter with an empirical study that focuses on one particular constituency – stock owners – to see if their reaction to a unique form of leadership change is indicative of changing beliefs about the impact CEOs have on organizational outcomes.

## **Existing evidence of increased CEO attention and attribution**

There is a rich history in the organizational literature focused on executive leadership (Bennis, 1959; House & Mitchell, 1974; Khurana, 2002; Mintzberg, 1973; Selznick, 1957) and the construction of meaning around their actions (Chen & Meindl, 1991; Pfeffer, 1981). Great amounts of ink have been spilled attempting to define leadership (Bass & Bass, 2008), discern ordinary leaders from the transformational (Tichy & Devanna, 1986), and identify the traits or conditions that limit or enhance the impact corporate leaders have on organizational outcomes (Guest, 1962; Hambrick & Finkelstein, 1987; Hambrick & Mason, 1984; Thompson, 1967). Some researchers have theorized leadership as more than a top down phenomenon but rather as an interaction between leader and follower (Dansereau, Graen, & Haga, 1975; Graen & Uhl-Bien, 1995) which has led to a near reversal in focus with follower-centric views developing in recent years (Meindl, 1995). Other streams of research have focused on leader portrayal in the media and how these portrayals can begin to impact organizational outcomes (Deepphouse, 2000; Fanelli, Misangyi, & Tosi, 2009; Fee & Hadlock, 2003; Hayward et al., 2004; Wade, Porac, Pollock, & Graffin, 2006).

Despite this attention on leaders, the keys to their effectiveness, and their portrayal in the media, little attention has been focused on how perceptions of CEOs have changed over time and, more specifically, how the evolution of attention focused on CEOs has impacted perceptions about their potential to have an impact on their organizations (for an exception, see Khurana, 2002). The focus of this chapter is not to make a broad claim about the general importance of leaders or to stress their importance above other actors. Rather, my goal is to highlight how perceptions of leaders and our interactions with them – and by leaders I specifically mean CEOs of major corporations – have changed in the 60-year period between

1950 and 2009 in the United States, and highlight how these changes may have impacted beliefs about the impact CEOs can have on organizational outcomes.

In this chapter I argue and test the idea that trends over the last 60 years have not only changed the way CEOs are viewed but have also impacted beliefs about how impactful CEOs can be. Four broad areas are covered below: media coverage and celebrity CEOs, changes in the hiring and tenure of CEOs, shifts in the business environment, and changes to executive compensation. In presenting these ideas, I discuss how changes in each area have led to (or are indicative of) changes in beliefs about the potential for CEO impact on organizational outcomes. I then present an empirical test of these ideas using a unique form of CEO succession.

### ***Media coverage and celebrity CEOs***

In addition to reporting the facts related to news and events, the media play a critical role in shaping the way in which events are perceived (Herman & Chomsky, 2002; McCombs & Shaw, 1972). Recognizing this, strategy and organizational theory scholars, building on work in communication, political science, and other fields, have pursued a robust stream of research on CEO media coverage and celebrity CEOs. For example, CEOs ranking near the top of magazine rankings receive outsized awards when performing well and, similarly, disproportionately undersized compensation when performing poorly. Further, the firms of recognized CEOs see an initial, short-term increase in stock price followed by a steady decline that results in an overall negative return after about a year (Wade et al., 2006). Top managers working for celebrity CEOs have also been shown to benefit from their boss' recognition. Not only does the pay of these other top managers increase, these top managers are more likely to become CEO, either within the same firm or externally (Graffin, Wade, Porac, & McNamee, 2008). While this research has pointedly discussed the media's role in increasing the focus on CEOs, the creation



and fostering of celebrity CEOs, and the various outcomes from the process, studies of CEO charisma have highlighted how the influence can flow in the opposite direction. That is, CEO impact can extend beyond the organization and effect external stakeholders such as stock analysts and the media. For example, CEOs who communicate charismatic visions through shareholder letters have a positive impact the ratings made by analysts (Fanelli et al., 2009). In short, media coverage has been shown to shape perceptions of CEOs while CEOs have been shown to influence how they are perceived by and portrayed by external stakeholders.

While this research amply discusses the construction of the CEO image in the modern media environment (Meindl & Thompson, 2005), missing is a discussion of how these trends have evolved over time to impact the perception of CEO impact. What we do know, however, is that the volume of news available has increased over the last 60 years. In the 1950s, television was in its infancy. News was broadcast over three or four major networks and consumed via daily newspapers and evening news programming on television and radio. With deregulation of many markets, especially financial services, there was a general increase in advertising of financially related products which boosted the available pages of business and financially related news (Vaughn, 2008). The 1980s saw the launch of cable news channels CNN, FNN, and CNN2/HLN. CNBC, a channel focused entirely on business news, launched in 1989. In the 1990s, general news channels, MSNBC, FOX and others were launched and the internet became generally available. In the 2000s, several more financial news channels launched (Bloomberg, FOX, etc) and the internet became a primary source of news and interpretation through dedicated websites, blogs, streaming video, and a host of other technologies. As each of these outlets developed, a void of content needed to be filled. With each addition to the media industry, consumers of news were increasingly bombarded with media that often included CEO portrayals.

Over this time the portrayal of CEOs, even from stable sources, evolved. In his book outlining the tendency for firms to seek out “savior” CEOs, Khurana (2002) pointed out numerous trends that spoke to an overall increase of attention on the CEO. For example, Khurana documented the increasing rate in which a single CEO was featured on the cover of Business Week magazine. In the early 1980s, a single CEO was featured on the cover of Business Week just a few times a year. By the 1990s this number was routinely more than a dozen and reached as high as 19, or approximately 36% of the covers in a single year (Khurana, 2002). This trend emphasized a desire to promote antideterministic beliefs (Chen & Meindl, 1991; Deephouse, 2000) about the causes of firm outcomes.

More important, however, was that the presence of so many CEOs on the cover of Business Week (or their presence in countless other media outlets) reinforced the process by which attributions are made by the broader public, likely resulting in an increase in the fundamental attribution error. In a theoretical discussion of the causes and consequences of CEO celebrity, Hayward, Rindova, and Pollock (2004) argued that journalists create celebrity CEOs through a process fraught with bias. First, in what is known as the fundamental attribution error, there is a general tendency to over-attribute outcomes to human causes (Heider, 1958; Ross, 1977). Because journalists are pressed for time and possess broad knowledge on a number of subjects rather than in-depth knowledge, they often lack the time and knowledge to develop a more nuanced understanding of the complex causes for certain outcomes. Thus, the impact of the fundamental attribution error is magnified with the result being an over emphasis of the role of human, volitional causes of firm outcomes. In short, the authors argue that journalists have a strong tendency to highlight and overemphasize the CEOs role in cases of positive firm

performance even when luck or other situational factors could have played a large role. The result is reporting that creates a strong link between firm outcomes and a firm's CEO.

Similarly, Fanelli and Misangyi (2006) theorized that the media acts as a key "institutional intermediary" in a process that influences the participation by outsiders and ultimately helps to shape how CEOs are identified. As part of the process, charismatic images of the CEO generated by the firm play an important role in shaping the views of those who are not able to directly observe or interact with the CEO – a group that often includes these key intermediaries. This provides an important pathway for a firm's media and PR efforts to have a positive impact on external stakeholders and likely contributes to the overall informational burden faced by reports.

With journalists tending to over-attribute outcomes to CEOs and the volume of content rapidly increasing, news consumers faced a compounding of forces which likely impacted their beliefs about the impact CEOs have on firm outcomes. First, consumers of news faced their own bias rooted in the fundamental attribution error. As they sought to explain varying business outcomes, they relied on a built in bias towards assuming a human causation in the form of CEOs. Second, the news they were consuming was, itself, biased towards a view that enhanced the role of CEO responsibility for firm outcomes. Finally, the sheer volume of news exacerbated constraints on time and processing capacity which hampers decision making abilities (Svenson & Benson III, 1993) which results in an even greater tendency to exhibit the fundamental attribution error. Taken together, the rise in the volume of media, the creation of CEO images by the firm, and the biases inherent within the media and consumers of news to over-attribute human causes likely contributed to an increasing perception of CEO impact.

### *CEO Succession, Hiring, and Tenure*

Over the past several decades there have been substantial changes to CEO succession, hiring processes, and their overall tenure. First, CEOs in the last decade faced an increased risk of termination (Khurana, 2002). Average CEO tenure has declined from 10 to about 7 years (Kaplan & Minton, 2006). In 2003 alone, the average tenure of departing CEOs was even lower, at just five years (Zhang & Rajagopalan, 2006). Some argue that part of this decrease in tenure is due to termination happening more quickly as a result of poor performance (Kaplan, 2008). That is, boards now seem quicker to act when performance falls. While some may argue that replacing the CEO is nothing more than “ritual scapegoating” (Boeker, 1992; Gamson & Scotch, 1964) designed to appease outside constituents, the fact that it happens with greater frequency, especially in times of poor performance, is informative. The increased rate of turnover might reflect that boards believe CEOs can have a greater impact on firm outcomes, especially the right CEO. They conclude that poor performance is tied to one particular CEO and that it is possible for a different CEO to reverse course. Thus they are willing to endure the costs of succession in an effort to find the “right” CEO. Alternatively, boards may recognize the ritualistic nature of succession. That is, if outside stakeholders such as analysts and shareholders (as discussed above) have overinflated beliefs about the impact CEOs can have, the increasing rate of succession could indicate that boards recognize this and acted accordingly. Either way, beliefs about CEO impact seem to have changed in one or perhaps even both groups. Interestingly, this may cause a recursive process to develop. Once boards take action to remove the CEO of a poorly performing firm, outside observers may take that to mean that boards think the problems were caused by an individual person. This may induce outsiders to take on the same view perhaps resulting in a change in stock price or analyst ratings. This, in turn, may suggest to

boards or other observers that some shareholders believe human factors can reverse the fortunes of the firm thus reinforcing the original decision and bias towards volitional causes.

Other intermediaries are involved as well and they have changed in important ways over the last 60 years. Rather than acting as passive investors as in the past, large institutions and activist investors have stepped up pressure on poorly performing CEOs and their boards, often calling for replacement of top executives including the CEO (Kahan & Rock, 2008). While some of these actions may be the result of evolving (and presumably better) firm governance these efforts seem to also be rooted in a change in mindset indicating that these investors believe CEOs can have great influence on outcomes – otherwise why push for their replacement which often comes with great difficulty and expense to both the investors and the targeted firm?

The process of appointing new CEOs has changed as well. In Vancil's classic depiction of the succession process, CEOs were often selected from among several internal candidates in an orderly "relay" process that ensured stability and continuity (Vancil, 1987). Specifically,

Vancil notes:

*"The most common pattern of CEO succession in large U.S. corporations is to select an overt heir apparent several years before the incumbent is expected to step down. Analogous to a relay race, these two executives work in tandem until the CEO passes the baton (the CEO title) to his teammate. The other succession process...is a horse race, an exciting event yielding a winner – and several losers. In the relay process, the promotion of the heir apparent is almost a nonevent (Vancil, 1987:1)."*

Vancil's classic description of the CEO succession process barely recognizes the idea of outside succession and, rather than noting the value of hiring a direct outsider, emphasizes the importance of hiring mid-level managers from the outside so as to eventually create a pool of potential internal CEO candidates who have been exposed to other firms. For example, in making recommendations about the ideal process, Vancil notes:

*"Another gauge of healthy practice in CEO succession can be defined by a simple question: Has one or more of the pool of candidates been employed by the company for*

*less than ten years? Many companies have an excellent management development program, and believe they must validate its effectiveness selecting a loyal, career employee as the next CEO. But for most companies, the national market is too big to ignore [...with some firms...] hiring an outsider as heir apparent...but searching for symptoms that may signal potential trouble, I believe that continuous inbreeding is a major red flag. Every large company should be hiring mid-career executives from the outside.”*

And while Vancil acknowledges that some firms may directly hire an outside CEO when internal talent development falls short of delivering the right candidate, his advice seems clearly aligned with the selection from among one or more specifically groomed internal candidates.

More recent CEO successions seem to indicate a new way of thinking. Rather than relay successions or horse races among internal candidates, boards have increasingly considered and hired outside CEOs (Brown, 1989). A Booz and Company report suggested that nearly 25% of all CEOs are now external hires, a number that continued to creep up in recent years (Karlsson & Neilson, 2009). Khurana (2002) wrote extensively about the process of firms searching for “savior CEOs” with these most often coming from outside the firm. They are often pushed by analysts and investors to find a CEO who has “the right profile” and who will be accepted by Wall Street as legitimate agents of change (Khurana, 2002). In short, outside succession has become more common which again suggests a certain change in mindset regarding the influence CEOs can have on firm outcomes.

### ***Perceptions of a changing business environment***

Certain environmental trends, or false beliefs about the environment, might also conspire to create perceptions of growing CEO impact. For example, popular management books often talk of the current periods in the direst of terms. In his book *The Management Myth* Stewart (2009) documents a long history of supposed gurus starting off their best-selling books with somber warnings about the uncertainty of the current period especially in comparison to the relatively calmer periods of just a few years ago. In one of the most poignant examples of this

abuse, Stewart documents more than 40 years of writing by Peter Drucker and notes the following:

*Peter Drucker, who in this respect had the misfortune of being productive too long, is perhaps the most obdurate proponent of the view that there is no time as vexatious as the now. In the spring of 2001 Drucker insisted that we were “in the throes of a transition period.” But, according to his 1980 book, *Managing in Turbulent Times*, the age of turbulence is already upon us, and the era of “predictable times” is confined to “the 25 years between the Marshal Plan and the OPEC cartel” in 1973. In 1969, however, while the world was presumably relaxed in this idyll of predictable times, this same Drucker argued in a book titled *The Age of Discontinuity* that the Age of Continuity has come to an end. Go back another decade into this Age of Continuity, to the flat-earth year of 1959, and Drucker was writing, “At some time during the last 20 years [1939-1959], we imperceptibly moved out of the Modern Age and into a new, as yet nameless era” (Stewart, 2009:262).*

Drucker is not alone in receiving some gentle ribbing by Stewart as he also mentions similar passages over time coming from modern writers such as Hamel, Prahalad, and Peters and even the classic writings of Marx and Schumpeter. With some of the top business writers constantly banging the drum of change, it's no wonder that a common depiction of the present is that the business environment of the late 20<sup>th</sup> century was more challenging to navigate than that of the 1950s, 60s, and 70s. There certainly are some realities to this belief. The pace of mergers and acquisitions, pressure from institutional investors, and the performance sensitivity for CEO termination all increased over the time period (Andrade, Mitchell, & Stafford, 2001; Kahan & Rock, 2008; Khurana, 2002). On the other hand, some of the “symptoms” of the supposed turbulence – such as volatility in the stock market, are mistaken interpretations.

The pace of mergers nearly tripled between the mid-1970s and the 1990s (Andrade et al., 2001). By some accounts, nearly one-fourth of large firms were the target of hostile takeover bids in the 1980s (Mitchell & Mulherin, 1996). The overall rate of mergers and acquisitions continued to grow even after a spate of state-level anti-takeover legislation went into place in the late 1980s. As Khurana argued, the pressure on CEOs, though lessened somewhat by anti-

takeover legislation, remained high because of the evolving role of large institutional investors who continued to lobby for action by applying pressure on the CEOs and boards of underperforming firms (Khurana, 2002). This is borne out by the fact that the 1990s saw approximately 50 percent more merger activity than the 1980s (Andrade et al., 2001) while evidence of record-breaking M&A volume from the early and mid-2000s suggested this trend continued (Dealogic, 2007).

Absolute growth in various stock indices also contributes to the belief that the environment is more turbulent. In a series of papers, Schwert argued that “scale illusion” causes the general public and even the media to equate large point swings, that are small in percentage terms, with overall volatility (Schwert, 1990; Schwert, 1997; Schwert, 2002). To make this point he noted (in 1997) that “all but three of the 35 largest [point] increases in the Dow Jones Industrial Average (DJIA) have occurred in 1996-97” while “27 of the 35 largest decreases in the DJIA happened in 1996-97 (1997:3)”. However, as Schwert points out, volatility should be measured in terms of the percentage change in value of the market index rather than absolute point swings. Though the DJIA has been tracked since 1885, none of the large point swings came before 1987. Similar patterns are seen with the S&P 500 index. Conversely, Schwert showed that the prevalence of large *percentage* changes are more evenly spread throughout history and that, while there has been intermittent periods of high volatility, “the typical level of monthly standard deviation [in market returns] is about 4% (1997:5).”

To social scientists and others trained in statistical methods, belaboring the point that absolute point swings are meaningless for comparative purposes over time may seem nearly ridiculous. However, the public and the media remain mystified by increasingly large point swings on the major markets even though, in proportional terms, they are unexceptional. News



reports often lead with headlines decrying the number of points lost or gained on the DJIA or S&P (Schwert, 1997). Only later in these reports does one read or hear that the percentage change was much more modest. The media's focus on the gain or loss of points only serves to reinforce the "scale illusion" problem highlighted by Schwert.

While large point swings can influence both the beliefs about how hard it is to operate in a given market context and, by extension, the magnitude of CEO impact, the media also tend to reinforce human causes of large market swings. Reports often speculate or outright blame stock declines directly on CEOs (e.g. Pui-Wing & Christopher, 2006). Going beyond one single firm, the media have even attributed large overall market swings to individual human causes. During his reign as chairman of the Federal Reserve, news outlets would follow Alan Greenspan's every word and attribute every possible market move to his comments and announcements (Bligh & Hess, 2007). More recently, following the meltdown of the financial industry in 2008, network news outlets would often superimpose a live number for the DJIA and S&P 500 over the screen while reporting live on a speech by one of the presidential candidates. This continued into 2009 as newly elected President Obama took office. Commentary following the President's speeches would attribute market moves to the content of the speech. Even while guests refuted these spurious links, news anchors continued to make the attributions (Lazo, 2009; Mooney & Gomstyn, 2009; Morcroft, 2009).

In short, false indicators of turmoil including the constant drumming from management authors and the increasing size, in points, of market swings, as well as more concrete changes in terms of M&A activity and shareholder activism combine to create a sense that the world is, indeed, more turbulent. With the media's inordinate focus on these changes serving to reinforce

them and with a general bias towards human attribution, it becomes a very small leap to conclude that these factors lead to beliefs of increased CEO impact.

### ***Executive compensation***

The decades-long rise in compensation of top executives in the United States has been well studied (Bebchuk & Grinstein, 2005; Crystal, 1991). For example, researchers have documented the recent rise in CEO pay noting that average pay for S&P 500 firms grew from \$3.7 million to \$9.1 million between 1993 and 2003 (Bebchuk & Grinstein, 2005). In 2003, the top 5 wage earners in these firms took home nearly 10% of their firm's net earnings. This is up from about 5% just 10 years earlier. While research on this topic has rapidly increased in the 17 years since revision of disclosure rules and the launch of the Execucomp database in 1993, the trends we see today started long before that time. This fact was well documented 20 years ago, as Crystal (1991) showed that CEO compensation grew by more than 400% in the 1970s and 80s while average worker pay stagnated.

While there is strong agreement on the existence of the rapid increase in compensation, the reasons for and appropriateness of the increase have been hotly debated. At first glance, one could easily draw the conclusion that if CEOs gain increasingly large compensation packages then someone (shareholders, boards, or otherwise) must think they have an increasingly important impact on organizational outcomes. Otherwise, why increase their pay? While compelling, this argument ignores the nuance present in several other theories of increased CEO pay. Below, I group these into two broad categories – power of the CEO and free market forces – and then develop arguments suggesting that both views presuppose a belief, by one or more actors, that CEOs have an increasing impact on firm outcomes.

The first line of argument focuses on the power relationship between a CEO and the board. In what is regarded as a failure, by the board, to properly monitor and discipline the CEO, this view suggests that CEOs co-opt their boards of directors (Wade, O'Reilly, & Chandratat, 1990), have a large say in the setting of their own compensation (Bebchuk, Fried, & Walker, 2002), and are only restricted in setting their own pay by what appears legitimate to external actors (Bebchuk & Fried, 2006; Hambrick & Finkelstein, 1995). For example, research has shown that firms with low levels of board control result in greater CEO pay (Boyd, 1994) and firms with powerful CEOs are more likely to establish long-term incentive plans but never fund them, as this would raise compensation risk for these CEOs (Westphal & Zajac, 1994; Zajac & Westphal, 1995). Powerful CEOs have also been shown to face a lower risk of termination when performance declines (Boeker, 1992; Salancik & Pfeffer, 1980). Perhaps as evidence of CEO power and control over compensation, research shows that as option pay has increased, it has not been offset by a reduction in guaranteed cash compensation. Instead, cash compensation continues to grow at rates similar to average employees, but this comes along with the increasing amounts of incentive pay awarded to CEOs (Bebchuk & Grinstein, 2005; Walsh, 2008). In short, this view suggests that CEOs have great leverage with the board when establishing compensation and this has allowed for the extensive growth.

Related to this is research that argues that compensation is largely driven by firm size. In an oft cited piece that is widely viewed as a seminal work on executive compensation, Baumol (1967) found that compensation was tied more closely to firm size than firm profitability. Subsequent research and a meta-analysis affirmed this view (Tosi, Werner, Katz, & Gomez-Mejia, 2000) with some even arguing that CEOs might pursue mergers and acquisitions for the express purpose of increasing the size of their firm and, as a result, their compensation (Amihud

& Lev, 1981; Kroll, Simmons, & Wright, 1990), especially in firms without dominant stockholders (Gomez-Mejia, Tosi, & Hinkin, 1987). Most recently, an interesting study by Tervio (2008) finds support for the argument that managerial ability doesn't impact compensation at all and, rather, that it is largely dictated by firm size.

From this perspective, increased pay is largely the result of the compensation plan being designed and approved through a process controlled by the CEO. Importantly, however, this view recognizes the need to limit pay levels to some standard of legitimacy from the perspective of shareholders and, perhaps, the media and the general public. The explicit or tacit approval by these constituencies suggests that they believe the pay is reasonable in relation to the challenge of the job and, by extension, the impact CEOs can have on firm outcomes. Further, those not directly involved in the process perhaps assume the large pay package is a signal of a CEO's overall importance and impact.

The second broad stream of research and commentary focuses on free-market forces and the increasing challenge or difficulty of a CEO's responsibilities (e.g., as a result of the environmental shifts discussed above) as the reasons for the rapid pay increase (Combs & Skill, 2003; Kaplan, 2008). Under this logic, CEO pay is set by market forces, through "arms-length" negotiation, where CEOs attempt to sell their services at the highest price while boards act to obtain the best deal and talent on behalf of shareholders. This system implies that CEOs must be "worth" their pay otherwise the market would not bear the cost. Specifically, "the price can go up if (i) the value to companies' of executives' services goes up (demand side), (ii) executives' reservation value (resulting in part from executives' outside options) goes up (supply side), or (iii) the job nature or requirements become more demanding or costly for executives (Bebchuk & Grinstein, 2005:298)". Supporters of this view argue that all three of these forces are acting in

concert to rapidly increase CEO compensation: that jobs are getting more challenging (Kaplan, 2008); that they require greater skill (Hoskisson, Castleton, & Withers, 2009), that reservation prices are increasing (Spatt, 2004) (both from growing wealth and the challenge of the job), and that, given recent growth in the stock market (prior to the current financial crises) their value to firms was, also, increasing (Kaplan, 2008). Again, with the exception of a CEO's reservation price, each of these arguments presupposes a belief, by one group or another, that CEOs can have a tremendous impact on firm outcomes and that it is worth absorbing the growing cost to find the right one. Otherwise, if boards believed CEOs had a limited or declining impact, they would seemingly be willing to accept a lesser CEO at a lower price, as the impact would be minimal.

Beyond these two arguments, there seems to be a more basic indicator that many believe that CEOs are increasingly important – CEO compensation continues to grow. Perhaps the most persistent findings in the managerial discretion literature (Hambrick & Finkelstein, 1987) are that greater discretion is positively associated with compensation (Cho & Shen, 2007; Finkelstein & Boyd, 1998; Maignan & St. Onge, 1997; Rajagopalan & Finkelstein, 1992) and greater discretion is associated with an increased CEO impact on firm outcomes (Crossland & Hambrick, 2007, 2009; Finkelstein & Hambrick, 1990; Hambrick, Geletkanycz, & Fredrickson, 1993; Quigley & Hambrick, In Press). While CEO pay packages have received some attention from the media and politicians and extensive attention in the academic literature, there has been little in the way of serious opposition coming from institutional investors and large shareholders. If there was, the trend would surely reverse. This would suggest that major shareholders are pleased with the deal they are getting. It may be that shareholders and boards believe CEOs have

greater discretion, should receive greater pay, and by extension have larger impacts on firm outcomes.

Some evidence about perceptions of relative CEO importance or impact can also be gleaned by looking at how their pay has changed relative to lower level employees and relative to other top executives. As reported by Frydman and Saks (2010), in 1950, the typical CEO made about 30 times more than the average employee. By the 2000s, CEO pay grew to more than 110 times the average worker. Also, relative growth was not just limited to comparisons with average workers. While CEOs and other top executives both saw incredible increases in pay over this period, the gap between CEOs and other top executives has also increased steadily since the early 1970s. If relative pay can be construed as a signal as to the beliefs about the relative importance of each class of worker, the growth in CEO pay relative to all other categories of employees would seemingly highlight their growing importance and impact as well.

Each of the items discussed here may be the result of multiple factors, some of which may have little or nothing to do with increased CEO influence. My arguments here should not be taken as an affront to other views that seek to explain some or all of the trends discussed above. However, I do argue here that, taken together as a body of evidence, the manifestations of increased media glorification and attributions of CEO influence, the changing nature of succession and CEO tenure, popular perceptions about a changing business environment, and increased CEO compensation are evidence that some groups believe CEOs have grown more impactful and signals to other groups that they too should believe that CEOs have grown more impactful. Below I offer a test of these ideas with a specific stakeholder group: stock owners.

## **Empirical analysis**

While the research streams discussed above are suggestive of increased attention paid to CEOs and increasing attributions of CEO impact over the last 60 years, past research does not demonstrate, explicitly, that there has been an actual change in beliefs with regard to CEO impact. Though CEOs are clearly receiving greater attention, it may be that stakeholders generally think their impact has remained the same. While surveying stock analysts or the general public about this topic might seem to be a viable way of testing the existence of these perceptions, the responses for beliefs held by people 60 years ago would likely be suspect. In practical terms, it's not likely possible to directly measure and compare perceptions of CEO impact over this 60 year period. Instead, to assess how these beliefs might have changed, I used market reaction to a unique succession event as a proxy for beliefs about the relative importance of today's CEO versus those in the 1950s.

Building on past research that measured the market reaction to the death of a firm's CEO (e.g. Etebari, Horrigan, & Landwehr, 1987; Worrell & Davidson, 1987; Worrell, Davidson, Chandy, & Garrison, 1986) I use the natural experiment of unexpected CEO death to discern the markets beliefs about leader impact. To the extent that there have been changes in beliefs about leader impact, one would expect the magnitude of market reaction, without regard to direction, to also change. Below I summarize past research in this area and highlight key findings that support my argument that markets will react differently based on perceptions of CEO impact. I then outline the methods to be used in the empirical study followed by the results and a discussion of the findings.

### ***Summary of research on unexpected CEO death***

Past research on the passing of CEOs and other top executives has typically focused on how the event impacts firm performance and results have been mixed (see Table 1 for a summary of past research on CEO death). In the earliest paper in this stream of literature, Johnson and colleagues studied market reactions to unexpected executive death, which included CEOs, board chairs, and presidents, and found that “sudden executive deaths have little systematic impact on *average* stock returns during the trading period beginning the day the executive died and ending the day the *Wall Street Journal* obituary notice is published (Johnson, Magee, Nagarajan, & Newman, 1985:172).” However, when looking at post-obituary returns, the authors found “excess returns were characterized by increased cross-sectional dispersion suggesting that positive and negative stock price adjustments to the executives’ deaths occurred (Johnson et al., 1985:173).” Further, positive returns were seen with the death of an executive who was a corporate founder while returns were negatively associated with a CEO’s compensation relative to other executives. The authors argue this indicates that the market considers the relative importance of corporate leaders when reacting to unexpected death.

In similar fashion, Worrell and colleagues (1986) studied executive death (CEOs and board chairs) and found no direct impact on market returns. They speculate this is a result of offsetting subgroups of positives and negatives and find support for this in a significant negative effect for sudden CEO death (as opposed to deaths of other executives or those who had previously announced a terminal illness). Further study found a positive market reaction to internal succession following CEO death (Worrell & Davidson, 1987) and a negative reaction to the death of a key executive in small-cap firms (Worrell & Davidson, 1989). Etabari, Horrigan, and Landwehr (1987) found a significant negative reaction for sudden deaths as well. Larson



(1999) however, contradicted earlier findings by showing no impact for the death or sudden death of CEOs though, in this study, the focus was on the CEOs of small firms.

In a study of a broader set of CEO succession events, Hayes and Schafer (1999) compared market reaction of CEO loss to another firm to loss through unexpected death. They found that loss through death was associated with a positive 3.82% abnormal market reaction while loss to another firm was related to a negative 1.51% abnormal return. Interpreting this finding, they argued that, on average, CEOs leaving for another firm must possess greater ability, reflecting the fact that, after vetting, another firm chose to hire them. Thus, the negative market reaction reflected the loss of an above average CEO combined with the limited prospects of hiring another above average leader. Conversely, the positive reaction to death reflected a separate mix of CEOs that would logically include at least some CEOs of lower quality. Thus the market assumes there are greater odds that a better CEO will be hired, improving performance and boosting stock price.

In short, while this stream of research has generated mixed results, it has uncovered some important and interesting patterns. Most notable for this dissertation is the indication that, while the overall effect of CEO death is unclear and likely close to zero, there is a tendency for large positive and negative reactions for certain subgroups. For example, in the most recent study of CEO death, market reactions ranged from negative 31% to positive 25%. This trend is poignantly reflected in a recent 5% drop for shares of Apple following the false report of the death of the firm's CEO, Steve Jobs (Collingswood, 2009). It is clear that at least part of the market reaction is a direct judgment of the passing CEO's human capital, their impact on the firm, and the anticipation of how likely it is that a new CEO will possess lesser or greater skills. If CEOs generally had little or no impact on firm outcomes relative to other factors such as the

firm, industry, or time period, we would expect the range of positive and negative reactions to be quite small in magnitude. However, if CEOs have great influence over firm outcomes, one would expect reactions to be increasingly large in magnitude, either positive or negative. Based on the theoretical arguments made above, if shareholders believe that CEOs have become increasingly important determinants of firm outcomes, the following hypothesis can be presented:

*Hypothesis 1: The magnitude of market reaction to unexpected CEO death, without regard to direction, will increase between 1950 and 2009.*

It's important to note that finding evidence of a larger reaction (or not) to unexpected CEO death does not answer the secondary question of actual CEO impact. A change in the magnitude of market reaction could be indicative of a real increase in the impact of CEOs over time, or it could simply be evidence of a perceived increase in their impact where none really exists. Thus, while this study will provide some evidence regarding the attention paid to CEOs and perceptions of their impact, additional empirical analysis will be needed to draw solid conclusions about the merits of this increased attention. That topic is addressed in chapters three and four.

## **Methodology**

### *Sample*

The sample was formed by searching obituaries reporting the deaths of top executives. The initial selection was made using the obituary listing in *Standard and Poor's Register of Corporations, Directors, and Executives* (S&P Register hereafter) which documents the passing of top executives in both public and private firms. This volume was searched for CEO deaths for each year between 1951 and 2010 (each volume reports on activities from the prior year). Since

the CEO title was not commonly used in the earliest years of this sample frame, the first selection identified passing executives with the title of CEO, president, or chairman of the board. Because this directory reports on both public and private firms, the complete list of CEO, president, and chairman deaths was then cross referenced with the list of firms in the CRSP database and those from private firms were eliminated. A total of 2,069 deaths were identified from public firms with titles of CEO, president, or chairman.

Using several online databases including ProQuest, Lexis-Nexis, and Mergent Web-Reports, each death was researched to determine two key pieces of information: 1) was the executive still CEO at the time of death and 2) was the death unexpected. Because the S&P Register reports the most recent title for each passing executive, it is possible (and quite common) that a passing “CEO” resigned the position before their death. Using company announcements, formal obituaries or other newspaper coverage, and announcements of subsequent CEO appointments, the executive’s final title and disposition at the time of death were confirmed. Because the title CEO was not always used, there was some ambiguity for those who died with the title of president or chairman. Additional searches were performed to determine if these individuals represented the top executive position within the firm at the time of death. This process is outlined in Appendix D. Of the 2,069 originally identified executive deaths from public companies, 631 were identified as holding the CEO position at the time of death. For each of these, the cause and circumstances of death were also documented.

Using the cause of death, those events which could have been anticipated by the market were eliminated. For example, common causes of death included health related issues such as heart attacks and cancer as well as accidents such as automobile or plane crashes. Illnesses not previously identified that resulted in the sudden or near sudden death of an executive (e.g., the

same day) were coded as unexpected. These included events such as heart attacks, strokes, and aneurisms. If a CEO was stricken by an illness, such as a heart attack, and survived for a few days before passing, it was coded as a “short illness” and eliminated from the sample. Similarly if the death was caused by a disease that is commonly identified weeks, months, or even years before death occurs, such as with cancer, the case was eliminated. Finally, some CEO deaths were accompanied by vague descriptions for the cause of death such as “short illness”, “long illness”, “died suddenly” or “died unexpectedly.” Short and long illnesses were coded as such and eliminated from the main sample. Deaths reported as sudden or unexpected were coded as such and, unless additional evidence suggested otherwise, included in the sample. Finally, some announcements included no information on the cause of death. These were also excluded from the main sample. In every case of sudden death, extensive searches were performed to ensure no related illnesses were reported in the weeks or months preceding death.

Similar to the process for illnesses, accidental deaths were coded as unexpected to the extent that death occurred without some intervening time between the accident and ultimate passing of the executive. Finally, cases of murder and suicide were also coded as unexpected.

Using these filters, a total of 193 unexpected CEO deaths were identified and included in the main sample. An expanded sample was also formed that included the main cases plus short illnesses and those cases without cause of death. Separate models were run on the two samples.

### ***Measures***

For each identified event, the following items were recorded: date of death, age, and because organizations face considerable risks when their first CEO departs (Carroll, 1984), a dummy variable coded to 1 if the CEO was a founder. Events were also linked with relevant

Compustat and CRSP data to include recent accounting and stock market performance. Using the Compustat data, three performance measures were also calculated for the fiscal year prior to each CEO's death: industry adjusted return on assets (ROA), return on sales (ROS), and return on equity. ROA was calculated for each firm-year as net-income divided by total assets. ROS was calculated by net-income divided by total revenues and also recorded for each year. ROE was calculated by net-income divided by stockholder's equity. The industry median value was then subtracted from each performance measure. The industry median performance was calculated using all firms in the same SIC code and year from the entire Compustat database. Because the final analysis is concerned with the magnitude of market reaction to unexpected death, without regard to sign, each of the industry adjusted performance measures were also recorded without sign as the absolute value of industry adjusted ROA, ROS, and ROE.

### ***Statistical Techniques***

Two forms of statistical analysis were performed. First, following the most common method of studying unexpected executive death, I completed a standard event study (Fama, Fisher, Jensen, & Roll, 1969) which calculates the market reaction that can be attributed to the release of new information – in this case the unexpected death of a CEO. Using broad market data from a specified period before each event and market performance in the days surrounding the event, a predictive model estimates what the expected returns for each firm would have been had the event not occurred. These expected returns are removed from actual returns, leaving the abnormal return. The cumulative abnormal return (CAR) is then calculated over one or more time periods for the event.

The event study was performed using Eventus software provided through the Wharton Research Data Service (WRDS). The estimation models for predicting expected event period

returns used data from the year prior to and ending 30 days before the event (e.g., between 255 and 30 trading days prior to the event). Cumulative abnormal returns were then calculated for each of the following event windows: -1 to 1, -1 to 2, -1 to 3, -1 to 5, and -1 to 30. The sample of 193 events was then split into two 30-year periods and the magnitude of cumulative abnormal returns was compared between samples using a t-test, to compare the simple means, and a variance test (sdtest in Stata 11.0), to compare the dispersion of each sample<sup>1</sup>. An alternative analysis was performed using three 20-year periods following the same process.

The second analysis used each event's CAR magnitude as a dependent variable in a multivariate OLS regression<sup>2</sup> similar to Friedman and Singh (1989). Predictors included time period, past performance (industry adjusted and absolute value of industry adjusted ROA, ROS, and ROE), CEO age, and a dummy variable for founder CEOs. To test for differential period effects of founders, the interaction of time period and founder was also included in the models.

## **Results**

### ***Event Studies***

Table 2 provides a summary of the sample of unexpected CEO deaths including the number of founders and frequency of cause of death by time period. About 50% of the deaths occurred as the result of a heart attack. It is likely that a number of the deaths described as “sudden” or “unexpected” are also the result of heart attacks. Together these causes account for between 68% and 78% of unexpected CEO deaths. It is also interesting to note that airplane

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<sup>1</sup> An alternative analysis was attempted where each CAR was transformed into a CAR magnitude (by taking the absolute value) before running a t-test to determine if the mean CAR magnitude had increased. While this test conceptually captures the essence of the hypothesis, the t-test assumes a normal distribution. After taking the absolute value of each CAR, the distribution reflects only the right half of a normal distribution. Thus, the variance comparison method provides a more appropriate test.

<sup>2</sup> The dependent variables in these models were formed by taking the absolute value of the CAR. This results a limited range for the variable consisting of only the right half of a normal distribution. In addition to the OLS models reported here, I also ran Tobit models specified for a dependent variable limited to positive numbers only. The results for each model were nearly identical. For simplicity, the OLS model results are reported here.

crashes result in slightly more CEO deaths than car accidents and most of these occurred in general aviation rather than commercial flights. This could offer an interesting argument against extensive CEO use of the corporate jet. The proportion of founders represented in the sample has increased slightly from the earliest to the latest period (growing from 13% to 22%). To ensure any changes in abnormal returns are not tied to this change in the makeup of CEO deaths, the OLS models will control for founder status.

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Insert Table 2 about here  
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Table 3 provides a summary of mean abnormal returns and a count of positive and negative returns for each day in a 30-day window surrounding the unexpected death of CEOs (days -15 to +15). Notably there were significant negative reactions on the day of the event and significant positive reactions on the second, third, and fifth trading days following the event. Curiously, the largest magnitude of abnormal return (-0.68%) comes 11-days following the event where 115 firms saw negative returns and 78 saw positive.

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Insert Table 3 about here  
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Table 4 and Table 5 present the first tests of the hypothesis that there has been an increase in the magnitude of market reaction to unexpected CEO death between 1950 and 2009. Table 4 presents the data using two 30-year periods while Table 5 presents it in three 20-year periods. Before discussing particular results, it is worth emphasizing that my hypothesis is focused on CAR magnitude, without regard to direction. However, it is still interesting to review how the mean CAR changes over this period as well. The first three columns of Table 4 show the various CAR means for each of the two 30-year periods and results for a t-test comparing them. In each case the mean market reaction to unexpected CEO death is near zero and

comparative t-tests are non-significant. To test my hypothesis, the remaining columns provide the standard deviations and the variance comparison tests for the CAR. For each event window, the standard deviation (or magnitude of reaction) increased over time and the differences are highly significant for both one and two-tailed tests (all cases  $p < .001$ ).

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Insert Table 4 and Table 5 about here  
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In an attempt to develop a finer grained view into the increased CAR magnitudes, Table 5 repeats these tests using three 20-year periods. Within each event window, t-tests were performed to see if each measurement differed from each of the other two. Thus, each row displays the mean CAR, standard deviation, and t-tests for just two of the three periods. Though there are a few small but significant differences in the mean CAR for the period of 1950-1969 and 1970-1989, the two longest event windows (extending to +5 and +30 days) are not significant. Further, matching the results reported earlier, the standard deviations increase in all cases and the differences are significant across all event windows and time periods, again providing strong support for the hypothesis.

Table 6 and Table 7 repeat the tests from Table 4 and Table 5 using an expanded sample that includes deaths without a reported cause and deaths from “short-illness” lasting just a few days. Again, the patterns reported above repeat.

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Insert Table 6 and Table 7 about here  
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In summary, the t-tests reported above show that the mean market reaction has remained relatively consistent over time. However, in support of the hypothesis, the variance comparison tests show that the magnitude of market reaction has increased in meaningful ways between 1950



and 2009. The results across time periods, event windows, and even the two samples were highly consistent and, in nearly all cases, highly significant.

### *OLS Models*

Table 8 through Table 17 contains results for OLS models predicting CAR magnitude for the various event windows. Table 8 through Table 12 used dummy variables representing two 30-year periods while Table 13 through Table 17 modeled them with dummy variables representing three 20-year periods. In each case the earliest period is omitted. Thus, positive coefficients are needed for the period dummy variables in order to support my hypothesis.

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Insert Table 8 through Table 17 about here  
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Table 8 includes models estimating CAR magnitude from one day prior to one day following the event (-1,+1). In model 1, founder is strongly related to increased CAR magnitude ( $p<.001$ ) while the period of 1980-2009 is marginally related to increased CAR magnitude ( $p<.10$ ). The performance indicators and interaction of founder and period were not significantly predictive of CAR magnitude.

Table 9 includes models estimating CAR magnitude from one day prior to two days post the event (-1, +2). In model 1, Founder and the period of 1980-2009 are both significantly related to increased CAR magnitude (both  $p<.001$ ). In models 2, 3, and 4, ROA, ROS, and ROE are all negatively related to CAR magnitude ( $p<.05$  for ROA and  $p<.10$  for ROS and ROE). That is, better performing firms had smaller CAR magnitudes following unexpected death. In these models, founder remained highly significant (always  $p<.001$ ) while period 1980-2009 declined slightly in significance (to  $p<.05$ ). Their coefficients, however, remained the same. The absolute value of industry adjusted ROA was marginally significant and positively related to

CAR magnitude, but this pattern was not repeated with the other absolute value performance measures. In model 8, the interaction between period and founder was not significant.

Table 10 includes models estimating CAR magnitude from one day prior to three days following the event (-1, +3). In model 1, founder and the period from 1980-2009 were both significant and positively related to CAR magnitude ( $p < .01$  and  $p < .001$ ). Neither the performance indicators nor the interaction were significant.

Table 11 includes models estimating CAR magnitude from one day prior to 5 days following the event (-1, +5). Again, model 1 shows that founder and the period of 1980-2009 were positive and significantly related to CAR magnitude ( $p < .01$  and  $p < .05$ ). Models 2, 3, and 4 show that industry adjusted ROA, ROS, and ROE were marginally and negatively related to CAR magnitude (all  $p < .10$ ), while the absolute value performance measures and the interaction were not significant.

Finally, Table 12 includes models estimating CAR magnitude from one day prior to 30 days following the event (-1, +30). In model one, founder was marginally significant and positively related to CAR magnitude ( $p < .10$ ), age was significant and negatively related to CAR magnitude ( $p < .05$ ), and the period from 1980-2009 was again highly significant and positively related to CAR magnitude ( $p < .001$ ). In models 5, 6, and 7, the absolute value for each industry adjusted performance indicator was marginally significant and positively related to CAR magnitude. In these models, founder was no longer significant and the impact of the period from 1980-2009 was diminished. However, it is important to note that the sample size was reduced by about 30 events for each of the performance models due to missing data. In each case the signs and coefficients remained consistent. Thus, these reductions in significance may reflect the

smaller sample size rather than a true shift in the underlying impact of age or founder status with the inclusion of the performance measures.

In Table 13 through Table 17, these models are repeated with dummy variables representing three 20-year periods. To simplify discussion, the periods will be referred to as period 1, 2, or 3 for 1950-1969, 1970-1989, and 1990-2009 respectively. Table 13 follows Table 8 in estimating CAR magnitude for the window from one day prior to one day following the event (-1,+1). As seen in the earlier models, founder was highly significant and positively related to CAR magnitude ( $p<.001$ ). Period 2 and period 3 were both positive and significantly related to CAR magnitude ( $p<.01$  and  $p<.05$  respectively). As seen in Table 8, the performance indicators were not significant predictors of CAR magnitude. However, in a deviation from the earlier models, the interaction of founder with period 2 was significant and positively related to CAR magnitude ( $p<.01$ ).

Table 14 follows Table 9 in estimating CAR magnitude for the window from one day prior to two days following the event (-1, +2). Repeating what was seen in Table 9, model 1 shows that founder and the time periods were highly significant and positively related to CAR magnitude ( $p<.001$  for founder and period 3 and  $p<.01$  for period 2). Industry adjusted ROA and ROE were marginally and negatively related to CAR magnitude ( $p<.10$  in each case) however ROS was not significantly related. Also as seen in Table 9, the absolute value of industry adjusted ROA was marginally significant and positively related to CAR magnitude ( $p<.01$ ). Finally, in model 8, the interaction of founder and period 2 was marginally significant and positively related to CAR magnitude ( $p<.10$ ). The interaction with period 3 was not significant.

Table 15 follows Table 10 in estimating CAR magnitude for the window from one day prior to three days following the event (-1, +3). Following the earlier models, founder and both

period 2 and 3 were all significant and positively related to CAR magnitude ( $p < .01$  for founder, and  $p < .001$  for period 2 and period 3). As seen before, neither performance nor the interactions was significant.

Table 16 follows Table 11 in estimating CAR magnitude for the window from one day prior to five days following the event (-1, +5). Consistent with the earlier models, founder and both period 2 and 3 were significant and positively related to CAR magnitude ( $p < .01$ ,  $p < .05$ ,  $p < .01$  respectively). Unlike the earlier models for this event window, none of the performance indicators were significant predictors of CAR magnitude.

Table 17 follows Table 12 in estimating CAR magnitude for the window from one day prior to 30 days following the event (-1, +30). Consistent with the earlier models, founder was marginally significant and positively related to CAR magnitude ( $p < .10$ ) and age was significant and negatively related to CAR magnitude ( $p < .05$ ). Period 2 was not significantly related to CAR magnitude but period 3 was significant and positively related to CAR magnitude ( $p < .01$ ). As seen earlier, in models 5, 6, and 7, the absolute value for each industry adjusted performance indicator was marginally significant and positively related to CAR ( $p < .10$  in each case). The interactions for founder and period were not significant.

In summary, some fairly consistent patterns emerged across all of the models. In each of the event windows, founder was positively related to CAR magnitude in nearly all models, through the strength of the relationship declined in the longest event window which stretched to 30 trading days following the event. Confirming the results of a study by Carroll (1984), it seems that the market assigns unique importance to the unexpected death of a founder CEO. Finally, in both the models that used two 30-year periods or three 20-year periods, the latter years were generally significant and positively related to CAR magnitude, relative to the omitted

earliest period. While the middle period was not always significant in the three-period models, the results indicate that the magnitude of market reaction to unexpected CEO death has increased between 1950 and 2009, even after controlling for founder status, age, and past performance. When combined with the results from the variance comparison tests discussed earlier, there was strong overall support for hypothesis 1.

## **Discussion**

In the opening sections of this chapter, I argued that certain changes related to the modern CEO were indicative of a change in beliefs about the impact CEOs have on organizations. I argued that changes in media portrayal, CEO hiring, tenure and succession, business environment, and CEO compensation all indicated that some stakeholders believed that CEOs mattered more in the latter years of the period between 1950 and 2009. Using the unique natural experiment of unexpected CEO death, I found strong support for this idea with one particularly important stakeholder – shareholders. Using both variance comparison tests to compare the magnitude of average cumulative abnormal returns and multivariate OLS models, I found consistently strong results for an increased CAR magnitude in the later years of the period under study. While the findings consistently supported the formal hypothesis presented earlier, the totality of results merits further discussion in a number of areas.

### ***Market Reactions to Other Events***

While the formal hypothesis presented earlier was supported, concluding that these results are indicative of an underlying change in how shareholders view the potential for CEO impact requires an inductive leap that might be derailed by a few alternative explanations that cannot be fully ruled out. For example, though I found reactions that grew in magnitude over time, it might be that the market reacts (or overreacts) to all kinds of unusual market events

purely as a result of changes in the way stocks are traded in more recent periods rather than as a function of changing beliefs about CEO impact or importance. For example, the use of technology to trade stocks has grown substantially and supports the more efficient and timely distribution of information. At the same time, technology can increase the likelihood of large market swings through contagion that is amplified by the use of automated trading programs (Jain & Johnson, 2008). If contagion is more prevalent in times of major financial crisis, perhaps similar patterns of trading can also impact the magnitude of reaction following acute events such as CEO death.

To investigate this possibility, I reviewed literature for another form of event study – market reactions to announced mergers and acquisitions. Simply comparing the mean abnormal returns will not provide information on how the magnitude of reaction to an event has changed as there are typically both positive and negative gains that offset each other. Instead, standard deviations are needed. Unfortunately the common practice in this literature does not include reporting the standard deviation of cumulative abnormal returns. Of the 13 US samples covered by a review of acquisition studies (Tuch & O'Sullivan, 2007), only one reported a standard deviation. The same was found in reviewing other event studies.

While it is not possible to compare other event studies, some information can be gleaned from general market characteristics. For example, there is a common misconception that markets have become more volatile in recent years. If markets were more volatile, it would be logical to conclude that the reaction to important events, such as CEO death, would have grown as well. However, this belief has been refuted by empirical research (Schwert, 1990; Schwert, 1997; Schwert, 2002). Schwert argues that many mistakenly attribute large point swings in various stock indices (e.g., the DOW and NASDAQ) to increased volatility. But, Schwert

demonstrates that markets have not grown more volatile when considering the more appropriate measure of percentage change over a given period. In short, markets in general are not more volatile suggesting the findings here reflect the underlying events rather than broad changes in market characteristics.

### ***CEO Death Increasingly Rare***

It is also important to consider how the market reaction to unexpected CEO death may have changed over time as well. The incidence of unexpected death for CEOs of publicly traded firms has become exceedingly rare. In this study, 6 CEOs died unexpectedly in 1950 while there was only 1 in 2008. There were no unexpected deaths in 2009. In comparison, the merged Compustat-CRSP database includes only 365 firms in 1950 but more than 5000 in 2009. Thus the rate of unexpected CEO death was nearly 1 in 60 in 1950 but has since dropped to 1 per several thousand in recent years. One can point to a number of reasons for this, including safer vehicles, increasing life expectancies, and a medical system that is better at both the detection and treatment of potentially life threatening illnesses. Therefore, even if a CEO faces a life threatening illness today, they will likely know about it sooner, allowing them the opportunity to announce it (thus it is no longer unexpected) and/or resign. The changing rate of unexpected CEO death is a limitation of this study and one that future empirical research should consider.

### **Conclusion**

This study found significant differences in market reactions to unexpected CEO death. While this cannot be construed as proof of changing beliefs about CEO impact, the findings are consistent with the argument that market participants place more importance on the impact of a CEO in the later years of the study period than they did in the earlier years. In the following chapters I consider if CEOs have had actual increasing impact on firm outcomes.





**CHAPTER 3:**  
**IS THE ROMANCE WARRANTED? A CASE FOR INCREASED MANAGERIAL  
DISCRETION AND LEADER EFFECTS, 1950 – 2009**

While in Chapter 2 I focused on the increased attention given CEOs, perceptions of their increased impact, and the specific attributions of one stakeholder group – shareholders – in this chapter I consider if these attributions are warranted. By focusing on historical shifts in the social and business environment I develop a theoretical position arguing that CEOs have greater latitude of action, or managerial discretion (Hambrick & Finkelstein, 1987), are encouraged to enact larger and bolder decisions, and, as a result, have had a greater influence over firm outcomes in 1990s and 2000s than they did in the 1950s and 1960s. This is not to say, however, that all factors have moved in favor of increased managerial discretion. Thus, following my arguments for a general increase in managerial discretion, I discuss several factors that may have limited CEO discretion and influence. First, however, I provide a brief overview of managerial discretion with an emphasis on a dynamic view of the construct.

**Managerial Discretion**

Hambrick and Finkelstein (1987) developed the managerial discretion concept to reconcile opposing views on the relative importance of firm leaders. While those from the organizational ecology, institutional, and neo-institutional views argue that overwhelming forces of the environment, organizational inertia, and normative constraints limit a leader's impact on organizations (DiMaggio & Powell, 1983; Hannan & Freeman, 1977; Pfeffer & Salancik, 1978), management strategy scholars have emphasized the broad impact top executives have on organizational outcomes as a result of their decisions and the extensive control they have over

their organizations (Andrews, 1971; Child, 1972; Hambrick & Mason, 1984). Discretion offers a resolution to this debate by suggesting that leaders matter to the extent they have discretion, or latitude of managerial action.

Discretion can be most easily understood by considering the relative latitude available to the CEO of a heavily regulated, slow-growing electric utility company as compared to one in the relatively unregulated, rapidly-growing consumer electronics industry. Clearly the CEO of the electric utility is constrained in both the types and magnitudes of choices available. For example, because of large capital investments to run an electric utility, there is very little freedom with which this CEO could decide to enter or exit a business or rapidly expand to entirely new geographic areas. Similarly, regulation and commoditized products limit potential actions that can be taken in terms of product development and pricing. In contrast, a CEO in the consumer electronics industry can make rapid decisions to enter and exit businesses, launch new products, adjust prices, and target new customers with near reckless abandon. With industry growth, the electronics CEO can seek to gain a portion of developing markets rather than fight for a slice of a pie that is relatively fixed. For good or for ill, the consumer electronics CEO has much more latitude of action and, thus, will likely have a greater effect on firm outcomes.

Numerous studies have shown the value of the managerial discretion concept. For example, increased managerial discretion has been shown to enhance the relationship between top management team tenure and persistent strategies and performance (Finkelstein & Hambrick, 1990) as well as firm performance and commitment to the status quo (Hambrick et al., 1993). Discretion also helps explain some of the variance in executive compensation. Notably, high discretion settings are associated with higher executive pay and increased incentive-based

compensation (Finkelstein & Boyd, 1998) while also leading to a greater link between performance and compensation (Magnan & St. Onge, 1997).

### *A dynamic view of managerial discretion*

In proposing the concept of managerial discretion, Hambrick and Finkelstein argued that it was rooted in three specific sources: task environment, internal organization, and managerial characteristics. Most empirical studies have operationalized discretion at the firm or task environment (industry) levels (see Carpenter & Golden, 1997 for an exception) using objective factors (e.g., organizational slack, size, asset intensity, product differentiability, etc.) or subjective classifications (e.g., natural gas as low discretion and computer software as high discretion) or the relative industry-level scores developed by Hambrick and Abrahamson (1995).

With this near exclusive focus on firm and industry characteristics as the determinant of managerial discretion, past research has also generally treated it as a static or time invariant construct. That is, rather than considering the possibility that broad environmental factors have impacted discretion in important ways, past empirical research has typically treated as static the amount of discretion available in various industrial settings. For example, the steel industry has been described as having relatively low discretion as compared to the computer equipment industry (Hambrick & Abrahamson, 1995). But, as shown by Hambrick and colleagues (Hambrick et al., 2005), the steel industry has seen vast changes in the choices available to leaders as a result of mini-mills and related technological innovations and shifts in the economic environment. At the same time, growth has slowed in the computer equipment industry (Smith, 2009) and many of the products have matured to commodity status (Carr, 2004). In fact, a recent study of leader effects found steel industry CEOs to have a greater impact on ROA than

their counterparts in the computer hardware and office equipment industry (Wasserman, Nohria, & Anand, 2001).

Interestingly, Hambrick and Finkelstein gave considerable thought to this possibility in their original discussion of discretion by asserting that “chief executives in high-growth industries have more discretion than those in low-growth industries” and that “the greater the instability of demand, the greater the chief executive’s discretion (1987:381-382).” Further, they noted that quasi-legal constraints and industry structure would have varying effects on discretion. To the extent these can change (e.g., regulations can be scaled back and industries, like steel, can be transformed by new entrants), available managerial discretion should change as well.

There have been suggestions of a dynamic view of discretion in empirical work as well. Several studies have ranked industries in terms of the CEO effect size or in terms of the discretion available at the industry level. For example, Hambrick and Abrahamson (1995) developed an index of discretion by industry using data from 1985 to 1989. Also, Wasserman and colleagues (2001) focused on the variance in firm outcomes attributable to CEOs across several industries much like the original Lieberman and O’Connor (Lieberman & O’Connor, 1972) study referred to often in this paper. As shown in Table 18, among the 10 industries that overlapped between the two more recent studies, Hambrick and Abrahamson found that the computer equipment industry was the second highest discretion industry while Wasserman et al. ranked it ninth in terms of the CEO’s effect on ROA and fifth in terms of Tobin’s Q. Similarly, Wasserman et al. found the scientific and electrical instruments industries to have the greatest CEO effect while Hambrick and Abrahamson found these two industries to be widely divergent at rankings of three and eight respectively.

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Insert Table 18 about here  
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There are fewer overlaps with the Lieberman and O'Connor study (which used data from 1946-1965), and the dependent variables take a different form, but, some comparisons can be made here as well. Lieberman and O'Connor found that leaders accounted for 7.4% of the variance in return-on-sales for the petroleum refining industry, while Wasserman et al. found they accounted for more than twice that, at 18.9% of return-on-assets and 11.2% for Tobin's Q. In soaps and toiletries, the change was in the opposite direction. Lieberman and O'Connor found leaders associated with 44% of the variance while Wasserman et al. found they were associated with only 5.8% of return-on-sales and 9.8% for Tobin's Q.

Changes in managerial discretion are not limited to shifts at the industrial level. Some evidence points to the potential for broad shifts in discretion that could impact industries across the entire economic spectrum. In a relatively new stream of research, Crossland and Hambrick (2007, 2009) argued and found that managerial discretion varies across national contexts as a function of differences in certain formal and informal institutions. While informal institutions are likely to remain quite consistent over time, several of the formal institution measures used in the study can, and likely do, undergo substantial change over time within a particular setting and this should lead to changes in managerial discretion and CEO impact. In particular, Crossland and Hambrick found that ownership dispersion and employer flexibility, measured as the protections afforded employees from mass terminations, the existence of employee protection regulation, and the existence of certain firm-level employee protections, was related to increased discretion within a particular country. While there is some debate about the relative dispersion of ownership in the US versus other countries (Holderness, 2009) the rise of mutual funds,

pension funds, and individual investors (Hall, 2000) has changed the nature of ownership in the US, providing the potential for a profound impact on discretion.

Further, unionization and employment practices have both evolved in the United States over the last 60 years. Between 1964 and 2008 union membership rates have dropped from near 30 percent to just 12.5% (Hirsch & Macpherson, 2009). In recent years, temporary employment arrangements and outsourcing have provided employers with increased options and flexibility (Kalleberg, 2000). With these arrangements, CEOs have fewer restrictions on their ability to quickly increase or decrease the size, and associated expense, of the workforce to meet company needs or market conditions. These changes grant CEOs broad increases in discretion.

These themes were echoed by Hambrick and colleagues (2005) in a paper that argued against DiMaggio and Powell's (1983) notion of a march towards isomorphism, a process which would seem to limit the impact of CEOs. DiMaggio and Powell argued that numerous forces pushed firms within an industry towards "homogeneity in structure, culture, and output (1983:147)." Specifically, the authors noted a series of coercive, mimetic, and normative forces that led firms facing similar challenges within a structural field to react in common ways that lead to uniformity. These forces included involvement by the government in the setting of standards or in large procurement efforts, increasing ambiguity of corporate goals, a reduction in the number of legitimate organizational forms, and increasing professionalization. While agreeing that these trends would, indeed, lead to isomorphism, Hambrick and colleagues countered that, in the later part of the 20<sup>th</sup> century, these underlying forces began to reverse course. Rather than having increasingly ambiguous goals, it became quite clear in the 1980s that managers needed to maximize firm profits for shareholders. In the same time frame, the government cut spending in many areas while also reducing its involvement in the establishment

of industry standards. New organizational forms emerged with the advent of outsourcing, offshoring, and related options. In short, the pressures towards conformity seemed to reverse course pushing firms towards decreased isomorphism. Hambrick and colleagues conclude their paper with detailed empirical evidence on the steel industry (as noted above), and less comprehensive yet still compelling information on 18 other industries, showing that, on most measures, industries tended towards increasing heterogeneity across diverse measures such as labor costs, capital expenditures, advertising and R&D intensity, and various performance metrics.

In short, though not explicitly investigated, discretion can change over time in a wide variety of settings. This notion has some support in past research and was even anticipated by Hambrick and Finkelstein. Next I turn to a more detailed discussion of the specific factors that have likely lead to increased managerial discretion over the period between 1950 and 2009.

### ***Discretion of actions versus objectives***

Before engaging fully in the discussion of how and why discretion may have changed between 1950 and 2009, it is useful to acknowledge other uses of the term “discretion” and clearly bound the use of the term in this study. Before Hambrick and Finkelstein introduced their concept of managerial discretion, which they defined as latitude of managerial action, economists used the term to define how much leeway managers have to pursue their own objectives versus the objectives of shareholders (Williamson, 1963). In this view, managers with large amounts of discretion can be expected to manage firms for their own benefit, appropriate outsized rents for themselves in the form of salary and perquisites, or take other actions that counter shareholder objectives, all without risk of repercussions. Shen and Cho (2005) argued that these two forms of discretion could be reconciled by aligning the economics view along an

axis that considered “latitude of objectives” and the management view (e.g. Hambrick and Finkelstein) along an axis that included “latitude of actions.” More specifically, Shen and Cho argue that “latitude of objectives addresses the performance pressure faced by managers, whereas latitude of actions addresses the range of strategic options available to managers as they strive to bring about the performance demanded by stakeholders (Shen & Cho, 2005:846).”

In this dissertation, my use of “managerial discretion” refers to the Hambrick and Finkelstein (Hambrick & Finkelstein, 1987) “latitude of actions”. However, I also argue that the two forms of discretion are not arranged orthogonally as suggested by Shen and Cho. Instead, in this essay I present the argument that as objectives became more clearly and narrowly defined through the rise of agency theory and investor capitalism as pursuit of shareholder value, latitude of actions increased. That is, with managers focused intently on and rewarded for delivering shareholder value, they were simultaneously given extensive leeway in determining how best to achieve the desired outcomes. I expand on this thinking below.

### **Increased CEO Discretion and Impact, 1950-2009**

The main thrust of my argument for increased CEO influence is based on the idea that broad shifts in the environment have increased managerial discretion and enabled CEOs to pursue a wider variety of actions than were permitted in earlier times. In short, CEOs have greater leeway to choose different paths. As Guillén argues, “the dominant pattern of politics sets limits to the repertoire of organizational approaches that are either possible or necessary, while the characteristic mode of thought affects the choice of alternatives by managers and firms (1994: xi).” Among the most notable changes in the business environment over the last 60 years has been the shift from managerialism to investor capitalism, the rise of both agency theory and the shareholder value perspective, and the rapid increase in CEO compensation, especially



performance-based contingent compensation. In the sections below, I discuss these and other forces that have influenced the impact CEOs have on their firms over time.

***Quest for organizational stability gives way to increased flexibility and innovation***

With managerialism there was a view of “management as a profession”, that managers faced generic problems across all industries, and that properly trained executives were best equipped to handle the challenges (Khurana, 2007). Further, CEOs and top executives, as members of this profession, had responsibility not just for the proper management of firm’s assets but also for management of those assets in a way that was beneficial to the nation’s economy as a whole. As Khurana (2007) argues, there was a great deal of motivation, post World War II, for managing the American economic system in a way that would generate greater results, collectively, than the rival communist system.

Perhaps inherent in this view of managerialism, and certainly in the practice of management at the time, was a sense that organizations ought to persist, largely in their existing form, and that employees and firms formed relationships that tended to last. As noted earlier, in the 1950s executives tended to be hired from within the firm, were socialized into a particular set of values, and ascended to top positions with certain expectations for how a firm operated (Whyte, 1956). Ironically, the defined benefit pension plan, which is causing so much trouble today in the auto and other industries, is emblematic of the notion that firms ought to persist long into the future, as the design of these plans essentially required it. In time, however, the predisposition towards persistence waned.

In describing the initial growth of corporations in America, Chamberlain noted that as a firm grew in size and scope it “had to pull up its local roots, separating itself from a community in which its managers were familiar civic figures, subject to the constraints of neighbors’

opinions (Chamberlain, 1982:4).” While American business of the 1950s and 60s was well beyond this local focus, the continued growth of the largest industrial firms and their expansion overseas only added to the growing facelessness of corporations and to the decoupling of their goals, objectives, and prosperity from those of the local community and general society which allowed them to form in the first place. The growing wealth of America’s corporate elite also created separation by limiting the interactions between these leaders and much of the rest of society. In so doing, leaders became freer to pursue new and different strategies that may have been untenable in earlier times. In the past, a CEO deciding to close a plant often lived in the town that would be impacted by this decision. Today, as firms grow with operations having greater geographic spread, these decisions have lost this personal connection. In the past a CEO might sit in church on Sunday next to employees of all levels. Today this type of interaction has all but been eliminated.

The view that firms persisted might also have been a function of the types of businesses that dominated the American landscape in the early part of the 20<sup>th</sup> century. Large industrial manufacturing entities formed the largest group of employers in this country. In 1929, nearly 45% of the workforce was employed in industrial settings. By 1950 this number had fallen to 33% and in 1970 was at 28% (Guillén, 1994). This pattern is also seen in the employment patterns in just the fifty largest industrial firms:

*In 1969, the fifty largest US industrial corporations by sales directly employed 6.4 million people, equivalent to 7.5 per cent of the civilian labor force. In 1991 [they employed] 5.2 million people, equivalent to 4.2 per cent of the labor force (Lazonick & O’Sullivan, 2000:19).*

Many of these firms consisted of massive plants with large machinery and other physical assets that certainly limited the choices, or discretion, available to top executives. While firms might pursue mergers or acquisitions in an effort to gain scale, power over competitors, better access to customers, or more reliable access to resources, these moves were typically kept within

existing lines of business (Fligstein, 1990). That is, firms were largely focused on the more efficient production of the same or similar products, and delivering them to a larger group of customers rather than developing vastly new products, developing new product lines, or entering (or exiting) entirely new lines of business. And even within manufacturing, the advent of outsourcing and contract manufacturing reduced the reliance on and constraints of increasingly large capital investments which provided increased flexibility not available to CEOs of an earlier time.

This sense of stability and pursuit of efficiency in existing businesses was evident in some popular conceptions of the time. The ideas of Frederick Taylor (1911), which were developed and embraced in the late 19<sup>th</sup> and early 20<sup>th</sup> century, for example, were to find the “one best way” of executing the business at hand. Through more efficient production, both managers and line employees could improve their lot. The human relations movement built on this with the idea that workers could be partners in developing processes for the most efficient methods of production. As Guillén (1994) argued, two of the prominent views of the era, scientific management and human relations, reflected an optimistic or utopian view of the future that promised a better lot for all. This inward focus centered on stability, by definition, limited attention given to external activities and, thus, limited the range of options available for CEOs of the time.

In sum, from the 1950s onward, there was a series of shifts that gave managers greater latitude to pursue bolder and more transformative actions. As firms grew larger and continued to develop distance between management and the local communities they originated from, much of the underlying pressure for stability began to subside. Second, as the nature of firms shifted from that of a largely industrial base to a broader set of firms, often rooted in a developing

service sector, and embraced outsourcing, managers were less often tied to the large capital outlays that commonly reduce the available options. With less tied up in past capital investments, managers gained increasing flexibility to pursue new strategies that would have been difficult or impossible under earlier conditions.

As firms looked outward, a plethora of new opportunities were presented to CEOs that continued the shift from stable to more dynamic and bold. Below I touch on several specific areas, namely the chance for diversifying into entirely new lines of business, the rise of shareholder supremacy and wealth maximization, shifts in executive compensation that required boldness of action, opportunities for outsourcing or offshoring portions of the value chain, and relaxed regulation that allowed enhanced flexibility. As will be discussed, each of these builds on the idea of stability giving way to a more dynamic view of the American corporation.

It's important to also note that the underlying logic of these arguments should not be taken to imply that each of these forces began precisely in 1950. Rather, many of the arguments made above or later in this section should be seen as general trends that may have begun many years prior to or even following the starting point of the empirical study that will be a part of this essay. That is, while certain forces, such as the shift away from manufacturing, may have begun earlier in the 20<sup>th</sup> century, the continuing trend and full realization of the implications of this shift may not have peaked until long after 1950, the starting point for the study to be discussed below.

***Increased diversification provides initial opportunities for an increasing CEO influence***

In asking why so much attention was focused inward in the early parts of the 20<sup>th</sup> century, Guillén noted that managers were busy with organizational strife and disagreements with labor. As those problems stabilized into the 1950s, managers were able to shift greater attention to larger, more macro issues (Guillén, 1994). As firms began growing into complex, diverse, and

internationalized organizations, the structural analysis view, which emerged in the 1950s and began taking hold through the 1960s and 70s, shifted managerial focus to a higher level of abstraction.

*“While structural-organizational aspects were surely a concern of business managers in the 1880-1955 period, problems related to the creation and handling of an industrial work force, and the organization of tasks and work groups had necessarily captured most of their attention because of rampant industrial conflict and disorderly production practices. Scientific management and human relations became popular among managers because those two paradigms addressed the most pressing issues of industrial conflict and shop-floor organization. Structural analysis, with its ideology of union-management collaboration, could not succeed until industrial strife receded (Guillén, 1994:81)”*

Until this point, it was almost as if managers were working in a closed system, separate from the environment (Scott & Davis, 2007) where they would create the perfect organization and, once complete, it would just run in perpetuity – full rationalized processes run by the perfectly matched employees, each in their ideal job, living ideal lives. These views are apparent in the fairly static rational (Taylor, 1911) and natural systems (Barnard, 1968; Mayo, 1945) theories that dominated thinking in the first 60 years of the twentieth century. Even as views evolved to acknowledge the dynamic nature of the external environment, conceptions of the organization remained fairly static. Both contingency theory (Lawrence & Lorsch, 1967) and Thompson’s (1967) notion of sealing off the technical core of a firm to isolate it from environmental shifts, acknowledged more than one best way to organize, partially dependent on the environment, but still viewed the selection of an organization form as a fairly enduring decision. But, several factors pushed this stability to the side.

In 1950, amid growing concern about the growth of large corporations into monopolistic entities, the mechanism of firm growth and consolidation through related acquisition was largely outlawed via the Celler-Kefauver Act. From this point forward, firms wishing to grow were forced to do so through unrelated diversification moves (Fligstein, 1987). While this regulation

took away certain options for the CEO, it encouraged and legitimized, as a viable option, the basic idea of unrelated diversification which afforded the typical firm a wide range of new strategic choices. At a time when firms were just beginning to shift focus towards more organizational issues and away from micro-operational factors, CEOs were presented with the entirely new, and now legitimate, option of combining their firm with another in an entirely new line of business. Gone was the option of simply acquiring a competitor, supplier, or customer to enlarge the firm. But, in its place came the countless options of merging a firm in one industry with any number of firms competing in other industries and settings. Thus, the imagination and creativity of top managers and the CEO were the only limiting factors in the creation of larger firms pursuing a wide array of newly combined activities. Further, the range of possible outcomes for these moves was significantly larger than those that came from simple related diversification moves which opened up the possibility for a skilled CEO to have a much larger impact on outcomes.

To this end, “In 1950, just 38 of the 100 largest industrial corporations were diversified, versus 60 in 1960 and 76 in 1970 (Guillén, 1994:82)”. Thus, as noted above, the impact of this regulation was not immediate. Rather, it took time for firms to understand and adapt to the reality of the new environment. In short, while the initial passing of the Celler-Kefauver Act initially limited certain options, the results, in time, led to more legitimate choices for CEOs and an increased likelihood that strategic choice on the part of CEOs would have an increasingly large impact on firm outcomes.

Unrelated diversification did not, however, completely eliminate the idea of stability and persistence of firms. Initial forays into unrelated diversification were often undertaken by CEOs looking to hedge risk, reduce chances of their own demise, and otherwise ensure the continued

existence of the entity. Thus, while choosing an acquisition target and integrating a new line of business into an existing firm provided ample opportunity for an increasing CEO effect, some of the motivations were decidedly oriented towards stability. In the short-term, this represented an incremental rather than quantum change in the role or effect of the CEO. However, when combined with the movement towards investor capitalism, as described below, any remaining focus on stability quickly vanished.

***The rise of agency theory and investor capitalism: Satisficing gives way to maximizing***

In the banking industry there was a common saying about the 3-6-3 rule where bankers operated in a simple system that took in deposits at 3%, loaned money at 6% and executives were on the golf course by 3pm. Walter notes “the implication is that the industry was a sleepy one, marked by a lack of aggressive competition” and that “‘bankers’ hours’ also seems to point to a lack of competitive zeal (Walter, 2006:51)”. Walter goes on to argue that these perceptions were somewhat accurate until the advent of deregulation, increased competition, and increased demands from shareholders. This tale reflects a common view held by proponents of agency theory: CEOs need incentives to fully engage in their position to maximize firm performance and shareholder wealth. Once engaged, CEOs would make decisions increasingly distanced from long-prevailing firm or industry norms causing them to have a greater impact on firm outcomes.

More broadly, the view of the role of American corporations began to shift as well.

*“Progressive ideology and post-World War II American policy, holding that corporate interests were subordinate to the public interests, had seen concentrated wealth and power as threats to the American democracy; in sharp contrast, restraints on the corporation’s pursuit of the purely financial interests of shareholders were now widely construed (as they have long been by the American Right) as threats to American’s liberty (Khurana, 2007:304).”*

While an unfettered corporation and resulting concentration of wealth was seen negatively at one time, this was slowly replaced with the notion that regulation, business restraint, and any force

blocking the maximization of shareholder value was, in fact, a greater problem. This view only accelerated in the 1970s and 80s. The rise of international competition, excess capacity of an overbuilt American industry, and, later, the shock of the oil crises all contributed to dismal economic performance in the middle of the 1970s.

In reaction to the poor economic performance of US firms and, perhaps, marking the shift to a new view, economist Milton Friedman (1970) wrote an influential piece about the role of the American corporation (Khurana, 2007). In the article, Friedman stressed that the one and only goal of American business was to maximize profits on behalf of owners.

*“[The CEO] has a direct responsibility to his employers. That responsibility is to conduct the business in accordance with their desires, which generally will be to make as much money as possible while conforming to the basic rules of the society, both those embodied in law and those embodied in ethical customs (Friedman, 1970: 173-174).”*

Gone was the view that firms ought to persist and serve some grander purpose for society. Also gone was the view that managers were selfless stewards of the assets entrusted them. Instead, CEOs were told to maximize shareholder wealth though whatever means necessary. This view necessarily encouraged bold action, a trend that was boosted by the evolving norms in executive compensation (more fully discussed in the next section).

Specifically, CEOs came to be viewed as guilefully self-interested and risk averse operatives (Williamson, 1975) who needed discipline and oversight to fully act in the best interests of shareholders. With this came the belief that managers’ interests ought to be aligned most closely with those of the firm’s owners or shareholders, and this was best accomplished through performance contingent compensation and stock options (Fama & Jensen, 1983). American business became increasingly defined by the seemingly Machiavellian shareholder view that insisted on maximization of profits above all else and above all other stakeholders.



With the rise of agency theory and the shareholder value perspective (Fama & Jensen, 1983; Jensen, Meckling, Field, & Park, 1976), CEOs were expected to focus attention expressly on shareholder returns to the relative exclusion of other goals or stakeholders. Rather than having at least an implicit mandate of ongoing organizational existence, CEOs were expected to maximize returns, often with an expectation of radical shifts in the nature of a firm's business to achieve the end goal. CEO succession is often accompanied with a mandate for change (Gabarro, 1987) that requires a CEO to take extensive action. Traditional business lines, once viewed as sacrosanct, came to be viewed as yet another bundle of assets to be managed for the greatest return, opening up the possibility of divestitures or other actions not open for consideration in years past. While past trends opened up the opportunity of unrelated diversification through acquisition, and the countless choices and combinations that came with this, the new view provided yet another lever of choice for the CEO that both increased discretion and likely increased the effect a CEO could have on firm outcomes. This idea is captured in Child's view of strategic choice:

*“Thus to an important extent, their decisions as to where the organization's operations shall be located, the clientele it shall serve, or the types of employees it shall recruit determine the limits to its environment – that is, to the environment significant for the functions which the organization performs (Child, 1972: 11).”*

The end result was an environment where CEOs were expected to constantly adjust a firm to maximize profits. In short, these shifts broadened the number of decisions that fell on the CEO's shoulders while also increasing the number of legitimate choices he or she could choose from. The end result of which should mean an increasing portion of outcomes attributable to the leader's decisions.

### *Shifts in executive compensation encourages increased boldness and risk taking*

Some have argued that the recent growth of CEO compensation (Bebchuk & Grinstein, 2005) is the result of these increasing challenges (Economist, 2007) and that CEOs deserve the remuneration they receive, as it is largely driven by positive changes in a firm's stock performance (Kaplan, 2008). This is because a key component of the increased compensation comes in the form of performance contingent pay, with the largest piece often stock option grants. Stock options were first used in compensation packages starting in the 1950s (Lazonick & O'Sullivan, 2000). But, with the shift to “downsize and distribute” and the increased focus on stock price brought on by investor capitalism, the shareholder value movement, and the rise of agency theory, their use grew in the 1970s and even more so in the 1980s and 1990s (Bebchuk & Grinstein, 2005).

Thus, in addition to having CEOs face a broad array of challenging strategic decisions, CEOs became increasingly enticed by an incentive structure that encouraged bold moves which ought to result in an increased CEO impact on firm outcomes. Specifically, CEOs granted a large number of stock options face enormous upside potential if a firm's stock price appreciates. Missing, however, is the opposing risk of extensive loss should the stock price decline. While a poorly performing CEO may be dismissed and find it difficult to find employment, a typical CEO would be far from destitute. Spatt (2004), for example, argues that part of the increase in CEO pay comes from their increasing wealth which creates an ever growing reservation price below which they will remain retired. The point is, highly compensated CEOs may be motivated only by large upside potential without being averse to falling short of that goal. Notable here is the fact that falling short of the performance goals means getting paid somewhat less (e.g. just the base salary), or termination, but explicitly does not mean, even in the case of termination or

complete firm failure, that the CEO will lose everything. Unless they are completely invested in the firm, their personal wealth remains safe no matter the outcomes of their choices. This creates an imbalance of incentives that tends to encourage bold moves. This was borne out with an empirical study finding that CEOs who receive stock options tend to take larger risks resulting in greater performance extremeness within their firms (Sanders & Hambrick, 2007). Though this finding comes from a random sample of public firms between 1993 and 2000, it is reasonable to think that, as option pay became more prevalent over the last few decades, that the level of risk taking also increased.

Some would argue that these arrangements are by design – boards provide incentive compensation precisely because they want CEOs to make bold moves that they or incur risk that they would otherwise be unwilling to take on (Jensen et al., 1976). One would also expect pay-for-performance contracts to come with some sort of implicit, if not an open and explicit, agreement that CEOs be granted substantial latitude to vigorously pursue the kind of actions required for the realization of the large payouts inherent in these packages. One can imagine a potential CEO asking upfront if they will actually have the latitude to pursue the risky actions that could lead to the performance needed for large payouts, and declining the position if the freedom isn't granted. Further, since boards have been shown to actively shape strategic change through the selection of a CEO that matches a board's desired strategic direction (Westphal & Fredrickson, 2001), there should be general support for the strategic shifts proposed by a new CEO. Finally, if a board is unwilling to provide this latitude to the CEO, the entire arrangement doesn't make much sense at all. Therefore, it seems the changes in compensation ought to lead CEOs to choose bolder courses of action from a larger array of possible actions which is, in essence, the display of a CEO exercising greater discretion.

In summary, several trends, some with slow beginnings as far back as the 1950s or earlier, began to transform the nature of CEO pay and incentives. Stock options have been a growing portion of CEO compensation and have largely contributed to the reported explosion in pay. With these options comes the incentive for CEOs to take bold risks in an effort to deliver the performance needed to reap the rewards of in-the-money options. Under these circumstances, CEOs have great latitude to pursue strategies that can deliver breakout performance. It is natural to expect that, under these circumstances of enhanced discretion, the CEO's actions would account for a greater proportion of a firm's outcomes.

***Decreased regulation provides latitude for innovation and bold action***

Hambrick and Finkelstein (1987) argued that involvement of the state, or quasi-legal constraint, would have a negative impact on CEO discretion. Clearly the CEO of a heavily regulated utility company faces greater restriction than those CEOs in industries facing little or no regulation. The same can also be said of industries facing decreased regulation. Regulation of American industry goes back at least to the late 1800s (MacAvoy, 1992), and there have been several significant waves across various aspects of the economy. Here I touch on two: financial regulation and antitrust regulation.

First, in response to the financial collapse surrounding the great depression, significant regulation was introduced in the financial services industry. Most notable was the Glass-Steagal Act of 1933 which limited certain activities of banks and financial services firms. Though weakened in several steps over time, the act was completely overturned by the Gramm-Leach-Bliley Act of 1999, which allowed banks, brokerages, and insurance companies to engage in business across all three domains, something that was specifically disallowed under the Glass-Steagal Act.

Next, antitrust regulations were established over time to limit competition-reducing mergers and collusive acts between firms. Though various regulations were established as far back as the Sherman Act of 1890 and the Clayton Act of 1914, enforcement was limited by poorly written laws and distractions such as World War 1, ensuing economic growth, and the depression following the market crash of 1929. What enforcement there was mainly came in the form of restrictions on collusive acts such as price controls and related activities. (Lovett, 1988). Greater restriction on business combinations came with the Celler-Kefauver Act of 1950. This regulation sought to block mergers or acquisitions that would “substantially lessen competition” or “tend to create a monopoly” (Adams & Brock, 1988:7). As argued above, while this act was certainly a discretion reducing force at first, it also legitimized acquisitions of unrelated businesses that ultimately gave executives more choices to consider.

*“A tough line was laid down on larger horizontal and vertical mergers. Big companies with hefty market shares were not allowed to make mergers within their own industries or markets nor to buy up their leading customers or suppliers...with respect to diversification or conglomerate mergers, however, a much softer line emerged. Relatively few complaints against such conglomerate mergers were filed, despite the fact that such transactions flourished and grew rapidly during the rising bull market of the mid to late 1960s (Lovett, 1988:25).”*

Following the economic slowdown of the 1970s, and the election of Reagan in 1980, the FTC and related agencies were given relaxed guidelines of enforcement resulting increased within-industry mergers and increasing industry concentration (Lovett, 1988). Even a spate of anti-takeover legislation at the state level failed to stem the tide of acquisitions.

In addition to a broad relaxation of financial and antitrust regulation, a number of specific industries saw reduced regulation as well. Further, as will be highlighted below, the effects of these changes not only impacted the specified industry but also spilled over to impact the broader business environment. As just one example of how industry-specific deregulation created greater latitude for CEOs, consider the firm Enron. Born of the merger of several energy

companies, Enron competed in the relatively sleepy natural gas industry. In the 1980s, this industry had decidedly low-discretion with prices and certain operational factors closely regulated by federal and state agencies (MacAvoy, 1992). For instance, Hambrick and Abrahamson (1995), using data from the late 1980s, found the petroleum and natural gas production industry to have the second lowest amount of discretion among their list of 17 industries. Also, in an earlier paper, the natural gas industry was used to represent a “low-discretion” industry because “supply and demand were greatly constrained by factors such as the economic climate, international oil prices, and government regulation, which controlled decisions from pricing to capital acquisition (Finkelstein & Hambrick, 1990:490).”

Yet, deregulation of the natural gas industry quickly gained momentum. Through a series of acts beginning in 1978 and continuing into the 1990s, the natural gas industry was able to shed price and production controls that limited the way in which the product could be sold. With the creativity of a few top managers, Enron became one of the fastest growing and most profitable companies in America. Faced with a challenging business environment and limited profits, Jeffrey Skilling “believed the natural-gas industry could get out of its predicament by becoming more like the financial-services industry (McLean & Elkind, 2003:33).” In what has become well trodden ground, the history of Enron shows that a firm acting within one of the most regulated settings imaginable, in a few short years following deregulation, can leverage increased latitude of managerial action and break out into an entirely new business model where the firm’s leaders have a tremendous impact on outcomes. “By October 2000...Enron had returned a stunning 1,400 percent since 1990, more than three times the gain of the S&P 500 (McLean & Elkind, 2003:229).” Though their gains eventually were based on deceptive and

illegal practices, without deregulation, they could not have even begun moving down the path of innovation in an otherwise unattractive industry.

The natural gas industry was just one of numerous industries experiencing substantial deregulation through the later years of the 20<sup>th</sup> century. Similar stories can be written about Southwest Airlines and the aviation industry, countless internet companies stemming from the deregulation of telecommunications, and shipping companies like FedEx and UPS as a result of changes in transportation regulations. A review of legislative action (see Table 19) shows no fewer than eight major industries specifically targeted by major new laws. Trucking, busing, air travel, rail, ocean shipping, natural gas and oil, telecommunications, and financial services were all impacted by a series of laws reducing the role of government regulators in the setting of prices and restriction of competition. The end result was an environment allowing vastly new products and services limited only by the imagination of those managing a firm.

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Insert Table 19 about here  
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It's important to note that the impact of regulation/deregulation is not just constrained to the specific industries mentioned. Rather, many of these industries represent basic building blocks of the American economy – communications, energy, and transportation to name a few – such that increasing discretion in these industries can impact each of the industries that make use of their services. This specific point was argued by MacAvoy:

*“The justification for price regulation of the utilities since the 1887 Act to Regulate Commerce has been to control prices of firms with monopoly power so as to increase the supply of goods and services throughout the economy. Particularly, regulation has focused on reducing prices in the infrastructure, transport, communications, and energy industries to reduce downstream costs of manufacturing and trade throughout the economy (MacAvoy, 1992:10-11).”*

In short, as regulation was reduced in the core infrastructure industries, the effects ripple through the wider economy allowing greater latitude of managerial action to CEOs in other industries as well.

As an example of this, with Enron changing the way natural gas was traded, financial services firms were faced with the decision to participate in the deals developed by Enron, either through direct investments or by offering the innovative investment vehicles to wealthy customers. Similarly, innovations in a deregulated financial services industry led to decisions for executives in a wide array of leadership positions outside the financial services industry. Newly developed financial instruments were often sold to pension funds and municipalities who, by design of law, historically faced limited investment opportunities. By the 2000s, school districts, cities, and pension plans found themselves essentially “insuring” large blocks of corporate debt against default (Waggoner & Krantz, 2008). As regulation waned in one industry, the effects often spread, giving leaders in other industries the opportunity to consider choices previously unavailable.

Gone also was the pressure to regulate emerging industries that might be competitive with or substitutes for existing players within an industry. For example, one of the prime reasons for regulating the trucking industry was because it competed with the already heavily regulated railroad industry (MacAvoy, 1979, 1992). With an overall push towards deregulation, managers in emerging industries faced fewer constraints on their actions.

### ***Outsourcing, off shoring, and changing organization forms***

The 1980s brought additional avenues of choice, and resulting discretion, for the CEO. With the advent of a rough and tumble market for corporate control (Davis & Stout, 1992),



CEOs again faced a shifting set of expectations with regard to how they managed their firms. In describing the shift to this new paradigm starting in the 1980s, Lazonick and O'Sullivan argued:

*“In the name of ‘creating shareholder value’ the past two decades [1980s and 1990s] have witnessed a marked shift in the strategic orientation of top corporate managers in the allocation of corporate resources and returns away from ‘retain and reinvest’ and towards ‘downsize and distribute’ (2000:18).”*

The pressure from corporate raiders in the 1980s shook up a stale corporate structure and "they began firing bland, indecisive leaders, and replacing them with non-organization men" (Nocera, 2002:xvi). While the distribution of excess cash through dividends is a decidedly discretion-reducing event, managers gained latitude from the many ways in which firms could be expected to handle the “downsize” part of the equation. CEOs were now expected to sell off unrelated or underperforming businesses. Outsourcing and offshoring also became commonplace options for a CEO to consider.

Though the concept of outsourcing is nothing new, it was formally identified as a business strategy as recently as 1989 (Mullin, 1996) and its use has grown beyond the jettisoning of non-core activities. The outsourcing of activities like R&D have seen rapid seeing growth in recent years in industries such as electronics and pharmaceuticals (Howells, Gagliardi, & Malik, 2008). Along with this, there has been rapid growth in the use of more complicated business relationships and organization forms such as partnerships, alliances, and joint ventures (Gulati, 2007).

All of these activities include two qualities that enhance discretion and the likelihood of increased CEO impact on firm outcomes. First, the act of choosing a path from the myriad of choices lends itself to increased CEO impact. As Hambrick and Finkelstein (1987) argued, discretion is enhanced in cases of means-end ambiguity. With the broadened set of choices before a CEO, the outcome of any given path becomes less clear resulting in enhanced CEO

latitude. The unpredictability and ambiguity of outsourcing is painfully evident in the countless statistics showing extremely high failure rates. For example, in 2005 the Gartner predicted that “through 2007, 80 percent of organizations that outsource customer service and support contact centers with the primary goal of reducing cost will fail (Gartner, 2005).” Second, each of these choices expands the boundary of the firm and introduces new management and coordination challenges. For example, it takes great skill to coordinate the complex supply chain needed to bring products like the iPhone and iPad to market through a global array of designers, suppliers, and assembly operations. While Apple is quite successful at this, the challenges of managing an ever more complex and global product team is clearly evident in the challenges faced by Boeing as their new 787 aircraft is now delayed by more than 3 years (Ghadge, Dani, & Kalawsky, 2010).

Initially, outsourcing and offshoring were, at the conceptual level, fairly simple ideas. A manager could carve out a well defined function that could be performed elsewhere by lower cost labor (Amiti & Wei, 2009). The number of locations available for offshoring, for example, was limited (e.g., India and eastern Europe) (Farrell, 2006). The process has become more complicated. In addition to simple customer service and production roles, design, development, and more complicated service functions can be outsourced (Burkholder, 2006). The number of target sites for offshoring too has increased and “more than 90% of the supply of young professionals suitable for work in offshore centers reside outside current hot-spot cities (Farrell, 2006:105).” By 2008 the McKinsey Global Institute forecasted shortages of workers in many locations and advised managers to “be creative” in efforts to find pools of talented workers in unusual places. Others have begun to highlight the problems of outsourcing – namely cost overruns, public perception, and risk management, not to mention the challenge of coordination.

These issues only highlight the complexity that comes with modern outsourcing decisions. With this complexity it is likely that greater weight is placed on the selection and implementation decisions which are often initiated and shaped by the CEO which, in turn, should lead to greater CEO impact on firm outcomes.

### **Increased managerial discretion and increased CEO influence**

The line of argument in this chapter has focused on a series of forces that have tended to give CEOs greater discretion and allow or even push CEOs towards greater and bolder actions. Starting at a time, in the 1950s, where CEOs were inclined to maintain the status quo, the 20<sup>th</sup> century concluded in an environment where CEOs were encouraged to take bold action that often included radical change to the nature of a firm's business. The effect of each of these forces on managerial discretion is stylistically represented in Figure 2. I further propose, as depicted in the final graph of the figure, that the summative effect of these forces is a general increase in discretion and, as a result, the proportion of firm outcomes attributable to CEOs. This leads to the following proposition:

*Proposition 1: The percentage of variance in performance outcomes attributable to CEOs increased in period between 1950 and 2008.*

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Insert Figure 2 about here  
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### **Opposing Forces**

Despite the broad forces noted above, it would be inaccurate to claim that there has been a uniform progression towards increasing CEO discretion and a greater CEO effect on firm outcomes. Indeed, there are some developments that likely restrict CEO discretion and influence. For example, the speed of competition or the pace of competitive moves and countermoves may have increased over this same time period. This might include an increase in

mimetic behavior (DiMaggio & Powell, 1983; Galaskiewicz & Wasserman, 1989; Haveman, 1993) which could dampen CEO influence. Below I consider how discretion and CEO impact could be reduced by two specific forces: the pace of competition (including the rise of international competitors) and new forms of regulation.

### *Pace of competition*

In order to find a “CEO effect” firm leaders must deliver performance outcomes that are consistently over (or under) what would be expected as a result of factors that are unique to the industry, firm, or time period. Hypercompetition is the idea that firms can no longer seek to establish a single competitive advantage and reap rewards from that advantage over long periods of time (D’Aveni & Gunther, 1994). If Hypercompetition exists and limits a CEO’s ability to establish a distinct competitive advantage, it is quite possible it will also result in a general reduction in a CEO’s ability to establish a distinct track record and the resulting “CEO effect.” Instead, it may be that CEOs have greater discretion but that any distinct outcomes are too quickly eroded along with any advantage their initiatives may create.

Recent research supports this possibility. Wiggins and Ruefli (2005) found that it has become increasingly difficult to establish and maintain an advantage across a wide range of industries. In another study of manufacturing firms between 1950 and 2002, Thomas and D’Aveni (2009) found that volatility and competition have increased in ways that are also consistent with the concepts of Hypercompetition. Conversely, McNamara and colleagues (McNamara, Vaaler, & Devers, 2003) used a sample from 1978-1997 and found diverging evidence with increasing hypercompetitive tendencies evident until late-1980s followed by more stable conditions in the 1990s.

With hypercompetition, it is still possible that CEOs have increased discretion and increased pressures to make bold decisions. However, to the extent that their actions fail to result in a persistent track record as a result of dynamic market forces, the CEO effect would decline rather than increase.

### *Modern regulatory forces*

Deregulation is a key driver of enhanced managerial discretion and serves a key role in the arguments I make above about the likely sources of any increased CEO effect. However, there are certain regulatory forces and other government actions that could reduce rather than enhance CEO discretion. While the general trend of the last three to four decades has been towards reduced regulation, the emergence of environmental regulations stands in stark contrast to the actions taken in numerous specific industries as discussed above. Since 1970, the United States has spent more than \$1 trillion on efforts to reduce pollution and the impact of these efforts can be seen in the air pollution generated by automobiles, factories, energy generation, and other industrial activities (Jaffe, Peterson, Portney, & Stavins, 1995). A common argument against this form of regulation is that it stymies innovation and weakens US firms relative to international competitors (Porter, 1996a). As a result, the common strategy of US firms was to resist the wave of environmental regulations that were implemented in the 1970s (Fischer & Schot, 1993).

Earlier I argued that the reduction of regulations in one industry would have spillover effects into the industries that consume the services of the newly deregulated one. With the growth of environmental regulations, the exact opposite can occur. However, environmental regulations do not apply to just one industry but, instead, are wide reaching. Thus, their impact can be felt more quickly. The impact of these regulations can be seen in a wide variety of

settings. For example, the cost of building a coal-fired electric plant increased by about 100% between the late 1960s and 1980 (Joskow & Rose, 1985) and many that enter the planning process are never built due to cost overruns and delays caused, at least in part, by regulatory processes (Berry, 2008). Similarly, construction projects or logging activities that have received approval can be stopped because of the discovery of endangered or protected species such as the spotted owl (Flournoy, 1993). The result of these actions can increase the cost of electricity and natural resources and delay construction projects for firms in nearly any industry. By extension, if CEOs are generally restricted (in terms of resources) or slowed down, their discretion and potential impact would be reduced as well.

More recent restriction of CEO action can be seen in the requirements of the Sarbanes-Oxley legislation (SOX) which requires CEOs to implement certain internal controls, disclose additional information, and personally certify financial statements at the risk of significant criminal penalty should irregularities be found. Research following the implementation of SOX showed that US firms suffered negative abnormal market returns as a result of the costs of complying with the regulation (Zhang, 2007). In addition to the time, energy, and cost of SOX, the disclosure rules may discourage a CEO from taking certain actions that would have to be disclosed. Again, because these rules apply across all publically traded firms, the impact is felt broadly and likely restricts a CEO's discretion.

## **Summary**

In this chapter I developed a theoretical case for a general increase in managerial discretion in the period between 1950 and 2008. With increased managerial discretion, I also argue that CEOs will have a greater impact on outcomes related to firm strategies and performance. I also developed arguments for a series of factors that could have the opposite

effect of reducing a CEO's latitude. In the next chapter I will empirically study how CEO impact has changed and discuss the results in light of these competing views.

**CHAPTER 4:**  
**RAMPANT ROMATICIZATION OR INCREASED CEO IMPACT? AN EMPIRICAL**  
**INVESTIGATION OF LEADER EFFECTS ON STRATEGIC CHOICE AND FIRM**  
**PERFORMANCE**

In chapter 2 I argued that there has been an increase in attributions of CEO influence over firm outcomes since 1950. Results of a study of unexpected CEO deaths showed that markets react with increasing magnitude to these events, consistent with a belief in increasingly impactful CEOs. In chapter 3 I sought to establish that these beliefs of increased CEO impact are founded, at least in part, by an actual increase in CEO influence resulting from broad increases in managerial discretion over the last 60 years. In this chapter I empirically test the theoretical assertions from chapter 3 by testing how the variance in firm outcomes attributable to CEOs has changed over between 1950 and 2008. Specifically, I build on the argument that managerial discretion broadly increased over this time period and argue that CEOs account for an increasing amount of the variance in strategic choice outcomes and in firm performance outcomes. Before discussing the sample, empirical tests, and results, I first review past research on CEO effects and formally present the hypotheses to be tested.

**Past research on CEO effect**

It is important to note that this topic has been studied in the past but the combined results fall short of answering the question of how the relative impact of CEOs on firm outcomes has changed over time. Arguing that contextual factors matter more than leaders, Lieberman and O'Connor (1972), in the most notable example, set out to measure the variance in firm outcomes that could be attributed to year, industry, company, and CEO. Using variance decomposition methodology, a statistical technique that allows the measurement of the variance in an outcome



that can be attributed to certain factors, Lieberman and O'Connor found that CEOs accounted for just 14.5% of the variance in return on sales (ROS) while industry and company accounted for 28.5% and 22.6%, respectively. In addition to reporting the relative impact of these various factors, the study demonstrated that the CEO effect varied widely by industry, providing evidence that leadership matters more in some contexts than in others.

Over the last twenty years, several scholars have sought to replicate or expand on the Lieberman and O'Connor study. Table 20 provides a summary of the key results most closely related to the original study showing a range of CEO effect between 5.7 and 14.7%. Despite the fact that this series of studies accounts for a large timeframe, these studies do not provide an answer to the underlying question of how CEO influence has (or has not) changed over time. There are three key reasons for this.

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Insert Table 20 about here  
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First, the initial study by Lieberman and O'Connor (1972), though impressive, is limited by some methodological choices and tradeoffs made in forming the sample and executing the study (see Finkelstein, Hambrick, & Cannella, 2009 for a review of these limitations). Most notably, the authors expressly excluded from their sample any firms that performed a major acquisition or merger during the time of the study. Given that acquisitions and mergers are among the most potent ways for an executive to change the strategy of a firm, excluding these firms from the sample biases the results away from finding larger CEO effects. Next, the original study coded a new leader any time there was a change in president or chair of the board (the moniker CEO was not widely used as an official title until the 1970s). This lack of precision

on such a critical variable, though an understandable choice in the research process, again biases the study away from finding a larger CEO effect.

The second key reason the combination of prior studies fall short of answering the question of changes in a CEO's influence is a function of the differing time periods covered by each study and the limitations noted above. While collectively the studies cover the years 1948 through 2002, each subsequent study used more recent data and revised methods for the purpose of refuting the earlier findings on methodological grounds. While certain studies (e.g. Weiner & Mahoney, 1981) also attempted to closely replicate the Lieberson and O'Connor study as a baseline for comparison, there are still small methodological differences to contend with (e.g. identification of the chief executive), on top of the differing timeframe for each sample. As such, a direct comparison of results across studies will fall short of answering the question pursued in this study.

Third, prior studies have used variance decomposition methods (ANOVA, VCA, etc.) to measure the relative impact of the CEO, firm, industry, and year. While this has been an accepted method for assessing the impact of CEOs, it is not without problems. Brush and Bromiley (1997), for example, demonstrated through Monte Carlo simulation that traditional variance decomposition methods lead to biased and unstable results. Further, because the overwhelming majority of CEOs serve in the position for just a single firm, CEOs are, in essence, nested within the larger structure of firm and industry. As this violates one of the basic assumptions of the linear model – that error terms should be independent across observations – other methods should be considered and may provide more reliable estimates. More recent research on CEO effects and on the relative impact of industry and business segments, have used multi-level modeling (MLM) techniques (Crossland & Hambrick, 2009; Hough, 2006; Klein &

Kozlowski, 2000; Misangyi, Elms, Greckhamer, & Lepine, 2006). Because of their advantages in estimating models with nested data this study also adopted an MLM approach.

Finally, each of the prior studies limited their discussion of variance explained by the CEO to the between CEO effect (2<sup>nd</sup> level in the models described here). As I will discuss in more detail below, what is termed the “error,” or residual, in each of these studies is actually reflective of the variance explained within CEO tenure. As will be shown, important shifts occur at this level as well.

## **Hypotheses**

In chapter 3 I argued that broad shifts in several macroeconomic factors have granted CEOs increased discretion in the period between 1950 and 2009. As a result of enhanced discretion, I argue that CEOs should account for a greater proportion of the variance in firm outcomes. This can be formally stated as follows

*Hypothesis 1: The percentage of variance in performance outcomes attributable to CEOs increased in period between 1950 and 2008.*

Past research on CEO effects has been primarily focused on determining the amount of variance in firm performance that can be attributable to CEOs (see discussion in Crossland & Hambrick, 2007). However, for increased managerial discretion to have an impact on the CEO effect size, there should also be an increase in the proportion of variance in strategic choice outcomes attributable to CEOs. Thus, in addition to investigating change in CEO impact on performance, I will investigate their impact on certain strategic choice outcomes as well.

*Hypothesis 2: The percentage of variance in strategic choice outcomes attributable to CEOs increased in period between 1950 and 2008.*

## **Methodology**

### *Sample Selection*

The selection of the sample for this study required the balancing of three critical demands. First, between the years of 1950 and 2008, the Compustat database contains more than 400,000 firm-years of data. In order to study this topic, a researcher must identify the CEO for each firm-year in the study. While this is a relatively simple process in recent years with the advent of the Execucomp database and the clear identification of the CEO, in prior years, the CEO must be identified through manual search of company announcements and newspaper accounts. Further, prior to the mid-1970s, the term CEO was not widely used. Rather, the top executive within a firm was either the president or, occasionally, the chairman of the board. Determining who held the position of top executive (or, what we today call the CEO), requires extensive searching through archives of newspaper accounts and company releases (see Appendix D for an additional discussion of this issue). Thus, for practical purposes, examination of the CEO effect size must be undertaken on some sub-sample of all available firms. Past studies, have addressed this by focusing on between 13 and 42 industries over time periods of about 20 years, with overall sample sizes ranging from several hundred to a maximum of about 10,000 firm-years of data.

Second, industries selected for study must include a minimum number of firms in a year to allow for a reasonable estimate of firm-level effects. While any number is arbitrary, one past study used eight as the minimum number of firms per year for inclusion in the study (Wasserman et al., 2001). Lieberman and O'Connor's (1972) study had as few as 6 firms in some industries.

Finally, the sampling technique must adequately reflect underlying shifts in the mix of industries represented in the overall economy. Past studies have been limited to about 20-year

periods and have expressly excluded firms and industries that did not exist for the entire time of study. With a sample of 59 years, requiring a firm or industry to exist for the entire period would favor inertial firms or industries and would potentially bias results towards the outcome that CEOs have little effect. This would also eliminate from consideration many of the industries that emerged in the later years of the 20<sup>th</sup> century. For example, requiring an industry to exist with a minimum of eight firms for all 59 years would eliminate several SIC codes making up large portions of the economy in the 1990s and 2000s including SIC 737 (Computer and Data Processing Services), SIC 357 (Computer and Office Equipment), and SIC481 (Telephone Communications), environments where CEOs are likely have a large impact.

To account for these competing pressures, this study used the following sampling process. Selection started with the entire Compustat-CRSP merged database. First, firms were eliminated from consideration based on several screens. Because smaller firms can face distinctive conditions, firms with less than \$100 million in revenues, adjusted to 2009 dollars using the consumer price index (see Figure 3 for a graph of relative values in each year), were eliminated from the sample. Further, financial services and related industries (SIC 600-699) were eliminated because their accounting metrics are so different from firms in other industries. Finally, firms with missing historical SIC codes or those coded as unclassifiable SIC (999) were also eliminated. From the remaining list, industries with four (4) or more firms for any 10 or more consecutive years were retained for further consideration. A minimum of four firms per industry per year was selected to ensure there was a bare minimum of variance within an industry while also allowing oligopolistic industries into the sample. A minimum of ten years with at least four firms was specified based on the argument that an industry failing to meet these minimal conditions was too transitory in nature to be truly considered an industry. A total of 198

industries met these initial criteria. Twenty-three of these industries met these conditions for the entire 59-year sample period.

Next, the number of industries was narrowed using two steps. First, of the 23 industries that met these conditions for the entire 59 year timeframe, 15 were randomly selected. From the industries that existed for at least 10 years but not for the entire 59 year period, an additional 15 industries were randomly selected. Finally, some industries contained an extremely large number of firms. For example, SIC 737 (Computer and Data Processing Services) had 618 firms in the year 2000. In years where an industry had fewer than 30 firms, all firms were included in the sample. In years where an industry comprised more than 30 firms, 30 were randomly selected. In each subsequent year, if the industry continued to have more than 30 firms, a new firm was randomly selected into the sample each time a firm already in the sample dropped out (e.g., ceased to exist or changed to another SIC). Further, to ensure adequate observations for these additional firms, any firm added to the sample through this selection process was included in earlier years as well. The final sample included 1106 firms across 30 industries and a total of 18,113 firm-years of data, which is far greater than previous studies. See Table 22 for a list of industries represented in sample.

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Insert Table 22 about here  
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### ***Independent and dependent variables***

In this study, the variance in various outcome variables (discussed in detail below) was partitioned across several explanatory variables: year, industry, firm, and CEO. The first three of these variables were identified and coded per the Compustat-CRSP database and through the selection of a given firm or industry into the sample. The CEOs for each firm, however, are not

included in these databases. The following process was undertaken to identify and code the CEO for each of the firm-years in the sample.

Careful attention was given to the identification and confirmation of the top executive in each firm. In the later years of the sample (e.g., 1980-2009) nearly all firms clearly identify an executive by the title “Chief Executive Officer” (CEO). However, the CEO title is a relatively recent manifestation. Prior to the mid-1970s, the top executive of a firm was typically given the title of President (e.g., Allen, 1959) though, in some cases, the chairman of the board also retained the role of chief executive. Lieberman and O’Connor faced this same challenge and, as a result, coded a change in leadership any time there was a new president or a new chairman. They note that “although the duties of the two officials vary from company to company as well as within companies, it is safe to say that these are a company’s top positions; and the chief executive officer is always one or the other (1972: 232).” In this study, I sought to more clearly identify the chief executive and found that newspaper accounts and company announcements often identified the chief executive from among these two positions. Thus, the following process was undertaken to document the top executive in each firm-year.

First, using *Standard and Poor’s Register of Corporations, Directors, and Executives*, an annual reference volume listing the top executives for thousands of companies, the CEO (or president) and chairman of the board for each firm in the sample was recorded for every third year (e.g., 1950, 1953, 1956, etc.). Using this baseline of information, each firm and leader was researched using archival sources including newspapers, company news releases, and corporate filings with the Securities and Exchange Commission. A search was performed to confirm each leader’s title and start date. These searches also helped identify predecessors and successors not identified in the first step outlined above. If the leader held the title of “CEO”, he or she was

coded as such. If a CEO was not clearly designated, I then sought to determine which of the “President” or “Chairman of the Board” was designated as the chief executive. Using newspaper accounts of each leader’s appointment, a search was completed to make this determination. When the chief executive was designated in media coverage, it was coded as such. Where no such designation was made, the president was assumed to be the top executive.

The dependent variables consisted of three performance measures and four strategic choice measures. Performance was calculated using three common measures: return on assets (ROA), return on sales (ROS), and return on equity (ROE). ROA was calculated as net-income divided by total assets. ROS was calculated by net-income divided by total revenues. ROE was calculated as net-income divided by stockholder’s equity.

Because of changes in data reporting requirements and in the way data has been archived to electronic sources over time, the identification of strategic choice variables that existed for the entire 59-year period of this study proved difficult. Selection of variables started with the six indicators outlined by Finkelstein and Hambrick (1990), and commonly used in strategy research (e.g., Westphal, Seidel, & Stewart, 2001). Advertising intensity and research and development intensity were eliminated from consideration due to the large number of missing data in earlier periods of the sample frame. The remaining four strategic indicators were retained as follows. Sales, general, and administrative intensity was measured as non-production overhead (e.g., sales, general, and administrative costs) divided by revenue. Property, plant, and equipment newness (PP&E newness) was calculated as the net property and equipment divided by gross property and equipment. Inventory levels were calculated as total inventories divided by revenue. Finally, leverage was calculated as long-term debt divided by total equity.



### ***Model and Estimation***

Researchers have used several methods to determine the proportion of variance explained by certain factors including sequential ANOVA (Lieberman & O'Connor, 1972), simultaneous ANOVA (Mackey, 2008; McGahan & Porter, 2002), variance components analysis (VCA) (Crossland & Hambrick, 2007; Rumelt, 1991) and multi-level or hierarchical linear modeling (MLM or HLM) (Crossland & Hambrick, 2009; Hough, 2006; Misangyi et al., 2006; Short, McKelvie, Ketchen, & Chandler, 2009). In recent years, however, both VCA and ANOVA have been shown to have severe limitations. For example, Brush and Bromiley (1997) showed that VCA estimates were unstable across Monte Carlo simulations and others have argued that these models suffer from limitations due to power, reliability, and interpretation (Bowman & Helfat, 2001). Similarly, VCA and ANOVA both suffer from assumed independence of effects, a violation of the linear model.

MLM addresses many of these issues by accounting for the nested nature of the data and estimating error components accordingly (Klein & Kozlowski, 2000; Raudenbush & Bryk, 2002). As such, MLM (specifically `xtmixed` in Stata 11.1) was used to measure the effect of each factor (year, CEO, firm, and industry) on firm performance. For each of the dependent variables, a nested 4-level unconditional model was estimated with CEO tenure years nested within CEOs nested within firms nested within industries (levels 1 through 4 respectively). This unconditional model can be represented as:

$$\text{Response}_{tijk} = \gamma_{0000} + \alpha_{000k} + \beta_{00jk} + \delta_{0ijk} + \eta_{tijk} + \varepsilon_{tijk}$$

where a given response variable in year  $t$  was modeled as a grand mean ( $\gamma_{0000}$ ), with random effects for industry  $k$  ( $\alpha_{000k}$ ), firm  $j$  ( $\beta_{00jk}$ ), CEO  $i$  ( $\delta_{0ijk}$ ), and tenure year  $t$  ( $\eta_{tijk}$ ).

With each year of a CEO's tenure as the lowest level, this unconditional model does not account for the impact of economic trends common to a particular calendar year. Rather, this only accounts for variance within a particular CEO's tenure. To account for the macroeconomic impact of calendar years, a second model was estimated including a fixed effect at level 1 for each calendar year (Hough, 2006; Misangyi et al., 2006). This model took the following form:

$$\text{Response}_{ijk} = \gamma_{0000} + \gamma_{1000}\text{CALYEAR}_{tijk} + \alpha_{000k} + \beta_{00jk} + \delta_{0ijk} + \eta_{tijk} + \varepsilon_{tijk}$$

where CALYEAR is a matrix of dummy variables representing the calendar year of each performance observation in tenure year  $t$  for CEO  $i$ , in firm  $j$ , in industry  $k$ .

To allow for comparison between different time periods, the dataset was split into 15-year, 20-year, and 30-year panels. Further, separate models were run using all of the industries included in the sample and with only those long-run industries that existed for the entire 59-year period of study.

## Results

Table 23 displays the sample size information by level for the entire dataset as well as for each 15-year period. Table 24 provides means and standard deviations for each of the six dependent variables across the entire sample (top row) and for each 15-year panel. Of particular interest is the overall decline in all three performance measures between the first and fourth 15-year period. Mean ROA for the sample declined from 7.11% in the earliest period (1950-1964) to just 2.48% in the final period (1995-2008). Mean ROS declined from 5.74% to 1.85 and mean ROE declined from 12.07% to 6.57%. While performance steadily declined the standard deviations increase dramatically<sup>3</sup>. For example, the standard deviation for ROA increased from

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<sup>3</sup> Each variable was Winsorized (Barnett & Lewis, 1994; Dixon & Yuen, 1974) at the 1<sup>st</sup> and 99<sup>th</sup> percentile to reduce the impact of outliers on the overall sample mean. The patterns described here were evident (and much larger) prior to Winsorizing.

4.15 to 10.80 while ROS and ROE saw similar increases. In short, between 1950 and 2008, average performance declined, but the dispersion across firms increased considerably.

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Insert Table 23 and Table 24 about here  
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To ensure these performance measures were not indicative of a biased sample, descriptive statistics were calculated for the entire Compustat database. Similar to the sample described above, firms with less than \$100 million in revenue (adjusted to 2009 dollars) were eliminated, and the same patterns remain. To illustrate, mean firm performance for each of the performance measures was plotted for each year 1950 to 2008, as shown in Figure 3. It may also be that these results are biased by size with the mean or median reduced because smaller firms perform differently than larger firms. For example, if smaller firms consistently underperform larger firms, the mean would be reduced unless weights were applied. Figure 5 addresses this by plotting the weighted mean. Again, the general declining pattern holds for all three measures.

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Insert Figure 4 and Figure 5 about here  
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To test the hypothesis that CEO effect size has increased during the period between 1950 and 2008, a series of models were estimated for each DV in each of the four time periods as described above. The raw details of these models are provided in Table 25 through Table 31. Each table covers the four 15-year periods for one of the seven dependent variables. Table 32 provides a summary of these results for the three performance DVs in the form of the proportion of variance explained by each level within each period. This table also provides results for estimates using alternative time periods using two 30-year periods or three 20-year periods. Tests for these differences between periods are shown in Table 33. Because it offers better

granularity, the discussion of results will focus on the estimates using 15-year periods. Table 34 and Table 35 repeat the summary format of Table 32 and Table 33 but for long-run industries only and will be discussed below. Table 36 through Table 39 provides the same information for the four strategy DVs.

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Insert Table 25 through Table 39 about here  
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The top panels in Table 32 provide proportions of variance explained for ROA while the middle and bottom show ROS and ROE respectively. In each case, and counter to what was expected, the variance explained by between CEO differences was greatest in the initial period of 1950-1964. This is followed by a large decline for 1965-1979 and then steady increases in the remaining two periods, 1980-1984 and 1985-2008. As shown in Table 33, except for one of the between period differences for ROE, Fisher's Z-tests of the differences were highly significant. Counter to Hypothesis 1, the proportion of variance explained by between CEO effects did not simply increase in the period between 1950 and 2009. Between the first and last periods tested, the CEO effect declined between 10 and 26%, depending on the performance measure. However, the overall relationship was more complicated than anticipated. Following a large initial decline from the first to the second period, each measure shows an overall and steady increase in the remaining periods.

As noted in the methodology section, past research on CEO effect sizes have limited their samples to industries that existed in some pre-determined size for the entirety of the sampling frame. In an effort to fully capture the CEO effect across the entire economy, the sampling technique in this study included both long-run industries and those that only existed for as few as 10 years. To test if there were differences in CEO effect in the long-run industries, each of the

models were run again using only firms in the 15 long-run industries. A summary of these findings are shown in Table 34 while the results of Fisher's Z-tests are shown in Table 35. The results of these models were nearly identical.

### ***Within CEO Tenure Variance***

The variance attributable to CEOs can come from two levels. In one – between CEO variance – there are some CEOs with generally good track records across their tenure, others with poor records, and finally some who perform consistently in the middle, on average, for their entire tenure, after factoring in expected performance as a function of general economic trends (e.g., calendar year), industry, and overall historic firm performance. These differences in mean performance across CEOs are represented by the “CEO” variance explained as discussed above. The multi-level models calculate this variance by modeling a CEO's mean performance across their tenure rather than each individual year of their performance independently. This form of CEO impact initially declined but has steadily increased as discussed above. Additional variance can be explained by differences occurring *within* a CEO's tenure.

Past studies of relative CEO impact have calculated variance at the industry, firm, CEO, and time levels. In each case, remaining variance is classified as “error” or “residual” variance. Because these studies – the present study included – have multiple observations per CEO, this “residual” actually quantifies the variance occurring *within* the tenure of sampled CEOs as the result of transient factors (Misangyi et al., 2006). Said differently, some CEOs have highly variable performance that can neither be explained by general economic (calendar year) or industry patterns, nor in patterns that are shared across other CEOs. When looking at a single time period, it is difficult to attach meaning to this value and understandable that other studies have called it “residual variance” or “error.” But, when studying several periods, it is instructive

to consider how this within CEO tenure variance has changed. Again referring to Table 32, there was a sizeable increase in variance explained by this level. For ROA, within CEO tenure variance was 26.0% in the earliest period, increased to 50.6% and 57.6% in the middle periods, before declining slightly to 52.3% in the final 15 year period. Models for ROS and ROE exactly match these trends.

In short, while the effect that is accounted for by between CEO differences (e.g., differences in the level-two mean performance across the entirety of each CEO's tenure) saw an initial decline followed by a steady increase that has resulted in an overall decline during the period of this study, the variance explained by differences within CEO tenure (e.g., differences at level 1 or across each year of a CEO's tenure) grew substantially. It is important to highlight that this increased variance cannot be explained by common factors at the industry, firm, or calendar year level, as those variances are accounted for separately in the model. This suggests that CEOs account for an increasing amount of overall firm variance but this effect isn't reflected in the mean performance of a CEO across all years of their tenure (e.g., level 2). Instead, above and beyond what can be accounted for by the environment (e.g. industry, firm, and calendar year), CEOs are generating more variable performance within their own tenure than they were 60 years earlier, and this is after accounting for a great increase in the variance attributable to CEOs.

### ***CEO Effect on Strategy***

In hypothesis 2 I argued that to have a greater impact on firm outcomes, CEOs would also have to account for a greater proportion of the variance in strategic outcomes as well. To test this, multi-level models for each of the four strategy outcomes were estimated, as shown in Table 28 through Table 31. These results are summarized in Table 36. For SG&A intensity and PP&E newness, the variance explained by differences between CEO's increased steadily across

the four periods. Table 38 provides the results of Fisher's Z-tests and shows that the overall increase and all but two between period increases were highly significant. For inventory levels and leverage the results were much more varied. Inventory intensity saw an overall decline of the CEO effect – from 10.4% to just 6.3%. Though the incremental changes between each period were not generally significant, the overall decline from beginning to end was highly significant. The CEO effect on leverage increased somewhat in the period between 1980 and 1994 but returned to prior levels in the final period. There was no overall change.

These models were also tested using a sample of just long-run industries. Table 37 provides a summary of the variances explained while Table 39 provides comparisons between periods and fisher-z tests. As with the performance outcomes above, the patterns were qualitatively unchanged. In short, CEOs explained an increasing portion of the variance in sales, general, & administrative intensity as well as PP&E newness. Conversely, CEOs explained a smaller amount of the variance in inventory levels and their effect on leverage was largely unchanged. Thus, hypothesis 2 received partial support. These findings will be discussed in greater detail below.

### ***Within Tenure CEO Impact on Strategy***

As with performance, CEOs can also explain variance in strategic outcomes through differences occurring within tenure. The amount of variance in SG&A, PP&E newness, and leverage explained by within tenure effects increased between 1950 and 2008. Variance in inventory levels explained by within tenure differences initially increased but ended with a small overall decline. Interestingly, this was the only place where there were significant differences between the full and long-run industry samples. For the long run industries, variance in

inventory levels explained by within tenure effects increased, opposite what was found in the full sample. Possible reasons for these observations are discussed below.

## **Summary and Discussion**

Over the last 40 years, several studies have attempted to document the relative impact of CEOs in comparison to contextual factors captured as differences across firms, industries, and year (Liebersohn & O'Connor, 1972; Mackey, 2008; Weiner & Mahoney, 1981). While each of the previous efforts looked at a single snapshot of time and debated the impact CEOs could generally have on organizational outcomes, these studies did not consider the possibility that the potential for leader impact could change over time. In this study I found that the impact of CEOs on firm outcomes in the United States has changed in some profound ways over the last 60 years.

Counter to what was hypothesized, the proportion of variance that can be explained by differences across CEOs declined across the entire period. However, this effect size reached a low point in the period between 1965 and 1979 and has risen since – but has not yet reached the same levels seen in the 1950s. These findings were consistent across all three performance measures (ROA, ROS, and ROE) and across the entire sample and a sample consisting only on long-run industries. Differences across CEOs also accounted for an increasing proportion of the variance in some strategic outcomes – namely SG&A intensity and PP&E newness. These effects declined for inventory levels and remained largely unchanged for leverage.

Though I do not directly measure the causes for these shifts, I argued above that factors such as regulation, the embrace of agency theory thinking, and the adoption of pay packages heavily laden with incentive compensation might have granted CEOs broader discretion and also encouraged them to make bigger and bolder decisions. I also proposed that this trend began in the 1950s and continued over the 59 year period of study. The results do not support this. The



variance in performance explained by between CEO effects was higher in the 1950s than it was in the late 1990s and 2000s. It might be that many of these trends did grant CEOs greater discretion but that they did not become fully manifest or were offset by other factors until the 1970s. For example, in the case of deregulation, the Celler-Kefauver act of 1950 made it illegal to pursue many types of related mergers. In time, many firms wishing to grow pursued a course of unrelated diversification (Fligstein, 1987). But, there is no doubting that the initial restriction of this act caused some decrease in discretion. Perhaps this is reflected in the results described here. Similarly, the logic around the impact of pay and agency theory thinking really had a starting point of the early 1970s, roughly matching the patterns of increased CEO effect seen in this study and perhaps indicating they played a more important role than other factors.

To gain some insight into when the CEO effect reversed course, some additional analyses were performed. Using the same full sample and modeling technique described above, a series of 46 models were estimated for each DV. Each model represented one in a series of 46 rolling 15-year windows and the amount of variance explained by each level (calendar year, industry, firm, CEO, tenure) was plotted on the y-axis using the mid-point of each window as the corresponding point of the x-axis. For example, the first model included the years 1950-1964, the second 1951-1965, the third 1952-1966, etc. The results for each model were recorded and plotted against time, using the midyear of each model (e.g., 1957, 1958, and, 1959 for the periods noted above). Thus, the point plotted any given “year” reflects the CEO effect for a time 7-years prior to and 7-years following the designated year. These results for performance outcomes can be seen in Figure 6, Figure 7, and Figure 8. Strategic outcomes are shown in Figure 9 through Figure 12. For the performance models, these figures show an inflection point in the CEO effect in the late 1960s. This may reflect the importance of the early 1970s rise of

agency thinking and growth in incentive compensation both of which would have been reflected in the 15-year windows beginning in the mid to late 1960s. Attempting to directly link these mechanisms, of course, opens up a number of avenues for future research which will be discussed below.

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Insert Figure 6- Figure 12 about here  
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### ***Changes in CEO Tenure Length***

Past research has documented that average CEO tenure is declining over time (Kaplan & Minton, 2006; Khurana, 2002) and this could potentially bias the findings in this study. For example, for the CEOs in this sample who completed their terms, the average tenure in the 1950s was nearly 12.5 years. In the 1980s this was down to 8.5. With succession occurring more frequently, it is possible that the greater number of CEOs in a given time period could inflate or deflate the observed CEO effect just as a statistical artifact rather than as a result of some underlying change in their overall potency.

To investigate this possibility, a series of simulated models were estimated using ROA as the dependent variable. Using the existing dataset, the frequency of CEO turnover was artificially increased using the following method. First, each CEO in the sample was assigned a random number between 0 and 100%. Then, if a particular CEO served more than 2 years, their tenure was split in proportion to the assigned random number. For example, if a CEO received 30% as the randomly assigned number and served 10 years, their tenure was split into two parts – one of 3 years and another of 7 years – with the original CEO being assigned to the first period and an additional CEO identifier created to account for the remaining years.

Table 40 shows how the sample sizes differed between the original and simulated samples (namely the increase in the number of CEOs in each period), provides the original and simulated results, and displays the size and direction of change for each effect and period. Year and industry effects remained largely unchanged. As might be expected, artificially adding CEOs consistently decreased the within-CEO tenure effect sizes by a small amount. With fewer years per CEO, there is less variance to explain at this level (and the simulation did not introduce any variance that might ordinarily be expected with a succession event). Inconsistent changes were seen, however, in both between firm effects and between CEO effects, largely in the first period, 1950-1964. In this period, the CEO effect declined by 9.1% and the firm effect increased by nearly the same amount at 9.1%. The number of observations per CEO declined from 4.8 in the actual data to 3.5 in the simulated runs. However, the decreases in subsequent years were as large or larger (e.g., 5.6 to 3.8 in 1965-1979 and 4.3 to 3.2 in 1995-2008) but the effects in those years were largely unchanged. While additional research would be needed to fully understand why this change occurred, the CEO effect was suppressed rather than enhanced, which is opposite what was proposed. If anything, the shortening of CEO tenure would make it harder to find the growing trend in CEO impact that was observed between the late 1960s and 2008.

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Insert Table 40 about here  
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### ***The Effects of CEO-Chair Separation***

When Lieberman and O'Connor originally studied the impact CEOs have on organizations in relation to factors such as time, firm, and industry, they focused on "leadership changes" defined as a change in *either* the president or chairman of the board (the CEO title was rarely used at this time). They noted that they used "Poor's Register of Corporations, Directors,

and Executives to determine personnel changes in these positions (Lieberson & O'Connor, 1972:121)” the same original source used in this study. They also noted that they “could not determine when in a given year the president or board chairman took office (Lieberson & O'Connor, 1972:121).” Where they stopped, modern technology allowed me to continue searching newspaper accounts and company records to determine who the Chief Executive was and when they took office. This also allowed me to document changes in the board chair position and allowed me to consider how duality – or situations where the CEO and board chair are the same person – might have impacted a CEO’s ability to affect firm outcomes.

To test this, the samples for each of the four time periods were split between cases where the CEO also served as chair (duality) and cases where someone else served as chair (other chair). The models for ROA were run separately for each half of the split samples (excluding the other chair variable as it would be constant across all observations). This allowed a direct comparison of the CEO effect in each period based on who occupies the board chair position.

Results of these models are summarized in Table 41 and include the original results for reference. First, it’s interesting to note how the incidence of this condition changed over time. As shown in Table 41, in the first period, 1950-1964, chair and CEO were split 64% of the time. This declined to 42% in the period of 1965-1979 and to just 34% between 1980 and 1994 before increasing slightly, to 40%, between 1995 and 2008. Thus, having separation of the chair and CEO was quite common in the 50s but became somewhat rare in recent years. The results are compelling as well. For the first three periods, CEOs serving with someone else as chair explain a larger portion of the variance in ROA than cases where the CEO also serves as chair. In the final period (1995-2008), however, this trend reverses – CEOs serving as chair explain a larger portion of the variance than those serving with someone else as chair. Interestingly, the exact

opposite trend is seen for the variance explained within CEO tenure and at the firm level. In the earliest three periods, CEOs who also serve as chair have greater within tenure variance and greater variance explained at the firm level than those serving with someone else as chair. In the final period, having someone else serve as chair resulted in slightly higher within tenure variance and greater variance explained between firms.

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Insert Table 41 about here  
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These results might be reflective of four key changes in the way boards hire, contract, and interact with CEOs, namely: 1) the increased incidence of hiring outside CEOs (Khurana, 2002); 2) a decline in what Vancil (1987) described as “relay succession” whereby the predecessor CEO grooms a successor for a period of time, eventually relinquishes the CEO position but remains chair for about a year, and then departs fully with the new CEO becoming chair as well; 3) a shift from “figurehead” board chairs to those tasked with more actively monitoring the firm, a key tenet agency theory (Fama & Jensen, 1983); and 4) the increase in performance-contingent compensation.

In the earliest period of this study, it was most common that CEOs served with someone else as chair. Further, these CEOs were often selected from an internal pool of candidates that had been indoctrinated into the practices and thinking of the firm. As such, upon attaining the additional title of chairman, we would not expect much deviation from the past patterns. More important, however, is that a CEO, in gaining the board chair position, might then appoint a new president or COO as an obvious heir-apparent. The logic, according to Vancil’s depiction is that the newly appointed heir would slowly take over the reins, logically beginning to imprint his or her own mark on the firm. To the extent the CEO, who is now holding both positions, becomes

more of a figurehead, increases his or her activities on outside boards and in other social or civic realms, and grants the new COO freedom we might expect more idiosyncratic actions that would create within tenure variance but, perhaps, not variance that would be reflected over the entire tenure of the CEO. Thus, we would expect increasing within tenure CEO variance and a decreased CEO effect. Further, once the CEO/chair relinquishes the CEO role to the COO, many of the unique initiatives brought by this individual would have already been implemented leading to more stable performance, greater variance explained between CEOs, and lower variance explained within tenure.

This is in contrast with later years where more CEOs are hired from the outside, given extremely large incentive packages and tasked with enacting great change within the firm. In this cases, having a separate chairman likely constrains a CEO from having a unique impact (Quigley & Hambrick, In Press), thus lower levels of variance explained between CEOs and more at the firm level. However, when released from the constraint and allowed to serve in the dual roles of CEO and chairman, a CEO is able to fully make their mark through a larger CEO effect and lower firm effect. In order to paint a more definitive picture about these patterns, however, additional research is needed.

### ***Declining Importance of Industry***

One of the more interesting, if tangential, findings of this study is the overall decline in industry effect. From a high of nearly 12% in the earliest period, industry impact declined to about 2% in the most recent periods. These results suggest two things: that the industry labels we use are less meaningful over time and that the constraints of industries may be declining as well. It is interesting to explore these ideas further and consider why this happened.

First, the labels we use to define industries may be less meaningful over time. The SIC codes used by this study were first created in the 1930s when manufacturing industries dominated the American landscape. In developing the replacement system (NAICS) a report from Census Bureau noted that “the current US SIC may not adequately indicate industries that exist: Three-fifths (574) of the SIC 4-digit industries are goods producing [mostly manufacturing], while the remaining two-fifths (430) 4-digit SIC’s relate to the entire non-goods producing sector...yet the non-goods producing sector is larger than the goods producing sector by most measures (Anonymous, 1991:1).” The shifts in the American economy require that disparate firms such as Google and Microsoft, to share the same 3-digit SIC code. Though similar in many ways, the firms have numerous differences that cannot be fully accounted for in a single SIC. Similarly, one of the arguments made in Chapter 3 was that firms become increasingly diversified, thereby granting CEOs a broader set of legitimate choices to choose from. Though research in strategic management has few choices, defining an industry as a 3-digit SIC code is clearly limiting and may be driving some of the decline seen in industry effect.

Second, even within industries that are well defined and captured by the SIC code system, economic shifts may reduce the constraints places upon firms in any given industry. In one of the more popular management views of the late 20<sup>th</sup> century, Porter argues that managers must develop a series of defining characteristics that distinguish their firm from all others (Porter, 1996b). Only through those efforts can a firm create a long standing competitive advantage. Evidence of firms taking this approach were discussed extensively by Hambrick and colleagues (Hambrick et al., 2005) in a paper that refutes the idea of institutional isomorphism, or the idea that firms would face “an inexorable push toward homogenization (DiMaggio & Powell, 1983:148).” Quite simply, in order for firms to deliver long-term profitability, they must

establish differences that go against the very idea of homogeneity. This may be partially facilitated by the shift away from manufacturing which also shifts firms away from the restraints of large capital outlays for machinery. Further, executives are now given great incentives and told to take on larger risk in order to possibly attain these advantages in the market place. Today we see Apple redefining the laptop with the iPad, Boeing attempting to redefine the modern airplane with the use of composites in the 787, and companies like Facebook, Google, and Twitter are redefining advertising and communications in ways we are just beginning to understand. In short, the decline of the firm effect is likely the cause of two factors. SIC codes are likely a poor mechanism to capture a given set of companies and, within any given set of companies, CEOs are less constrained by traditional forces.

#### ***Comparison with Lieberman and O'Connor***

The results of this study suggest that CEOs, historically, have been far more important determinants of performance outcomes than originally shown by Lieberman and O'Connor (Lieberman & O'Connor, 1972). In their study, using a sample from 1946 to 1965, they determined that CEOs accounted for just 14.5% of the variance in ROS. Using a similar 20-year time period (1950 to 1969), this study showed that CEOs accounted for 36.3% of the variance in ROS, approximately 2½ times greater than what was found by Lieberman and O'Connor. There are a number of reasons for this large difference between the studies. First, as noted above, Lieberman and O'Connor made a number of decisions that biased their results away from finding a CEO effect. For example, their study excluded firms that completed a major merger or acquisition during the years covered by the study and they required firms to exist for each of the sample years, thus excluding some of the major ways CEOs have to impact firm outcomes. This also expressly eliminated CEOs who had the ignominious yet important impact of driving their



firm out of business. Lieberman and O'Connor also coded a change in leadership any time there was a change in either the chairman of the board or president. In this study, I was able to more clearly determine the top executive for each firm-year thus allowing me to test how much of an effect this assumption had on the results shown by these studies.

To make this comparison, the model for ROS was run again for the period of 1950-1969 (which is the period from this study that most closely matches Lieberman and O'Connor). However, as done by Lieberman and O'Conner, a new "leader" was coded each time there was a change in chairman of the board or president. This new variable was substituted in for the variable used to denote the CEO level in prior models.

A summary of these results, Lieberman and O'Connor's results, and the original ROS results from this study are shown in Table 42. Using this modified method of accounting for leadership, the "CEO effect" drops to 25.4%. Thus, this change in the coding of leadership accounts for nearly half of the difference between the two studies.

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Insert Table 42 about here  
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It is interesting to also compare the effects at other levels. In the replication, the year effect remained nearly the same. However, the industry effect is smaller while the corporate effect is larger. This may reflect the fact that this study allowed firms into the sample that performed major acquisitions and also allowed firms to change industries. Most important, however, is that this simple replication helps explain the large gap between the two studies and provides some assurance that the results can be reasonably compared.

## **Limitations, future research, and summary**

A major limitation of this study comes from the fact that the proposed mechanisms behind shifts in CEO impact were not directly measured. Despite this, the study provides important insight into the changing nature of CEO impact and cracks open a number of avenues for future research. First, future research might directly address the main limitation of this study by focusing directly on the mechanisms that cause temporal changes in CEO impact. I proposed that deregulation and other classic measures of managerial discretion shifted broadly across all industries to grant CEOs greater discretion and, therefore, a greater hand in firm outcomes. I also argued that changes in compensation packages provided a strong impetus for CEOs to make bolder decisions and place bigger strategic bets in an effort to earn these lucrative payouts, and shareholders, in many ways, desire CEOs who take on more risk. It may be possible to directly test these ideas and future research should consider that possibility.

Second, while I touched on a few, there may be other mechanisms leading to temporal shifts in CEO impact. Over time, efforts have been made by boards and shareholders to limit a CEO's ability to pursue self-interested (e.g., low risk) strategies and a CEO's ability to extract expensive perquisites from the firm. For example, regulations now require more disclosure of non-financial compensation given to top executives, such as the use of company airplanes or the provision of other services, and deferred compensation arrangements. Past research has shown that CEOs will be more likely to take action in unconstrained domains when constrained in others. With a CEO limited in these ways, their attention may be more squarely focused on making additional strategic decisions that are, on the surface, in the "zone of acceptance" (Hambrick & Finkelstein, 1987) of boards and shareholders. For example, it may be that CEOs just make more strategic decisions and change course more often. This would likely produce the

within CEO tenure results seen in this study and might also explain the part of the overall decline in both ROA and ROS observed over this timeframe as well.

Finally, the results presented here might be the outcome of even more nuanced forces. Hypercompetition is defined as an environment where advantages are rapidly created and eroded (D'Aveni & Gunther, 1994). Recent research suggests that singular competitive advantages are more difficult to sustain and that long term success comes from linking a series of distinct advantages (Thomas & D'Aveni, 2009; Wiggins & Ruefli, 2005). The findings in this study could be the result of hypercompetitive forces that push CEOs to constantly refine and reinvent firm strategies in an effort to link together just such a series of advantages. Thus, future work might also consider the role of competitive dynamics on the relative importance and impact of CEOs on firm outcomes.

In summary, while past research has treated the potential for CEO impact as a relatively static concept, this study highlights how CEO impact on firm outcomes has changed dramatically over the last 60 years in the United States. Though several theoretical mechanisms are proposed for these shifts, this study, however, leaves open to future research elaboration on the causes of these shifts.

## CHAPTER 5:

### DISCUSSION AND CONCLUSION

This dissertation began with a relatively simple question: has CEO impact changed over the last 60 years? In Chapter 2, I documented many of the ways in which CEOs are increasingly glorified and presented arguments supporting the idea that the attention heaped on CEOs is associated with various constituencies believing that CEOs are increasingly important determinants of firm outcomes in the United States over the period between 1950 and 2009. Empirical results from a study of unexpected CEO deaths showed a consistent pattern: shareholders react to the event in a manner consistent with a belief in increased CEO impact. I then considered if this glorification of CEOs and belief about their changing impact was rooted in a quantifiable change in CEO impact or simply a case of what Meindl and colleagues (1985) would call romance of leadership. In Chapter 3, I argued that CEOs became more impactful as a result of gaining broader discretion (Hambrick & Finkelstein, 1987), or latitude of action. My theoretical discussion highlighted how CEOs could have become more impactful as a result of gaining a greater range of choices to select from and through encouragement to take bold action, a result of evolving incentive compensation structures and risk seeking shareholders. In Chapter 4, I empirically studied the changes in CEO impact over the period between 1950 and 2008, and found somewhat more complicated results than expected. While overall, the variance explained between CEOs declined, from 37% to 28% for ROA (and in similar magnitudes for ROS and ROE), it saw an even sharper decline in the earliest periods, to as low as 18%, followed by steady increases since (again with similar trends for other performance variables). However, the variance attributable to within tenure differences increased substantially over the study period. In the most recent period, differences within CEO tenure accounted for more than 50% of the

variance in various performance measures, essentially doubling what it was in the earliest period of the study.

Though the studies in this dissertation answered a number of key questions – namely how CEO impact has changed over the 60-year period of the study – the results also have a number of important implications. Below I discuss some of these.

### **The Importance of Time and Sample Frame**

Perhaps the most surprising result of this dissertation was the fact that the proportion of variance explained between CEOs was actually higher in the 1950s and early 1960s than it was in the late 1990s and 2000s, or, for that matter, any other time in the sample. Moreover, the results exhibited a more complex pattern than the simple monotonic trend I was expecting. That is, the impact of CEOs declined substantially into the 1960s before steadily increasing since. These results highlight some important issues for researchers. First, these findings bring a clearer view of how CEO's impact organizations. Their impact is not uniform across all time periods, but rather, can vary as a function of general social and economic trends. Interestingly, had my sample frame been just 45 years (say 1965 to 2009), I might have drawn very different conclusions about how the impact of CEOs has changed. The CEO effect for the earliest period would have been in line with what Lieberman and O'Connor found. I might have concluded that the CEO effect was steadily increasing, with no major shift in that pattern at any time, and I might have concluded that there was little difference between my method and Lieberman and O'Connor's method of identifying CEOs or leaders. Instead, I found an important inflection point in this effect that should inform other work, and I found a large gap between my results and earlier work spurring some additional analysis that showed that half the differences came from how leaders were identified.

This leads me to a second important implication of these findings. Lieberman and O'Connor noted that "much of the variance in [performance] can be explained by factors other than leadership variance (1972:128)" which suggests that "in emphasizing the effect of leadership, we may be overlooking far more powerful environmental influences (1972:129)." Building on this, Salancik and Pfeffer found that mayors had limited impact on city budgets relative to the constraints of precedent and predecessor commitments (Salancik & Pfeffer, 1977). In response, Mackey highlighted empirical results of increased CEO impact and noted how "adopting new methodological approaches that focus on settings where the effects of CEOs on firm performance can actually be estimated...shows that CEOs can, in fact, have a substantial impact, explaining as much as 29.2 percent of the variance in a firm's performance (2008:1358)." In the context of the results shown in this dissertation, each of these researchers missed the reality that they were chasing a moving target. That is, while certainly some of the change in CEO effect observed in prior studies could be attributed to evolving methods, as shown in my own supplementary analysis above, the CEO effect itself was changing, something prior researchers had not considered.

To their credit, Salancik and Pfeffer (1977) did perform a supplementary analysis on their sample and found greater constraint in the later years. However, they concluded that "mayors who held office more recently would have less discretion than mayors of prior years." Thus, while they recognized that the target could move, much like DiMaggio and Powell (1983) argued for the near inevitability of increasingly homogenous organizational forms, they only considered the possibility that it could move in a single direction.

In summary, there was one group of researchers who took differing results over time and pointed to purely methodological causes, while another group observed a relationship at a single

time period and assumed that it would apply universally. This highlights an important responsibility for researchers. We cannot simply assume that our theories or empirical results are timeless. While at one time Lieberman and O'Connor claimed that both industries and firms were greater determinants of firm performance than CEOs, this study shows that this was not and is not always the case. This also opens up the possibility for researchers to incorporate greater temporal considerations into existing theories which will allow for greater insights into how organizations evolve. Further, it yet again reminds researchers of the importance of questioning and replicating prior empirical results (Hambrick, 2007) that might otherwise be viewed as timeless and sacrosanct. Finally, if different results are found, we ought not to limit our explanations to simple differences in sample composition or methods. Rather, we should consider how temporal considerations might enlighten our theoretical understanding of the phenomenon of interest.

### **Explaining Differences in CEO Effect**

That said, how might the initial decline and subsequent increase in CEO impact be explained? Further, what can explain these findings especially given the seemingly contradictory results that show a simple increase in the market reaction to unexpected CEO death? Below I offer some speculation based on recent research on the evolution of CEO compensation.

In making the case for increasing CEO impact in chapter 3, I highlighted a series of factors that could contribute to this trend. Among them were changes in executive compensation – namely the broad increases in overall pay and in the use of incentive-based compensation. In a recent paper, Frydman and Saks (2010) provided what is probably the most detailed view into executive compensation over time using data painstakingly collected by hand from corporate

filings going back to 1936. Contrary to prior research that found that CEO pay increased steadily in the 1950s and 1960s (Lewellen, 1968), these authors note that “executive compensation was remarkably flat from the end of World War II (WWII) to the mid-1970s, even though firms grew considerably during that time (Frydman & Saks, 2010:2100).” However, the authors provide additional details in the form of after-tax compensation for top executives. In doing so they noted that “after-tax pay [fell] more steeply than pre-tax pay during WWII due to a significant increase in labor income tax rates [and] starting in 1964, after-tax pay [rose] more than pre-tax pay because of the incremental reduction in labor income tax rates over time (Frydman & Saks, 2010:2110).” This is reflective of United States Tax policy that saw the maximum marginal rate increase from 84.36% in 1950 to a high of 92% in 1952. The rates remained at 91% from 1954 until 1963 before declining to 77% in 1964 and 70% in 1965. Though there were some small changes, rates remained near these levels until 1980 when they began to steadily decline (Wilson & Jordan, 2002). In essence, though overall salary remained stable, the take-home pay for top executives, after taxes, declined sharply as a result of changes in the marginal tax-rate (Frydman & Molloy, 2009) and this trend did not reverse until the mid-1960s, roughly matching the point where variance explained between CEOs reversed the declining trend and began to increase.

The fact that the CEO effect has failed to reach prior levels while within-CEO variance has increased substantially could be the result of how incentive compensation changed during the same period. Frydman and Saks noted that “the use of employee stock options was almost negligible until 1950, when tax reform legislation introduced the restricted stock option (2010:2107).” As noted earlier, Sanders and Hambrick (2007) found that stock options led CEOs to take larger risks resulting in increasing performance variability. If the growing use of



options triggered CEOs to take on greater risk and resulted in highly variable performance we would naturally see variance explained by within CEO-tenure differences increase as well. Sanders and Hambrick also note that outcomes are asymmetrical with options triggering a greater number of big losses than big gains. Thus we would also expect average firm performance to decline and become more variable, both of which are observed in the sample used in Chapter 4. In short, the results seen here are highly consistent with the most recent research on CEO compensation. As the connection remains speculative at this point, the similarity in trends highlights an important area for future research.

### **Differences in Firm Effect**

Interestingly, some other work by Frydman provides potential insight into the changes seen in firm effect. In roughly a mirror image of the changes in between-CEO effect, I found an initial increase in the role of the firm followed by a general decline. Though management scholars often focus on the general increase in the hiring of outside CEOs (e.g., Khurana, 2002), Vancil (1987) noted the importance of hiring outsiders into positions below the CEO in order to have a candidate with some outside experience ultimately succeeding the current CEO. In a working paper, Frydman (2005) showed that the proportion of top executives (from among the top 3 highest paid) who worked for the same firm their entire career peaked at almost 70% in 1965. There were general increases up till that point and a general decline subsequently. As seen with compensation and CEO impact, these patterns roughly match the trends seen for variance explained by the firm-level effect. It may be that CEOs indoctrinated to a greater (or lesser) extent within a firm may concurrently increase (or decrease) the observed firm effect. As stated above, further work is needed to provide more conclusive evidence, but the match between these trends is suggestive of a relationship between outside hires the resulting impact of firms.

## **Romance of Leadership and Media Coverage**

The title of this dissertation evoked the concept of romance of leadership (Meindl et al., 1985) suggestive of the possibility that the attention given to CEOs, as described in the opening quote of Chapter 1, was disproportionately large as compared to the real impact CEOs have on firm outcomes. In discussing this possibility I noted how biases in both the media and other observers could easily lead to an over attribution of human (CEO) causes for firm outcomes. It is instructive, then, to note that at least one media outlet managed to track – perhaps unintentionally – the changes in CEO impact fairly accurately.

Building on counts done by Khurana (2002) for the 1980s and 1990s, Figure 13 shows the proportion of Business Week magazine covers featuring a single CEO each year between 1950 and 2000. Noting the familiar pattern, I then plotted the results for the between CEO impact on firm outcomes on the same chart. This is shown in Figure 14. Though the Business Week covers display additional variability, the patterns are strikingly similar. Thus while shareholders seemingly reacted as if CEOs were monotonically more important (in terms of reaction to unexpected death), it seems that at least one constituency – in this case the publishers of Business Week – tracked the importance of CEOs fairly accurately, if unknowingly.

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Insert Figure 13 and Figure 14 about here  
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This simple analysis, however, does not consider the content in the coverage of CEOs. It might be that magazines such as Business Week cover CEOs in frequencies that are relatively consistent with their overall impact, but the language used to describe their them may reflect differences over time. Perhaps the language used in coverage in the 1950s, when the between-CEO effect on firm outcomes was relatively high and the within-tenure effect was low, is very

different from that used in the 1980s, when performance explained by within-tenure factors was highest and between CEO differences were relatively low. Future research might consider these possibilities by analyzing the content of various media accounts.

### **Looking to the Future**

With the relative importance of CEOs changing in substantial ways over the last 60-years, it is useful to consider what these results might tell us about the future. Though any specific predictions about the importance of CEOs five or ten years into the future are mainly speculation, it is possible to glean some informative guidance from today's trends and consider how they might play out in the coming years. I do so below by focusing mainly on the events of the past decade and current economic trends.

Any discussion of the future should first consider events of the immediate past. The past 10 years have been full of turmoil. The 2000s started with the bursting of the dot-com bubble, corporate scandal that introduced America to numerous CEOs who are now in jail, the trauma of September 11<sup>th</sup>, and two wars that are both nearing a decade in length. While the economy recovered somewhat following the dot-com bubble and September 11<sup>th</sup>, the bursting of the housing bubble led to a recession of epic proportions. While the recession officially ended in June of 2009 (Thiess, 2011), the effects are still palpable and will likely remain an issue for several more years. One major characteristic of the ensuing recovery has been its slow pace. In terms of job creation, this has been the deepest and longest decline since World War 2, as companies laid off in record numbers and delayed new hiring even as economic growth rebounded (Thiess, 2011). Firms have also hoarded cash by delaying speculative capital outlays resulting. As a result, business investment (as a proportion of GDP) is lower than at any time in at least the last 50 years (Anonymous, 2009).

The government has reacted in several ways. In response to the scandals in the early 2000s and the economic crises of the late 2000s, broad new regulations have been enacted. As a result of 2002 Sarbanes-Oxley Act, CEOs must now personally sign off on company financials. This regulation also calls for greater disclosure of financial information and transparency of internal processes so shareholders can gain a clearer understanding of a firm's health. Financial services firms have also seen greater regulation, though not to the levels some have called for. In early 2011, nearly 5-years after the start of the recession, the housing market, a key driver of the United States economy (Bernstein & Bivens, 2006), is still struggling and government officials are discussing the president's call for getting the federal government out of the home mortgage business (Dimsdale, 2011).

In terms of the factors driving CEO impact that were discussed in Chapter 3, it appears that many are stabilizing or even reversing course. With the uncertainty around the current economic recovery, many firms are taking a cautious view of the near term instead of taking increasingly bold actions. With investments down, firms are harvesting returns from prior capital outlays and awaiting a clearer picture before moving forward. While diversification provided CEOs an initial opportunity to have greater impact in the 1950s, that trend likely ended in the 1980s. However, we may have seen the pinnacle of agency thinking and the related views of shareholder supremacy and profit maximization. While the typical MBA student in the early 2000s sought out opportunities in investment banking and other seemingly cutthroat but get-rich-quick industries, business schools are seeing a rising interest in socially responsible enterprise, work-life balance, and sustainability (Gangemi, 2009; Symonds, 2009). At the same time, firms are beginning to embrace these topics as well, with green initiatives being announced and chief sustainability officers being hired. While there will be debates about altruistic versus profit

driven motives, the fact that firms are considering – at least on the surface – the broad impact they have on society and the environment, highlights the public’s growing demands for these actions. As a result, there will eventually be an impact on firm outcomes, especially once the current crop of MBA students reaches the executive suite in the next 20 years.

The compensation picture is a little more complicated. Though academics and the media have given the topic increasing attention and lawmakers have considered regulations such as shareholder say-on-pay, there seems to be little evidence of a concerted effort by powerful parties to actually enact serious restrictions on compensation like those seen from the marginal tax rates of the 1950s and 1960s. Nor is there the requisite groundswell of populism that could drive change in this arena. As a result, it seems likely that CEO salaries will remain fairly large. However, the pace of growth may slow.

As mentioned, some regulations have increased and it seems that energy demands and climate change will eventually force governments to regulate or, absent that, firms will have to take action akin to regulation as they transition to new energy sources. Finally, for companies in the United States, it would seem that offshoring might reach a peak in the near term as the Chinese will eventually increase the value of the currency. In doing so, much of the economic benefit of manufacturing products in China will disappear. While firms will still consider outsourcing, as some of this economic activity returns to the United States, the prime driver of outsourcing – cost savings – will disappear. Thus, with costs less of an issue and the removal of geographic hurdles, CEOs may be enticed to bring some of these activities back under direct control of the firm. Perhaps foreshadowing this possibility, 2010 saw net employment increases in manufacturing industries such as automobiles, metal products, plastics and rubber, and electronics equipment (Indiviglio, 2011).

In sum, many of the trends that I argued would increase CEO impact have reversed or stabilized. As a result, we may see a reversal in CEO impact. With stability a more important goal and CEOs taking fewer risks, firms may have less of a need to force out CEOs. They might also hire more insiders. While it remains to be seen if this happens in the coming years, a report by Booz and Company notes that these two trends were observed in 2009 (Favaro, Karlsson, & Neilson, 2010). They also note an increase in the frequency of someone other than the CEO serving as chair and in the hiring of an heir apparent, or what Booz and Company calls the apprentice model. If these trends continue, new subsequent CEOs will have patterns more in line with the company they came from meaning the growth in variance attributable to between CEO differences will likely stabilize. Further, with lower levels of risk taking and a focus on stability following the turmoil of the 2000s, it also seems likely that within-tenure variance will decline. This, in turn, ought to lead to increases in the firm and, perhaps, the industry effect as well.

## **Conclusion**

With CEOs receiving enormous pay packages and being the topic of ongoing media attention, it seems likely that interest in their impact will remain relatively high among academics and the broader public. This dissertation makes substantial contributions to that discussion by providing some important insight into how their impact has changed in the United States over the last 60 years. By using a consistent set of methods with a sample collected from more than half a decade of corporate activities, the results presented here can serve as a firm statement about how much impact CEOs have on various organizational outcomes over time. In turn, the findings also provide a stepping off point for future research into topics such as managerial discretion and CEO impact, executive compensation, and governance.

## REFERENCES

- Adams, W., & Brock, J. W. 1988. Mr. Reagan and antitrust. In A. A. Heggestad (Ed.), *Public policy toward corporations*: 3-16. Gainesville, FL: University of Florida Press.
- Allen, L. A. 1959. *Charting the company organization structure*: National Industrial Conference Board.
- Amihud, Y., & Lev, B. 1981. Risk Reduction as a Managerial Motive for Conglomerate Mergers. *Bell Journal of Economics*, 12(2): 605-617.
- Amiti, M., & Wei, S. 2009. Service offshoring and productivity: Evidence from the US. *The World Economy*, 32(2): 203-220.
- Andrade, G., Mitchell, M., & Stafford, E. 2001. New evidence and perspectives on mergers. *Journal of Economic Perspectives*, 15(2): 103-120.
- Andrews, K. R. 1971. *The Concept of Corporate Strategy*. Homewood, Ill.: Dow Jones-Irwin.
- Anonymous. 1991. Issues Paper No. 1: "Conceptual Issues". Washington D. C.: U. S. Census Bureau
- Anonymous. 2009. Britain: Show us the money; Energy and climate change, *The Economist*, Vol. 392: 54: The Economist Intelligence Unit.
- Barnard, C. I. 1968. *The Functions of the Executive*. Cambridge: Harvard University Press.
- Barnett, V., & Lewis, T. 1994. *Outliers in statistical data* (3rd ed.). Chichester ; New York: Wiley & Sons.
- Bass, B., & Bass, R. 2008. *The Bass handbook of leadership: Theory, research, and managerial applications*: Free Pr.
- Baumol, W. J. 1967. *Business behavior, value and growth* (Rev. ed.). New York: Harcourt, Brace & World.
- Bebchuk, L., & Grinstein, Y. 2005. The growth of executive pay. *Oxford Review of Economic Policy*, 21(2): 283-303.
- Bebchuk, L. A., & Fried, J. M. 2006. Pay without Performance: Overview of the issues. *Academy of Management Perspectives*, 20(1): 5-24.
- Bebchuk, L. A., Fried, J. M., & Walker, D. I. 2002. Managerial power and rent extraction in the design of executive compensation. *University of Chicago Law Review*, 69(3): 751-846.
- Bennis, W. G. 1959. Leadership Theory and Administrative Behavior - the Problem of Authority. *Administrative Science Quarterly*, 4(3): 259-301.

- Bernstein, J., & Bivens, L. J. 2006. The wide impact of the housing slump on the economy. *Economic Policy Institute*.
- Berry, D. 2008. Investment Risk of New Coal-Fired Power Plants. *Western Resource Advocates, Boulder, CO*.
- Blau, P. M., & Scott, W. R. 1962. *Formal organizations: a comparative approach*. San Francisco: Chandler Pub. Co.
- Bligh, M. C., & Hess, G. D. 2007. The power of leading subtly: Alan Greenspan, rhetorical leadership, and monetary policy. *The Leadership Quarterly*, 18(2): 87-104.
- Boeker, W. 1992. Power and managerial dismissal: Scapegoating at the top. *Administrative Science Quarterly*, 37(3): 400-421.
- Borokhovich, K. A., Brunarski, K. R., Donahue, M. S., & Harman, Y. S. 2006. The importance of board quality in the event of a CEO death. *Financial Review*, 41(3): 307-337.
- Bowman, E. H., & Helfat, C. E. 2001. Does corporate strategy matter? *Strategic Management Journal*, 22(1): 1-23.
- Boyd, B. K. 1994. Board control and CEO compensation. *Strategic Management Journal*: 335-344.
- Brown, D. 1989. Race for the Corporate Throne. *Management Review*, 78(11): 22.
- Brush, T. H., & Bromiley, P. 1997. What Does a Small Corporate Effect Mean? A Variance Components Simulation of Corporate and Business Effects. *Strategic Management Journal*, 18(10): 825-835.
- Burkholder, N. C. 2006. *Outsourcing : the definitive view, applications and implications*. Hoboken, N.J.: Wiley.
- Carlyle, T. 1849. *On heroes, hero-worship and the heroic in history : Six lectures* ([1st American ed.]. New York: J. Wiley.
- Carpenter, M. A., & Golden, B. R. 1997. Perceived managerial discretion: A study of cause and effect. *Strategic Management Journal*, 18(3): 187-206.
- Carr, N. G. 2004. *Does IT matter?: Information technology and the corrosion of competitive advantage*. Boston, Mass.: Harvard Business School Press.
- Carroll, G. R. 1984. Dynamics of publisher succession in newspaper organizations. *Administrative Science Quarterly*, 29(1): 93-113.
- Chamberlain, N. W. 1982. *Social strategy and corporate structure*. New York: Macmillan.
- Chen, C., & Meindl, J. 1991. The construction of leadership images in the popular press: The case of Donald Burr and People Express. *Administrative Science Quarterly*, 36(4).



- Child, J. 1972. Organizational structure, environment and performance: The Role of strategic choice. *Sociology*, 6(1): 1-22.
- Cho, T. S., & Shen, W. 2007. Changes in executive compensation following an environmental shift: The role of top management team turnover. *Strategic Management Journal*, 28(7): 747-754.
- Collingswood, H. 2009. Do CEOs matter?, *Tha Atlantic*. Washington, D.C.
- Combs, J. G., & Skill, M. S. 2003. Managerialist and human capital explanations for key executive pay premiums: A contingency perspective. *Academy of Management Journal*, 46(1): 63-73.
- Cowan, A. R. 2007. Eventus Versin 8.0 User's Guide: Cowan Research, L.C.
- Crossland, C., & Hambrick, D. C. 2007. How national systems differ in their constraints on corporate executives: a study of CEO effects in three countries. *Strategic Management Journal*, 28(8): 767.
- Crossland, C., & Hambrick, D. C. 2009. Differences in managerial discretion across countries: How nation-level institutions affect the degree to which CEOs matter.
- Crystal, G. S. 1991. *In search of excess: The overcompensation of American executives* (1st ed.). New York: Norton.
- D'Aveni, R. A., & Gunther, R. E. 1994. *Hypercompetition : managing the dynamics of strategic maneuvering*. New York: The Free Press.
- Dansereau, F., Graen, G., & Haga, W. J. 1975. Vertical Dyad Linkage Approach to Leadership within Formal Organizations - Longitudinal Investigation of Role Making Process. *Organizational Behavior and Human Performance*, 13(1): 46-78.
- Davis, G. F., & Stout, S. K. 1992. Organization theory and the market for corporate-control: A dynamic analysis of the characteristics of large takeover targets, 1980-1990. *Administrative Science Quarterly*, 37(4): 605-633.
- Dealogic. 2007. M&A Analytics.
- Deephouse, D. 2000. Media reputation as a strategic resource: An integration of mass communication and resource-based theories. *Journal of Management*, 26(6): 1091.
- DiMaggio, P. J., & Powell, W. W. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2): 147-160.
- Dimsdale, J. 2011. Obama unveils housing finance plan, *Marketplace*. February 11, 2011: American Public Media.

- Dixon, W., & Yuen, K. 1974. Trimming and winsorization: A review. *Statistical Papers*, 15(2): 157-170.
- Economist. 2007. Survey: The stockpot, *The Economist*, Vol. 382: 6.
- Etebari, A., Horrigan, J. O., & Landwehr, J. L. 1987. To be or not to be: Reaction of stock returns to sudden deaths of corporate chief executive officers. *Journal of Business Finance & Accounting*, 14(2): 255-278.
- Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. 1969. The Adjustment of Stock Prices to New Information. *International Economic Review*, 10(1): 1-21.
- Fama, E. F., & Jensen, M. C. 1983. Separation of ownership and control. *Journal of Law & Economics*, 26(2): 301-325.
- Fanelli, A., & Misangyi, V. 2006. Bringing out charisma: CEO charisma and external stakeholders. *The Academy of Management review*.
- Fanelli, A., Misangyi, V., & Tosi, H. 2009. In charisma we trust: The effects of CEO charismatic visions on securities analysts. *Organization science*, 20(6): 1011-1033.
- Farrell, D. 2006. *Offshoring: Understanding the emerging global labor market*. Boston, Mass.: Harvard Business School Press.
- Favaro, K., Karlsson, P.-O., & Neilson, G. L. 2010. CEO Succession 2000 - 2009: A Decade of convergence and compression, *Strategy+Business*, Vol. 59: Booz & Company.
- Fee, C. E., & Hadlock, C. J. 2003. Raids, rewards, and reputations in the market for managerial talent. *The Review of Financial Studies*, 16(4): 1315-1357.
- Finkelstein, S., & Boyd, B. K. 1998. How much does the CEO matter? The role of managerial discretion in the setting of CEO compensation. *Academy of Management Journal*, 41(2): 179.
- Finkelstein, S., & Hambrick, D. C. 1990. Top-management-team tenure and organizational outcomes: The moderating role of managerial discretion. *Administrative Science Quarterly*, 35(3): 484-503.
- Finkelstein, S., Hambrick, D. C., & Cannella, A. A. 2009. *Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards*. New York: Oxford University Press.
- Fischer, K., & Schot, J. 1993. *Environmental strategies for industry*: Island Press Washington, DC.
- Fligstein, N. 1987. The intraorganizational power struggle: Rise of finance personnel to top leadership in large corporations, 1919-1979. *American Sociological Review*, 52(1): 44-58.

- Fligstein, N. 1990. *The transformation of corporate control*. Cambridge, Mass.: Harvard University Press.
- Flournoy, A. 1993. Beyond the Spotted Owl Problem: Learning from the Old-Growth Controversy. *Harvard Environmental Law Review*, 17: 261.
- Friedman, M. 1970. The social responsibility of business is to increase its profits, *New York Times Magazine*, Vol. 32: 122-126.
- Friedman, S. D., & Singh, H. 1989. CEO succession and stockholder reaction: The influence of organizational context and event content. *Academy of Management Journal*, 32(4): 718-744.
- Frydman, C. 2005. Rising through the ranks. The evolution of the market for corporate executives, 1936-2003. *Working Paper, Cambridge, MA: Harvard University*.
- Frydman, C., & Molloy, R. S. 2009. Does tax policy affect executive compensation? evidence from postwar tax reforms. *Working Paper 2009-30, Federal Reserve Board of Governors*.
- Frydman, C., & Saks, R. 2010. Executive compensation: a new view from a long-term perspective, 1936–2005. *Review of Financial Studies*, 23(5): 2099.
- Gabarro, J. J. 1987. *The Dynamics of Taking Charge*. Boston: Harvard Business School Press.
- Galaskiewicz, J., & Wasserman, S. 1989. Mimetic processes within an interorganizational field: An empirical test. *Administrative Science Quarterly*, 34(3): 454-479.
- Gamson, W. A., & Scotch, N. A. 1964. Scapegoating in baseball. *American Journal of Sociology*, 70(1): 69-72.
- Gangemi, J. 2009. Reversing the MBA Stereotype, *Business Week (Online)*: n/a: Bloomberg Finance LP.
- Gartner. 2005. Gartner Says 80 percent of Customer Service Outsourcing Projects Aimed to Cut Costs are Destined to Fail
- Ghadge, A., Dani, S., & Kalawsky, R. 2010. *A framework for managing risks in the aerospace supply chain using systems thinking*. Paper presented at the System of Systems Engineering (SoSE), 2010 5th International Conference on.
- Gomez-Mejia, L. R., Tosi, H., & Hinkin, T. 1987. Managerial Control, Performance, and Executive Compensation. *The Academy of Management Journal*, 30(1): 51-70.
- Graen, G. B., & Uhl-Bien, M. 1995. Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, 6(2): 219-247.

- Graffin, S. D., Wade, J. B., Porac, J. F., & McNamee, R. C. 2008. The impact of CEO status diffusion on the economic outcomes of other senior managers. *Organization science*, 19(3): 457-474.
- Grusky, O. 1963. Managerial succession and organizational-effectiveness. *American Journal of Sociology*, 69(1): 21-31.
- Guest, R. H. 1962. Managerial succession in complex organizations. *American Journal of Sociology*, 68(1): 47-54.
- Guillén, M. F. 1994. *Models of management : work, authority, and organization in a comparative perspective*. Chicago: University of Chicago Press.
- Gulati, R. 2007. *Managing network resources : alliances, affiliations and other relational assets*. Oxford ; New York: Oxford University Press.
- Hall, J. 2000. The roots of broadened stock ownership. In J. E. Committee (Ed.).
- Hambrick, D. C. 2007. The field of management's devotion to theory: too much of a good thing? *Academy of Management Journal*, 50(6): 1346.
- Hambrick, D. C., & Abrahamson, E. 1995. Assessing managerial discretion across industries: A multimethod approach. *Academy of Management Journal*, 38(5): 1427-1441.
- Hambrick, D. C., & Finkelstein, S. 1987. Managerial discretion: A bridge between polar views of organizational studies. *Research in Organizational Behavior*, 9: 369-406.
- Hambrick, D. C., & Finkelstein, S. 1995. The effects of ownership structure on conditions at the top - The case of CEO pay raises. *Strategic Management Journal*, 16(3): 175-193.
- Hambrick, D. C., Finkelstein, S., Cho, T. S., & Jackson, E. M. 2005. Isomorphism in reverse: Institutional theory as an explanation for recent increases in intraindustry heterogeneity and managerial discretion, *Research in Organizational Behavior: An Annual Series of Analytical Essays and Critical Reviews, Vol 26*, Vol. 26: 307-350.
- Hambrick, D. C., Geletkanycz, M. A., & Fredrickson, J. W. 1993. Top executive commitment to the status-quo: Some tests of its determinants. *Strategic Management Journal*, 14(6): 401-418.
- Hambrick, D. C., & Mason, P. A. 1984. Upper Echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2): 193-206.
- Hannan, M. T., & Freeman, J. 1977. The population ecology of organizations. *American Journal of Sociology*, 82(5): 929.
- Hannan, M. T., & Freeman, J. 1984. Structural inertia and organizational-change. *American Sociological Review*, 49(2): 149-164.

- Haveman, H. A. 1993. Follow the leader: Mimetic isomorphism and entry into new markets. *Administrative Science Quarterly*, 38(4): 593-627.
- Hayes, R. M., & Schaefer, S. 1999. How much are differences in managerial ability worth? *Journal of Accounting & Economics*, 27(2): 125-148.
- Hayward, M. L. A., Rindova, V. P., & Pollock, T. G. 2004. Believing one's own press: The causes and consequences of CEO celebrity. *Strategic Management Journal*, 25(7): 637-653.
- Heider, F. 1958. *The psychology of interpersonal relations*. New York: Wiley.
- Herman, E. S., & Chomsky, N. 2002. *Manufacturing consent: The political economy of the mass media*. New York: Pantheon Books.
- Hirsch, B., & Macpherson, D. 2009. Union membership and coverage database from the current population survey.
- Holderness, C. G. 2009. The Myth of Diffuse Ownership in the United States. *Rev. Financ. Stud.*, 22(4): 1377-1408.
- Hoskisson, R. E., Castleton, M. W., & Withers, M. C. 2009. Complementarity in Monitoring and Bonding: More Intense Monitoring Leads to Higher Executive Compensation. *Academy of Management Perspectives*, 23(2): 57-74.
- Hough, J. R. 2006. Business segment performance redux: a multilevel approach. *Strategic Management Journal*, 27(1).
- House, R. J., & Mitchell, T. R. 1974. Path-Goal Theory of Leadership. *Journal of Contemporary Business*, 3(4): 81-97.
- Howells, J., Gagliardi, D., & Malik, K. 2008. The growth and management of R&D outsourcing: evidence from UK pharmaceuticals. *R&D Management*, 38(2): 205-219.
- Indiviglio, D. 2011. 12 Industries that are actually growing, *The Atlantic*, Vol. February 2, 2011.
- Jaffe, A., Peterson, S., Portney, P., & Stavins, R. 1995. Environmental regulation and the competitiveness of US manufacturing: what does the evidence tell us? *Journal of Economic literature*, 33(1): 132-163.
- Jain, P., & Johnson, W. 2008. Trading Technology and Stock Market Liquidity. *Stock market liquidity: implications for market microstructure and asset pricing*: 287.
- Jensen, M. C., Meckling, W. H., Field, S., & Park, T. C. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics (JFE)*, 3(4).

- Johnson, W. B., Magee, R. P., Nagarajan, N. J., & Newman, H. A. 1985. An analysis of the stock-price reaction to sudden executive deaths: Implications for the managerial labor-market. *Journal of Accounting & Economics*, 7(1-3): 151-174.
- Jordon, S. 2008. Berkshire Hathaway: 31,000 show up at Qwest Center for annual meeting, *Omaha World-Herald*. Omaha, NE.
- Joskow, P. L., & Rose, N. L. 1985. The Effects of Technological Change, Experience, and Environmental Regulation on the Construction Cost of Coal-Burning Generating Units. *The RAND Journal of Economics*, 16(1): 1-27.
- Kahan, M., & Rock, E. B. 2008. Embattled CEOs. *SSRN eLibrary*.
- Kalleberg, A. L. 2000. Nonstandard employment relations: Part-time, temporary and contract work. *Annual Review of Sociology*, 26(1): 341-365.
- Kaplan, S. N. 2008. Are U.S. CEOs Overpaid? *Academy of Management Perspectives*, 22(2): 5-20.
- Kaplan, S. N., & Minton, B. A. 2006. How has CEO Turnover Changed? Increasingly Performance Sensitive Boards and Increasingly Uneasy CEOs: SSRN.
- Karlsson, P.-O., & Neilson, G. L. 2009. CEO Succession 2008: Stability in the Storm, *Strategy+Business*, Vol. 55: Booz & Company.
- Khurana, R. 2002. *Searching for a corporate savior: The irrational quest for charismatic CEOs*. Princeton, N.J.: Princeton University Press.
- Khurana, R. 2007. *From higher aims to hired hands: The social transformation of American business schools and the unfulfilled promise of management as a profession*. Princeton: Princeton University Press.
- Klein, K. J., & Kozlowski, S. W. J. 2000. From micro to meso: Critical steps in conceptualizing and conducting multilevel research. *Organizational Research Methods*, 3(3): 211.
- Kroll, M., Simmons, S. A., & Wright, P. 1990. Determinants of Chief Executive Officer Compensation Following Major Acquisitions. *Journal of Business Research*, 20(4): 349-366.
- Larson, J. A. 1999. Stock price reactions of small public firms to the loss of the CEO. *Journal of Small Business Management*, 37(3): 15.
- Lawrence, P. R., & Lorsch, J. W. 1967. Differentiation and integration in complex organizations. *Administrative Science Quarterly*, 12(1): 1-47.
- Lazo, A. 2009. Stocks Fall on Obama Plans, Jobs Report, *The Washington Post*: D.4.

- Lazonick, W., & O'Sullivan, M. 2000. Maximizing shareholder value: a new ideology for corporate governance. *Economy and Society*, 29(1): 13-35.
- Lewellen, W. G. 1968. Executive compensation in large industrial corporations. *National Bureau of Economic Research*.
- Lieberson, S., & O'Connor, J. F. 1972. Leadership and organizational performance: A study of large corporations. *American Sociological Review*, 37(2): 117-130.
- Lovett, W. A. 1988. Antitrust in the current economic environment. In A. A. Heggestad (Ed.), *Public policy toward corporations*: 17-52. Gainesville, FL: University of Florida Press.
- MacAvoy, P. W. 1979. *The regulated industries and the economy* (1st ed.). New York: Norton.
- MacAvoy, P. W. 1992. *Industry regulation and the performance of the American economy* (1st ed.). New York: W.W. Norton.
- Mackey, A. 2008. The effect of CEOs on firm performance. *Strategic Management Journal*, 29(12): 1357-1367.
- Magnan, M. L., & St. Onge, S. 1997. Bank performance and executive compensation: A managerial discretion perspective. *Strategic Management Journal*, 18(7): 573-581.
- Mahajan, A., & Lummer, S. 1993. Shareholder wealth effects of management changes. *Journal of Business Finance & Accounting*, 20(3): 393-410.
- Mayo, E. 1945. *The social problems of an industrial civilization*. Boston,: Division of research, Graduate school of business administration, Harvard university.
- McCombs, M. E., & Shaw, D. L. 1972. The agenda-setting function of the mass media. *Public Opinion Quarterly*, 36(2): 176-187.
- McGahan, A., & Porter, M. 2002. What do we know about variance in accounting profitability? *Management Science*, 48(7): 834-851.
- McLean, B., & Elkind, P. 2003. *The smartest guys in the room: The amazing rise and scandalous fall of Enron*. New York: Portfolio.
- McNamara, G., Vaaler, P., & Devers, C. 2003. Same as it ever was: the search for evidence of increasing hypercompetition. *Strategic Management Journal*, 24(3): 261-278.
- Meindl, J. R. 1995. The romance of leadership as a follower-centric theory: A social constructionist approach. *The Leadership Quarterly*, 6(3): 329-341.
- Meindl, J. R., Ehrlich, S. B., & Dukerich, J. M. 1985. The Romance of Leadership. *Administrative Science Quarterly*, 30(1): 78-102.

- Meindl, J. R., & Thompson, K. J. 2005. The construction of charismatic leadership within industries. In J. F. Porac, & M. Ventresca (Eds.), *Constructing Industries and Markets*: 1-37. Oxford, UK: Elsevier.
- Mintzberg, H. 1973. *The nature of managerial work*. New York: Harper & Row.
- Misangyi, V. F., Elms, H., Greckhamer, T., & Lepine, J. A. 2006. A new perspective on a fundamental debate: A multilevel approach to industry, corporate, and business unit effects. *Strategic Management Journal*, 27: 571-590.
- Mitchell, M. L., & Mulherin, J. H. 1996. The impact of industry shocks on takeover and restructuring activity. *Journal of Financial Economics*, 41(2): 193-229.
- Mooney, M., & Gomstyn, A. 2009. Obama's speeches don't wow Wall Street, Vol. 2009: ABC News.
- Morcroft, G. 2009. Stocks fall as Obama blasts bonuses, Vol. 2009. New York: MarketWatch.
- Mullin, R. 1996. Outsourcing: Managing the outsourced enterprise. *Journal of Business Strategy*, 17: 28.
- Nocera, J. 2002. Forward. In W. H. Whyte (Ed.), *The organization man*: 429 p. Philadelphia: University of Pennsylvania Press.
- Nocera, J. 2008. Apple's Culture Of Secrecy, *New York Times*: C.1.
- Pfeffer, J. 1981. Management as Symbolic Action: The Creation and Maintenance of Organizational Paradigms. *Research in Organizational Behavior*, 3: 1-52.
- Pfeffer, J., & Davis-Blake, A. 1986. Administrative succession and organizational performance: How administrator experience mediates the succession effect. *Academy of Management Journal*, 29(1): 72-83.
- Pfeffer, J., & Salancik, G. R. 1978. *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper & Row.
- Porter, M. 1996a. America's green strategy. *Business and the environment: a reader*: 33.
- Porter, M. 1996b. What's strategy. *Harvard Business Review*, 74(6): 61-78.
- Pui-Wing, T., & Christopher, L. 2006. Call Tech Support: Dell's Chief Fuels Wall Street Worry, *Wall Street Journal*: C.1.
- Quigley, T. J., & Hambrick, D. C. In Press. When the Former CEO Stays on as Board Chair: Effects on Successor Discretion, Strategic Change, and Performance. *Strategic Management Journal*.
- Quinn, M. 2008. EARNINGS; Profit robust but Apple stock ill; Weak forecasts and fears over Jobs' health erase shares' gains, *Los Angeles Times*: C.1.



- Rajagopalan, N., & Finkelstein, S. 1992. Effects of strategic orientation and environmental change on senior management reward systems. *Strategic Management Journal*, 13: 127-141.
- Raudenbush, S., & Bryk, A. 2002. *Hierarchical linear models: Applications and data analysis methods*: Sage Publications.
- Ross, L. 1977. The Intuitive Psychologist and His Shortcomings: Distortions in the Attribution Process. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology*, Vol. 10: 173-220: Academic Press.
- Rumelt, R. 1991. How much does industry matter? *Strategic Management Journal*, 12: 167-185.
- Rush, M. C., Thomas, J. C., & Lord, R. G. 1977. Implicit leadership theory: A potential threat to the internal validity of leader behavior questionnaires. *Organizational Behavior and Human Performance*, 20(1): 93-110.
- Salancik, G. R., & Pfeffer, J. 1977. Constraints on Administrator Discretion: The Limited Influence of Mayors on City Budgets. *Urban Affairs Review*, 12(4): 475-498.
- Salancik, G. R., & Pfeffer, J. 1980. Effects of Ownership and Performance on Executive Tenure in U.S. Corporations. *The Academy of Management Journal*, 23(4): 653-664.
- Sanders, W. G., & Hambrick, D. C. 2007. Swinging For the Fences: The Effects of CEO Stock Options on Company Risk-Taking and Performance. *Academy of Management Journal*, 50(5).
- Schwert, G. W. 1990. Stock Market Volatility. *Financial Analysts Journal*, 46(3): 23-34.
- Schwert, G. W. 1997. Stock Market Volatility: Ten Years After the Crash, *Center for Financial Institutions Working Papers* Vol. 97-51. Philadelphia, PA.
- Schwert, G. W. 2002. Stock volatility in the new millennium: how wacky is Nasdaq? *Journal of Monetary Economics*, 49(1): 3-26.
- Scott, W. R., & Davis, G. F. 2007. *Organizations and organizing : rational, natural, and open system perspectives* (1st ed.). Upper Saddle River, N.J.: Pearson Prentice Hall.
- Selznick, P. 1957. *Leadership in administration: A sociological interpretation*. New York: Harper & Row.
- Shell, A. 2008. Warren Buffett hones rock-star status, *USA Today*.
- Shen, W., & Cho, T. S. 2005. Exploring involuntary executive turnover through a managerial discretion framework. *Academy of Management Review*, 30(4): 843-854.

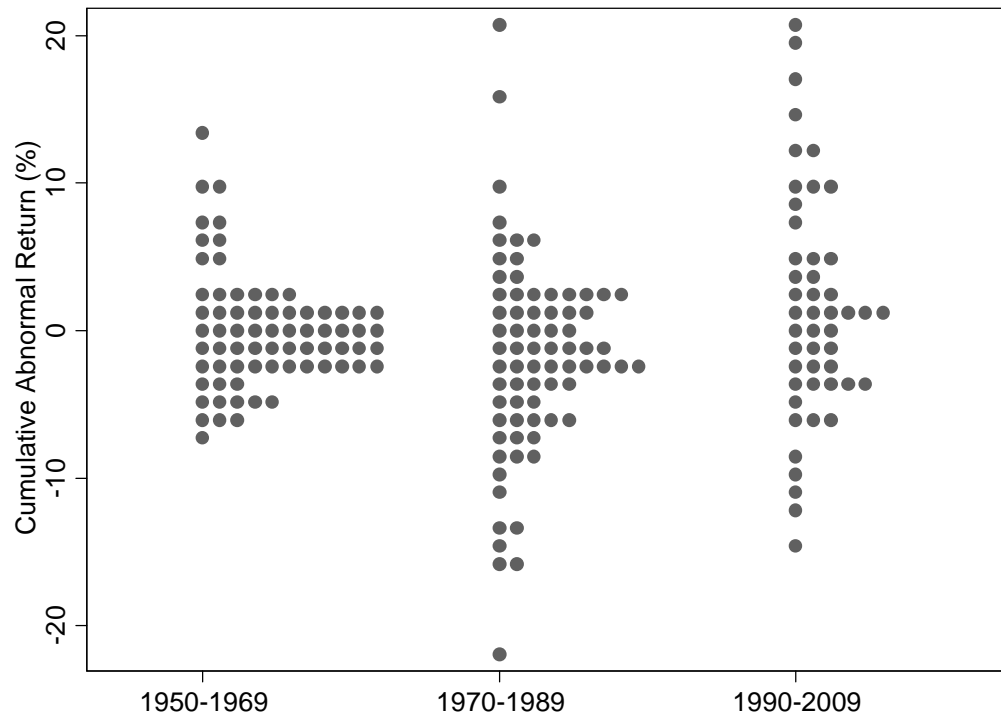
- Short, J. C., McKelvie, A., Ketchen, D. J., & Chandler, G. N. 2009. Firm and industry effects on firm performance: A generalization and extension for new ventures. *Strategic Entrepreneurship Journal*, 3(1): 47-65.
- Smith, T. W. 2009. Computers: Hardware, *Standard and Poor's Industry Surveys*. New York.
- Spatt, C. 2004. Executive Compensation and Contracting, *Ohio State-Federal Reserve Bank of New York - Journal of Financial Economics Conference on Agency Problems and Conflicts of Interest in Financial Intermediaries*.
- Staw, B. M., & Ross, J. 1980. Commitment in an Experimenting Society: A Study of the Attribution of Leadership from Administrative Scenarios. *Journal of Applied Psychology*, 65(3): 249-260.
- Stewart, M. 2009. *The management myth: Why the experts keep getting it wrong* (1st ed.). New York: W. W. Norton & Co.
- Surowiecki, J. 2002. Blame Iacocca: How the former Chrysler CEO caused the corporate scandals: Slate.com.
- Svenson, O., & Benson III, L. 1993. Framing and time pressure in decision making. In O. Svenson, & L. Benson III (Eds.), *Time pressure and stress in human judgment and decision making*: 133–144: Plenum Publishing Corporation.
- Symonds, M. 2009. At Business School, Sustainability Takes Center Stage, *Business Week (Online)*: Bloomberg Finance LP.
- Taylor, F. W. 1911. *The principles of scientific management*. New York ; London: Harper.
- Tervio, M. 2008. The difference that CEOs make: An assignment model approach. *American Economic Review*, 98(3): 642-668.
- Thiess, R. 2011. The great recession's long tail. *Economic Policy Institute*(Briefing Paper #294).
- Thomas, L. G., & D'Aveni, R. 2009. The changing nature of competition in the US manufacturing sector, 1950--2002. *Strategic Organization*, 7(4): 387-431.
- Thompson, J. D. 1967. *Organizations in action: Social science bases of administrative theory*. New York: McGraw-Hill.
- Tichy, N. M., & Devanna, M. A. 1986. *The transformational leader*: John Wiley & Sons.
- Tolstoy, L. 1869. *War and peace*.
- Tosi, H. L., Werner, S., Katz, J. P., & Gomez-Mejia, L. R. 2000. How much does performance matter? A meta-analysis of CEO pay studies. *Journal of Management*, 26(2): 301-339.
- Tuch, C., & O'Sullivan, N. 2007. The impact of acquisitions on firm performance: A review of the evidence. *International Journal of Management Reviews*, 9(2): 141-170.

- Vancil, R. F. 1987. *Passing the Baton: Managing the Process of CEO Succession*. Boston: Harvard Business School Press.
- Vaughn, S. 2008. *Encyclopedia of American journalism*. New York: Routledge.
- Wade, J., O'Reilly, C. A., III, & Chandratat, I. 1990. Golden parachutes: CEOs and the exercise of social influence. *Administrative Science Quarterly*, 35(4): 587-603.
- Wade, J. B., Porac, J. F., Pollock, T. G., & Graffin, S. D. 2006. The burden of celebrity: The impact of CEO certification contests on CEO pay and performance. *Academy of Management Journal*, 49(4): 643-660.
- Waggoner, J., & Krantz, M. 2008. Weighing the value of the unwanted, *USA Today*: B1. McLean, VA.
- Walsh, J. P. 2008. CEO Compensation and the Responsibilities of the Business Scholar to Society. *Academy of Management Perspectives*, 22(2): 26-33.
- Walter, J. R. 2006. The 3-6-3 Rule: An Urban Myth? *Federal Reserve Bank of Richmond Economic Quarterly*, 92(1): 51.
- Wasserman, N., Nohria, N., & Anand, B. N. 2001. When Does Leadership Matter? The Contingent Opportunities View of CEO Leadership: SSRN.
- Weber, M., Henderson, A. M., & Parsons, T. 1947. *The theory of social and economic organization*. Glencoe, Ill.: The Free Press & the Falcon's Wing Press.
- Weiner, N., & Mahoney, T. A. 1981. A model of corporate performance as a function of environmental, organizational, and leadership influences. *Academy of Management Journal*, 24(3): 453-470.
- Westphal, J. D., & Fredrickson, J. W. 2001. Who directs strategic change? Director experience, the selection of new CEOs, and change in corporate strategy. *Strategic Management Journal*, 22(12): 1113-1137.
- Westphal, J. D., Seidel, M. D. L., & Stewart, K. J. 2001. Second-order imitation: Uncovering latent effects of board network ties. *Administrative Science Quarterly*, 46(4): 717-747.
- Westphal, J. D., & Zajac, E. J. 1994. Substance and symbolism in CEO's long-term incentive plans. *Administrative Science Quarterly*, 39(3): 367-390.
- Whyte, W. H. 1956. *The organization man*. Garden City, N.Y.: Doubleday.
- Wiggins, R. R., & Ruefli, T. W. 2005. Schumpeter's ghost: Is hypercompetition making the best of times shorter? *Strategic Management Journal*, 26(10): 887-911.
- Williamson, O. E. 1963. Managerial discretion and business behavior. *American Economic Review*, 53(5): 1032-1057.

- Williamson, O. E. 1975. *Markets and hierarchies, analysis and antitrust implications : a study in the economics of internal organization*. New York: Free Press.
- Wilson, R. A., & Jordan, D. E. 2002. Personal exemptions and individual income tax rates, 1913-2002. *Internal Revenue Service, Statistics of Income Bulletin (Publication 1136)*: 216-225.
- Worrell, D. L., Davidson, W. N., Chandy, P. R., & Garrison, S. L. 1986. Management turnover through deaths of key executives: Effects on investor wealth. *Academy of Management Journal*, 29(4): 674-694.
- Worrell, D. L., & Davidson, W. N., III. 1987. The Effect of CEO Succession on Stockholder Wealth in Large Firms Following the Death of the Predecessor. *Journal of Management*, 13(3): 509-515.
- Worrell, D. L., & Davidson, W. N., III. 1989. The Death of Key Executives in Small Firms Effects on Investor Wealth. *Journal of Small Business Management*, 27(2).
- Zajac, E. J., & Westphal, J. D. 1995. Accounting for the explanations of CEO compensation - Substance and symbolism. *Administrative Science Quarterly*, 40(2): 283-308.
- Zhang, I. X. 2007. Economic consequences of the Sarbanes-Oxley Act of 2002. *Journal of Accounting and Economics*, 44(1-2): 74-115.
- Zhang, Y., & Rajagopalan, N. 2006. Grooming for the top post and ending the CEO succession crisis. *Organizational Dynamics*, 35(1): 96-105.

## APPENDIX A: FIGURES

**Figure 1:**  
**Distribution of Cumulative Abnormal Returns by Period (-1,+2 days)**



**Figure 2:**  
**Stylized Depiction of Hypothesized Influence of Trends on Discretion, 1950-2010**

Figure 1A: Shift to Investor Capitalism

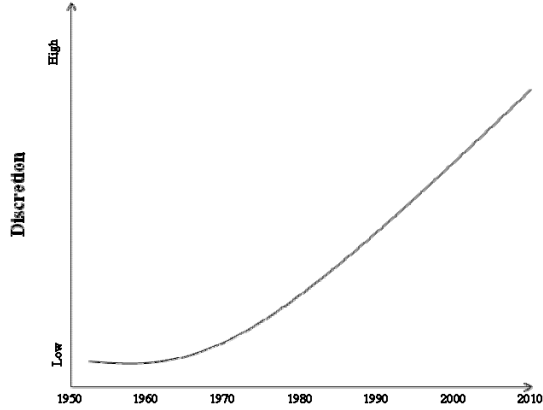


Figure 1B: Rise of Agency Theory

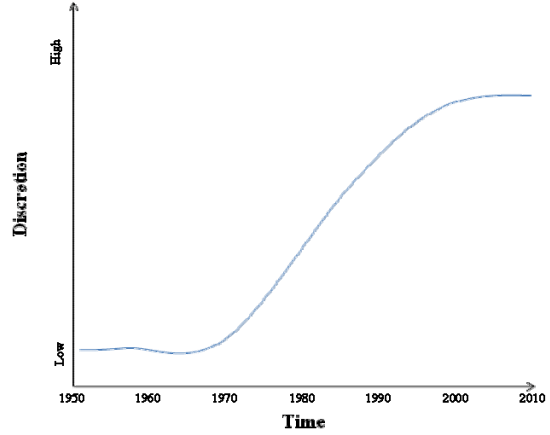


Figure 1C: Executive Compensation

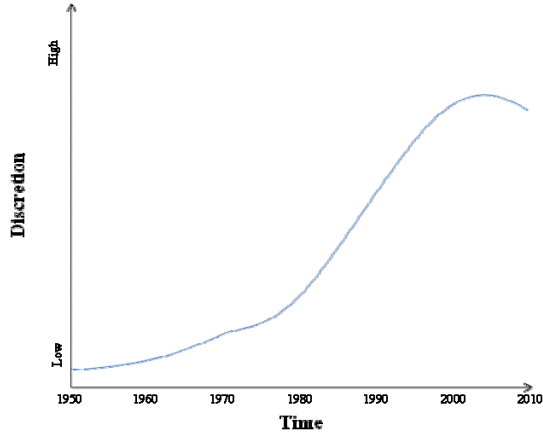


Figure 1D: Deregulation

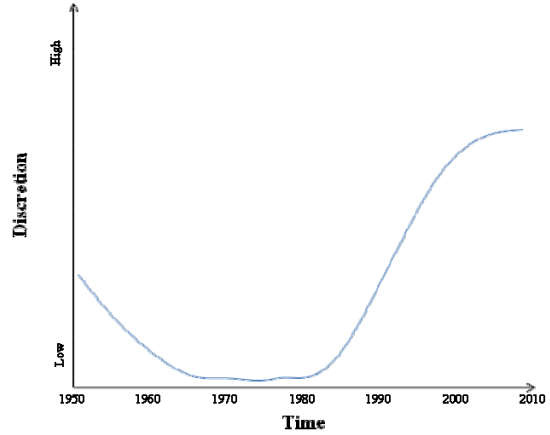
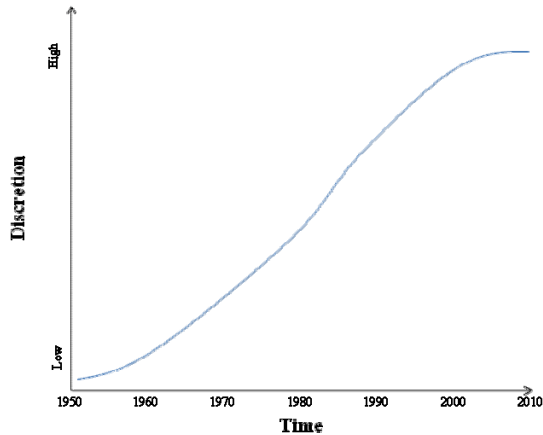
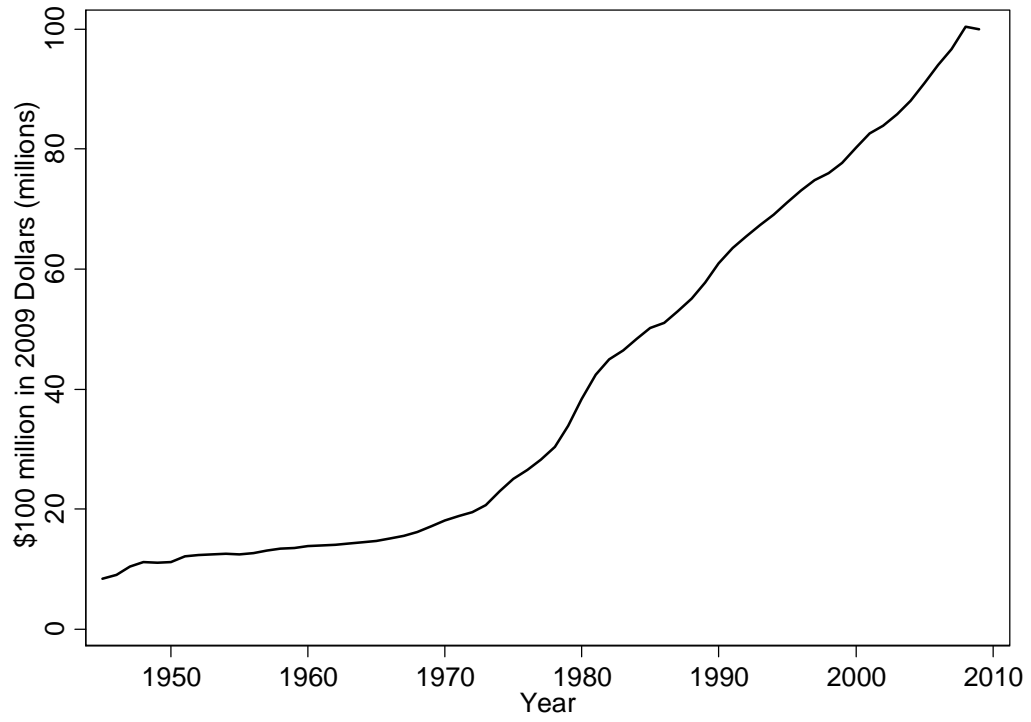


Figure 1E: Net Effect

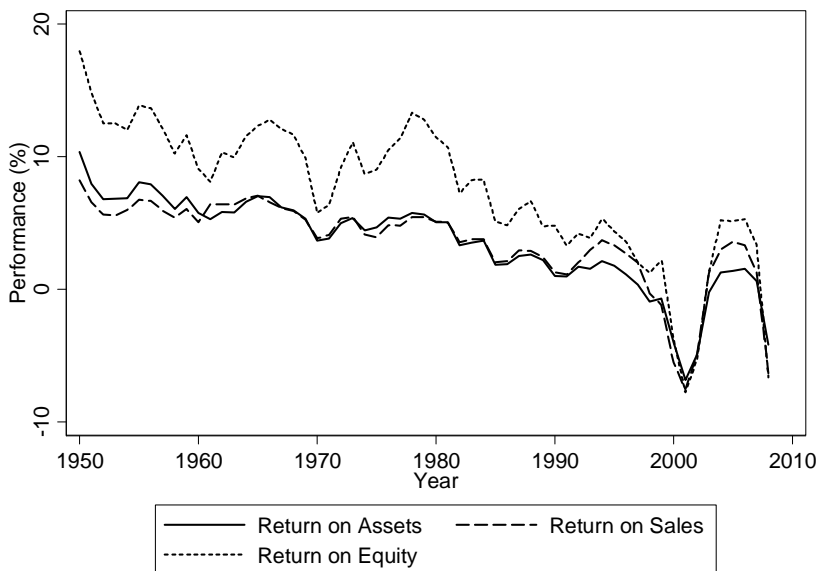


**Figure 3:  
Minimum Revenue by Year Benchmarked to \$100million In 2009**

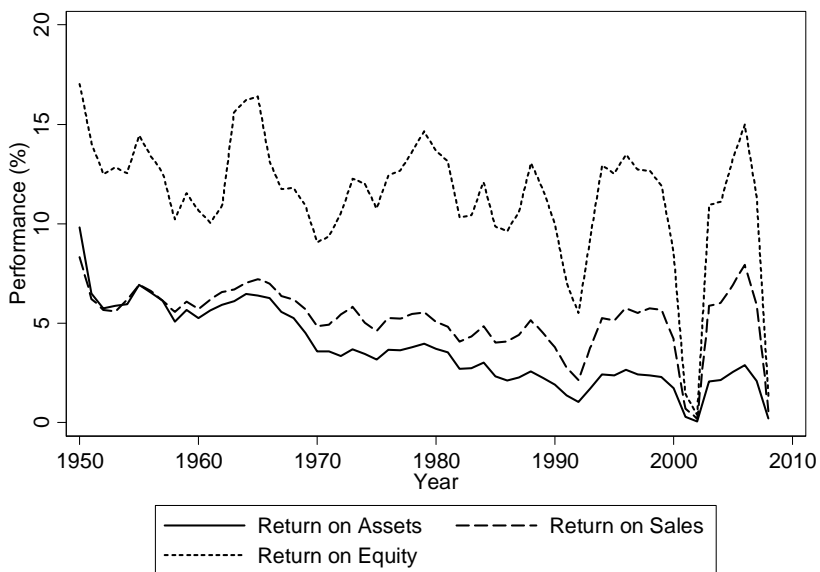


Inflation rate from Bureau of Labor Statistics

**Figure 4:  
Median Firm Performance, 1950-2008<sup>4</sup>**



**Figure 5:  
Weighted Mean Performance, 1950-2008<sup>5</sup>**



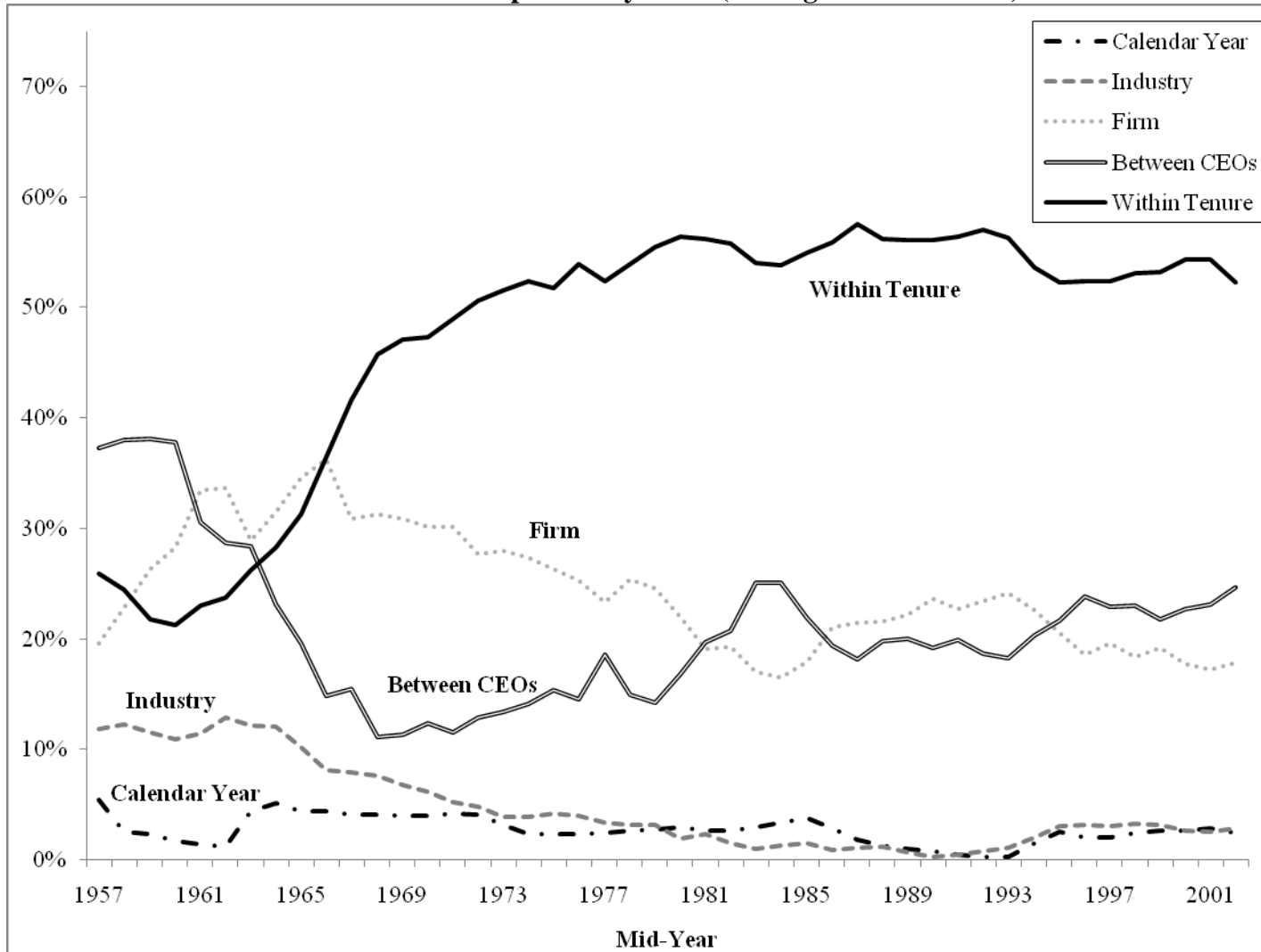

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<sup>4</sup> Includes all firms in Compustat database with revenues greater than \$100million in 2009 dollars

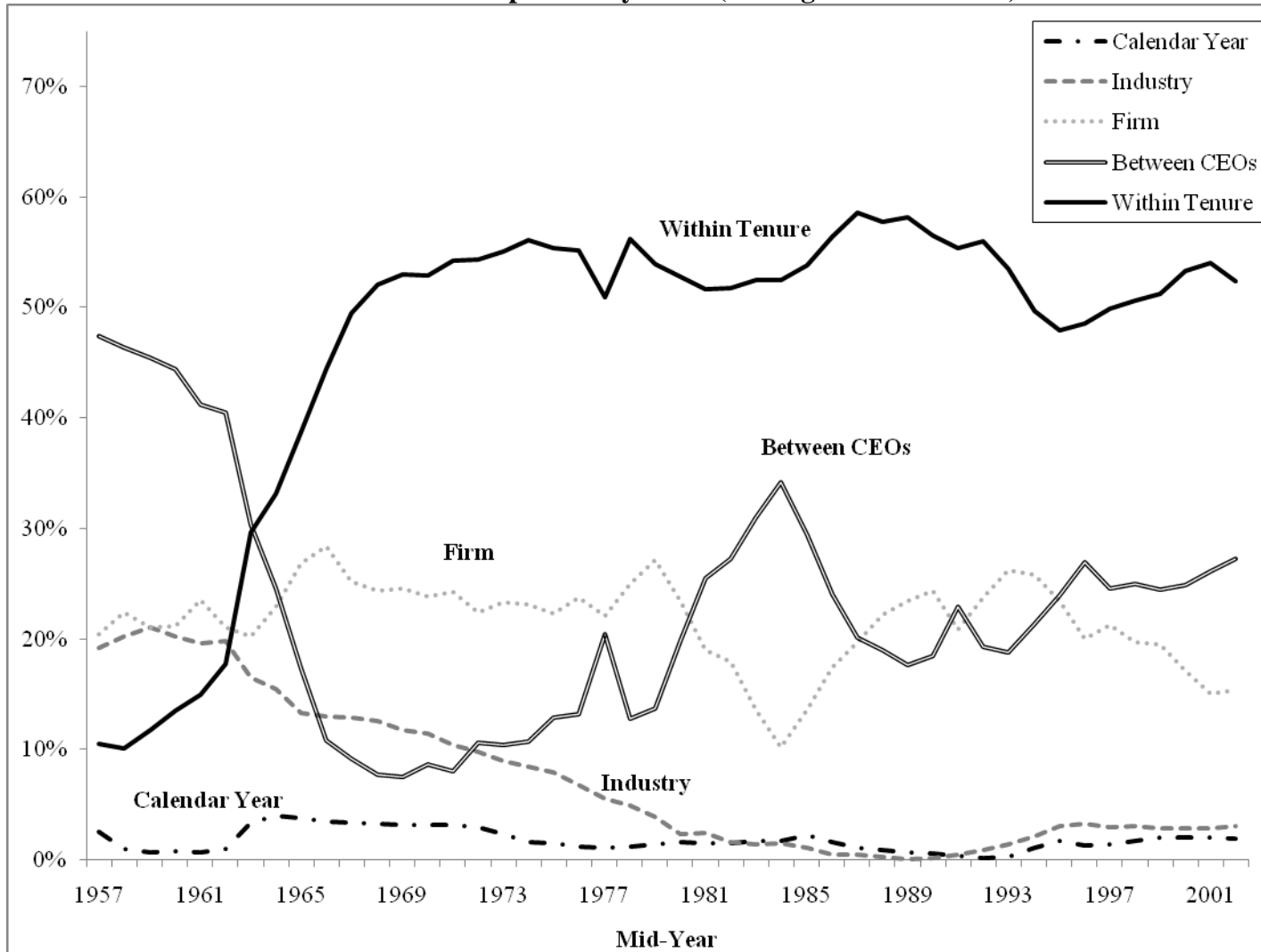
<sup>5</sup> Includes all firms in Compustat database regardless of size. Mean is weighted by firm size (e.g., total assets, total sales, or total revenue).



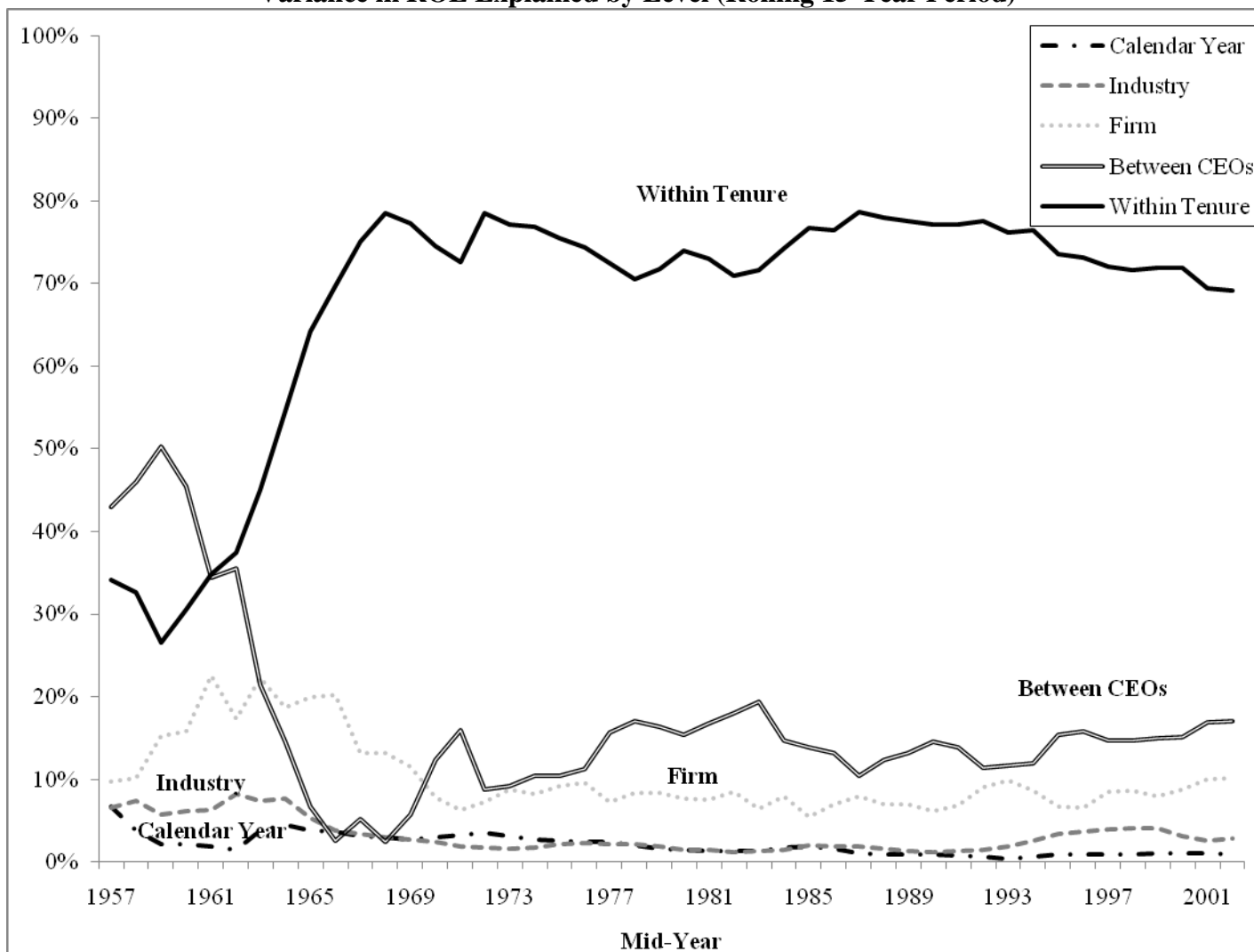
**Figure 6:  
Variance in ROA Explained by Level (Rolling 15-Year Period)**



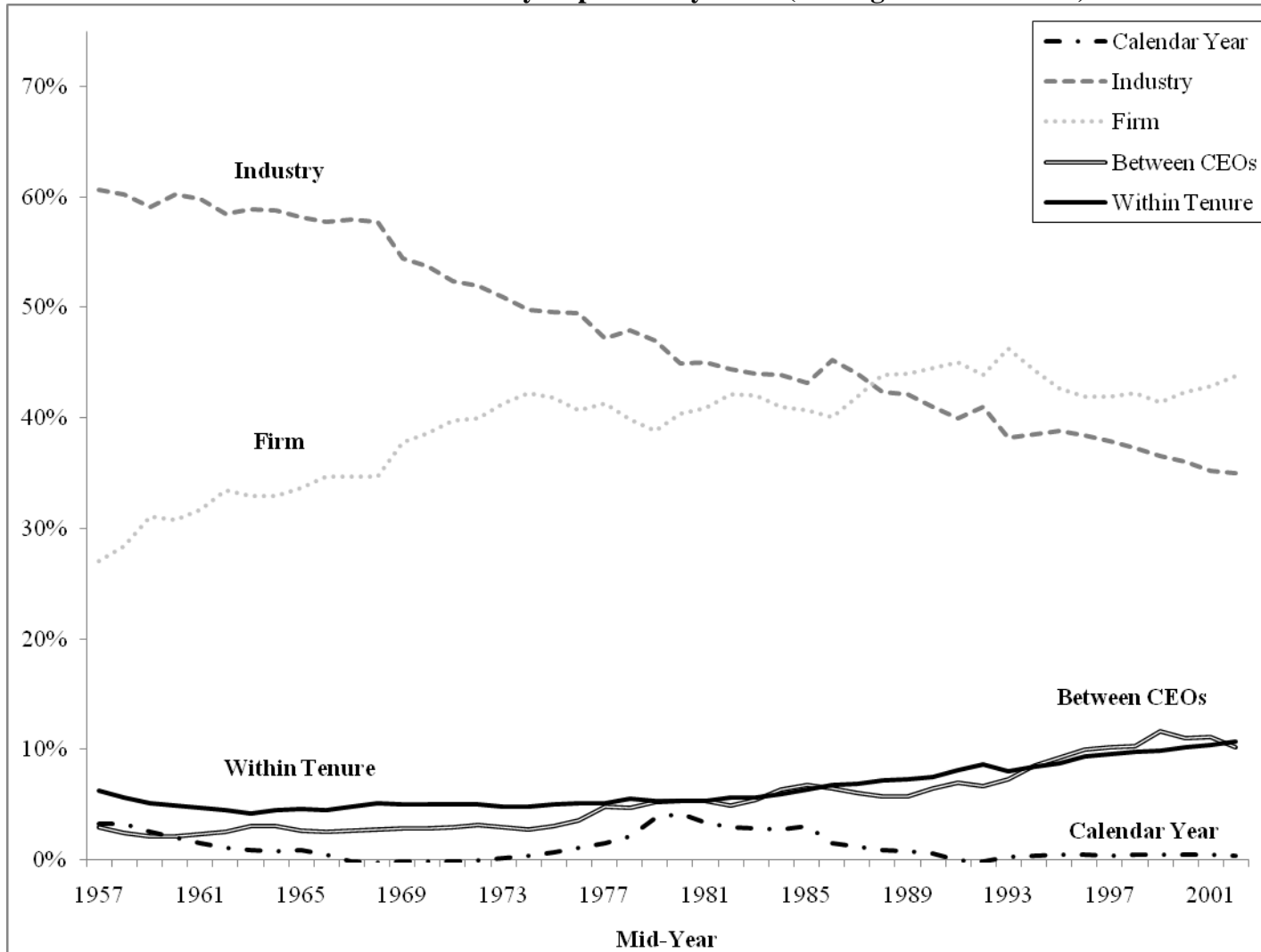
**Figure 7:  
Variance in ROS Explained by Level (Rolling 15-Year Period)**



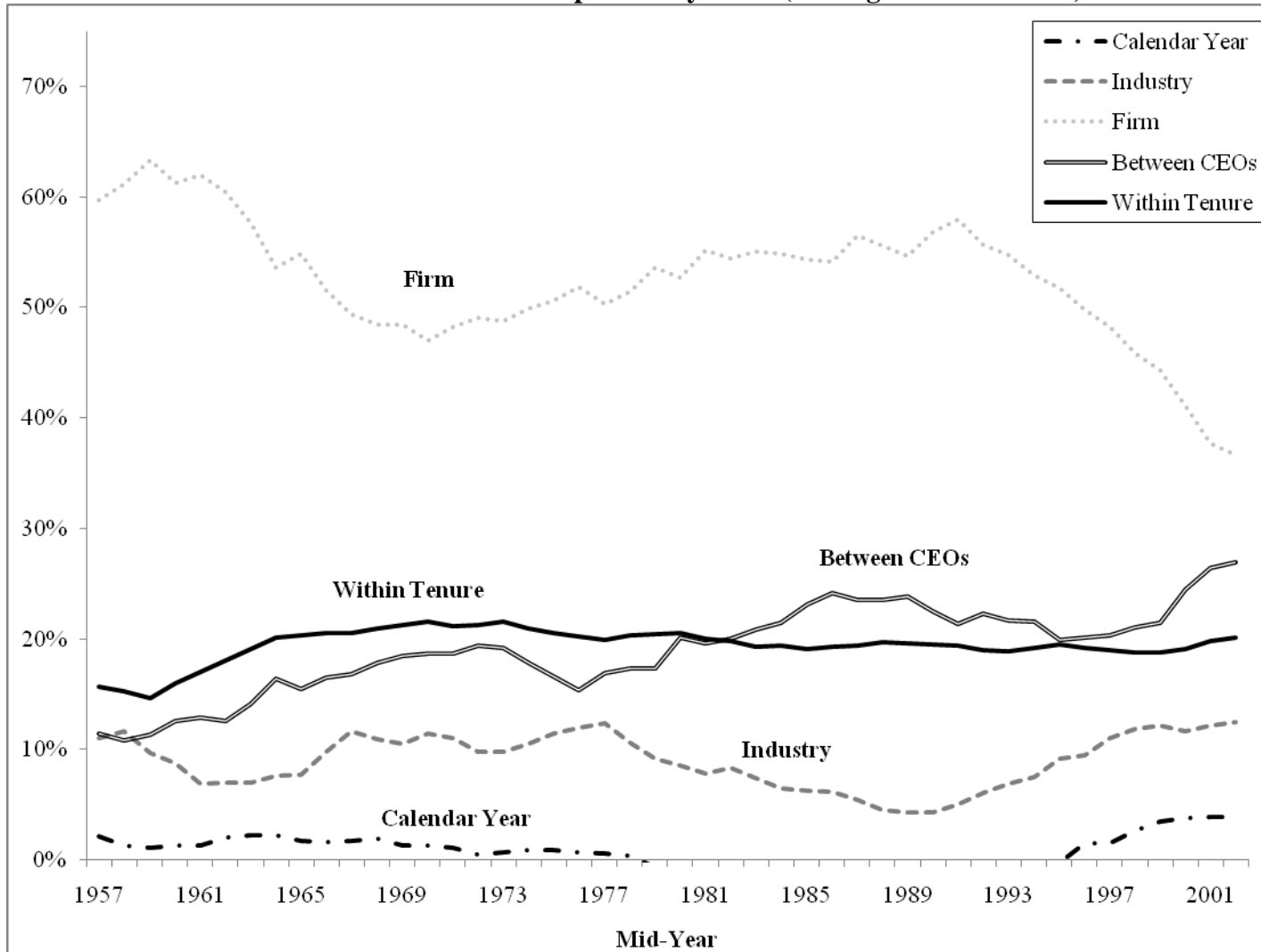
**Figure 8:  
Variance in ROE Explained by Level (Rolling 15-Year Period)**



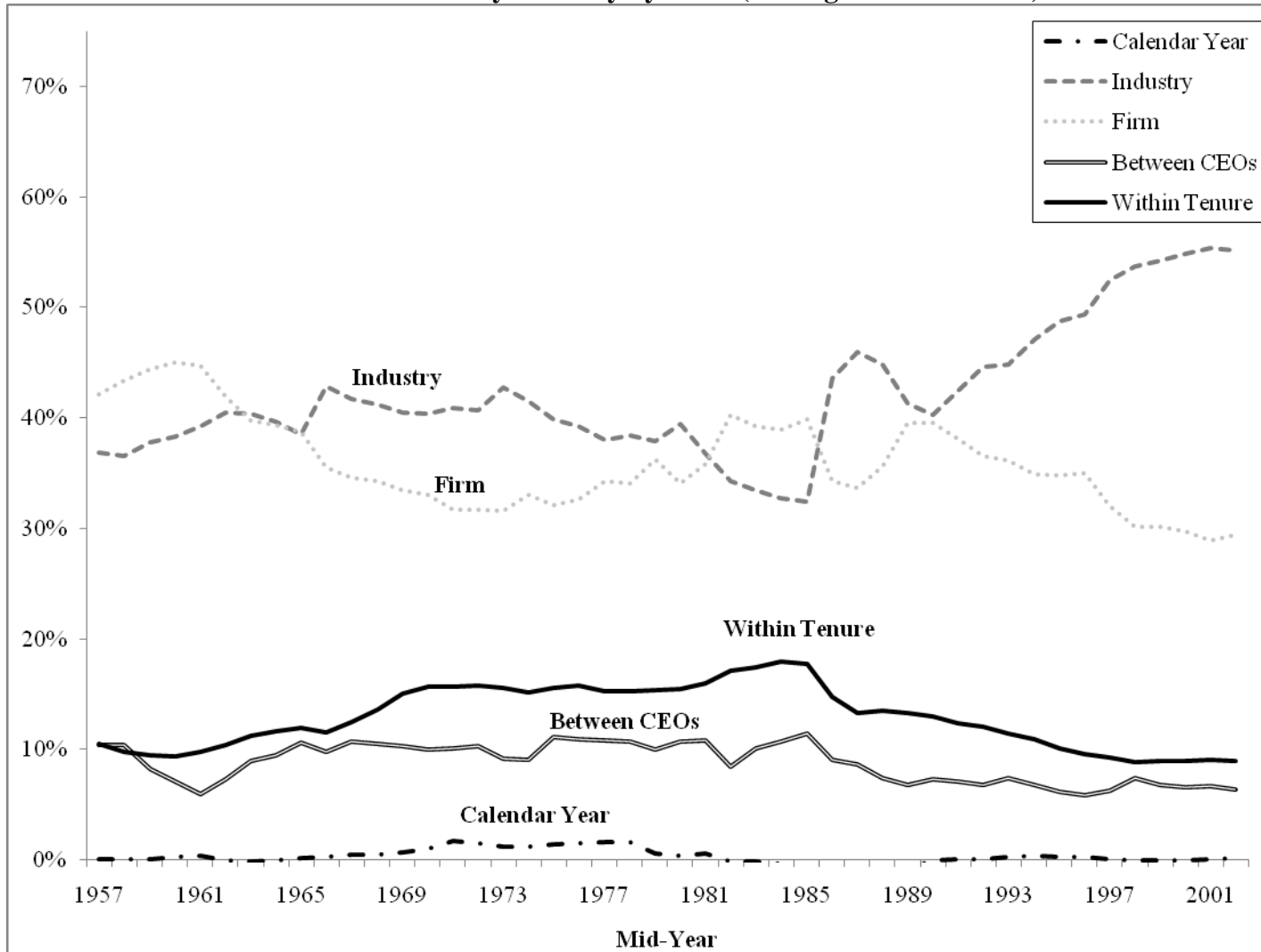
**Figure 9:  
Variance in SG&A Intensity Explained by Level (Rolling 15-Year Period)**



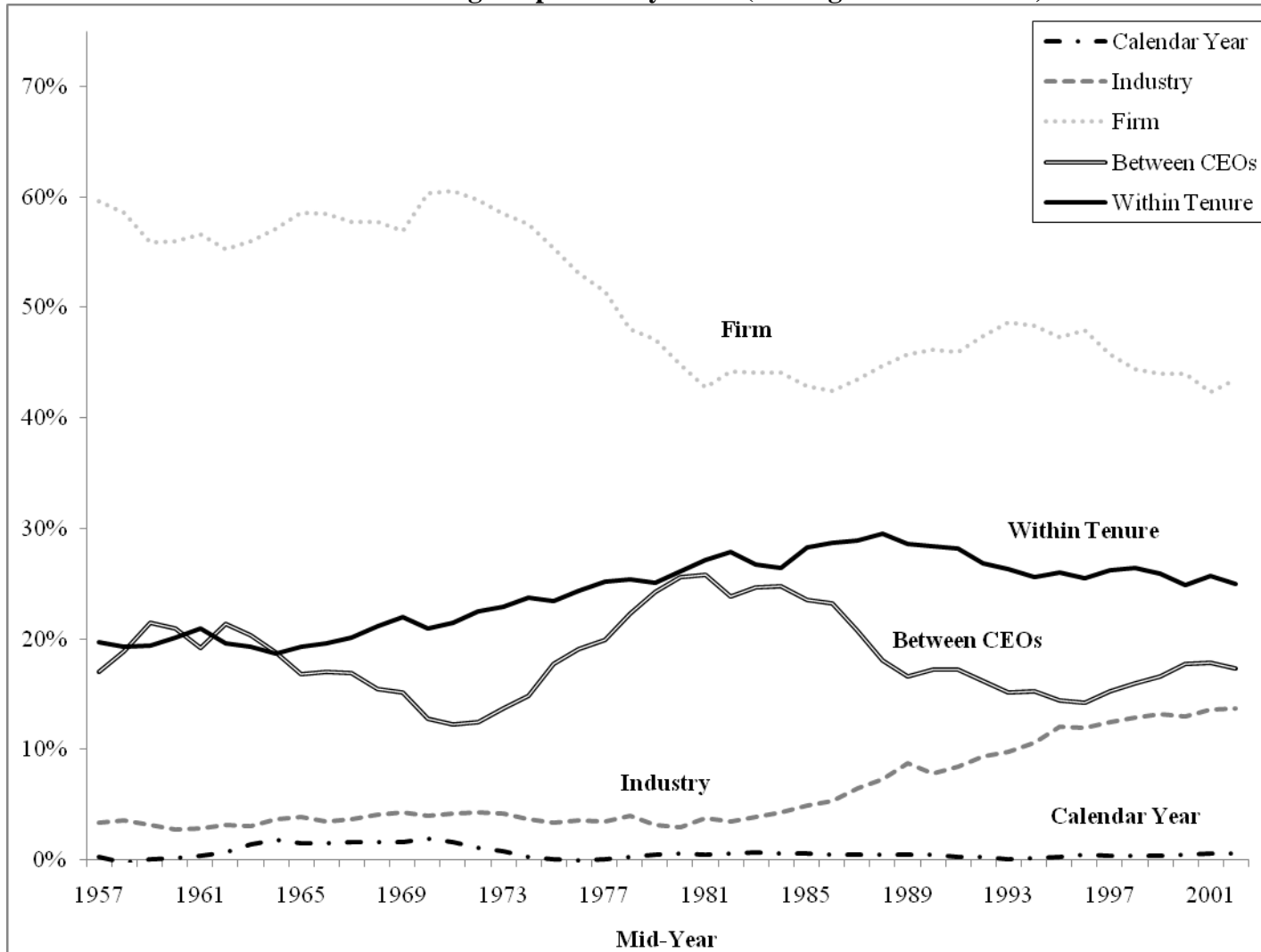
**Figure 10:  
Variance in PP&E Newness Explained by Level (Rolling 15-Year Period)**



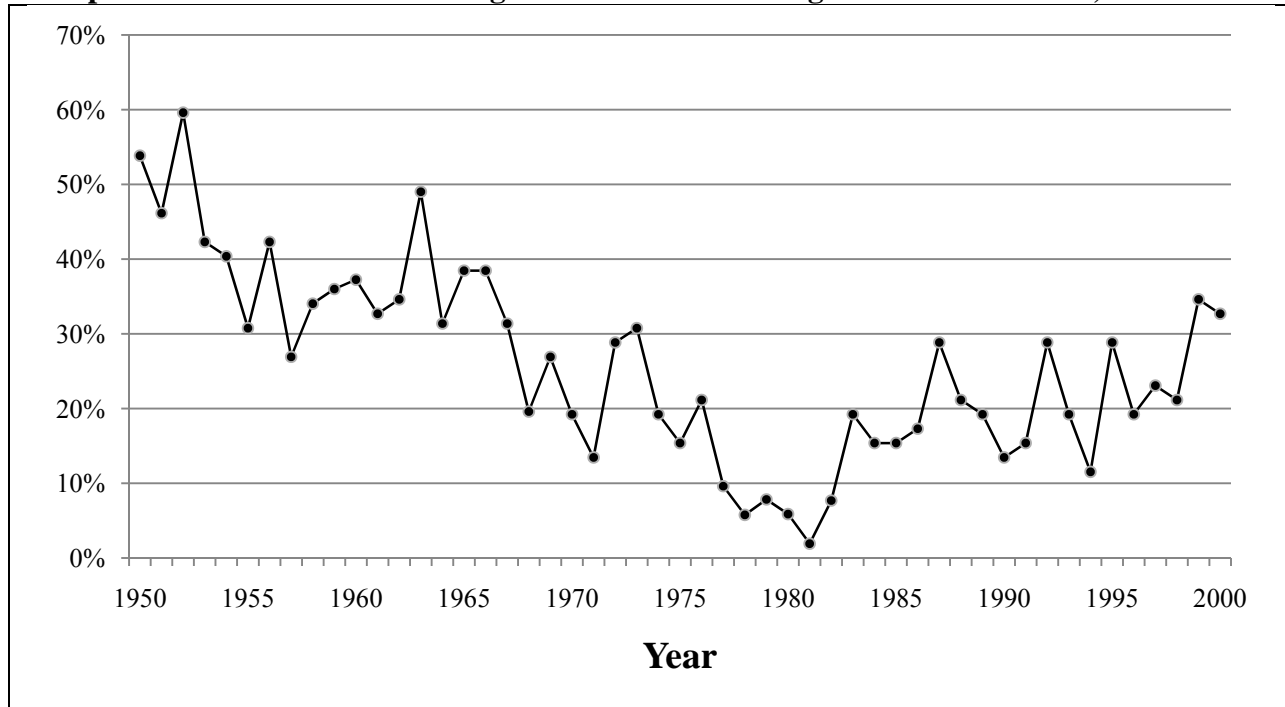
**Figure 11:  
Variance in Inventory Intensity by Level (Rolling 15-Year Period)**



**Figure 12:  
Variance in Leverage Explained by Level (Rolling 15-Year Period)**



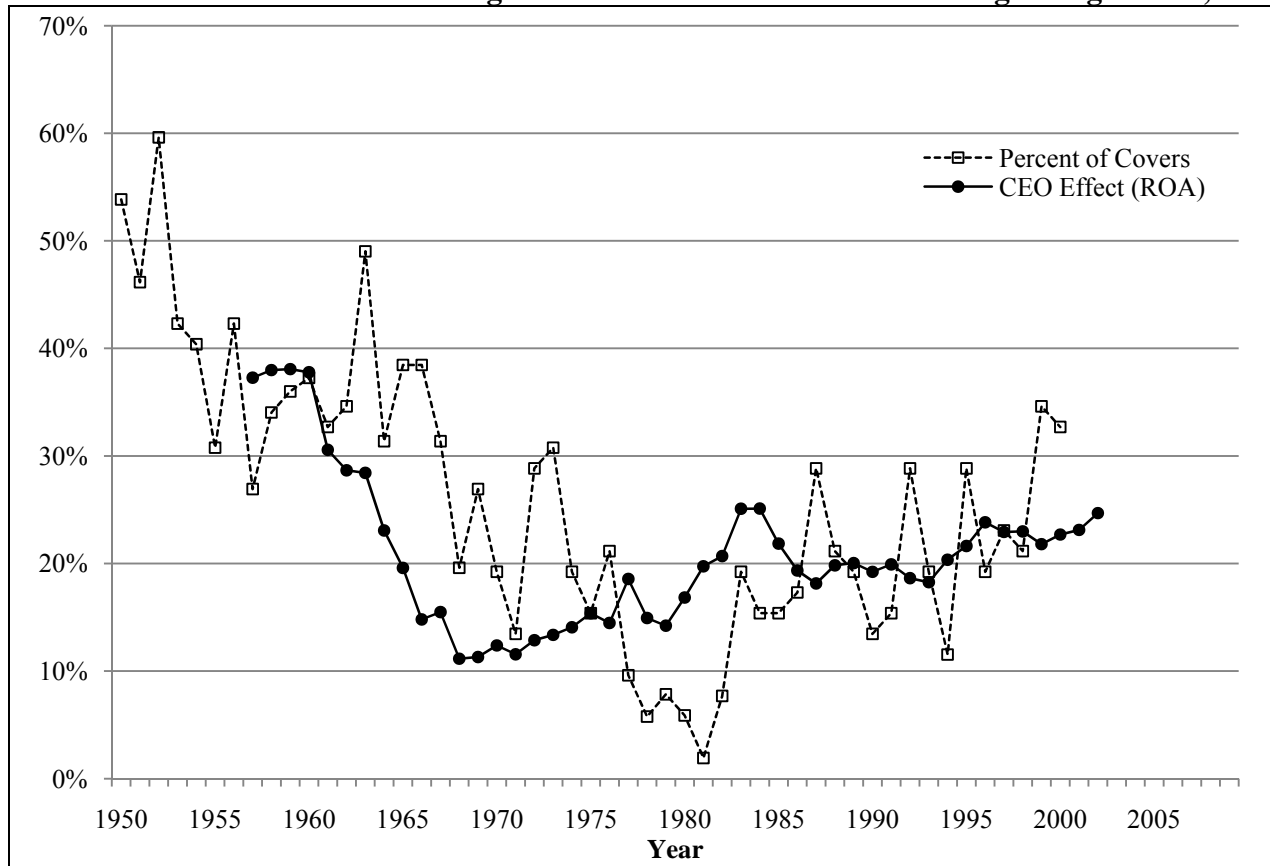
**Figure 13:  
Proportion of Business Week Magazine Covers Featuring an Individual CEO, 1950 - 2000**



Values for 1980-2000 adapted from Khurana (2002)



**Figure 14:**  
**Plot of CEO Effect on ROA and Percentage of Business Week Covers Featuring a Single CEO, 1950 - 2000**



Values for 1980-2000 Business Week covers adapted from Khurana (2002)

## APPENDIX B: TABLES

**Table 1:  
Summary of Prior Research on Market Reaction to CEO Death**

Study	Sample	Dates	Average CEO Death Effect (CAR)	Standard Deviation of Market Returns in Event Period
(Johnson et al., 1985)	53 Executive Deaths(CEO, President, or Board Chair)	1971 - 1982	No impact overall, positive for founders	1.55
(Worrell et al., 1986)	127 Executives (CEO or Board Chair)	1967 - 1981	No impact	Not available
(Worrell & Davidson, 1987)	60 CEO succession	1966-1982	Positive reaction for inside succession, no reaction for outside succession	Not available
(Etebari et al., 1987)	48 chairman or presidents (eliminated duality cases)	1972-1982	Small negative reaction the day after event	Not available
(Worrell & Davidson, 1989)	21 CEOs of small firms	1966-1982	Negative (-2.7% over 8 days)*	Not available
(Friedman & Singh, 1989)	235 Surveys (19 of which were disabilities or death of CEO)	Late 1980s	Negative	.08
(Mahajan & Lummer, 1993)	24 executives (CEOs, presidents, or chairs)	1972-1983	Positive (1.98% over two days)	Not available
(Larson, 1999)	39 “key executive” deaths in small public firms	1990-1997	No change*	N/A – small firms
(Hayes & Schaefer, 1999)	29 sudden deaths	1979-1994	Positive (2.8% over three days)	Not available
(Borokhovich, Brunarski, Donahue, & Harman, 2006)	161 deaths (CEO, board chair, president)	1972-2005	Positive (1.8% over three days)	Not available

\* Small firms only

**Table 2:  
Unexpected CEO Death Sample Summary**

	Total	Period		
		1950-1969	1970-1989	1990-2009
Total	193	71	73	49
Founders	35	9	15	11
Percentage		13%	21%	22%
Cause of Death				
Heart Attack	95	34	41	20
Sudden	38	22	7	9
Plane Crash	11	0	7	4
Unexpected	10	0	2	8
Car Accident	9	1	5	3
Other Accidents	8	5	3	0
Cerebral Hemorrhage	7	5	2	0
Stroke	6	2	2	2
Suicide	4	0	1	3
Other - Illness	3	2	1	0
Murder	2	0	2	0

**Table 3:  
Daily Mean Abnormal Returns (days -15,+15)**

Day	n	Mean Abnormal Return (%)	Positive: Negative
-15	192	-0.07	84:108
-14	192	-0.03	76:116*
-13	193	0.28	86:107
-12	193	0.12	94:99
-11	193	-0.14	83:110
-10	193	-0.07	85:108
-9	193	-0.09	85:108
-8	193	0.23	92:101
-7	192	0.26*	102:90*
-6	193	-0.02	87:106
-5	193	0.07	95:98
-4	193	-0.23	85:108
-3	193	0.02	84:109
-2	193	-0.21	81:112
-1	193	-0.08	88:105
0	192	-0.57**	81:111
+1	193	-0.42	91:102
+2	193	0.34**	91:102
+3	193	0.30*	93:100
+4	193	0.32	92:101
+5	193	0.17*	96:97
+6	193	0.14	86:107
+7	193	-0.05	90:103
+8	193	-0.13	88:105
+9	193	-0.27	86:107
+10	193	-0.10	82:111
+11	193	-0.62***	78:115*
+12	193	0.11	97:96
+13	193	-0.15	86:107
+14	193	0.06	92:101
+15	193	0.36*	96:97

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

Significance is reported for Patell Z-test comparing daily mean return to zero and Generalized Sign Z comparing counts of positive and negative returns for each day (Cowan, 2007).

**Table 4:  
Mean CAR and Variance Comparison – Base Sample (30-year periods)**

Event Period	Mean		t-test	Standard Deviation		Variance Comparison	
	1950-1979	1980-2009	2-tail	1950-1979	1980-2009	1-tail	2-tail
(-1,+1)	-0.011	-0.010	0.971	0.048	0.091	0.000 ***	0.000 ***
(-1,+2)	-0.009	-0.005	0.715	0.049	0.102	0.000 ***	0.000 ***
(-1,+3)	-0.008	0.001	0.466	0.047	0.093	0.000 ***	0.000 ***
(-1,+5)	0.001	-0.001	0.864	0.067	0.104	0.000 ***	0.000 ***
(-1,+30)	0.012	0.011	0.967	0.106	0.229	0.000 ***	0.000 ***
Count	116	77					

**Table 5:  
Mean CAR and Variance Comparison – Base Sample (20-year periods)**

Event Period	Mean			t-test 2-tail	Standard Deviation			Variance Comparison	
	1950-1969	1970-1989	1990-2009		1950-1969	1970-1989	1990-2009	1-tail	2-tail
(-1,+1)	-0.32%	-2.13%		0.043*	0.037	0.065		0.000***	0.000***
	-0.32%		-0.59%	0.858	0.037		0.100	0.000***	0.000***
(-1,+2)		-2.13%	-0.59%	0.347		0.065	0.100	0.000***	0.001***
	-0.12%		0.22%	0.048*	0.039	0.068		0.000***	0.000***
(-1,+3)		-1.96%	0.22%	0.838	0.039		0.113	0.000***	0.000***
	-0.12%			0.231		0.068	0.113	0.000***	0.000***
(-1,+5)	-0.01%	-1.58%		0.088+	0.038	0.068		0.000***	0.000***
	-0.01%		0.67%	0.648	0.038		0.098	0.000***	0.000***
(-1,+30)		-1.58%	0.67%	0.167		0.068	0.098	0.002**	0.005**
	0.60%	-0.97%		0.187	0.061	0.079		0.016*	0.032*
(-1,+5)	0.60%		0.80%	0.909	0.061		0.112	0.000***	0.000***
		-0.97%	0.80%	0.344		0.079	0.112	0.004**	0.007**
(-1,+30)	1.11%	1.32%		0.929	0.101	0.173		0.000***	0.000***
	1.11%		0.94%	0.960	0.101		0.224	0.000***	0.000***
		1.32%	0.94%	0.920		0.173	0.224	0.022*	0.045*
Count	71	73	49						

**Table 6:  
Mean CAR and Variance Comparison – Expanded Sample (30-year periods)**

Event Period	Mean		t-test	Standard Deviation		Variance Comparison	
	1950-1979	1980-2009	2-tail	1950-1979	1980-2009	1-tail	2-tail
(-1,+1)	-0.009	-0.004	0.633	0.046	0.086	0.000 ***	0.000 ***
(-1,+2)	-0.008	0.001	0.356	0.046	0.094	0.000 ***	0.000 ***
(-1,+3)	-0.007	0.003	0.260	0.046	0.087	0.000 ***	0.000 ***
(-1,+5)	0.001	0.005	0.742	0.063	0.097	0.000 ***	0.000 ***
(-1,+30)	0.006	0.009	0.909	0.098	0.212	0.000 ***	0.000 ***
Count	148	101					

**Table 7:  
Mean CAR and Variance Comparison – Expanded Sample (20-year periods)**

Event Period	Mean			t-test 2-tail	Standard Deviation			Variance Comparison	
	1950-1969	1970-1989	1990-2009		1950-1969	1970-1989	1990-2009	1-tail	2-tail
(-1,+1)	-0.48%	-1.41%		0.241	0.037	0.066		0.000 ***	0.000 ***
	-0.48%		0.01%	0.684	0.037		0.091	0.000 ***	0.000 ***
(-1,+2)		-1.41%	0.01%	0.289		0.066	0.091	0.002 **	0.005 **
	-0.48%	-1.32%	0.77%	0.300	0.038	0.068		0.000 ***	0.000 ***
(-1,+3)	-0.48%		0.77%	0.345	0.038		0.101	0.000 ***	0.000 ***
		-1.32%	0.77%	0.151		0.068	0.101	0.000 ***	0.001 ***
(-1,+5)	-0.40%	-0.99%		0.484	0.040	0.069		0.000 ***	0.000 ***
	-0.40%		0.83%	0.300	0.040		0.089	0.000 ***	0.000 ***
(-1,+30)		-0.99%	0.83%	0.174		0.069	0.089	0.017 *	0.035 *
	0.13%	-0.18%		0.767	0.058	0.080		0.001 ***	0.002 **
(-1,+30)	0.13%		0.99%	0.535	0.058		0.099	0.000 ***	0.000 ***
		-0.18%	0.99%	0.440		0.080	0.099	0.034 *	0.069 +
Count	0.40%	0.33%		0.972	0.092	0.164		0.000 ***	0.000 ***
	0.40%		1.69%	0.640	0.092		0.206	0.000 ***	0.000 ***
		0.33%	1.69%	0.663		0.164	0.206	0.025 *	0.050 +



**Table 8:**  
**OLS Models Estimating Car Magnitude (-1,+1 days) with Two Periods**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Founder	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.03*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)
Age	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
1980-2009	0.01+ (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01* (0.01)
Ind. Adj. ROA		0.01 (0.03)						
Ind. Adj. ROS			0.02 (0.03)					
Ind. Adj. ROE				0.00 (0.01)				
Ind. Adj. ROA (abs. value)					0.05 (0.04)			
Ind. Adj. ROS (abs. value)						-0.00 (0.03)		
Ind. Adj. ROE (abs. value)							0.00 (0.01)	
Founder X 1980-2009								-0.01 (0.01)
Constant	0.03 (0.02)	0.02 (0.02)	0.02 (0.02)	0.01 (0.02)	0.01 (0.02)	0.02 (0.02)	0.01 (0.02)	0.02 (0.02)
Observations	185	159	156	156	159	156	156	185
R-squared	0.149	0.138	0.156	0.155	0.145	0.152	0.156	0.151

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 9:  
OLS Models Estimating CAR Magnitude (-1,+2 days) with Two Periods**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Founder	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.04*** (0.01)
Age	0.00 (0.00)	0.00+ (0.00)	0.00 (0.00)	0.00+ (0.00)	0.00 (0.00)	0.00 (0.00)	0.00+ (0.00)	0.00 (0.00)
1980-2009	0.02*** (0.01)	0.02** (0.01)	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)	0.02** (0.01)
Ind. Adj. ROA		-0.07* (0.03)						
Ind. Adj. ROS			-0.05+ (0.03)					
Ind. Adj. ROE				-0.02+ (0.01)				
Ind. Adj. ROA (abs. value)					0.08+ (0.04)			
Ind. Adj. ROS (abs. value)						0.02 (0.04)		
Ind. Adj. ROE (abs. value)							0.02 (0.01)	
Founder X 1980-2009								-0.01 (0.02)
Constant	0.01 (0.02)	-0.00 (0.02)	0.00 (0.02)	-0.00 (0.02)	-0.00 (0.02)	0.00 (0.02)	-0.00 (0.02)	0.01 (0.02)
Observations	185	159	156	156	159	156	156	185
R-squared	0.151	0.163	0.164	0.176	0.161	0.151	0.170	0.152

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 10:**  
**OLS Models Estimating CAR Magnitude (-1,+3 days) with Two Periods**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Founder	0.02** (0.01)	0.02** (0.01)	0.02** (0.01)	0.03** (0.01)	0.02** (0.01)	0.02** (0.01)	0.03** (0.01)	0.03** (0.01)
Age	0.00 (0.00)	0.00* (0.00)	0.00+ (0.00)	0.00* (0.00)	0.00+ (0.00)	0.00+ (0.00)	0.00* (0.00)	0.00 (0.00)
1980-2009	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.02*** (0.01)	0.03*** (0.01)
Ind. Adj. ROA		-0.03 (0.03)						
Ind. Adj. ROS			-0.03 (0.03)					
Ind. Adj. ROE				-0.01 (0.01)				
Ind. Adj. ROA (abs. value)					0.04 (0.04)			
Ind. Adj. ROS (abs. value)						-0.01 (0.03)		
Ind. Adj. ROE (abs. value)							0.01 (0.01)	
Founder X 1980-2009								-0.01 (0.01)
Constant	0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	0.01 (0.02)
Observations	185	159	156	156	159	156	156	185
R-squared	0.169	0.177	0.179	0.186	0.179	0.175	0.186	0.170

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 11:**  
**OLS Models Estimating CAR Magnitude (-1,+5 days) with Two Periods**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Founder	0.03** (0.01)	0.03** (0.01)	0.03** (0.01)	0.03* (0.01)	0.03* (0.01)	0.03** (0.01)	0.03* (0.01)	0.04** (0.01)
Age	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
1980-2009	0.02* (0.01)	0.01+ (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02* (0.01)
Ind. Adj. ROA		-0.07+ (0.04)						
Ind. Adj. ROS			-0.06+ (0.04)					
Ind. Adj. ROE				-0.02+ (0.01)				
Ind. Adj. ROA (abs. value)					0.06 (0.05)			
Ind. Adj. ROS (abs. value)						0.00 (0.04)		
Ind. Adj. ROE (abs. value)							0.02 (0.02)	
Founder X 1980-2009								-0.03 (0.02)
Constant	0.02 (0.02)	0.00 (0.03)	0.01 (0.03)	0.01 (0.03)	0.00 (0.03)	0.01 (0.03)	0.01 (0.03)	0.02 (0.02)
Observations	185	159	156	156	159	156	156	185
R-squared	0.076	0.100	0.105	0.094	0.091	0.086	0.088	0.085

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 12:**  
**OLS Models Estimating CAR Magnitude (-1,+30 days) with Two Periods**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Founder	0.03+	0.03	0.03+	0.02	0.02	0.03	0.02	0.03
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Age	-0.00*	-0.00+	-0.00*	-0.00*	-0.00+	-0.00*	-0.00+	-0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
1980-2009	0.05***	0.04**	0.04**	0.04**	0.03*	0.04*	0.04*	0.05**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)
Ind. Adj. ROA		-0.08						
		(0.07)						
Ind. Adj. ROS			-0.06					
			(0.06)					
Ind. Adj. ROE				-0.04				
				(0.02)				
Ind. Adj. ROA (abs. value)					0.15+			
					(0.09)			
Ind. Adj. ROS (abs. value)						0.14+		
						(0.07)		
Ind. Adj. ROE (abs. value)							0.05+	
							(0.03)	
Founder X 1980-2009								0.01
								(0.03)
Constant	0.18***	0.15**	0.19***	0.16***	0.15**	0.20***	0.15***	0.18***
	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)
Observations	185	159	156	156	159	156	156	185
R-squared	0.127	0.102	0.118	0.115	0.111	0.132	0.120	0.128

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 13:**  
**OLS Models Estimating CAR Magnitude (-1,+1 days) with Three Periods**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Founder	0.04*** (0.01)	0.03*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.03*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.01 (0.01)
Age	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
1970-1989	0.02** (0.01)	0.02** (0.01)	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)	0.01 (0.01)
1990-2009	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)	0.02+ (0.01)	0.01+ (0.01)	0.02* (0.01)	0.01+ (0.01)	0.01+ (0.01)
Ind. Adj. ROA		0.01 (0.03)						
Ind. Adj. ROS			0.03 (0.03)					
Ind. Adj. ROE				0.00 (0.01)				
Ind. Adj. ROA (abs. value)					0.04 (0.04)			
Ind. Adj. ROS (abs. value)						0.00 (0.03)		
Ind. Adj. ROE (abs. value)							0.00 (0.01)	
Founder X 1970-1989								0.05** (0.02)
Founder X 1990-2009								0.02 (0.02)
Constant	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.00 (0.02)	0.00 (0.02)	0.01 (0.02)	0.00 (0.02)	0.02 (0.02)
Observations	185	159	156	156	159	156	156	185
R-squared	0.177	0.168	0.185	0.179	0.174	0.179	0.179	0.218

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 14:**  
**OLS Models Estimating CAR Magnitude (-1,+2 days) with Three Periods**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Founder	0.03*** (0.01)	0.03** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.01 (0.02)
Age	0.00 (0.00)	0.00+ (0.00)	0.00 (0.00)	0.00+ (0.00)	0.00+ (0.00)	0.00 (0.00)	0.00+ (0.00)	0.00 (0.00)
1970-1989	0.02** (0.01)	0.02** (0.01)	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)	0.02* (0.01)
1990-2009	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03** (0.01)	0.03** (0.01)	0.03** (0.01)	0.03** (0.01)	0.03*** (0.01)
Ind. Adj. ROA		-0.07+ (0.03)						
Ind. Adj. ROS			-0.05 (0.03)					
Ind. Adj. ROE				-0.02+ (0.01)				
Ind. Adj. ROA (abs. value)					0.07+ (0.04)			
Ind. Adj. ROS (abs. value)						0.02 (0.03)		
Ind. Adj. ROE (abs. value)							0.02 (0.01)	
Founder X 1970-1989								0.03+ (0.02)
Founder X 1990-2009								0.01 (0.02)
Constant	-0.00 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	0.00 (0.02)
Observations	185	159	156	156	159	156	156	185
R-squared	0.178	0.190	0.192	0.199	0.186	0.182	0.190	0.196

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 15:**  
**OLS Models Estimating CAR Magnitude (-1,+3 days) with Three Periods**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Founder	0.02** (0.01)	0.02* (0.01)	0.02** (0.01)	0.02** (0.01)	0.02* (0.01)	0.02** (0.01)	0.02** (0.01)	0.01 (0.01)
Age	0.00 (0.00)	0.00* (0.00)	0.00* (0.00)	0.00* (0.00)	0.00* (0.00)	0.00+ (0.00)	0.00* (0.00)	0.00 (0.00)
1970-1989	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03** (0.01)	0.02** (0.01)
1990-2009	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)
Ind. Adj. ROA		-0.03 (0.03)						
Ind. Adj. ROS			-0.02 (0.03)					
Ind. Adj. ROE				-0.01 (0.01)				
Ind. Adj. ROA (abs. value)					0.04 (0.04)			
Ind. Adj. ROS (abs. value)						-0.01 (0.03)		
Ind. Adj. ROE (abs. value)							0.01 (0.01)	
Founder X 1970-1989								0.02 (0.02)
Founder X 1990-2009								-0.00 (0.02)
Constant	-0.00 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.00 (0.02)
Observations	185	159	156	156	159	156	156	185
R-squared	0.198	0.210	0.214	0.213	0.211	0.211	0.212	0.206

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10



**Table 16:**  
**OLS Models Estimating CAR Magnitude (-1,+5 days) with Three Periods**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Founder	0.03** (0.01)	0.03* (0.01)	0.03** (0.01)	0.02* (0.01)	0.03* (0.01)	0.03** (0.01)	0.02* (0.01)	0.03 (0.02)
Age	0.00 (0.00)	0.00+ (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
1970-1989	0.02* (0.01)	0.02* (0.01)	0.02 (0.01)	0.02* (0.01)	0.02+ (0.01)	0.02+ (0.01)	0.02* (0.01)	0.02* (0.01)
1990-2009	0.03** (0.01)	0.03* (0.01)	0.02* (0.01)	0.03* (0.01)	0.02* (0.01)	0.03* (0.01)	0.03* (0.01)	0.03** (0.01)
Ind. Adj. ROA		-0.07 (0.04)						
Ind. Adj. ROS			-0.06 (0.04)					
Ind. Adj. ROE				-0.02 (0.01)				
Ind. Adj. ROA (abs. value)					0.05 (0.05)			
Ind. Adj. ROS (abs. value)						0.00 (0.04)		
Ind. Adj. ROE (abs. value)							0.02 (0.02)	
Founder X 1970-1989								0.00 (0.02)
Founder X 1990-2009								-0.01 (0.03)
Constant	0.01 (0.02)	-0.01 (0.03)	-0.00 (0.03)	-0.00 (0.03)	-0.01 (0.03)	0.00 (0.03)	-0.00 (0.03)	0.01 (0.02)
Observations	185	159	156	156	159	156	156	185
R-squared	0.098	0.121	0.124	0.120	0.112	0.109	0.111	0.099

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 17:**  
**OLS Models Estimating CAR Magnitude (-1,+30 days) with Three Periods**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Founder	0.03+	0.03	0.03	0.02	0.02	0.03	0.02	0.03
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
Age	-0.00*	-0.00+	-0.00**	-0.00*	-0.00+	-0.00**	-0.00*	-0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
1970-1989	0.02	0.01	0.00	0.01	0.01	0.00	0.01	0.03
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
1990-2009	0.06**	0.05**	0.05**	0.05**	0.04*	0.05*	0.05*	0.05**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Ind. Adj. ROA		-0.09						
		(0.07)						
Ind. Adj. ROS			-0.06					
			(0.06)					
Ind. Adj. ROE				-0.04				
				(0.02)				
Ind. Adj. ROA (abs. value)					0.16+			
					(0.09)			
Ind. Adj. ROS (abs. value)						0.14+		
						(0.07)		
Ind. Adj. ROE (abs. value)							0.05+	
							(0.03)	
Founder X 1970-1989								-0.01
								(0.04)
Founder X 1990-2009								0.02
								(0.05)
Constant	0.17***	0.16***	0.21***	0.16***	0.15**	0.21***	0.16***	0.17***
	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)
Observations	185	159	156	156	159	156	156	185
R-squared	0.118	0.104	0.129	0.118	0.115	0.143	0.124	0.121

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 18:  
Comparison of Discretion Ratings and CEO Effect Rankings**

Industry	Hambrick and Abrahamson (1995) Sample: 1985-1989			Wasserman et al. (2001) Sample: 1979 - 1997			Relative Ranks		
	SIC	Mean Rating	SD	Proportion of variance attributed to leader			Hambrick and Abrahamson	Wasserman et al.	
				SIC	(ROA)	(Tobin's Q)		(ROA)	(Tobin's Q)
Petroleum/natural gas production	1311	2.33	1.67	1310	12.2%	20.3%	9	7	4
Pharmaceuticals	2834	5.54	1.05	2830	12.3	15.4	4	6	6
Blast furnaces and steel mills	3312	2.08	1.31	3310	12.7	10.2	10	5	9
Computer equipment	3570	5.77	1.01	3570	10.7	17.7	2	9	5
Radio/TV communication equipment	3663	5.17	1.03	3660	12.2	22.0	6	7	3
Semiconductors	3674	4.61	1.80	3670	14.8	9.9	7	3	10
Instruments to measure electricity	3825	4.33	0.87	3820	26.9	22.8	8	1	1
Engineering/scientific instruments	3826	5.63	0.92	3820	26.9	22.8	3	1	1
Surgical/medical instruments	3841	5.42	0.99	3840	6.9	10.7	5	10	8
Computer programming	7372	6.38	1.04	7370	12.8	12.4	1	4	7

Note: Hambrick and Abrahamson used 4-digit SICs while Wasserman et al. aggregated to three digit SICs.

**Table 19:**  
**Major Regulatory Legislative Actions, 1976 - 1999**

Year	Legislative Action
1976	Hart-Scott-Rodino Antitrust Improvements Act
1976	Railroad Revitalization and Regulatory Reform Act of 1976
1977	Emergency Natural Gas Act
1978	Natural Gas Policy Act
1978	Airline Deregulation Act
1980	Ronald Reagan Elected
1980	Depository Institutions Deregulation and Monetary Control Act
1980	Regulatory Flexibility Act
1980	Staggers Rail Act
1980	Motor Carrier Act
1982	Bus Regulatory Reform Act of 1980
1982	Garn-St. Germain Depository Institutions Act
1984	Ocean Shipping Act of 1984
1986	Surface Freight Forwarders Deregulation Act of 1986
1989	Natural Gas Wellhead Decontrol Act
1990	Emergence of anti-takeover provisions
1992	National Energy Policy Act
1994	Federal Aviation Administration Authorization Act of 1994
1996	Telecommunications Act of 1996
1998	Ocean Shipping Reform Act of 1998
1999	Graham-Leach-Bliley Act (financial services)

**Table 20:  
Prior CEO Effect-Size Research<sup>6</sup>**

	Lieberson & O'Connor (1972)	Weiner (1978)	Thomas (1988)*	Wasserman, Nohria, & Anand (2001)	Mackey (2008) A	Mackey (2008) B	Crossland & Hambrick (2007) US Sample
<b>Time Period</b>	1946-1965	1956-1974	1965-1984	1979-1997	1992-2002	1992-2002	1988-2002
<b>Performance Measure</b>	ROS	ROS	ROS	ROA	ROA	ROA	ROS
<b>Year Effect</b>	1.8%	2.4%	5.6%	2.6%	11.0%	1.0%	3.0%
<b>Industry Effect</b>	28.5	20.5	n/a	6.3	18.0	n/a	14.8
<b>Corporate Effect</b>	22.6	45.8	83.2	25.5	29.5	47.5	23.3
<b>CEO Effect</b>	14.5	8.7	5.7	14.7	12.9	12.9	14.0
<b>Error</b>	32.6	22.6	5.4	50.9	38.5	38.5	55.9
<b>Total</b>	100	100	100	100	100	100	100
<b>Industry Count</b>	13	1	1	13	459	98	8
<b>Firm Count</b>	167	193	193	167	520	51	108
<b>Firm-Years</b>	3340	3667	3667	10,089	8522 <sup>^</sup>	801 <sup>^</sup>	1464

\* Study of a single industry in Great Britain. All others are US samples.

<sup>^</sup> Represents the number of segment-years

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<sup>6</sup> These results represent those most closely related to the original Lieberson & O'Connor study. Each of these papers also offered additional findings based on methodological deviations from the Lieberson and O'Connor.

**Table 21:**  
**Industries in Lieberman And O'Connor Study with Firm Counts by Decade**

SIC Code	Industry	1950	1960	1970	1980	1990	2000	2007
4512	Air transportation	11	25	29	45	41	41	40
2082	Beer (Malt Beverages)	9	12	15	12	8	18	12
3250	Clay products	0	4	8	6	4	5	3
3241	Cement	10	21	26	17	8	4	3
2800	Chemicals <sup>7</sup>	4	6	8	8	8	12	9
5311	Department stores	13	33	53	38	29	18	10
2834	Drugs	16	22	34	54	156	298	277
2911	Petroleum refining	19	33	45	52	44	54	39
2731	Publishing	8	17	27	25	19	20	8
3730	Ship building	5	12	17	14	12	10	6
5661	Shoes and shoe stores <sup>8</sup>	2	4	10	11	5	12	11
2840/2844	Soaps and toiletries	13	22	33	36	42	45	27
3310/3312/3317	Steel	16	39	54	56	70	73	40

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<sup>7</sup> SIC 2800 starts with only 4 firms. However, adding the various chemical SICs together creates a much large sample for this industry.

<sup>8</sup> WSIC 5661 is just retail shoe stores. Adding in manufacturers (SICs 3021 and 3140) will increase the number

**Table 22:  
Industries Represented in Sample**

<b>SIC3</b>	<b>Industry Name</b>	<b>Enter Sample</b>	<b>Depart Sample</b>	<b>Firm-Years</b>
122	Coal	1993	2008	77
153	Operative Builders	1993	2008	165
173	Electrical Work	1998	2008	51
179	Special Trade Contractors	1978	2002	119
204	Grain Mill Products*	1950	2008	680
205	Bakery Products*	1950	2008	305
221	Broadwoven Fabric Mills, Cotton	1950	2002	462
229	Miscellaneous Textile Goods	1988	2000	79
242	Sawmills and Planning Mills	1969	1986	101
281	Industrial Inorganic Chemicals*	1950	2008	926
283	Drugs*	1950	2008	1,306
291	Petroleum Refining*	1950	2008	1,144
327	Concrete, Gypsum, And Plaster Products*	1950	2008	553
335	Rolling, Drawing, And Extruding Of Nonferrous Metals*	1950	2008	798
352	Farm and Garden Machinery and Equipment*	1950	2008	521
354	Metalworking Machinery And Equipment*	1950	2008	794
357	Computer and Office Equipment*	1950	2008	1,254
366	Communications Equipment*	1950	2008	1,405
367	Electronic Components and Accessories	1962	2008	1,122
369	Miscellaneous Electrical Machinery, Equipment, and Supplies*	1950	2008	740
371	Motor Vehicles and Motor Vehicle Equipment*	1950	2008	1,352
372	Aircraft and Parts*	1950	2008	1,063
384	Surgical, Medical, And Dental Instruments And Supplies	1963	2008	1,011
391	Jewelry, Silverware, And Plated Ware	1972	1998	165
541	Grocery Stores*	1950	2008	1,274
561	Men's and Boys' Clothing and Accessory Stores	1992	2005	66
566	Shoe Stores	1966	2008	190
721	Power Laundries, Family and Commercial	1963	2005	242
729	Miscellaneous Personal Services	1993	2008	74
829	Schools and Educational Services	1993	2008	100

\* Denotes long run industry

**Table 23:**  
**Sample Sizes by Level And Period**

<b>Period</b>	<b>n</b>	<b>Industries</b>	<b>Firms</b>	<b>CEOs</b>
All periods	18113	30	1106	2814
1950 to 1964	2567	19	304	525
1965 to 1979	5260	23	932	932
1980 to 1994	5453	29	670	1139
1995 to 2008	4833	29	629	1106



**Table 24:  
Means and Standard Deviations**

Period	ROA		ROS		ROE		SG&A Intensity		PP&E Newness		Inventory Intensity		Leverage	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
All	4.58	8.15	3.40	9.28	8.84	22.50	20.95	13.74	54.55	13.29	17.68	11.10	27.49	22.78
1950 – 1964	7.11	4.15	5.74	4.78	12.07	8.11	15.45	10.79	54.90	10.73	18.78	9.65	22.72	23.79
1965 – 1979	5.98	5.53	4.32	5.10	10.80	14.12	18.21	10.40	56.13	10.91	19.46	10.12	26.84	18.08
1980 – 1994	3.90	8.38	2.79	9.11	7.68	24.20	22.49	12.97	56.53	13.53	17.16	10.29	28.81	22.45
1995 – 2008	2.48	10.80	1.85	13.49	6.57	30.46	24.97	17.16	50.36	15.53	15.73	13.17	28.95	26.41

**Table 25:  
Multi-Level Models Estimating ROA**

	1950-1964		1965-1979		1980-1994		1995-2008	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year 2	1951	-2.49*** (0.27)	1966	0.28 (0.35)	1981	-0.27 (0.49)	1996	-0.34 (0.57)
Year 3		-3.60*** (0.28)		-0.79* (0.35)		-1.78*** (0.50)		-0.72 (0.58)
Year 4		-3.77*** (0.28)		-0.91* (0.35)		-1.82*** (0.50)		-2.22*** (0.59)
Year 5		-3.65*** (0.28)		-1.45*** (0.35)		-1.45** (0.51)		-2.14*** (0.61)
Year 6		-2.40*** (0.28)		-3.74*** (0.35)		-3.33*** (0.51)		-2.50*** (0.63)
Year 7		-3.00*** (0.28)		-3.69*** (0.35)		-2.79*** (0.53)		-5.69*** (0.64)
Year 8		-3.35*** (0.29)		-3.07*** (0.35)		-2.71*** (0.53)		-5.77*** (0.65)
Year 9		-4.54*** (0.29)		-1.60*** (0.35)		-1.81*** (0.53)		-2.77*** (0.67)
Year 10		-3.55*** (0.29)		-2.33*** (0.35)		-2.75*** (0.54)		-1.89** (0.67)
Year 11		-4.59*** (0.29)		-2.26*** (0.35)		-3.15*** (0.54)		-0.61 (0.68)
Year 12		-4.86*** (0.29)		-1.50*** (0.35)		-4.22*** (0.54)		-0.97 (0.72)
Year 13		-4.21*** (0.30)		-1.50*** (0.35)		-5.48*** (0.53)		-2.50*** (0.73)
Year 14		-4.31*** (0.30)		-1.21*** (0.36)		-4.36*** (0.53)	2008	-5.71*** (0.74)
Year 15	1964	-3.92*** (0.30)	1979	-1.01** (0.36)	1994	-2.54*** (0.53)		
Constant	6.81*** (0.41)	10.53*** (0.46)	6.11*** (0.32)	7.77*** (0.41)	3.53*** (0.29)	6.07*** (0.46)	1.81*** (0.48)	3.91*** (0.63)
Industry Variance	2.367	2.384	1.521	1.509	0.672	0.790	3.538	3.486
Firm Variance	3.913	3.931	8.643	8.730	15.42	16.21	19.99	21.89
CEO Variance	7.592	7.497	4.325	4.070	14.33	13.70	31.88	30.38
Residual	6.241	5.220	17.13	16.01	45.10	43.46	67.65	64.34

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 26:**  
**Multi-Level models Estimating ROS**

	1950-1964		1965-1979		1980-1994		1995-2008	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year 2	1951	-1.63*** (0.21)	1966	0.03 (0.33)	1981	-0.08 (0.53)	1996	-0.15 (0.71)
Year 3		-2.62*** (0.21)		-0.50 (0.33)		-1.17* (0.55)		-0.56 (0.72)
Year 4		-2.95*** (0.21)		-0.45 (0.33)		-1.04+ (0.55)		-2.34** (0.74)
Year 5		-2.57*** (0.21)		-0.93** (0.33)		-0.93+ (0.56)		-1.78* (0.77)
Year 6		-1.68*** (0.21)		-3.02*** (0.33)		-2.47*** (0.56)		-2.16** (0.78)
Year 7		-2.00*** (0.21)		-2.78*** (0.33)		-2.16*** (0.58)		-5.44*** (0.81)
Year 8		-2.47*** (0.22)		-2.36*** (0.32)		-1.94*** (0.58)		-5.15*** (0.82)
Year 9		-3.15*** (0.22)		-1.28*** (0.32)		-0.99+ (0.58)		-1.90* (0.83)
Year 10		-2.40*** (0.22)		-1.89*** (0.32)		-2.14*** (0.59)		-0.47 (0.84)
Year 11		-3.18*** (0.22)		-2.09*** (0.33)		-1.99*** (0.59)		0.26 (0.85)
Year 12		-3.14*** (0.23)		-1.43*** (0.33)		-2.68*** (0.59)		0.48 (0.90)
Year 13		-2.74*** (0.24)		-1.36*** (0.33)		-4.28*** (0.58)		-1.12 (0.91)
Year 14		-2.81*** (0.24)		-1.13*** (0.33)		-2.77*** (0.58)	2008	-4.61*** (0.93)
Year 15	1964	-2.57*** (0.24)	1979	-1.11*** (0.33)	1994	-1.36* (0.58)		
Constant	5.25*** (0.60)	7.75*** (0.61)	4.28*** (0.37)	5.67*** (0.45)	2.39*** (0.28)	4.08*** (0.48)	1.21* (0.61)	2.82*** (0.80)
Industry Variance	5.551	5.403	2.574	2.541	0.366	0.431	5.941	5.935
Firm Variance	5.643	5.743	5.722	5.817	17.27	17.47	27.99	29.42
CEO Variance	13.48	13.32	2.863	2.750	18.13	17.85	53.95	52.34
Residual	3.438	2.935	14.84	14.14	52.98	52.00	103.9	100.5

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 27:  
Multi-Level Models Estimating ROE**

	1950-1964		1965-1979		1980-1994		1995-2008	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year 2	1951	-3.32*** (0.64)	1966	0.39 (1.37)	1981	-1.21 (1.60)	1996	-0.80 (1.83)
Year 3		-5.29*** (0.65)		-1.01 (1.35)		-3.58* (1.62)		-0.47 (1.85)
Year 4		-5.70*** (0.65)		-0.85 (1.35)		-2.85+ (1.63)		-5.68** (1.88)
Year 5		-5.78*** (0.65)		-1.81 (1.33)		-0.23 (1.64)		-3.66+ (1.93)
Year 6		-3.80*** (0.65)		-7.23*** (1.32)		-6.37*** (1.66)		-3.27+ (1.96)
Year 7		-4.88*** (0.66)		-6.51*** (1.32)		-3.11+ (1.70)		-7.09*** (2.02)
Year 8		-5.60*** (0.66)		-5.11*** (1.31)		-4.06* (1.69)		-9.71*** (2.04)
Year 9		-7.79*** (0.67)		-1.64 (1.30)		-1.51 (1.70)		-4.23* (2.08)
Year 10		-6.41*** (0.67)		-1.66 (1.30)		-3.96* (1.70)		-3.14 (2.09)
Year 11		-8.58*** (0.68)		-1.73 (1.31)		-2.95+ (1.70)		-0.27 (2.11)
Year 12		-9.60*** (0.68)		-1.43 (1.31)		-7.67*** (1.71)		0.43 (2.23)
Year 13		-7.69*** (0.71)		-0.45 (1.31)		-8.41*** (1.68)		-3.33 (2.25)
Year 14		-8.67*** (0.82)		0.32 (1.32)		-7.16*** (1.66)	2008	-7.35** (2.30)
Year 15	1964	-7.92*** (0.83)	1979	1.26 (1.32)	1994	-1.20 (1.65)		
Constant	11.33*** (0.65)	17.90*** (0.84)	10.86*** (0.52)	12.72*** (1.23)	7.16*** (0.88)	10.74*** (1.43)	5.43*** (1.30)	8.62*** (1.81)
Industry Variance	4.802	5.347	3.483	3.639	11.47	11.38	28.60	27.48
Firm Variance	7.718	7.962	14.79	14.76	47.10	47.22	95.02	98.62
CEO Variance	37.62	35.24	20.81	17.83	61.59	62.82	166.3	165.0
Residual	31.88	27.98	164.0	159.6	479.7	472.3	678.7	669.4

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 28:  
Multi-Level Models Estimating SG&A Intensity**

	1950-1964		1965-1979		1980-1994		1995-2008	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year 2	1951	-0.27 (0.34)	1966	-0.41* (0.21)	1981	0.28 (0.27)	1996	0.04 (0.41)
Year 3		0.14 (0.35)		-0.19 (0.21)		1.41*** (0.27)		0.30 (0.42)
Year 4		0.53 (0.35)		-0.28 (0.21)		1.72*** (0.28)		1.30** (0.44)
Year 5		1.33*** (0.35)		-0.10 (0.21)		1.74*** (0.28)		1.40** (0.46)
Year 6		1.39*** (0.34)		0.46* (0.21)		2.52*** (0.29)		1.59*** (0.47)
Year 7		1.72*** (0.35)		0.55** (0.21)		2.68*** (0.30)		2.47*** (0.49)
Year 8		2.20*** (0.35)		0.18 (0.21)		3.01*** (0.30)		2.49*** (0.49)
Year 9		2.73*** (0.35)		-0.22 (0.21)		2.97*** (0.30)		1.62** (0.50)
Year 10		2.58*** (0.35)		-0.76*** (0.21)		2.90*** (0.31)		0.91+ (0.51)
Year 11		3.33*** (0.35)		-0.33 (0.21)		3.39*** (0.31)		0.64 (0.52)
Year 12		3.61*** (0.35)		-0.24 (0.21)		3.90*** (0.31)		0.74 (0.54)
Year 13		3.82*** (0.37)		-0.29 (0.22)		3.80*** (0.31)		0.39 (0.55)
Year 14		3.90*** (0.36)		-0.26 (0.22)		3.72*** (0.31)	2008	1.09+ (0.57)
Year 15	1964	4.11*** (0.36)	1979	-0.12 (0.22)	1994	3.18*** (0.32)		
Constant	16.90*** (1.96)	13.94*** (1.95)	18.34*** (1.59)	18.50*** (1.60)	21.12*** (1.75)	18.61*** (1.76)	23.08*** (2.00)	22.14*** (2.02)
Industry Variance	70.34	67.92	55.36	55.46	80.32	80.08	104.2	104.4
Firm Variance	29.11	30.32	42.41	42.58	76.82	76.30	130.8	130.6
CEO Variance	4.653	3.272	3.438	3.347	11.67	11.06	31.21	30.54
Residual	7.963	6.949	5.472	5.374	13.25	12.53	32.34	31.89

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 29:  
Multi-Level Models Estimating Property, Plant, & Equipment Newness**

	1950-1964		1965-1979		1980-1994		1995-2008	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year 2	1951	1.92*** (0.52)	1966	1.14* (0.46)	1981	0.11 (0.47)	1996	0.07 (0.51)
Year 3		2.10*** (0.53)		1.79*** (0.46)		-0.43 (0.49)		-0.15 (0.52)
Year 4		1.01+ (0.53)		2.10*** (0.46)		-1.23* (0.49)		-0.13 (0.54)
Year 5		-0.25 (0.53)		2.88*** (0.46)		-1.55** (0.50)		-0.65 (0.56)
Year 6		-1.15* (0.53)		2.62*** (0.46)		-1.98*** (0.51)		-0.79 (0.58)
Year 7		-0.22 (0.53)		1.67*** (0.47)		-2.79*** (0.53)		-2.96*** (0.60)
Year 8		-0.31 (0.54)		1.01* (0.47)		-3.49*** (0.53)		-6.19*** (0.61)
Year 9		-1.60** (0.54)		1.18* (0.46)		-5.02*** (0.54)		-8.73*** (0.62)
Year 10		-2.46*** (0.54)		1.32** (0.47)		-6.00*** (0.54)		-9.33*** (0.63)
Year 11		-3.36*** (0.55)		0.85+ (0.47)		-7.32*** (0.55)		-8.81*** (0.64)
Year 12		-4.32*** (0.55)		0.77 (0.47)		-8.94*** (0.56)		-8.73*** (0.68)
Year 13		-4.81*** (0.58)		1.08* (0.48)		-10.26*** (0.55)		-8.38*** (0.69)
Year 14		-5.80*** (0.57)		1.53** (0.48)		-10.99*** (0.55)	2008	-9.25*** (0.71)
Year 15	1964	-6.40*** (0.58)	1979	2.57*** (0.49)	1994	-11.14*** (0.56)		
Constant	54.82*** (0.92)	58.25*** (1.11)	57.02*** (0.86)	55.49*** (0.93)	57.38*** (0.82)	62.83*** (0.93)	51.70*** (1.15)	55.03*** (1.25)
Industry Variance	9.590	13.55	12.11	12.24	10.71	11.16	28.67	31.03
Firm Variance	68.34	73.40	61.60	61.54	86.51	117.2	80.09	91.10
CEO Variance	22.75	14.02	24.43	24.26	62.08	48.79	82.19	66.87
Residual	22.15	19.22	27.17	26.64	47.90	40.09	57.59	49.89

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 30:  
Multi-Level Models Estimating Inventory Levels**

	1950-1964		1965-1979		1980-1994		1995-2008	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year 2	1951	1.20** (0.38)	1966	0.02 (0.37)	1981	-0.87** (0.33)	1996	0.13 (0.30)
Year 3		0.46 (0.38)		0.59 (0.37)		-1.27*** (0.34)		-0.39 (0.31)
Year 4		0.12 (0.39)		0.79* (0.37)		-1.47*** (0.34)		-0.10 (0.32)
Year 5		0.18 (0.39)		1.26*** (0.37)		-1.60*** (0.35)		-0.71* (0.33)
Year 6		0.03 (0.39)		2.26*** (0.37)		-1.73*** (0.35)		-0.79* (0.34)
Year 7		0.69+ (0.39)		2.12*** (0.38)		-1.97*** (0.36)		-1.00** (0.35)
Year 8		0.52 (0.40)		1.40*** (0.37)		-1.92*** (0.37)		-1.39*** (0.36)
Year 9		0.87* (0.40)		0.89* (0.37)		-2.24*** (0.37)		-1.89*** (0.36)
Year 10		0.42 (0.40)		1.84*** (0.37)		-2.36*** (0.37)		-2.17*** (0.37)
Year 11		0.83* (0.40)		0.56 (0.38)		-2.91*** (0.38)		-1.83*** (0.37)
Year 12		0.72+ (0.41)		-0.35 (0.38)		-3.45*** (0.38)		-1.54*** (0.39)
Year 13		0.73+ (0.43)		-0.82* (0.38)		-4.00*** (0.38)		-1.36*** (0.40)
Year 14		0.69 (0.42)		-0.71+ (0.39)		-4.38*** (0.38)	2008	-1.61*** (0.41)
Year 15	1965	0.82+ (0.43)	1979	-0.45 (0.39)	1994	-4.23*** (0.38)		
Constant	19.02*** (1.45)	18.37*** (1.49)	19.45*** (1.45)	19.00*** (1.47)	17.26*** (1.55)	19.87*** (1.60)	15.71*** (1.97)	16.50*** (1.99)
Industry Variance	35.93	35.99	45.13	44.85	63.65	66.96	107.5	107.9
Firm Variance	41.08	41.09	35.24	34.92	47.42	49.09	57.30	57.52
CEO Variance	10.14	10.18	11.56	11.33	14.45	12.61	13.04	12.38
Residual	10.39	10.28	18.23	17.41	20.14	19.42	17.70	17.46

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

**Table 31:  
Multi-Level Models Estimating Leverage**

	1950-1964		1965-1979		1980-1994		1995-2008	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year 2	1951	2.16+ (1.25)	1966	1.91+ (1.00)	1981	-0.76 (0.94)	1996	0.09 (0.97)
Year 3		7.02*** (1.25)		3.79*** (0.99)		-0.58 (0.97)		0.01 (0.99)
Year 4		7.11*** (1.26)		4.59*** (1.00)		-1.84+ (0.98)		4.05*** (1.02)
Year 5		5.71*** (1.27)		5.35*** (0.99)		-1.14 (0.99)		5.85*** (1.05)
Year 6		5.76*** (1.27)		7.75*** (0.99)		1.24 (1.01)		4.79*** (1.08)
Year 7		8.03*** (1.27)		8.61*** (0.99)		2.13* (1.04)		4.79*** (1.12)
Year 8		9.06*** (1.29)		8.67*** (0.99)		3.59*** (1.04)		3.80*** (1.14)
Year 9		8.74*** (1.29)		8.66*** (0.98)		5.02*** (1.06)		1.97+ (1.16)
Year 10		6.82*** (1.30)		8.96*** (0.99)		6.46*** (1.07)		1.04 (1.17)
Year 11		6.42*** (1.32)		8.70*** (0.99)		5.24*** (1.07)		-0.09 (1.19)
Year 12		6.60*** (1.32)		8.46*** (0.99)		4.04*** (1.08)		1.84 (1.25)
Year 13		6.22*** (1.41)		9.50*** (1.00)		2.97** (1.07)		2.61* (1.27)
Year 14		-2.00 (1.62)		9.99*** (1.01)		2.74* (1.07)	2008	4.97*** (1.30)
Year 15	1964	-1.80 (1.64)	1979	9.32*** (1.01)	1994	2.72* (1.08)		
Industry Variance	17.31	18.61	15.05	15.24	33.97	35.38	101.0	99.60
Firm Variance	316.2	326.0	208.5	214.8	232.6	239.2	314.8	315.3
CEO Variance	96.86	92.81	51.54	44.78	120.9	114.0	124.1	125.7
Residual	116.4	107.8	84.33	80.67	162.1	158.6	185.4	180.9

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10



**Table 32:  
Variance in Performance Explained by Level – 15, 20, and 30 Year Periods (All Industries)**

<b>ROA</b>																	
<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>
1950-1979	5.3%	5.2%	26.3%	18.7%	44.4%	1950-1969	3.7%	11.7%	31.4%	26.7%	26.5%	1950-1964	5.4%	11.9%	19.5%	37.3%	26.0%
1980-2008	3.3%	1.6%	17.2%	22.5%	55.4%	1970-1989	2.5%	1.9%	21.0%	19.9%	54.7%	1965-1979	4.1%	4.8%	27.6%	12.9%	50.6%
						1990-2008	2.4%	1.9%	19.0%	21.4%	55.3%	1980-1994	1.8%	1.0%	21.5%	18.1%	57.6%
												1995-2008	2.4%	2.8%	17.8%	24.7%	52.3%

<b>ROS</b>																	
<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>
1950-1979	4.3%	10.6%	23.7%	18.6%	42.7%	1950-1969	2.4%	20.0%	22.9%	36.3%	18.5%	1950-1964	2.5%	19.2%	20.4%	47.4%	10.4%
1980-2008	2.1%	2.0%	15.6%	25.4%	55.0%	1970-1989	1.4%	1.7%	21.3%	25.2%	50.4%	1965-1979	2.9%	9.8%	22.4%	10.6%	54.4%
						1990-2008	1.8%	2.2%	17.5%	23.8%	54.7%	1980-1994	1.1%	0.5%	19.7%	20.1%	58.6%
												1995-2008	1.9%	3.1%	15.3%	27.3%	52.4%

<b>ROE</b>																	
<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>
1950-1979	4.5%	2.0%	8.9%	12.5%	72.1%	1950-1969	4.3%	6.9%	17.1%	32.0%	39.6%	1950-1964	6.7%	6.5%	9.7%	43.0%	34.1%
1980-2008	1.0%	2.2%	8.2%	13.8%	74.8%	1970-1989	1.7%	1.2%	8.3%	16.3%	72.5%	1965-1979	3.6%	1.8%	7.3%	8.8%	78.6%
						1990-2008	0.9%	2.8%	8.1%	13.5%	74.6%	1980-1994	1.0%	1.9%	7.9%	10.5%	78.7%
												1995-2008	0.8%	2.8%	10.2%	17.0%	69.1%

**Table 33:**  
**Test Of Differences in CEO Effect on Performance Measures – Full Sample<sup>9</sup>**

<b>Return on Assets</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	37.3%	-	0.000	0.000	0.000
2	1965-1979	12.9%		-	0.002	0.000
3	1980-1994	18.1%			-	0.002
4	1995-2008	24.7%				-

<b>Return on Sales</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	47.4%	-	0.000	0.000	0.000
2	1965-1979	10.6%		-	0.000	0.000
3	1980-1994	20.1%			-	0.001
4	1995-2008	27.3%				-

<b>Return on Equity</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	43.0%	-	0.000	0.000	0.000
2	1965-1979	8.8%		-	0.124	0.000
3	1980-1994	10.5%			-	0.000
4	1995-2008	17.0%				-

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<sup>9</sup> Each cell represents a *p-value* for a Fishers's z-test comparing the CEO effect between two periods.

**Table 34:  
Variance in Performance Explained by Level – 15, 20, and 30 Year Periods (Long-Run Industries)**

<b>ROA</b>																	
<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>
1950-1979	6.2%	5.5%	25.5%	21.1%	41.8%	1950-1969	4.4%	11.1%	30.2%	27.6%	26.7%	1950-1964	5.3%	11.1%	20.9%	36.9%	25.8%
1980-2008	4.2%	1.7%	17.1%	20.2%	56.8%	1970-1989	2.1%	1.7%	21.5%	20.8%	53.9%	1965-1979	4.3%	5.4%	27.5%	14.2%	48.6%
						1990-2008	3.1%	2.5%	17.2%	18.9%	58.2%	1980-1994	2.3%	0.6%	22.2%	14.9%	59.9%
												1995-2008	3.1%	3.9%	16.6%	23.5%	52.8%

<b>ROS</b>																	
<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>
1950-1979	5.1%	13.1%	22.3%	23.7%	35.8%	1950-1969	2.6%	22.3%	21.3%	36.4%	17.4%	1950-1964	2.3%	19.9%	21.0%	47.0%	9.7%
1980-2008	2.3%	2.2%	14.3%	25.8%	55.4%	1970-1989	1.3%	1.6%	23.1%	25.8%	48.2%	1965-1979	3.3%	13.0%	22.3%	12.5%	48.9%
						1990-2008	2.0%	2.8%	14.4%	24.0%	56.8%	1980-1994	1.3%	0.4%	19.3%	18.0%	60.9%
												1995-2008	2.0%	3.8%	13.7%	29.5%	51.1%

<b>ROE</b>																	
<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>
1950-1979	4.7%	2.2%	10.1%	14.9%	68.1%	1950-1969	5.0%	5.9%	16.5%	33.1%	39.5%	1950-1964	6.7%	5.4%	10.3%	43.6%	34.1%
1980-2008	1.3%	2.3%	8.0%	13.6%	74.7%	1970-1989	1.5%	1.4%	8.5%	17.5%	71.1%	1965-1979	3.4%	2.2%	8.4%	10.1%	75.8%
						1990-2008	1.3%	2.8%	8.0%	13.2%	74.6%	1980-1994	1.4%	2.3%	7.6%	10.3%	78.5%
												1995-2008	1.2%	2.7%	10.4%	16.8%	69.0%

**Table 35:**  
**Test of Differences in CEO Effect on Performance – Long-Run Industries<sup>10</sup>**

<b>Return on Assets</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	36.9%	-	0.000	0.000	0.000
2	1965-1979	14.2%		-	0.350	0.000
3	1980-1994	14.9%			-	0.000
4	1995-2008	23.5%				-

<b>Return on Sales</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	47.0%	-	0.000	0.000	0.000
2	1965-1979	12.5%		-	0.003	0.000
3	1980-1994	18.0%			-	0.000
4	1995-2008	29.5%				-

<b>Return on Equity</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	43.6%	-	0.000	0.000	0.000
2	1965-1979	10.1%		-	0.450	0.001
3	1980-1994	10.3%			-	0.001
4	1995-2008	16.8%				-

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<sup>10</sup> Each cell represents a *p-value* for a Fishers's *z*-test comparing the CEO effect between two periods.

**Table 36:  
Variance in Strategy Variables Explained by Level – 15, 20, and 30 Year Periods (All Industries)**

<b>SG&amp;A</b>																	
Period	Year	Ind.	Firm	CEO	Tenure	Period	Year	Ind.	Firm	CEO	Tenure	Period	Year	Ind.	Firm	CEO	Tenure
1950-1979	1.9%	51.9%	35.6%	5.0%	5.6%	1950-1969	2.7%	56.8%	31.3%	3.6%	5.6%	1950-1964	3.2%	60.6%	27.1%	2.9%	6.2%
1980-2008	1.9%	38.5%	40.0%	10.4%	9.1%	1970-1989	2.8%	43.4%	42.7%	5.3%	5.7%	1965-1979	-0.1%	52.0%	39.9%	3.1%	5.0%
						1990-2008	0.3%	37.2%	42.3%	10.3%	9.9%	1980-1994	1.1%	44.0%	41.9%	6.1%	6.9%
												1995-2008	0.4%	35.0%	43.7%	10.2%	10.7%

<b>Property, Plant, &amp; Equipment</b>																	
Period	Year	Ind.	Firm	CEO	Tenure	Period	Year	Ind.	Firm	CEO	Tenure	Period	Year	Ind.	Firm	CEO	Tenure
1950-1979	0.9%	8.2%	45.2%	24.0%	21.6%	1950-1969	2.3%	6.4%	56.1%	15.2%	20.1%	1950-1964	2.1%	11.0%	59.8%	11.4%	15.7%
1980-2008	4.3%	7.3%	38.6%	28.8%	21.1%	1970-1989	-2.7%	7.4%	52.9%	21.5%	20.9%	1965-1979	0.5%	9.8%	49.1%	19.4%	21.3%
						1990-2008	3.5%	11.1%	39.6%	25.4%	20.4%	1980-1994	-4.8%	5.4%	56.6%	23.5%	19.3%
												1995-2008	3.9%	12.5%	36.7%	26.9%	20.1%

<b>Inventory</b>																	
Period	Year	Ind.	Firm	CEO	Tenure	Period	Year	Ind.	Firm	CEO	Tenure	Period	Year	Ind.	Firm	CEO	Tenure
1950-1979	1.2%	39.3%	33.6%	12.0%	13.9%	1950-1969	0.0%	38.3%	40.3%	10.2%	11.3%	1950-1964	0.0%	36.9%	42.1%	10.4%	10.5%
1980-2008	-0.1%	55.8%	26.2%	7.7%	10.4%	1970-1989	1.3%	33.4%	35.6%	13.5%	16.2%	1965-1979	1.5%	40.7%	31.7%	10.3%	15.8%
						1990-2008	0.0%	54.8%	29.9%	6.4%	8.9%	1980-1994	-1.7%	46.0%	33.7%	8.7%	13.3%
												1995-2008	0.1%	55.2%	29.4%	6.3%	8.9%

<b>Leverage</b>																	
Period	Year	Ind.	Firm	CEO	Tenure	Period	Year	Ind.	Firm	CEO	Tenure	Period	Year	Ind.	Firm	CEO	Tenure
1950-1979	2.1%	2.7%	45.1%	27.5%	22.6%	1950-1969	1.3%	2.6%	47.9%	24.9%	23.3%	1950-1964	0.3%	3.4%	59.6%	17.0%	19.7%
1980-2008	0.4%	9.0%	38.3%	23.6%	28.6%	1970-1989	0.1%	3.0%	48.4%	22.4%	26.2%	1965-1979	1.1%	4.2%	59.8%	12.5%	22.4%
						1990-2008	0.3%	11.6%	43.2%	18.2%	26.6%	1980-1994	0.4%	6.4%	43.5%	20.7%	28.9%
												1995-2008	0.5%	13.7%	43.5%	17.3%	24.9%

**Table 37:  
Variance in Strategy Variables Explained by Level – 15, 20, and 30 Year Periods (Long-Run Industries)**

<b>SG&amp;A</b>																	
<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>
1950-1979	1.7%	53.2%	34.2%	5.5%	5.4%	1950-1969	2.3%	59.5%	29.6%	3.5%	5.2%	1950-1964	1.8%	63.1%	26.1%	2.9%	6.1%
1980-2008	1.7%	39.2%	38.5%	11.1%	9.5%	1970-1989	3.3%	43.3%	43.2%	4.8%	5.5%	1965-1979	0.0%	53.0%	38.9%	3.5%	4.6%
						1990-2008	0.5%	38.3%	38.9%	11.9%	10.4%	1980-1994	1.0%	44.0%	44.3%	3.7%	7.1%
												1995-2008	0.7%	36.3%	39.6%	12.3%	11.1%

<b>Property, Plant, &amp; Equipment</b>																	
<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>
1950-1979	1.9%	4.3%	46.9%	25.2%	21.7%	1950-1969	3.0%	6.2%	55.2%	15.7%	19.9%	1950-1964	3.1%	10.8%	59.4%	11.0%	15.7%
1980-2008	3.1%	7.1%	40.6%	29.2%	19.9%	1970-1989	-2.6%	5.7%	56.4%	19.8%	20.7%	1965-1979	1.1%	5.4%	51.2%	21.0%	21.3%
						1990-2008	3.0%	12.2%	39.4%	26.9%	18.4%	1980-1994	-5.6%	6.3%	60.2%	20.5%	18.6%
												1995-2008	4.4%	13.4%	35.6%	28.7%	17.8%

<b>Inventory</b>																	
<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>
1950-1979	0.2%	40.9%	32.5%	12.4%	13.9%	1950-1969	-0.3%	43.6%	37.7%	8.9%	10.1%	1950-1964	-0.1%	40.4%	41.0%	9.1%	9.7%
1980-2008	0.6%	23.5%	44.9%	14.1%	16.8%	1970-1989	0.6%	35.1%	37.8%	10.0%	16.4%	1965-1979	1.0%	42.4%	28.8%	11.4%	16.4%
						1990-2008	0.8%	18.1%	54.1%	12.4%	14.5%	1980-1994	-0.6%	28.1%	43.2%	12.0%	17.3%
												1995-2008	0.9%	17.8%	55.0%	12.0%	14.5%

<b>Leverage</b>																	
<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>	<b>Period</b>	<b>Year</b>	<b>Ind.</b>	<b>Firm</b>	<b>CEO</b>	<b>Tenure</b>
1950-1979	2.9%	2.6%	45.0%	27.1%	22.4%	1950-1969	1.1%	2.9%	50.5%	22.2%	23.2%	1950-1964	-0.1%	4.0%	63.3%	13.2%	19.6%
1980-2008	0.3%	6.6%	39.6%	24.5%	29.0%	1970-1989	-0.1%	3.2%	48.7%	22.7%	25.5%	1965-1979	2.3%	3.9%	60.1%	11.6%	22.2%
						1990-2008	0.0%	8.7%	45.5%	18.5%	27.3%	1980-1994	0.4%	6.7%	42.8%	20.6%	29.4%
												1995-2008	-0.1%	8.2%	47.8%	19.0%	25.1%

**Table 38:**  
**Test of Differences in CEO Effect on Strategy– Full Sample<sup>11</sup>**

<b>Sales, General, and Administrative Intensity</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	2.9%	-	0.418	0.007	0.000
2	1965-1979	3.1%		-	0.002	0.000
3	1980-1994	6.1%			-	0.002
4	1995-2008	10.2%				-

<b>Property, Plant, &amp; Equipment Newness</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	11.4%	-	0.000	0.000	0.000
2	1965-1979	19.4%		-	0.026	0.001
3	1980-1994	23.5%			-	0.087
4	1995-2008	26.9%				-

<b>Inventory Levels</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	10.4%	-	0.469	0.163	0.009
2	1965-1979	10.3%		-	0.127	0.002
3	1980-1994	8.7%			-	0.041
4	1995-2008	6.3%				-

<b>Leverage</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	17.0%	-	0.027	0.078	0.445
2	1965-1979	12.5%		-	0.000	0.005
3	1980-1994	20.7%			-	0.056
4	1995-2008	17.3%				-

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<sup>11</sup> Each cell represents a *p-value* for a Fisher's *z*-test comparing the CEO effect between two periods.

**Table 39:**  
**Test of Differences in CEO Effect on Strategy – Long-Run Industries<sup>12</sup>**

<b>Sales, General, and Administrative Intensity</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	2.9%	-	0.306	0.265	0.000
2	1965-1979	3.5%		-	0.438	0.000
3	1980-1994	3.7%			-	0.000
4	1995-2008	12.3%				-

<b>Property, Plant, &amp; Equipment Newness</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	11.0%	-	0.000	0.000	0.000
2	1965-1979	21.0%		-	0.418	0.003
3	1980-1994	20.5%			-	0.002
4	1995-2008	28.7%				-

<b>Inventory Levels</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	9.1%	-	0.105	0.060	0.076
2	1965-1979	11.4%		-	0.364	0.385
3	1980-1994	12.0%			-	0.488
4	1995-2008	12.0%				-

<b>Leverage</b>						
	<b>Period</b>	<b>CEO Effect</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	1950-1964	13.2%	-	0.235	0.003	0.016
2	1965-1979	11.6%		-	0.000	0.000
3	1980-1994	20.6%			-	0.268
4	1995-2008	19.0%				-

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<sup>12</sup> Each cell represents a *p-value* for a Fisher's z-test comparing the CEO effect between two periods.



**Table 40:  
Simulated Models Testing Impact of Changing CEO Tenure Length**

Counts by Level and Period - Original					Counts by Level and Period - Simulated				
Period	n	Industries	Firms	CEOs	n	Industries	Firms	CEOs	
All periods	18113	30	1106	2814	All periods	18113	30	1106	4369
1950 to 1964	2567	19	304	525	1950 to 1964	2567	19	304	727
1965 to 1979	5260	23	520	932	1965 to 1979	5260	23	520	1346
1980 to 1994	5453	29	670	1139	1980 to 1994	5453	29	670	1542
1995 to 2008	4833	29	629	1106	1995 to 2008	4833	29	629	1529

Original Results - ROA						Simulated Results					
Period	Year	Ind.	Firm	CEO	Tenure	Period	Year	Ind.	Firm	CEO	Tenure
1950-1964	5.4%	11.9%	19.5%	37.3%	26.0%	1950-1964	6.2%	11.6%	29.7%	28.2%	24.3%
1965-1979	4.1%	4.8%	27.6%	12.9%	50.6%	1965-1979	4.1%	4.8%	29.3%	16.1%	45.7%
1980-1994	1.8%	1.0%	21.5%	18.1%	57.6%	1980-1994	2.1%	1.0%	22.9%	19.9%	54.0%
1995-2008	2.4%	2.8%	17.8%	24.7%	52.3%	1995-2008	2.3%	2.8%	21.8%	25.0%	48.0%

Differences between Actual and Simulated					
Period	Year	Ind.	Firm	CEO	Tenure
1950-1964	0.8%	-0.3%	10.1%	-9.1%	-1.6%
1965-1979	0.0%	0.0%	1.7%	3.2%	-5.0%
1980-1994	0.3%	0.0%	1.5%	1.8%	-3.6%
1995-2008	-0.1%	0.0%	4.1%	0.3%	-4.3%

**Table 41:  
Split Sample Showing Effects of Duality on ROA Variance Explained**

	% of Cases	Proportion of Variance Explained				
		Year	Industry	Firm	CEO	Tenure
<b>1950-1964</b>						
Full Sample		5.4%	11.9%	19.5%	37.3%	26.0%
Other Chair	64%	5.5%	9.1%	15.6%	47.9%	21.9%
Duality	36%	4.1%	14.2%	33.0%	13.7%	35.0%
<b>1965-1979</b>						
Full Sample		4.1%	4.8%	27.6%	12.9%	50.6%
Other Chair	42%	5.4%	6.0%	26.3%	16.4%	45.9%
Duality	58%	3.3%	4.6%	32.1%	9.9%	50.1%
<b>1980-1994</b>						
Full Sample		1.8%	1.0%	21.5%	18.1%	57.6%
Other Chair	34%	2.0%	1.5%	18.2%	25.4%	53.0%
Duality	66%	1.8%	0.5%	26.3%	9.6%	61.8%
<b>1995-2008</b>						
Full Sample		2.4%	2.8%	17.8%	24.7%	52.3%
Other Chair	40%	3.6%	2.4%	20.2%	20.8%	53.1%
Duality	60%	1.9%	2.8%	14.9%	28.7%	51.8%

**Table 42:**  
**Modified Replication and Comparison of Results seen in Lieberson and O'Connor (1972)**

	This Study	Lieberson & O'Connor (1972)	Replication
Time Period	1950-1969	1946-1965	1950-1969
Performance Measure	ROS	ROS	ROS
Year Effect	2.4%	1.8%	2.4%
Industry Effect	20.0%	28.5%	20.6%
Corporate Effect	22.9%	22.6%	32.2%
CEO Effect	36.3%	14.5%	25.4%
Error/Within Tenure	18.5%	32.6%	19.4%

## APPENDIX C: EXHIBITS

### Exhibit 1:

#### Example of Executive Listing

**Officers:** H. G. Riter, 3rd, Hon. Chmn.; F. R. S. Kaplan, Chmn.; J. M. Darbaker, Pres.; C. W. Holmquist, Exec. Vice-Pres. (Steel Div.); W. W. Ege, Vice-Pres. (Wire & Cable Div.); J. W. Kennedy, Jr., Vice-Pres. (Ohio Seamless Tube Div.); L. B. Foster, I. M. J. Kaplan, M. B. Morris, Paul Van Wagner, P. A. Terrell, Vice-Pres.; M. J. Mahoney, Sec.; C. A. Taylor, Vice-Pres., Treas. and Controller; W. E. Cooper, Asst. Sec. and Div. Contr.; W. J. Davis, Jr., John Hook, Asst. Treas.; David Ferguson, Asst. Controller; Merle Hoffman, N. F. Yount, Asst. Sec. and Div. Controller.

Source: Mergent WebReports/Moody's Manual, 1956

### Exhibit 2:

#### Example Succession Announcement

Directors of the Copperweld Steel Company yesterday elected James M. Darbaker as president to succeed Frank R. S. Kaplan, who becomes chairman of the board. Henry G. Riter 3d, president of Thomas A. Edison, Inc., and president of the National Association of Manufacturers, was elected honorary chairman of the board of directors and chairman of the finance committee.

Mr. Darbaker joined Copperweld as senior vice president in May, 1954, after working for the United States Steel Corporation thirty-four years. His last assignment there was as director of distribution and availability. He will be top administration officer in charge of manufacturing and Mr. Kaplan will continue as chief executive officer.

Source: New York Times, September 16, 1955, pg. 34.

## **APPENDIX D: IDENTIFICATION OF CEOS**

While the title “Chief Executive Officer (CEO)” is ubiquitous today, its use as a formal title is a recent trend. Prior to the 1970s, the top executive typically held the title chairman of the board or president. Because both studies in this dissertation required the clear identification of CEOs, extensive research was performed to ensure the data were coded in a way that properly identified the firm’s top manager.

First, those executives possessing the title “CEO” were coded as such. There was no ambiguity at all in these cases. The challenge came when identifying the top executive from within a firm that listed only a president and/or chairman of the board as shown in the listing of top executives for Copperweld Steel Corp. in Exhibit 1. According to prototypical organization charts published by the National Industrial Conference Board, firms in the 1950s were typically led by the president who was overseen by a board led by a chairman (Allen, 1959). That is, the president was the top executive in charge of managing the firm. Absent other evidence or a clearly identified CEO, the president of a firm was assumed to be the chief executive. However, newspaper accounts of succession events often provided additional information. For example, as shown in Exhibit 2, when James Darbaker succeeded Frank Kaplan as president, Kaplan became chairman of the board but, as noted in the newspaper account, retained the title of chief executive. For each CEO death used in the study discussed in chapter 2 and succession event used in the study described in chapter 4, when a CEO was not clearly identified, newspaper accounts were carefully searched to identify the proper CEO from those holding the title chairman of the board and president.

## **VITA**

### **Timothy J. Quigley**

Tim earned his Ph.D. in business administration, with a focus in strategic management, in May, 2011 from Pennsylvania State University's Smeal College of Business. Tim also earned an MBA Smeal 2004 and a Bachelor of Science in Exercise Science from Pennsylvania State University in 1996. In July 2011, Tim will join Lehigh University as an Assistant Professor of Management in the College of Business and Economics.