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An investigation of the impact of the pace of change in post -IPO corporate governance on firm performance

Son A. Le
Louisiana Tech University

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AN INVESTIGATION OF THE IMPACT OF THE PACE OF CHANGE
IN POST-IPO CORPORATE GOVERNANCE
ON FIRM PERFORMANCE

By

Son A. Le, B.A., M.B.A.

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Business Administration

COLLEGE OF ADMINISTRATION AND BUSINESS
LOUISIANA TECH UNIVERSITY

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be accepted in partial fulfillment of the requirements for the Degree of
Doctor of Business Administration

Mark Kroll
Supervisor of Dissertation Research

Mark Kroll
Head of Department

Management and Information Systems
Department

Recommendation concurred in:
[Signature]
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Approved:
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Director of Graduate Studies

Shirley Reagan
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ABSTRACT

In this study, I examine the impact of changes in post-IPO corporate governance on firm performance. Changes in corporate governance affect firm performance in various ways. Some theories such as agency and resource dependence theories predict that fast-paced change in post-IPO corporate governance will enhance firm performance. Other theories such as the resource-based view offer the opposite prediction that slow-paced change is more beneficial for firm performance. I, therefore, develop competing hypotheses regarding the impact of change in post-IPO corporate governance on firm performance.

Going public represents an important milestone in a firm's organizational life cycle. A number of theories have been developed to explain why firms decide to go public. Major arguments include financing firm growth, providing a mechanism for initial investors to harvest and diversify their investment, increasing legitimacy, and changing the power balance between managers and investors. Although there is no consensus on which theory provides the better explanation, it is obvious that IPOs help to raise significant capital for firms and turn many small, entrepreneurial firms into national and international corporations.

IPO firms have unique characteristics. They are often small, young firms. As a matter of fact, they suffer from the liabilities of newness and smallness. Unlike established large firms, IPO firms often have limited resources and lack credibility to

acquire needed resources. IPO firms also share other typical characteristics. Normally, top managers have extraordinarily important roles in IPO firms. They represent an important source of competitive advantage for IPO firms. Another typical characteristic of IPO firms is that their corporate governance is informal and weak, especially prior to the IPO.

After going public, firms have to change their corporate governance to meet the requirements of the Securities and Exchange Commission (SEC) and expectations of the investment community. Major changes in corporate governance include changes in managerial ownership, changes in board composition, and changes in top management team (TMT) membership. To understand the impact of these changes on firm performance, I adopt various theoretical perspectives. Except for change in managerial ownership, agency and resource dependence theories argue that rapid change in post-IPO corporate governance will help to reduce agency costs and increase firm legitimacy, thus enhancing firm performance. On the contrary, the resource-based view predicts that slow change in post-IPO corporate governance helps to maintain and leverage TMT psychological commitment and social and human capital, which help create competitive advantages and enhance firm performance.

I used archival data from *Hoovers Online*, *Edgar*, *S&P Compustat*, and *CRSP* to test whether slow or rapid change in post-IPO corporate governance is more beneficial for firm performance. I also tested the moderating effect of changes in managerial ownership, the presence of a founder CEO, and technology on the relationship between change in post-IPO corporate governance and firm performance. Empirical results provide some support for the case of slow change in post-IPO corporate governance.

Changes in managerial ownership and the presence of a founder CEO somewhat moderate the relationship between changes in post-IPO corporate governance and firm performance.

The major theoretical implication is that for young, entrepreneurial firms, the need for supporting original top managers should be viewed as at least as important as the need for protecting investors. The important implication for policy makers, investors and managers is that change in post-IPO corporate governance should be implemented gradually to maintain and leverage original top managers' psychological commitment, and human and social capital for the benefit of the firm. The study suggests that future research should provide more insights into the relationship between investors and managers in the face of a transformational change such as IPOs. The major limitation of this study involves the possibility of survivorship bias.

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CHAPTER 1

INTRODUCTION

An initial public offering (IPO) represents a critical milestone in a firm's life cycle. Around the time of their IPOs, firms need to undertake a number of changes in order to transform themselves into public firms, of which the most salient change involves corporate governance-related processes (Burton, Helliard, & Power, 2004). IPO firms have to establish or overhaul their corporate governance structure to meet the listing requirements and expectations of stock exchanges and investors (Blowers, Griffith, & Milan, 1999). In addition, radical change in post-IPO corporate governance is required to accommodate firms' post-IPO structures and strategies such as greater separation of ownership and control, and the need for additional resources to compete in the domain of public firms (Bouresli, Davidson, & Abdulsalam, 2002; Cyr, Johnson, & Welbourne, 2000).

On the other hand, fast-paced change in post-IPO corporate governance may hamper firm performance. IPO firms are often small, young firms (Certo et al., 2001). In such firms, top management teams (TMTs) often play an extraordinarily critical role. They not only have successfully grown the new ventures to the point of viability for going public, but they also have firm-specific human and social capital necessary for their

firms to stay competitive after their IPOs (Deeds, DeCarolis, & Coombs, 1998; Eisenhardt & Schoohoven, 1990). As changes in post-IPO corporate governance are often geared toward reducing top managers' power and discretion, such changes may discount founding managers' motivation and human capital, thus lowering firm performance (Fisher & Pollock, 2004; Sapienza & Korsgaard, 1996).

This indicates that change in post-IPO corporate governance may have conflicting effects on firm performance. From perspectives such as agency and resource dependence, radical change in post-IPO corporate governance helps reduce agency costs and increase legitimacy, thereby enhancing firm performance. On the contrary, proponents of other perspectives such as the resource-based view may argue that radical change fails to leverage original TMTs' human and social capital, and discounts their psychological commitment, resulting in lower performance. It is also argued that the relationship may be moderated by various factors such as managerial ownership, the presence of founder CEOs, and the firm's technology. The relationship between change in post-IPO corporate governance and subsequent firm performance is, therefore, complex and poses a number of questions as mentioned above that have not been explored sufficiently in the extant literature. An investigation of this relationship will advance the understanding of corporate governance in the context of IPOs, post-IPO performance, and the roles of founding management teams around the time of IPOs. Such research also has important implications for practitioners such as managers, shareholders, and policy makers in the sense that it provides insights regarding how to effectively manage the transition of corporate governance from a private firm to a public firm.

The purpose of this dissertation is, therefore, to examine the impact of the pace of change in corporate governance on firm performance in the context of initial public offerings. The first chapter of this dissertation is organized as follows. Section 1 presents the importance of post-IPO corporate governance. Section 2 explains the need for an investigation of the relationship between the rate of change in post-IPO corporate governance and subsequent performance. Section 3 summarizes the objectives of the dissertation. Section 4 presents the contributions of the dissertation. Finally, section 5 presents the plan of the study.

The Importance of the Study of the Impact of Change
in Post-IPO Corporate Governance
on Firm Performance

Corporate governance facilitates the specialization of investment and management, thus promoting the development of corporations and economic growth (Fama, 1980). Since the works by Berle and Means (1932) and Jensen and Meckling (1976), an extensive literature on corporate governance has evolved (e.g., Eisenhardt, 1989; Jensen, 1993; Shleifer & Vishny, 1997). Traditionally, researchers have focused on the role of corporate governance in reducing agency costs (e.g., Fama & Jensen, 1983; Hoskinsson & Hitt, 1990; Jones & Butler, 1992; Kosnik, 1990). Recently, there has emerged a consensus that corporate governance has other important functions in addition to this traditional control function (Daily, Dalton, & Cannella, 2003). Particularly, corporate governance influences firms' ability to acquire resources (Pfeffer & Salancik, 1978), legitimacy (DiMaggio & Powell, 1983; Certo et al., 2001), and human and social capital (Baun, Locke, & Smith, 2001; Gimeno, Folta, Cooper, & Woo, 1997).

A firm's corporate governance primarily consists of major mechanisms such as its board of directors, ownership structure, and management structure (Fama, 1980; Jensen, 1993; Shleifer & Vishny, 1997). Boards of directors are elected by, and to act on behalf of shareholders. Besides their primary control responsibilities such as hiring, setting compensation for, and monitoring top managers, they help provide strategic advice, and help the firm to obtain legitimacy and resources (Carpenter & Westphal, 2001; Hillman & Daziel, 2003). Board composition (e.g., the proportion of inside vs. outside board members), board ownership, and board size are important indicators of board effectiveness (Jensen & Smith, 2000; Kosnik, 1990; Zahra & Pearce, 1989). Ownership structure often involves outside versus inside ownership, and ownership concentration versus dispersion (Fama & Jensen, 1983; Morck, Shleifer, & Vishny, 1988). Ownership structure influences the incentive alignment between managers and shareholders, the effectiveness of shareholder monitoring, and the ability of the firm to obtain legitimacy and resources from or through blockholders (Jensen & Meckling, 1976; Shleifer & Vishny, 1997). The role of management structure in corporate governance is to create mutual monitoring among managers (Fama, 1980). Management structure also affects managers' discretion and motivation (Finkelstein & D'Aveni, 1994). Therefore, change in corporate governance structure induces various effects on the firm.

Organizational life cycle (OLC) theory indicates that firms grow through various stages (e.g., Boeker & Karichalil, 2002; Zingales, 1995). A firm's life cycle begins when it is founded by one or more entrepreneurs. A great number of firms fail to survive in the start-up stage (Blowers et al., 1999). Firms that are successful in the start-up stage may choose to go public when they reach a certain level of growth (Zingales, 1995). An initial public offering (IPO), the time at which a firm offers its common stock for sale to

the public for the first time, represents an important milestone in a firm's life cycle, as this moves the firm from the private domain to the public domain (Certo et al., 2001). Because IPOs are increasingly important means for entrepreneurs to diversify their investment, and for firms to acquire needed capital for new projects and expansion, they help foster innovation and economic growth (Ritter, 1998). For instance, from 1980 to 2001, the capital raised through IPOs in the United States was approximately \$488 billion (Ritter & Welch, 2002).

Going public, firms have to establish or change their corporate governance structure to comply with Securities and Exchange Commission (SEC) regulations and the expectations of shareholders (Blowers et al., 1999). For example, they have to follow stringent rules concerning financial disclosure and board structure. There are several reasons why firms need to radically change their corporate governance around the time of their IPO. First, IPOs result in greater separation of ownership and control, and thus create greater potential for agency problems (Mikkelsen, Partch, & Shah, 1997). This is because top managers, who no longer have majority ownership in their firm after the IPO, may not act in shareholders' best interests (Balatbat, Tayler, & Walter, 2004; Jensen & Meckling, 1996).

Second, founding top managers might not be capable of leading a public firm, which requires a different set of skills, such as the ability to work with shareholders and the stock exchanges (Boeker & Karichalil, 2002; Gompers, 1995; Zingales, 1995). Thus, new top managers and board members may be brought in to provide these additional skills (Filatotchev & Bishop, 2002). Finally, changes in corporate governance that bring firms into line with prevailing norms helps to signal that the firms have become more

“professional,” thus increasing their credibility with investors, customers, creditors, and suppliers (Zimmerman & Zeitz, 2002).

However, radical change in post-IPO corporate governance may also have negative effects on IPO firms. IPO firms tend to be relatively small, young firms, and unlike established, large corporations, they greatly depend on their top managers, who are often their founders (Certo et al., 2001). Particularly, IPO firms’ competitive advantages tend to come from their top managers’ human and social capital such as their entrepreneurial skills, social connections, and high level of motivation and effort (Fisher & Pollock, 2004; Lichtenstein & Brush, 2001). Radically imposing independent corporate governance mechanisms on a firm following its IPO may negatively affect its TMT motivation and stability (Bergh, 2001; Boeker, 1997). Consequently, IPO firms may lose their most valuable competitive advantage which lies in their founding TMTs’ human and social capital, and thereby they may suffer declining performance (Daily & Dalton, 1995; Finkelstain & D’Aveni, 1994). It is, therefore, important to study how changes in firms’ corporate governance following their IPO influence their various capabilities and resources, and performance.

The Need for Future Research

Although IPOs have long been studied in the finance literature, they have not received much attention from management researchers until recently. Finance researchers often focus on the investigation of IPO underpricing and long-run performance (e.g., Ritter, 1991; Ritter & Welch, 2002). They have consistently reported long-run underperformance of IPO firms (Jain & Kini, 1994; Mikkelson et al., 1997; Schultz, 2003). Despite numerous research efforts to explain IPO long-run

underperformance, it is still poorly understood (Certo, Covin, Daily, & Dalton, 2001; Ritter, 1991). A study of the impact of corporate governance change around the time of an IPO on firm performance may help contribute to the explanation of post-IPO underperformance.

IPOs have recently received growing attention from entrepreneurship and strategy researchers (Certo et al., 2001). Specifically, entrepreneurship and strategy researchers have examined the impact of founders, top management teams (TMTs), and corporate governance on IPO firms' performance and failure (e.g., Balatbat et al., 2004; Boeker & Karichalil, 2002; Certo et al., 2001; Cyr et al., 2000; Nelson, 2003). However, to the best of our knowledge, no study has comprehensively examined the impact of change in corporate governance following IPOs on firm performance. Such an investigation would be important and may offer interesting insights for the following reasons. First, organizational change researchers have argued that change in strategy and structure influences performance (Miller & Friesen, 1982). In the same vein, considerable change in corporate governance following an IPO is likely to affect firm performance and survival. However, little has been known about this relationship.

Second, corporate governance has various effects on a firm (Lynall, Golden, & Hillman, 2003). A number of theories explain the different functions of corporate governance. For example, the monitoring function is explained by agency theory (e.g. Eisenhardt, 1989; Fama, 1980; Jensen & Meckling, 1976). The resource dependence function (i.e., corporate governance helps firms to acquire critical resources) is explained by resource dependence theory (e.g., Pfeffer & Salancik, 1978; Hillman & Dalziel, 2003). The legitimacy function and corporate governance isomorphism are explained by institutional theory (e.g., DiMaggio & Powell, 1983; Lynall et al., 2003). The effect of

corporate governance on firm human capital is explained by human capital theory (e.g., Buchholtz, Ribbens, & Houle, 2003), resource-based theory (e.g., Lichtenstein & Brush, 2001), and upper echelon theory (Finkelstein & Boyd, 1998). It is therefore reasonable to predict that a particular rate of change in the firm's corporate governance may help the firm in some ways, but at the same time may hurt it in other ways. For example, if a firm quickly changes its corporate governance from inside dominance to outside dominance following its IPO, it may acquire greater legitimacy and outside resources, but it may hurt its founding top managers' motivation. In sum, varying rates of change may have different implications on firm performance.

Third, the relationship between the rate of change in corporate governance and subsequent performance may be moderated by various conditions and factors. It is therefore important to examine under which conditions or in the presence of what factors rapid or slow rates of change in corporate governance will be effective for IPO firms. Potential moderating variables include top management team characteristics (e.g., the presence of founder CEOs), ownership structure (e.g., change in managerial ownership following an IPO), and industry technology (e.g., high tech vs. low tech industries). I found no studies that directly examined the potential moderating effects of such variables on the relationship between change in post-IPO corporate governance and firm performance.

In general, the relationship between the change in post-IPO corporate governance and firm performance is important but insufficiently explored. Insights into such relationships will enhance our understanding of the role of corporate governance in the transition of firms from the private to the public arena, and the relationship between top managers and outside stakeholders in the special context of IPOs.

Statement of the Problem and Objectives of the Study

In this dissertation, I attempt to address the gap in the extant literature that I highlighted in the previous sections. Particularly, my primary purpose is to examine the relationship between the pace of change in corporate governance following IPOs and subsequent firm performance, and to identify moderating variables of this relationship. Figure 1.1 illustrates my study model. The specific objectives of this dissertation are as follows:

1. To examine whether rapid or slow pace of change in managerial ownership following IPOs is more effective in terms of firm performance.
2. To examine whether rapid or slow pace of change in board composition following IPOs is more effective in terms of firm performance.
3. To examine whether rapid or slow pace of change in TMT composition following IPOs is more effective in terms of firm performance.
4. To examine whether the pace of change in managerial ownership moderates the relationship between the pace of change in board composition and firm performance in the context of IPOs.
5. To examine whether the pace of change in managerial ownership moderates the relationship between the pace of change in TMT composition and firm performance in the context of IPOs.
6. To examine whether the presence of founder CEOs moderates the relationship between the pace of change in board composition and firm performance in the context of IPOs.

7. To examine whether the presence of founder CEOs moderates the relationship between the pace of change in TMT composition and firm performance in the context of IPOs.
8. To examine whether the presence of founder CEOs moderates the relationship between the pace of change in board composition and firm performance in the context of IPOs.
9. To examine whether industry characteristics (low vs. high tech) moderate the relationship between the pace of change in board composition and firm performance in the context of IPOs.
10. To examine whether industry characteristics (low vs. high tech) moderate the relationship between the pace of change in TMT turnover and firm performance in the context of IPOs.
11. To contribute to the explanation of post-IPO underperformance.
12. To shed light on what theoretical perspectives better explain the relationship between change in post-IPO corporate governance and performance.

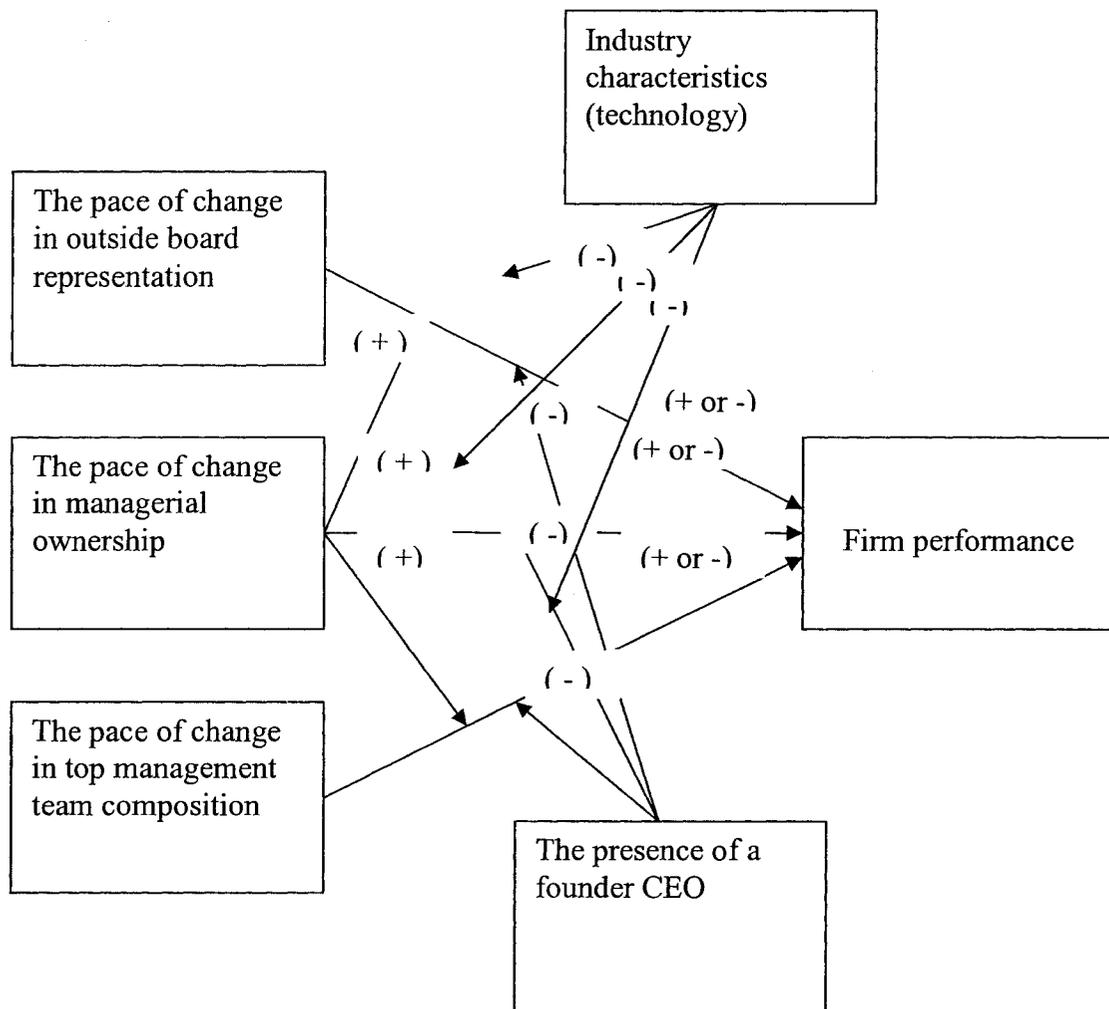


Figure 1.1 Model of the impact of the pace of change in post-IPO corporate governance on firm performance

Contributions of this Study

By examining the relationship between change in post-IPO corporate governance and performance as well as the moderators of this relationship, this dissertation promises a number of contributions and implications. First, it extends the literature on corporate governance by combining the insights of organizational change and corporate governance studies to shed light on the effects of change in corporate governance on firm performance. Previous studies have often focused on the impact of corporate governance but not on that of the change in corporate governance on firm performance. IPOs provide an ideal context for the investigation of the impact of change in corporate governance on firm performance. Second, this dissertation extends the study of post-IPO performance. It provides insights regarding how change in corporate governance affects post-IPO performance. By doing that, it also helps identify which theories are more powerful in explaining the impact of change in corporate governance on post-IPO performance. Third, this dissertation extends the entrepreneurship literature regarding the role of founding top management teams. It argues that change in post-IPO corporate governance tends to discount founding top managers' social and human capital, and psychological commitment. Thus, a finding concerning the relationship between change in post-IPO corporate governance and firm performance will provide insights regarding the role of founding managers. Finally, this dissertation identifies the moderators of the relationship between change in post-IPO corporate governance and firm performance. In other words, it informs us regarding under what conditions or given the presence of which factors, fast or slow changes in post-IPO corporate governance will be more effective for IPO firms. These insights are particularly important for practitioners such as top managers, board members, investors, and policy makers.

Plan of Study

The remainder of this dissertation is organized as follows. Chapter Two provides a review of relevant literature that lead to the development of my hypotheses. The literature review includes IPOs, corporate governance, and the effects of corporate governance on firm performance from relevant perspectives such as agency theory, resource dependence theory, institutional theory, resource-based view, and human capital theory. This chapter also reviews potential moderator variables of the relationship between change in post-IPO corporate governance and firm performance such as change in managerial ownership, the presence of a founder CEO, and industry characteristics (i.e., technology). Chapter Three presents my methodology, including sample construction, data collection techniques, and statistical techniques. Chapter Four presents the results of the data analysis. Finally, Chapter Five presents the conclusions, contributions, implications, and limitations of the studies, and recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

An initial public offering (IPO) represents a critical juncture in a firm's organizational life cycle. IPOs are the means by which firms launch new projects and expand their operational scale and scope. Thus, IPOs contribute to both job creation and economic growth. Many firms would not have grown to be national and international corporations without having gone public (Prasad, Vozikis, Bruton, & Merikas, 1995). Deeds and colleagues (1997: 32) highlight the importance of IPOs to entrepreneurs when they observe that "going public has a magical sound to most entrepreneurial managers." The magnitude of IPOs in terms of their impact on the economy is summarized by Ritter and Welch (2002: 1795-1796) when they report:

From 1980 to 2001, the number of companies going public in the United States exceeded one per business day... These IPOs raised \$488 billion (in 2001 dollars) in gross proceeds, an average of \$78 million per deal.... The 1980s saw modest IPO activity (about \$8 billion in issuing activity per year). In the 1990s, issuing volume roughly doubled to \$20 billion per year during 1990 to 1994, doubled again from 1995 to 1998 (\$35 billion per year), and then doubled again from 1999 to 2000 (\$65 billion per year), before falling to \$34 billion in 2001.

IPOs have been a topic of great research interest not only because of their importance to firm development and economic growth as mentioned above, but also because they provide an ideal context in which researchers can study various organizational phenomena (Andrews & Welbourne, 2000). Emanating from finance literature (e.g., Mikkelsen & Partch, 1986; Ritter, 1991), IPOs have gained increasing

attention in strategy (e.g., Carpenter, Pollock, & Leary, 2003; Certo et al., 2001), and entrepreneurship literatures (e.g., Cyr et al., 2000; Deeds et al., 1998). In finance, most studies have focused on IPO activity, IPO underpricing, and post-IPO performance (Ritter & Welch, 2002). Strategy and entrepreneurship researchers have been interested in IPO-related corporate governance issues and the impact of top management, venture capitalists, and environmental factors on IPO underpricing and post-IPO performance (e.g., Boursesli et al., 2002; Certo et al., 2001; Filatotchev & Bishop, 2002). Although numerous studies have examined IPOs and IPO-related issues, after conducting an intensive review, I found that the relationship between the pace of change in corporate governance following an IPO and subsequent firm performance has not been examined in the extant literature. The purpose of this study is, therefore, to examine this unexplored relationship. Toward this end, I will review (1) why firms decide to go public, (2) the IPO process, (3) changes in corporate governance following an IPO, (4) how changes in post-IPO corporate governance influence firm performance, and (5) offer hypotheses.

Why Firms Decide to Go Public

Private firms tend to have ownership concentrated in the hands of a few investors, mostly top managers and large private investors (venture capitalists and angels) (Chemmanur & Fulghieri, 1999). When firms go public, their common stock is typically sold to a large number of investors. Unlike private firms, publicly-held firms have to follow stringent listing regulations imposed by the SEC, as well as the exchange on which they are traded, and meet the expectations of the investment community (Blowers et al., 1999). To understand IPOs and their impacts on firm performance, it is necessary to investigate the question “why do firms decide to go public?” A number of theories have been proposed to shed light on this question.

Raising Capital for Growth

The most obvious reason for firms to go public is to raise equity capital in order to finance growth. New ventures often start small, and are based on an idea for a new product, process, and/or market. If the new venture survives the start-up stage and proves successful, it will likely need considerable capital to fulfill its growth potential. Going public helps the firm not only raise considerable equity capital but also gain increased legitimacy, which allows it to acquire needed resources for growth (Ritter & Welch, 2002). Specifically, by undertaking an IPO, a firm can accelerate its growth, launch new products, enter new markets, and attract valuable employees and resources (Blowers et al., 1999). Prasad and colleagues (1995) point out that an IPO often results in higher valuations for the exiting stockholders' shares, while at the same time providing a major infusion of cash for the firm's future growth. In a study of Italian firms, Pagano, Panetta, and Zingales (1998) found that companies going public could lower their costs of credit. They also found that going public is particularly appealing for firms with large current and future investment needs.

Creating a Market for the Firm's Stock

The second most important explanation for going public is to create a public market for founders' and initial investors' shares in order that they can convert at least a portion of their holdings to cash (Ritter & Welch, 2002). Chemmanur and Fulghieri (1999) indicate that going public helps initial shareholders diversify their investments at lower cost than would be the case if their firms stayed private. Pagano (1993) proposes that going public is a means for a firm's owners to diversify, and as a result, riskier firms are more likely to go public. Likewise, Prasad and colleagues (1995) suggest that an IPO is a major exit mechanism for entrepreneurs intent on harvesting their businesses.

Going Public as a Stage in Organizational Life Cycle

Organizational cycle theory, which contends firms progress through different stages in their life cycle, and in each stage firms face different challenges and opportunities (Zingales, 1995), is commonly used to explain why firms go public. The life cycle of a firm begins when it is founded by one entrepreneur or a team of entrepreneurs, based on an innovative idea. A large number of new ventures fail during their start-up stage; some survive the liabilities of newness and smallness, and move to subsequent stages of their organizational life cycle (Gimeno et al., 1997; Singh, House, & Tucker, 1986).

Successful private firms tend to go public at some point in their growth (Ritter, 1991; Zingales, 1995). For example, Maug (2001) suggests that optimal insider ownership changes over the life cycle of the firm. That is, insiders decide to take the firm public when the firm grows to such size that insiders have lost the comparative advantage over outsiders in gathering information to evaluate the firm's growth prospects. Jain and Kini (1994) explain that entrepreneurs decide to go public to cash out their holdings when they see their firm reaching the mature stage in its growth.

Thus, according to life cycle theory, an IPO represents a stage in a firm's life cycle and, therefore, private firms that successfully progress through the start-up stage tend to go public (Zingales, 1995). Although this prediction of life cycle theory does not apply for all firms because in reality there are large, established firms that do not go public, it indicates that IPO firms are often young firms (Certo et al., 2001). For instance Gompers (1993) documented that in the U.S. the average age of firms going public was 6.7 years for venture-backed firms, and 11 years for non-venture-backed firms.

Changing Bargaining Power and Control

Private firms often have a small number of large investors, whereas public firms tend to have numerous but small investors. This implies that outside investors' bargaining power vis-à-vis inside managers is greater in private firms than in public firms. Thus, it is reasonable to argue that managers may take their firm public in order to increase their power versus outside investors as a matter of self-interest (Chemmanur & Fulghieri, 1999). Likewise, Zingales (1995) indicates that initial owner managers may choose to go public because they can maximize their utility by selling cash flow rights to dispersed shareholders and still retain control rights. By doing so, they can increase their well-being by engaging in perquisite consumption at the expense of shareholders. For instance, Jani and Kini (1994) argue that firm performance suffers after an IPO because managers, who have less ownership in the firm, may increase perquisite consumption. Finally, Black and Gilson (1998) point out that entrepreneurs may take their firm public to regain control from venture capitalists in venture capitalist-backed firms.

Increasing Legitimacy

Because private firms are often young and small firms, they have little track record, low visibility, and thus little legitimacy. As a result, it is more difficult for small private firms to gain access to resources than it is for larger public firms. Going public provides firms with an increased level of legitimacy in the business community, and thus better access to resources (Finkle, 1998; Sutton & Benedetto, 1988). Merton (1987) showed that listing on a major exchange can help a firm to be more visible and attract more investors. Drawing from signaling theory, Certo and colleagues (2001) found that the IPO firms with greater board reputation often have higher performance. Therefore, firms might go public in order to increase their legitimacy.

Timing the Market

According to this theory, the decision to go public is simply driven by market conditions. In general, IPO firms will get a higher price for their stock in a bull market than in a bear market. Thus, entrepreneurs take their firms public in periods of rising stock prices, and they delay an IPO in periods of declining stock prices. For instance, Choe, Masulis, and Nanda (1993) indicated that entrepreneurs often avoid issuing shares in periods during which few other good-quality firms are doing so. In the same vein, Ritter (1991) suggested that firms tend to go public when they recognize other publicly-traded firms in their industry are overvalued.

Summary

As described above, various theories have been proposed to explain why firms go public. Different theories offer different explanations. These theories are not mutually exclusive because they focus on different aspects of the motivation for going public. Some theories suggest that the motive for going public is to benefit firms and stakeholders by providing a means for initial investors to diversify, and for firms to obtain legitimacy and resources for growth. Other theories, such as agency theory, suspect that entrepreneurs/ managers' motives for going public may be driven by entrepreneurs/ managers' self-interests.

These theories may have different implications for the pace of change in corporate governance following an IPO. The first group of theories tends to support insider dominance and slower rates of change in corporate governance, whereas the second group tends to support outsider dominance and faster rates of change in corporate governance following an IPO. I will examine the different rates of change in corporate

governance and their impact on post-IPO performance in the later sections. To investigate the changes in corporate governance following an IPO, it is necessary to understand the major characteristics of pre-IPO firms.

Characteristics Of Pre-IPO Firms

IPO firms are those that are in transition from private to public ownership. The common characteristics of pre-IPO firms are that (1) they tend to be small, young firms, (2) ownership tends to be concentrated in the hands of a few, (3) they tend to be heavily influenced by their CEOs, and (4) they often have weak corporate governance. These characteristics will be briefly discussed below.

Small, Young Firms

IPO firms tend to be small, young firms (Certo et al., 2001). Gompers (1993) documents that U.S. firms go public at the average age of less than 10 years. Although numerous definitions of small firms have been proposed based on various criteria such as sales, employees, and membership, there is no clear consensus as to their definition (Daily & Dalton, 1992). In this study, I follow the definition of a small business provided by the U.S. Small Business Administration (SBA). The SBA suggests that a small business is one that is independently owned and operated, and is not a dominant firm in its field of operation. Small business literature suggests that small, young firms often struggle with the liabilities of newness and smallness. Proposed by Stinchcombe (1965), the notion of the liabilities of newness and smallness has been consistently supported by empirical studies (e.g., Carroll & Dlacroix, 1982; Singh et al., 1986). This notion indicates that younger firms have a higher incidence of failure than do larger firms because they are in the learning process of developing internal structures and capabilities,

and are struggling to establish external relationships needed to survive and grow, while at the same time lacking the legitimacy and resources to do so (Stinchcombe, 1965; Zahra & Filatotchev, 2004). Many studies have documented that small business ventures simply do not have, or cannot afford the resources that large businesses can easily access (e.g., Chaganti, DeCarolis, & Deeds, 1995; Welsh & White, 1981).

Ownership Concentration

New ventures are initially funded with their founders' equity, and borrowing. As new ventures grow, they require more capital. Entrepreneurs typically prefer to finance capital needs from internally generated funds rather than through external investors (Barton & Gordon, 1987). However, in many cases, the capital needs exceed internal sources, and entrepreneurs have to invite equity investments from angels and venture capitalists. As a result, prior to their IPOs, ownership of private firms is often concentrated in the hands of entrepreneurs and large private investors (Prasad et al., 1995). For instance, Mikkelsen and colleagues (1997) examined a sample of 283 firms that went public in the years from 1980 to 1983 and documented that ownership of officers and directors prior to the public offering was 67.9%. Certo and colleagues (2001) looked at 748 firms that went public from 1990 to 1998, and reported that the average ownership of officers and directors was 42%.

Strong Influence of CEOs

Pre-IPO firm CEOs tend to have more power to affect organizational outcomes than do large-firm CEOs because (1) they are less constrained by organizational systems and structures (Certo et al., 2001), (2) they are normally the locus of decision making (Begley & Boyd, 1987), (3) they possess critical firm-specific knowledge and competencies (Alvarez & Busenitz, 2001; Baun et al., 2001), (4) they often have large

ownership positions in their firms (Prasad et al., 1995), and (5) they have greater psychological commitment to the firm (Westphal, 1998). Moreover, some research has revealed that because of their control mentality, entrepreneurs often sacrifice the firm's economic best interests in order to protect their ownership and power in their firms (e.g., Daily & Dalton, 1993; Westphal, 1998). As a result of these factors, pre-IPO CEOs have a larger and more intermediate impact on organizational processes and outcomes (Eisenhardt & Schoonhoven, 1990), and their impact is easier to observe than their counterparts in larger firms (Certo et al., 2001).

Weak Corporate Governance

As mentioned above, pre-IPO firms' ownership is concentrated in the hands of entrepreneurial owner managers and a few private investors (venture capitalists and angels). Many pre-IPO firms do not have a true need for corporate governance, especially where the firms have no outside investors or major outside stakeholders (Burton et al., 2004). In a firm with outside investors, such as venture capitalists and angels, those investors often directly monitor managers in order to protect their investment in the firm (Gorman & Sahlman, 1989).

Consequently, formal corporate governance mechanisms such as boards of directors are either nonexistent, or are established for other purposes such as obtaining advice, resources, and legitimacy rather than monitoring (Welbourne & Andrews, 1996). For instance, Whisler (1988) pointed out that the most important role of a private firm's board of directors is the resource dependence role (i.e., providing resources and/or assisting the firm in obtaining resources). It should also be noted that in private firms, it is at the CEOs' discretion to select and appoint directors for their firms (Westhead, 1999).

Summary

Due to their typical characteristics as described above, pre-IPO firms' corporate governance differs from that of large firms in some important ways. First, because pre-IPO firms are small and young, they may place greater emphasis on their corporate governance's resource dependence function (i.e., helping to acquire legitimacy and resources) than may large firms (Fiegener, Brown, Dreux, & Dennis, 2000; Lynall et al., 2003). Second, outside investors often participate in firm strategic decision making and directly monitor inside managers (Bruton, Fried, & Hisrich, 2000; MacMillan, Kulos, & Khoylian, 1989). Third, pre-IPO firm CEOs have great discretion and flexibility in shaping corporate governance (Castaldi & Wortman, 1984; Westhead, 1999). Finally, the balance of CEO-board power strongly favors the CEO in small firms (Westhead, 1999). Going public, private firms, often, have to make significant changes in their corporate governance to be consistent with listing requirements and the expectations of the investment community (Welbourne & Cyr, 1999). In the next section, I will briefly review the IPO process to provide some context for the examination of changes in corporate governance following IPOs.

The IPO Process

In this section, I will provide a brief description of the IPO process in order to add some perspective to the changes in post-IPO corporate governance. The IPO process is a lengthy, complex and expensive one (Daily, Certo, Dalton, & Roengpitya, 2003). It generally lasts between 90 and 120 days, including finding a lead underwriter, preparing and filing a registration statement, taking a road show, and closing. The process starts when the CEO and other top managers decide to go public.

The first step in the IPO process is securing the services of a lead underwriter (also referred to as an investment banker). There are two common types of underwriting arrangements: firm-commitment and best-effort. In a firm-commitment underwriting agreement, the underwriters agree to purchase all the shares in the offering and resell them to public investors. In a best-effort underwriting agreement, the underwriters simply agree to make their best effort to sell the stock on behalf of the firm. The lead underwriter's prestige and market share can have a significant effect on firm IPO pricing (Higgins & Gulati, 2003). The lead underwriter then forms an underwriting syndicate to sell the firm's securities. In many cases, an underwriting syndicate may include more than 50 underwriters (Blowers et al., 1999).

In the next step, the firm and the underwriters work together to prepare the registration statement. A registration statement consists of two parts: (1) the prospectus, which is widely distributed to underwriters and prospective investors, and (2) additional information that is required by the Securities and Exchange Commission (SEC) such as indemnification and insurance for liability of directors, and sales of unregistered securities in the past three years. The offering firm files the registration statement with the SEC. The SEC staff then takes approximately 30 days to issue its first comment letter. The offering firm and its underwriter have to amend the registration statements to address the SEC comments and file the registration statement again. If all SEC comments have been addressed to the satisfaction of the SEC staff, they will, at the firm's request, declare the registration statement effective. Some firms may then begin the IPO marketing process, which is called a "road show," when the registration statement is filed; some may wait until the registration statement is cleared by the SEC. On the road show, company executives and lead underwriters meet with the underwriting syndicate

and with prospective investors to discuss the company and the offering via presentations. The prospectus is often used as a selling document and provided to targeted investors (Daily et al., 2003). The road show is important for the offering firm and its underwriters because it provides investors' "indications of interest" in the firm's stock (Blowers et al., 1999; Ritter, 1998).

Upon completion of the road show, the firm and its underwriter will meet to negotiate the stock price. Up to this point of the IPO process, the lead underwriter has been the firm's advisor, but now becomes the buyer of the firm's stock. The stock pricing will be determined via negotiation between the firm and the underwriter. The culmination of the process is referred to as the closing, when the securities are issued to the underwriters and the firm receives the proceeds (net of the underwriters' compensation) from the offering.

Changes in Post-IPO Corporate Governance

Before, during, and after an IPO, firms have to make many changes in order to transform into public firms (Fischer & Pollock, 2004). There are two important reasons behind these changes. First, an IPO greatly alters the ownership structure of the firm in such a way that ownership becomes widely dispersed in the hands of a large number of outside shareholders. Consequently, the power structure alters, triggering changes in firm corporate governance (Jain & Kini, 1994). Second, public firms are subject to different laws, regulations, and the scrutiny of the press (Blowers, et al., 1999). Thus, in transforming into public firms, IPO firms have to change to meet these new expectations. Most importantly, they have to comply with the stringent listing requirements of the SEC (Certo et al., 2001; Welbourne & Cyr, 1999). Burton and colleagues (2004) conducted a

survey examining the changes resulting from IPOs and found that corporate governance-related changes were the most salient during the IPO process. Major corporate governance-related changes around the time of an IPO involve ownership structure, boards of directors, and management structure.

Change in Ownership Structure

The purpose of an IPO is to sell the firm's common stock to the public in order to raise capital and provide a mechanism for initial investors to cash out their investment. Prasad (1994) points out there are three types of offerings: "pure primary offerings," "pure secondary offerings," and "simultaneous primary and secondary offerings." "Pure primary offerings" occur when IPO firms only sell new shares to outside investors. "Pure secondary offerings" occur when IPO firms only sell some or all the shares of existing shareholders to outside investors. "Simultaneous primary and secondary offerings" involve the sale of both new shares and the shares of existing shareholders. Regardless of the type of offerings a firm undertakes, its ownership structure alters. That is, the ownership positions of entrepreneurial owner managers and initial investors decreases, while outside ownership increases (Jain & Kini, 1994).

Previous studies demonstrate that inside ownership declines significantly following an IPO. For example, Mikkelsen and colleagues (1997) examined 283 U.S. IPO firms during the period from 1980 to 1983 and found that median inside ownership fell from 67.9% to 43.78% following IPOs and fell still further to 28.6% after five years. Bouresli and colleagues (2002) studied 293 U.S. IPOs and reported that the change in median insider ownership before and after IPOs was 20%.

Change in Board Structure

Going public generally leads to greater separation of managerial control and stock ownership, thus resulting in a greater need for protecting shareholders from agency risks. Establishing boards of directors that meet SEC guidelines as well as prospective investors' expectations is a must for IPO firms (Certo et al., 2001). Boards of directors are the legal representatives of firms' shareholders. Their fiduciary responsibilities involve hiring, firing, and setting compensation for top managers, and monitoring and ratifying major corporate decisions (Fama & Jensen, 1983; Jensen & Smith, 2000). Researchers have provided empirical evidence suggesting that boards of directors have often failed to meet their legal responsibilities to monitor and control management decision making on behalf of shareholders (Dalton, Daily, Ellstrand, & Johnson, 1998; Morck, Shleifer, & Vishny, 1989). Consequently, board reform has been called for in order to improve board effectiveness, and a number of new regulations have been introduced by the SEC, of which the most salient regulation involves the requirements to have a certain number of independent directors on a firm's board (Blowers et al., 1999). The general belief is that an independent board structure is more effective because such a board structure is less influenced by managers (Fama & Jensen, 1983). Before going public, private firms do not have to comply with corporate governance regulations. Private firms with outside investors may have some corporate governance mechanisms, which are chosen at the discretion of firm managers and owners, and not necessarily congruent with formal corporate governance regulations (Burton et al., 2004; Welbourne & Andrews, 1996). However, once a firm seeks to undertake an IPO in order to sell shares to the public, it has to follow the corporate governance requirements. The most salient requirement is establishing a formal board of directors. Many firms establish an independent board of directors before their IPO in

order to signal the presence of an effective monitoring mechanism, thereby enhancing firm value (Certo et al., 2001). The independent outside directors (i.e. directors who are not employees of the firm and do not have material relationships with the firm) are the key determinant of board independence (Baysinger & Butler, 1985; Daily & Dalton, 1994). To be eligible for listing, IPO firms must have a certain number of outsider directors (Blowers et al., 1999). The percentage of outside directors tends to increase after IPOs due to the rise of outside ownership and the bargaining power of outside investors versus inside managers. For example, Crutchley, Garner, and Marshall (2002) studied IPOs during the period from 1993 to 1994 and reported that the median outside board representation was 50%, 60% and 67% for the year prior to an IPO, two years after an IPO and 5 years after an IPO, respectively. In sum, the most salient change associated with boards of directors before and after IPOs involves the change in board composition toward greater outside director representation.

Change in Management Structure

In making the transformation into a public firm through an IPO, a firm typically needs to reconfigure its management structure and top management team (TMT) to acquire new expertise and to meet the SEC's requirements as well as outside investors' expectations (Welbourne & Cyr, 1999). IPO firms must perform new tasks they did not undertake prior to their IPO. Such activities include preparing periodic reports, dealing with outside investors, and budgeting, forecasting, and using benchmarks in compliance with SEC requirements (Blowers et al., 1999). In addition, IPO firms often use the new capital obtained from their IPO to expand on existing strategies or undertake new initiatives (Fischer & Pollock, 2004). In order to execute these new initiatives, they have to hire new executives to provide expertise that the current management team lacks. For example,

Burton and colleagues (2004) surveyed IPO firms in the U.K. and reported that IPO firms frequently appointed new senior managers with prior experience such as finance directors. Cyr and colleagues (2000) recommend that IPO firms should appoint a vice president of human resources to develop and manage their human resources effectively.

Changes in firm management around the time of an IPO are not only for the purpose of resource acquisition but also for the purpose of firm governance (Andrews & Welbourne, 2000). Jensen and Fama (1983) suggest that management structure works as a corporate governance mechanism as it creates a mutual monitoring mechanism among managers. Thus, changes in management structure and the TMT may affect a post-IPO firm's capacity for corporate governance. When a firm goes public, its new outside shareholders may require changes in management structure to assure effective corporate governance. Shareholders may require the firm to bring in new outside senior managers to perform control functions, such as mutual monitoring among managers and financial control, and to reduce the power of the original management team. For example, Burton and colleagues (2004) indicated that IPO firms often had new finance directors.

Wasserman (2003) documented that after each round of outside financing, the rate of founder CEO change increased. Boursesli and colleagues (2002) observed that venture capital firms often took an active role in reconfiguring the corporate governance structures of the IPO firm in which they invested, leading to fewer board seats controlled by insiders. In addition, after going public, founder managers often have to give up a great deal of their discretion and power. Unlike private firms in which founder managers have the freedom to make decisions and bear all risks associated with those decisions, in a newly listed firm, managers have to seek approval of the board of directors before implementing major decisions (Burton et al., 2004). In sum, an IPO generally leads to

changes in firm management such as adding new top managers and reducing the top management team's power and discretion.

Summary

I have reviewed the IPO process and changes in corporate governance before, during, and after an IPO. The general conclusion is that changes in corporate governance resulting from an IPO are inevitable. This is not only owing to the SEC listing requirements and investors' expectations but also to facilitate the acquisition of new expertise and resources necessary for the IPO firm to compete in the public domain. The most salient changes in corporate governance around the time of an IPO include the dilution of managerial ownership, the rising percentage of outside board members, and changes in TMT structure and power. Because these changes may be highly significant and radical, they represent a transformational change in the firm's corporate governance (Certo et al., 2001; Fischer & Pollock, 2004). The above review also indicates pre-IPO corporate governance is likely dominated by the firm's original entrepreneurial management team. An IPO often results in the firm's corporate governance being less dominated by the TMT and more heavily influenced by outside shareholders.

A large number of studies have examined the relationship between corporate governance, IPO activity, and performance (e.g., Andrews & Welbourne, 2000; Balatbat et al., 2004, Boursesli et al., 2002; Brav & Gompers, 1997; Carpenter et al., 2003; Certo et al., 2001; Higgins, & Gulati, 2003; McConaughy, Dhatt, & Kim, 1995). Most of these studies have focused on static corporate governance variables such as percentage of outside directors, board ownership, or the presence of founders and venture capitalists, and they typically examine the relationships between these variables and IPO underpricing or long-run performance. For instance, Mikkelson and colleagues (1996)

investigated the impact of inside ownership on performance. Nelson (2003) focused on the relationship between the presence of a founder manager and IPO performance. Higgins and Gulati (2003) studied the impact of managers' reputations and underwriters' prestige on the IPO process. Boursesli and colleagues (2002) explored the role of venture capitalists in IPO corporate governance and IPO operating performance. Certo and colleagues (2001) examined the signaling impact of outside board members on IPO underpricing.

A few studies have examined the changes in post-IPO corporate governance and their impact on IPO performance. For instance, Crutchly, Garner, and Marshall (2002) explored the effect of changes in board structure on IPO firms' long-run performance. However, I have not found any past studies that specifically examine the impact of the pace of change in corporate governance on long-run performance in the context of IPOs. I suspect that different rates of change may impact firm performance differently. In the next section, I will examine the potential impact of the pace of change in corporate governance on post-IPO performance, based on various theoretical perspectives.

The Impact of the Pace of Change in Post-IPO Corporate Governance on Performance

Pace of Change

How organizations undertake change has been debated in the change literature. There are two opposite themes regarding how rapidly a firm should implement a transformational change (Amis, Slack, & Hinings, 2004). One theme advocates that transformational change should be implemented rapidly (e.g., Gersick, 1991; Miller & Chen, 1994; Romanelli & Tushman, 1994). Specifically, Romanelli and Tushman (1994) argue that rapid change is necessary to overcome inertia and to prevent resistance

building up among members of the organization. Gersick contends that “fundamental changes cannot be accomplished piecemeal, slowly, gradually, or comfortably” (1991:34). Likewise, Miller and Friesen (1982) find that dramatic change is more associated with high performance than is incremental change.

The other school of thought suggests that change undertaken at a relatively slow pace is more effective because such change is less disruptive and more manageable (e.g. Brown & Eisenhardt, 1997; Haveman, 1992; Pettigrew, Ferlie, & McKee, 1992). Brown and Eisenhardt (1997) argue that slow, continuous change leverages firm competences and capitalizes on what the firm does well. Pettigrew and colleagues (1992) suggest that radical change should be introduced slowly because it involves actors’ ideologies, values, and knowledge, which take time to adjust.

The review presented above indicates that the impact of the pace of transformational change on firm outcomes is theoretically and empirically inconclusive (Amis et al., 2004). This suggests an investigation of the impact of the pace of change in corporate governance on firm performance in the context of IPOs may be a worthwhile undertaking. The findings of this investigation will not only contribute to the study of IPO-related corporate governance but also to the change literature. The most typical and significant changes in corporate governance at the time of an IPO include change in inside ownership, change in outside board representation, and change in TMT structure and power. These changes are likely interrelated and together represent a corporate governance transformation that is contemporaneous with an IPO (Certo et al., 2001).

The pace of IPO-related change in corporate governance is to some extent determined by shareholders and firm management. For instance, in some IPO firms, managerial ownership is diluted rapidly, and many new outside directors and senior

managers are appointed in a short period of time. The pace of change in post-IPO corporate governance in such firms is obviously rapid. On the other hand, if managerial ownership is diluted gradually, and changes in board composition and TMT structure and power take place slowly, the pace of change in post-IPO corporate governance will be marginal. A retarded pace of change means that IPO firm corporate governance moves from an insider-dominated structure to an outsider-dominated structure gradually, whereas rapid change makes this transition quickly. This raises the question of whether a fast-paced or slow-paced change in post-IPO corporate governance is more effective and has a more positive impact on firm performance. To shed light on this question, I will examine the negative and positive effects of rapid versus slow pace of change in post-IPO corporate governance on firm performance based on different theoretical perspectives such as agency theory, resource dependence theory, and resource-based theory. Although there are other theories that may offer explanations regarding the impact of corporate governance, such as institutional and social network theories, in this study we choose the above theories because they dominate the corporate governance literature and they provide greater explanatory power (Daily et al., 2003, Kor, 2003; Lynall et al., 2003).

Agency Theory

Agency theory is based on the premise that people are characterized by self-interest, bounded rationality, and risk aversion (Eisenhardt, 1989). In a modern firm where owners (principals) hire managers (agents) to manage the firm on their behalf (often referred to as the separation of ownership and control), managers and shareholders have divergent goals and risk preferences (Jensen & Meckling, 1976). Therefore, managers will not always act in the best interests of shareholders (Fama, 1980). Agency theorists further argue that managers tend to engage in adverse selection (hidden

information) and morale hazards (hidden behaviors) as they seek to maximize their own wealth and power at the expense of owners (Fama & Jensen, 1983; Seward & Walsh, 1993). Major corporate governance mechanisms, which can help to align the interests of shareholders and managers or control managers, include managerial ownership, managerial compensation schemes, boards of directors, and internal control systems (Baysinger & Butler, 1985; Eisenhardt, 1989; Fama, 1980; Jensen, 1993; Shleifer & Vishny, 1997; Zahra & Pearce, 1989). I will examine the impact of the pace of change in post-IPO corporate governance on performance from an agency perspective in the following section.

The Pace of Change in Managerial Ownership. Jensen and Meckling (1976) propose that managerial ownership is adversely related to agency costs. They reason that the lower the managerial ownership, the more divergent the interest between managers and shareholders. Interest divergence indicates that managers do not always act in shareholders' best interests but for their own interests, resulting in agency costs. Morck, Shleifer, and Vishny (1988) further suggest that the relationship between managerial ownership and performance is not simply linear. They find that firm performance decreases when inside ownership increases from 5 to 25 percent; while managerial ownership of 25 percent is the threshold at which ownership incentive alignment becomes effective. Managerial ownership prior to an IPO is relatively large and often greater than the ownership alignment threshold of 25%. For example, Mikkelsen and colleagues (1997) examined a sample of 283 firms that went public in the years 1980 through 1983 and documented that ownership of officers and directors prior to the initial offering was 67.9%. Certo and colleagues (2001) looked at 748 firms that went public from 1990 to 1998, and reported that the average ownership of officers and directors was 42%. Based on these findings, I anticipate that rapid change in managerial

ownership will quickly worsen the incentive alignment, leading to greater agency costs and lower performance.

The Pace of Change in Outside Board Representation. Outside board members are not employees of the firm on whose board they serve. Fama (1980) suggests that because outside board members are less influenced by the CEO and other top managers, they are more effective in controlling managers. Truly independent outside board members are likely to fulfill their fiduciary responsibilities in order to protect and enhance their human capital (Baysinger & Hoskisson, 1989; Kosnik, 1990). Thus, a board of directors dominated by outside board members tends to more effectively oversee managers on behalf of shareholders. Empirical findings regarding the effectiveness of outside board members in large firms are conflicting. Some studies find no significant relationship between outside board representation and firm performance (e.g., Dalton et al., 1998; Wagner, Stimpert, & Fubara, 1998), while other studies find outside board representation has a significant impact on performance (e.g., Pearce & Zahra 1991; Rosenstein & Wyatt, 1990). Regardless of its effectiveness, outside board representation has become a corporate governance norm and a requirement for publicly-listed firms (Blowers et al., 1999; Certo et al., 2001). IPO firms, therefore, have to establish boards of directors with certain numbers of outside directors to comply with the prevailing expectations of the investment community and requirements of the SEC and the stock exchange on which they are listed (Bouresli et al., 2002; Cyr et al., 2000).

A rapid pace of change in corporate governance following an IPO implies that the IPO firm rapidly increases the percentage of outside directors. According to agency theory, quickly establishing an outsider dominated board of directors will help the IPO firm control agency costs and enhance performance. It should be noted that outside directors should be truly

independent to be effective in controlling executives (e.g., Boeker, 1992; Finkle, 1998). Truly independent outside board members will be discussed in greater detail in the method section of this study. In sum, from the agency perspective, rapid change in outside board representation following an IPO will lead to higher performance than will a slow rate of change.

The Pace of Change in TMT Structure and Power. Management structure creates hierarchical control and mutual monitoring among managers, thereby reducing agency costs (e.g., Fama & Jensen, 1983; Gulati & Singh, 1998; Jones & Butler, 1992; Ocasio, 1999). Hierarchical control is enhanced in firms where a formal structure and authority are clearly established (Jones & Butler, 1992). Mutual monitoring occurs when managers politically compete for management positions (Gulati & Singh, 1998; Jensen & Smith, 2000). Group researchers have indicated that group heterogeneity in terms of tenure, experience and other demographic characteristics leads to low group cohesiveness and increased group conflict and competition (e.g., Barsade, Ward, Turner, & Sonnenfeld, 2000; Jehn, Northcraft, & Neale, 1996; Pelled, 1996; Wiersema & Bantel, 1992). Thus, as far as corporate governance is concerned, the more heterogeneous the top management team, the more likely that managers compete and monitor one another (Ocasio, 1999; Pitcher & Smith, 2001).

Going public, firms have to professionalize by formalizing their organizational structure and internal control systems. In so doing, they often have to hire new senior managers to carry out new tasks that the current management team is not sufficiently qualified to undertake (Certo et al., 2001). The formal organizational structure and internal control systems will facilitate hierarchical control because responsibilities, policies, and working procedures become more defined (Ocasio, 1999). Having new senior managers in a TMT will make the team more heterogeneous and less cohesive. Consequently, the mutual monitoring among members of the top management team is likely to be more intense, thus reducing

agency costs (Fama, 1980). In sum, the changes in management structure and top management team membership following an IPO will lead to reduced agency costs; and the greater the pace of change, the lower agency costs will be.

Summary. In summary, agency theory makes conflicting predictions with regard to the effects of the pace of change in post-IPO corporate governance structure upon firm performance. From an agency theory perspective, a rapid decline in managerial ownership increases agency costs because it undermines incentive alignment between managers and shareholders, resulting in lower firm performance. Contrarily, rapid changes in outside board representation and management structure lead to increased performance. Rapid change in board representation results in greater board independence and board oversight, thus reducing agency costs. Rapid change in top management team membership enhances mutual monitoring among managers, resulting in reduced agency costs and increased performance.

Resource Dependence Theory

Resource dependence theory emphasizes the importance of external resources to a firm's survival and growth (Pfeffer & Salancik, 1978). Proponents of this theory contend that firms should organize in a way so as to maximize their ability to access and acquire resources from external organizations and the environment (Pfeffer & Salancik, 1978). According to this perspective, a firm's corporate governance should be structured so as to help it acquire external resources (Hillman, Cannella, & Paetzold, 2000). Changes in major corporate governance mechanisms such as ownership structure, board structure, and management structure resulting from an IPO are likely to affect the ability of a firm to acquire external resources and subsequent performance.

The Pace of Change in Ownership Structure. An IPO represents the first time a firm sells its common stock to the public. As a result, managerial ownership is normally diluted and

outside ownership increases. Because public firms are more visible than private firms, it is easier for them to acquire resources from external organizations (Finkle, 1998; Sutton & Benedetto, 1988). For instance, Merton (1987) finds that listing on a major exchange can help a firm to be more visible and attract more investors. It may, therefore, be inferred that fast-paced change in post-IPO managerial ownership may result in greater outside ownership, thereby enhancing the firm's visibility and legitimacy. As a result, a significant decline in post-IPO managerial ownership may be associated with performance enhancement.

The Pace of Change in Outside Board Representation. Researchers have frequently applied resource dependence theory to the study of boards of directors. The general contention is that the board of directors acts as a bridge linking the firm with its external environment (Pfeffer & Salancik, 1978). Outside board members can provide the firm with needed resources such as expertise and legitimacy (Hillman & Dalziel, 2003). They also can assist the firm in obtaining resources and assistance from outside the firm (Hillman et al., 2000). Researchers of resource dependence theory-based corporate governance, therefore, advocate for a preponderance of outside board members (Hillman et al., 2000; Pfeffer, 1981). In the context of an IPO, the greater the pace of change in board composition, the greater the number of outside board members brought on to the firm's board. More board members may increase the firm's ability to obtain critical resources, thereby enhancing performance.

The Pace of Change in TMT Membership and Power. New senior managers may bring new connections and relationships to the firm. Thus, appointing new senior managers may increase the firm's ability to access external resources. As I mentioned previously, firms going public have to carry out additional tasks required by the SEC and

shareholders such as periodic reporting and managing investor relationships. In addition, they often need more management personnel in order to undertake new projects financed by the IPO proceeds. IPO firms, to some extent, can choose to promote insiders or recruit outsiders for newly-created management positions. From a resource dependence perspective, if IPO firms hire new outsider managers, they may have additional connections and relationships with individuals and organizations in their external environment, thereby enhancing their ability to acquire external resources.

Summary. Rapid change in managerial ownership, board composition, and the TMT's structure will result in increased numbers of outside investors, outside board members and new outside senior managers. These new stakeholders will bring with them additional resources, information, connections, and relationships, which enhance the firm's ability to acquire resources and boost performance. Thus, according to resource dependence theory, rapid change in post-IPO corporate governance should lead to higher performance than a slow rate of change.

Resource-Based View

As previously described, from agency and resource dependence perspectives, a greater pace of change in post-IPO corporate governance, except the change in managerial ownership, tends to lead to better performance than does a slower pace. However, keeping agency costs low and accessing external resources are not enough for firms to outperform their competitors. Proponents of a resourced-based view argue that firm performance is largely determined by sustainable competitive advantages which result from valuable, rare, inimitable, and non-substitutable resources and capabilities (Barney, 1991; Mahoney & Pandian, 1992; Wernerfelt, 1984). Changes in post-IPO corporate governance such as the appointment of new outside board members and senior

managers are likely to affect firm resources and capabilities, and thus firm performance. For IPO firms, competitive advantages mostly lie in their original top management team's firm-specific human and social capital, and psychological factors (Baun et al., 2001; Eisenhardt & Schoonhoven, 1990; Nelsen, 1991). A TMT's human capital comes from individual TMT members' firm-specific knowledge of resources, capabilities, and routines that they develop by working within the firm for a substantial period of time. A TMT's human capital is not only the sum of members' knowledge but also the shared experience of the TMT as a whole (Bergh, 2001; Penrose, 1959). Shared team-specific management experience is created collectively from team interactions, during which top managers develop working patterns, routines, and interpersonal relationships (Fisher & Pollock, 2004). The shared experience of managers, therefore, can increase TMT risk taking, save coordination time, and permit decisions to be made more efficiently because the team can avoid group process issues such as interpersonal conflicts (Eisenhardt & Schoonhoven, 1990; Kor, 2003).

Researchers (e.g., Berman, Down, & Hill, 2002; Eisenhardt & Schoonhoven, 1990; Kor, 2003) have suggested that firm-specific knowledge of individual top managers and shared team-specific management experience are a source of competitive advantage because they are context-specific and valuable. For instance, Penrose (1959:46) emphasizes that "existing managerial personnel provide services that cannot be provided by personnel newly hired from outside the firm ... because experience they gain from working within the firm and with each other enables them to provide services that are uniquely valuable for the operations of the particular group with which they are associated." Eisenhardt and Schoonhoven (1990) documented that the shared work experience of a TMT's members significantly contributed to growth among newly

founded semiconductor firms. Baum, Locke and Smith (2001) examined various predictors of venture growth and found that only top managers' specific competencies, motivations, and firm competitive strategies are direct predictors of venture growth. Gimeno and colleagues (1997) concluded that specific human capital is positively related to ventures' economic performance. Similarly, Deeds and colleagues (1998) reported a strong association between firm-specific capabilities and wealth creation.

TMT social capital and top managers' psychological commitment to the firm enhance the deployment and development of TMT human capital. Because an IPO firm's top managers are often founders or have been part of the TMT since the early stage of the firm's existence (Certo et al., 2001; Gompers, 1993), they tend to have a stronger psychological commitment to their firms than do large firms' top managers (Nelson, 2003). IPO firms' top managers, imbued with a psychological commitment, tend to leverage their existing competences and exert great effort to acquire new knowledge for the purpose of growing their firms (Baum, Locke, & Smith, 2001). TMT social capital arises from top managers' interaction and helps to enhance cohesiveness and collective goal attainment (Fisher & Pollock, 2004). Thus, where a TMT has greater social capital, its members tend to interact more intensively and develop greater shared team-specific knowledge. For instance, drawing from research on groups, Fisher and Pollock (2004:468) conclude that "team members who are together longer tend to perform their tasks better, because they have had the time to develop working routines and understandings that allow them to leverage the distinctive benefits of their varied backgrounds." In the next section, I will examine how the pace of change in post-IPO corporate governance affects firm performance from a resource-based view.

The Pace of Change in Managerial Ownership. The pace of change in post-IPO corporate governance is likely to affect the ability of an IPO firm to leverage its TMT human capital. More rapid change in managerial ownership involves sharp dilution of managerial stakes in the firm during and after the IPO. This may have two potential consequences. First, dilution of managerial ownership weakens top managers' psychological commitment (Nelson, 2003). As a result, top managers will exert less effort in deploying and leveraging their human capital. Second, the greater the decrease in managerial ownership, the greater will be the diminution of TMT power (Finkelstein, 1992). Reduced TMT power lowers top managers' flexibility and discretion, which in turn constrains top managers in using their human capital in the best possible ways for the benefit of the firm (Zahra & Filatotchev, 2004). In sum, rapid change in post-IPO corporate governance leads to sharp dilution of managerial ownership, which in turn may cause a deterioration of TMT human capital, thus lowering performance.

The Pace of Change in Outside Board Representation and the TMT. Changes in post-IPO corporate governance involve appointing new outside board members. Unlike the advocates of resource dependence theory who emphasize the importance of outside directors in obtaining external resources, advocates of resource-based theory (e.g., Bergh, 2001; Kor, 2003) tend to oppose appointing outside directors. As mentioned above, an IPO firm's TMT has somewhat unique human and social capital, and high psychological commitment, which represents a source of competitive advantage for the IPO firm. Appointing new outside directors may negatively affect the human and social capital and psychological commitment of the original TMT. Appointing outside directors will increase the structural power of the board of directors vis-à-vis the original TMT (Daily & Schwenk, 1996).

Drawing from psychological reactance theory, Westphal (1998:513) indicates that “the threat of losing some control over some strategic direction-making outcomes should precipitate efforts by CEOs to maintain their direction over the firm’s strategic direction.” Sapienza and Korsgaard (1996) point out that if board monitoring involves data production, analysis, and presentation, managers may find it costly and oppressive. Van de Ven and Walker (1984) indicate that sharply increasing board independence and monitoring may lead to conflicts between the board and original top managers. Consequently, senior managers may focus on political efforts for their own sake rather than leveraging their human capital for the sake of their firm (Kor, 2003; Westphal, 1998).

The Pace of Change in TMT Structure and Power. Appointing many new outside senior managers may create disruptive change in an IPO firm’s TMT, discounting the human and social capital of the original TMT. Because new and old senior managers may engage in political maneuvering to gain power to advance their own interests and positions, the cohesiveness and collective effort of the TMT worsens, negatively affecting the deployment and development of the original TMT’s human capital (Kor, 2003; Westphal, 1998). It should be noted that the original TMT’s human capital may represent the firm’s most important competitive advantage and may be responsible for the firm’s being successful prior to its IPO (Baum, Locke, & Smith, 2001). Thus, a quick pace of change in the post-IPO TMT does not help maintain and develop a firm’s inimitable, valuable, firm-specific assets, enabling the firm to survive and grow in the new public domain.

Hypotheses

I have examined the impact of the pace of change in post-IPO corporate governance on firm performance based on agency, resource dependence, and resource-based theories. These theories offer opposing predictions regarding the impact of the pace of change in post-IPO corporate governance on firm performance. Agency theory, which focuses on controlling inside managers and reducing agency risks, and resource dependence theory, which emphasizes the importance of external resources, tend to support rapid change in post-IPO corporate governance, with the notable exception of steep declines in managerial ownership. Generally, according to these perspectives, a speedy pace of change helps firms quickly establish an outsider-dominated corporate governance structure, which can control managers and assist firms in obtaining external resources. On the contrary, resource-based theory and other theories such as learning, human capital, and social capital theories, which focus on the continuity of the deployment and development of capabilities and competitive advantages, tend to support a slower pace of change in post-IPO corporate governance. These theories imply that modest change helps to maintain and leverage the human capital, social capital, and psychological motivation of the original TMT, which represent a source of competitive advantage for the firm.

As presented previously, these theories provide sound, although opposing explanations of the impact of the pace of change in post-IPO corporate governance on subsequent firm performance. They are helpful in understanding different aspects of the impact of the pace of change in post-IPO corporate governance. Although a number of studies (e.g., Baum, Locke, & Smith, 2001; Bergh, 2001; Berman et al., 2002; Eisenhardt & Schoonhoven, 1990; Fisher & Pollock, 2004; Zahra & Filatotchev, 2004) have demonstrated the importance of human capital and managerial motivation in young, small firms in general and IPO firms in

particular, it is hard to discount the arguments regarding the need to reduce agency costs and to obtain external resources for the growth of IPO firms (e.g., Boursesli et al., 2002; Crutchly et al., 2002; Mikkelsen et al., 1997; Wasserman, 2003). To investigate which theoretical perspectives are more applicable in the context of IPOs, I offer competing hypotheses regarding the impact of the pace of change in post-IPO corporate governance on subsequent firm performance.

Hypotheses Supporting Rapid Pace of Change in Post-IPO Corporate Governance

Hypothesis 1.1. According to the resource dependence perspective, rapid change in post-IPO managerial ownership is positively associated with subsequent firm performance.

Hypothesis 1.2. According to resource dependence and agency perspectives, rapid change in post-IPO board composition is positively associated with subsequent firm performance.

Hypothesis 1.3. According to resource dependence and agency perspectives, rapid change in post-IPO TMT composition is positively associated with subsequent firm performance.

Hypotheses Supporting Slow Pace of Change in Post-IPO Corporate Governance

Hypothesis 2.1. According to agency and resource-based perspectives, rapid change in post-IPO managerial ownership is negatively associated with subsequent firm performance.

Hypothesis 2.2. According to the resource-based view, rapid change in post-IPO board composition is negatively associated with subsequent firm performance.

Hypothesis 2.3. According to the resource-based view, rapid change in post-IPO TMT composition is negatively associated with subsequent firm performance.

Moderating Effect of Pace of Change in Post-IPO Managerial Ownership

These salient changes in post-IPO corporate governance may interact with one another to influence firm performance. If managerial ownership decreases rapidly, and thus top managers' incentive alignment weakens, there is a greater need for quickly

establishing independent boards of directors to control managers, and appointing new senior managers to reduce the original TMT's cohesiveness and power. On the other hand, slow paced change in managerial ownership implies that top managers have good incentive alignment, and they are confident about their capabilities and the growth prospects of their firm. In this case, maintaining the original TMT's human capital, social capital, and psychological motivation will help the firm to continue to capitalize on what it has done well. Thus, the pace of change in managerial ownership may moderate the association between the pace of change in outside board representation and the pace of change in the TMT.

Hypothesis 3.1. The interaction between the pace of change in managerial ownership and the pace of change in outside board representation will positively affect firm performance.

Hypothesis 3.2. The interaction between the pace of change in managerial ownership and the pace of change in post-IPO TMT composition will positively affect firm performance.

Moderating Effect of Founder CEO

Because founder CEOs created or recognized the original entrepreneurial idea upon which the firm was founded, established the firm, and have made an enormous personal investment in terms of time, effort and resources in the firm, they have a greater impact on their firm than do nonfounder CEOs (Nelson, 2003). Founder CEOs have firm-specific knowledge that is essential for their firm to survive and grow (Fisher & Pollock, 2004). They play an important role in shaping strategies and determining how to implement those strategies, which help the firm to grow successfully and get to the point at which it can go public (Nelson, 2003). Thus, according to the resource-based view, founder CEOs represent a source of competitive advantage, which firms need to maintain and capitalize on (Baum, Locke, & Smith, 2001; Bergh, 2001).

Having established and grown their firm since its inception, founder-CEOs have a psychological commitment to the firm; and their personal identification is often attached to the firm (Nelson, 2003). This has two important implications. First, founder-CEOs have a great desire to see their firm succeed. Thus, they are less likely to engage in self-serving activities at the expense of their firm (Fisher & Pollock, 2004). Second, according to psychological reactance theory (e.g. Brehm & Brehm, 1981; Westphal, 1998), founder-CEOs tend to strongly resist changes that threaten their power and discretion. Consequently, rapid change in post-IPO corporate governance is likely to result in conflicts between founder-CEOs and outside investors, leading to disruption and instability in the firm. Based on these arguments, I propose the following hypotheses regarding the potential moderating effect of the presence of the founder-CEO on the relationship between pace of change in post-IPO corporate governance and long-term post-IPO performance.

Hypothesis 4.1. The interaction between the presence of a founder-CEO and the pace of change in post-IPO outside board representation will negatively affect subsequent firm performance.

Hypothesis 4.2. The interaction between the presence of a founder-CEO and the pace of change in the post-IPO TMT composition will negatively affect subsequent firm performance.

Moderating Effect of Firm Technology

Firms can be categorized into high-tech and low-tech firms (Certo et al., 2001). Firm-specific human capital is a more critical source of competitive advantage for high-tech firms than for low-tech firms (Deeds et al., 1998). The processes and products of low-tech IPO firms are not difficult for outsiders to comprehend. However, top managers of high-tech IPO firms often possess highly specialized firm-specific knowledge that outsiders may need a considerable time to comprehend (Zahra & Filatotchev, 2004).

This indicates that from the resource-based view, fast-paced change in post-IPO corporate governance has greater negative impact on high-tech firms than low-tech firms. In other words, industry technology moderates the relationship between the pace of change in post-IPO corporate governance and firm performance.

Hypothesis 5.1. The interaction between industry technology and the pace of change in post-IPO outside board representation will negatively affect subsequent firm performance.

Hypothesis 5.2. The interaction between industry technology and the pace of change in post-IPO TMT composition will negatively affect subsequent firm performance.

CHAPTER 3

RESEARCH METHODOLOGY

In this chapter, I describe the sample construction procedure, the operationalization of the variables and the analytical methods employed in this dissertation. The first section of this chapter provides details on the sample, the data sources, and the procedure used to construct the sample. The second section discusses the operationalization of the variables and the data sources. Finally, the data analysis methods used to test hypotheses are discussed.

Sample

The purpose of this study is to examine the impact of the pace of change in post-IPO corporate governance on firm performance in the context of IPOs. The target population is entrepreneurial IPO firms. Consistent with previous studies, I considered entrepreneurial IPO firms as firms that are less than 10 years of age at the time of IPO, and independently operated (i.e., firms that are not spin-offs or subsidiaries of other firms) (e.g., Daily, & Dalton, 1993; Eisenhardt & Schoonhoven, 1990). These criteria ensure that the firms in the population are in the entrepreneurial stage of development, and have the characteristics as described in the section “Characteristics of Pre-IPO Firm.” The sample for this study consisted of firms that went public in the period 1996 though

2000. I constructed the sample of firms undertaking IPOs over five consecutive years in order to increase the generalizability of this study over time. Inferences drawn from a sample of firms that went public in a particular year may be biased by the idiosyncrasies associated with the market conditions of that year. Using a sample of firms that went public in different years may reduce such biases (Rajagopalan, 1997; Zajac, Krasstz, & Bresser, 2000). I chose firms that went public between the years 1996 through 2000 because this period includes both favorable and poor market conditions for IPOs. The period 1996 and 1999 represented a bull market for IPOs with a peak in 1999 when the number of IPOs reached a record of 621 (Andrews & Welbourne, 2000; Ritter & Welch, 2002). In contrast, securities markets declined in 2000 and continued through years 2001 and 2002 (Ritter & Welch, 2002). I did not include years 2001 and 2002 because using these years could not leave sufficient subsequent years to trace the impact of change in corporate governance on firm performance.

To construct the sample, I first obtained the list of IPO firms that went public in the years between 1996 and 2000 from *Hoover's Online*. The initial list consisted of 2,123 IPO firms (621 firms in 1996, 432 firms in 1997, 267 firms in 1998, 457 firms in 1999, and 346 in 2000). I chose only firms that meet the criteria of entrepreneurial IPO firms; that is, they are less than 10 years of age at the time of IPO, and independently operated. As a result, 638 firms were excluded. Consistent with previous studies of IPO firms (e.g., e.g., Andrew & Welbourne, 2000; Carpenter et al., 2003; Crutchley, Garner, & Marshall, 2002), I eliminated 237 IPO firms that are financial firms, such as mutual funds, foreign ADRs, and real estate investment trust (REITs), various forms of publicly-offered limited partnership, spin-offs of existing public firms, and reverse leveraged buyouts (LBOs). I eliminated spin-off firms and reverse LBO firms because they are

often not entrepreneurial firms, which are the focus of this study (Carpenter et al., 2003). I also excluded firms that were acquired by, or merged with other firms.

I excluded 443 IPO firms that were acquired or merged with other firms during my period of study. Acquisitions and mergers are common among IPO firms because these are attractive and desirable outcomes for most IPO firms and their investors (Blowers et al., 1999). In other words, acquired and merged IPO firms are not typically different from other IPO firms in terms of firm performance and other firm characteristics, and thus excluding them does not bias the sample (Fisher & Pollock, 2004). There were 246 IPO firms that went bankrupt or discontinued during the period of my study. These firms were excluded because they did not survive long enough to undergo governance as they went bankrupt in the first or second year after their IPO.

Finally, I eliminated 77 firms with missing data. The final number of eligible firms was 482. I randomly selected half of the firms in each of the years to construct the sample for this study, which consisted of 51, 45, 31, 48, and 66 IPO firms in 1996, 1997, 1998, 1999, and 2000, respectively. T-tests were undertaken to test for the differences in the final sample and the list of eligible firms from which the final sample was randomly taken from, in terms of such firm characteristics as sales, number of employees, and ROA. There were not significant differences between the firms in the sample and the total eligible firms.

The pace of change was measured for two time intervals, that is, one year and three years after the IPO. One-year intervals represent the immediate impact of the pace of change in corporate governance following an IPO on firm performance. However, one year might not fully capture change in post-IPO corporate governance, given that terms of directorship are often two or three years. Three-year intervals may sufficiently capture

change in corporate governance resulting from IPOs. Beyond a three-year horizon, the effect of IPOs on change in corporate governance would be marginal (Ritter, 1999; Ritter & Welch, 2002). Therefore, to understand the impact of the pace of change in post-IPO corporate governance on firm performance, it is necessary to measure and relate the pace of change in one-year and three-year intervals with subsequent firm performance. Two sets of data were constructed accordingly for these two intervals. In other words, I traced the change in corporate governance one year, and three years after IPO. The IPO year was labeled t_0 , and the following years were labeled t_1 , t_2 , t_3 and t_4 .

Independent Variables

My main purpose in this study is to test the relationship between the pace of change in post-IPO corporate governance and subsequent performance. The independent variables in this study include change in managerial ownership, change in board composition and change in TMT team composition. The following sections describe the operationalization of these independent variables.

The Pace of Change in Managerial Ownership. Managerial ownership has often been measured as the percentage of common shares owned by top managers and the total amount of common stock outstanding. The proportion of managerial ownership reflects the level of top managers' incentive alignment and psychological commitment to their firm. I measured the pace of change in managerial ownership as the ratio of the difference of the proportion of managerial ownership at the time of the IPO and at year t_n , where n was one, or three, depending on which time interval are under study, to the proportion of managerial ownership at the time of the IPO. In other words, the pace of change in managerial ownership was defined as: $(\text{proportion of managerial ownership } t_n - \text{proportion of managerial ownership } t_0) / \text{proportion of managerial ownership } t_0$. I

subtracted the proportion of managerial ownership at t_n from proportion of managerial ownership at t_0 because managerial ownership tends to decrease after IPOs. The greater the ratio, the more rapid the change in managerial ownership between the two time periods. Data on the common stock held by top managers were obtained from the offering prospectuses included in *Edgar* and *Hoover's Online*.

The Pace of Change in Outside Board Representation. Going public requires a firm to reconfigure its board of directors in light with the SEC's requirements and investors' expectations. The most salient change in this regard involves appointing outside board members on the firm's board or increasing the proportion of outside board members on the board. It has been argued that outside board members are more effective in controlling managers than are inside board members (Fama, 1980). However, previous studies produced inconclusive findings with regard to the oversight effectiveness of outside board members (e.g., Dalton et al., 1998; Wagner et al., 1998). Recent studies have used a more refined method to identify truly independent outside board members, who are not influenced by firm executives (e.g., Boeker, 1992; Daily & Dalton, 1994, Finkle, 1998). Following Daily and Dalton (1994), this study used the major criteria specified in the SEC's regulation 14A, item 6b to identify truly independent directors. According to this regulation, truly independent directors (1) have not been employees of the firm within the last five years, (2) do not have family a relationship with top executives, and (3) have not affiliated in the last two years with any organizations that have business relationships with the firm. In addition to these criteria, this study also did not consider outside directors who are appointed less than one year before the IPO and do not have ownership in the firm as independent outsider directors. The reason is that since these directors are appointed only for legitimacy purposes at the

time of the IPO, they are not likely to be independent from firm executives. Following Hill and Hansen (1991), I operationalized the change in the ratio of independent outside directors as the percentage of the ratio of independent outside directors at t_n over the ratio of independent outside directors at t_0 , where n is 1 and 3 for the data sets corresponding to one-year and three-year change in corporate governance, respectively.

In the context of IPO firms, change in board independence may also result from replacing existing outside board members with new outsiders, especially those who are appointed prior to the IPO and do not have ownership in the firm. It may be argued that such directors may develop an interdependent relationship with the original CEO and top managers or fail to perform their fiduciary duties to shareholders. Replacing those directors is likely to increase board independence. Thus, the proportion of the number of original outside directors (appointed at least one year before the IPO) exited at t_n (where n is 1 and 3 for the data sets corresponding to one-year and three-year change in corporate governance, respectively) to the total directors at the IPO years t_0 (Goodstein & Boeker, 1991). Since change in the percentage of independent outside directors and the turnover of original outside directors reflect different aspects of change in board independence, they can be combined to fully capture the change in board independence. Following the method used by Finkelstein and Hambrick (1990), I standardized change in the percentage of independent outside directors and the turnover of original outside directors ($\bar{x} = 0$, s.d. = 1) and summed their values to create the composite measure of change in board independence. Board membership data were obtained from prospectuses and proxy statements included in *Edgar* and *Hoover's Online*.

The Pace of Change in TMT Composition. As I mentioned in chapter 2, IPO-related change in TMT composition tends to reduce TMT power, enhancing the control

by new outside shareholders. On the other hand, such change also may undermine the TMT's social and human capital as well as psychological commitment to the firm. A firm's TMT includes the CEO and all other managers who report directly to the CEO. In this study, I considered all top managers who are listed in prospectuses, proxy statements and 10-K reports as TMT members.

Following Romanelli and Tushman (1994), I operationalized the pace of change in TMT composition for a period as the ratio of the number of top managers increased/ decreased plus the number of original top managers eliminated during that period, to the total number of top managers at the IPO year. For example, if during a one-year period following an IPO, the total member of a firm's TMT increased from six to seven, and two original top managers resigned, the pace of change is 0.5 [(1 member increased + 2 members resigned)/ 6 members at IPO.] The greater the ratio of the pace of change in TMT composition, the weaker the original TMT, likely bringing about a deterioration in the TMT's social and human capital, and psychological commitment to the firm. Contrarily, the greater the ratio, the more power the shareholders have vis-à-vis the TMT. TMT membership data were obtained from prospectuses, proxy statements, and 10-K reports.

Moderating Variables

In this study, I investigate the moderating effect of two variables, that is, the pace of change in managerial ownership and the presence of the founder CEO at the time of the IPO. The pace of change in managerial ownership was operationalized earlier. The presence of the founder CEO at the time of the IPO was measured as a dummy variable coded 1 if the firm had a founder CEO at the time of the IPO, and 0 otherwise. The data on the presence of a founder CEO were obtained from offering prospectuses.

Industry technology is operationalized as a dummy variable coded 1 for high-tech firms and 0 for low-tech firms. To identify high-tech firms, I followed the method developed by Certo and colleagues (2001) in which a list of high-tech industries was compiled based on their associated 2-digit SIC codes. The high-tech industries include computer hardware (SIC 35), computer software (SIC 73), semiconductors and printed circuits (SIC 36), biotechnology (SIC 28), telecommunications (SIC 48), pharmaceuticals (SIC 28), specialty chemicals (SIC 28), and aerospace (SIC 37). SIC data were taken from *Standard & Poor's Compustat*.

Dependent Variables

Firm performance is the dependent variable in this analysis. I employed two separate measures of firm performance (i.e., accounting and market measures) for two reasons. First, there is no consensus concerning the measure of firm financial performance, and performance measures fall into two categories either accounting or market returns measures (Chakravarthy, 1986; Daily & Dalton, 1993). Second, both accounting and market measures have inherent advantages and disadvantages. For example, market measures can provide accurate information concerning shareholders' wealth maximization (Mikkelsen & Partch, 1997), but they may be biased by bullish expectations, and thus fail to reflect actual firm performance (Florin, Lubatkin, & Schulze, 2003).

I chose sales growth as the accounting measure rather than the standard accounting measures such as return on assets or return on equity because sales growth better captures the success of young firms (Deeds et al., 1998; Florin et al., 2003). Sales growth was measured as the ratio of the difference between sales at t_n and sales at t_{n+1} (n

= 1 or 3) divided by sales at t_n . Sales data were taken from *Standard & Poor's Compustat*.

Following Ritter (1991), I chose holding period returns (HPR) as my market-based performance measure. Holding period returns for a period are calculated as follows:

$$\text{HPR}_i = \left[\prod_{t=1}^{12} (1 + r_{it}) \right] - 1$$

Where r_{it} is the stock return of firm i in event month t . In this study, I calculated one-year holding period returns for year t_2 and t_4 (the second and fourth year after the IPO) for the data sets corresponding to one-year change and three-year change in post-IPO corporate governance, respectively. One-year holding period returns represent the return on a hypothetical \$1 investment in the firm's stock at the beginning of the year and held until the end of that year. Monthly stock return data for this measure were obtained from *Standard & Poor's Compustat*.

Sales growth and holding period returns were one-year lagged in relation to corresponding independent variables. Consistent with Zajac and colleagues (2000), I posit that a one-year lag is sufficient to capture the impact of change in post-IPO corporate governance on firm performance. One-year change in corporate governance ($t_1 - t_0$) was related to sales growth or holding period returns in year t_2 . Three-year change in corporate governance ($t_3 - t_0$) was related to the sales growth or holding period returns in year t_4 .

Control Variables

Variables that had significant effects on post-IPO performance in previous research include venture capitalist backing, prior IPO performance, firm size, firm age,

and environmental conditions. Therefore, I controlled for the effects of these variables. The following section provides a discussion regarding the control variables.

Venture Capitalist Backing. Venture capitalists have a great impact on entrepreneurial firms in which they invest (Bruton, Fried, & Hisrich, 2000). Because they are typically large and experienced investors, venture capitalists actively and effectively control managers, participate in strategic decision making, provide expertise and advice for firm managers, and bridge the firm to important stakeholders such as creditors, suppliers and customers (Bouresli et al., 2002; Cyr et al., 2000; Jain & Kini, 1994; Tihanyi, Hoskisson, & Hitt, 2003). This indicates that IPO firms with venture capitalist backing may have better performance. Therefore, I controlled for the effect of venture capitalist backing at the time of the IPO on firm performance. Venture capitalist backing was measured as a dummy variable coded 1 if the firm had venture capitalists as investors at the time of the IPO, and 0 otherwise. The data on the presence of venture capitalists were obtained from offering prospectuses.

Prior Firm Performance. Firms that had better performance in the previous years are likely to have a better chance of producing good performance in the coming years versus firms that had poorer prior performance. Superior prior performance usually reflects the firm's ability to secure market share and customers, and produces slack resources for future growth (Wiersema & Bantel, 1992). Prior firm performance, therefore, was included as a control variable. I chose return on assets (ROA) and sales growth as control variables. Prior performance data were taken from *Standard & Poor's Compustat*.

Firm Size. Firm size has been argued to affect firm performance (Carpenter et al., 2003). Larger firms tend to have better performance because they have more advantages

such as economies of scale, experience, brand recognition, market power, and access to critical resources (Hambrick, MacMillan, & Day, 1982). Specifically, larger IPO firms tend to outperform smaller ones in terms of stock appreciation (Mikkelsen et al., 1997). I, therefore, included firm size as a control variable. Number of employees and total assets were selected as the measures of firm size. Data on firm size were obtained from offering prospectuses.

Firm Age. It has long been argued that young firms suffer the liability of newness which creates difficulties accessing resources for survival and growth (e.g., Stinchcombe, 1965; Chaganti et al., 1995). On the other hand, older firms tend to have more information, resources, and experience that could give them a competitive advantage (Deeds et al., 1998). As a result, Ritter (1998) found that older firms financially outperformed younger firms both prior to and following the IPO. Therefore, firm age was controlled for in this study, and was measured as the total number of years from the founding of the firm until its IPO. Data on firm age were obtained from offering prospectuses.

Analytical Method

I conducted hierarchical moderated regression analysis to test the hypotheses according to the standard procedures (Cohen & Cohen, 1993; Sharma, Durand, & Gurarie, 1981). Ordinary least squares (OLS) regression analysis is appropriate in this study because the data are cross-sectional and thus do not suffer from autocorrelation problems. The general model of this study can be described as follows:

Sales growth t_{n+1} or holding period returns $t_{n+1} = f(\text{venture capitalist backing } t_0 + \text{prior firm performance } t_n + \text{firm size } t_n + \text{firm age } t_0 + \text{pace of change in managerial ownership } t_n - t_0 + \text{pace of change in board interdependence } t_n - t_0 + \text{pace of change in TMT composition } t_n - t_0 + \text{pace of change in managerial ownership } t_n - t_0 \times \text{pace of change in board interdependence } t_n - t_0 \text{ pace of change in managerial ownership } t_n - t_0 \times \text{pace of change in TMT composition } t_n - t_0 + \text{presence of a founder CEO } \times \text{pace of change in TMT composition } t_n - t_0 + \text{presence of founder CEO } \times \text{pace of change in board interdependence } t_n - t_0)$

Where $n = 1$, and 3 , corresponding to the one-year change or three-year change data sets.

Two dependent variables and two data sets require four sets of models. Two sets of models were used to examine the impact of the pace of one-year, and three-year change in corporate governance variables on subsequent sales growth. Another two sets of models were to examine the impact of the pace of one-year, and three-year change in corporate governance variables on subsequent holding period returns. Each set of models included three models, where the first model included only control variables, the second model included control variables and “main effect” variables, and the third full model added all variables including “interaction” variables. The change in the amount of

variance explained (R^2) was computed for each model. To graphically demonstrate the interactive effects, I followed the graphing procedure outlined by Aiken and West (1991).

CHAPTER 4

PRESENTATION OF DATA ANALYSIS

This chapter presents the results of the empirical analysis. The first section reports the descriptive statistics and provides a correlation table including the variables used in the study. The second section reports the specification of the various regression models I estimated. The final section reports the tests of the hypotheses.

Descriptive Statistics and Correlations

To test the hypotheses, I collected two sets of data. The first data set was used to examine the impact of changes in post-IPO corporate governance in the first year following the IPOs ($t_1 - t_0$, where t_0 defines the IPO year during in the period from 1996 through 2000; and t_1 defines the first years after the year of the IPO) on corresponding subsequent firm performance (firm performance in year t_2 , where t_2 is 1998, 1999, 2000, 2001, or 2002). The second set was used to investigate the impact of changes in post-IPO corporate governance over the three years following the IPOs ($t_3 - t_0$, where t_0 defines IPO year in the period from 1996 through 2000; and t_3 defines the third year after the IPO) on corresponding subsequent firm performance (firm performance in year t_4 ; where t_4 is 2000, 2001, 2002, 2003 or 2004). Tables 4.1 and 4.2 present the descriptive statistics and correlation matrices of the variables used in my study.

Table 4.1 Descriptive statistics and correlations for the one-year change data

Variables	Mean	s.d.	1	2	3	4	5	6
1. Sales Growth	0.48	1.57						
2. Holding Period Returns	0.25	1.65	-0.04					
3. Venture Capitalist Backing	0.64	0.48	0.01	0.00				
4. Firm Age at IPO	5.30	2.67	-0.07	0.05	-0.07			
5. Total Assets	169.77	277.30	-0.01	-0.08	0.22***	-0.19***		
6. Number of Employees	0.73	1.60	-0.02	-0.04	0.14**	-0.10	0.58***	
7. Percentage of Outside Directors	0.59	0.38	0.02	-0.04	0.26***	-0.03	0.08	-0.02
8. Original TMT Size	6.85	2.50	-0.09	0.04	0.18**	-0.15**	0.12*	0.14**
9. Prior Sales Growth	1.49	3.15	0.62***	-0.09	0.11*	-0.19*	0.13*	-0.02
10. Prior ROA	-51.10	88.36	-0.13**	0.03	-0.03	0.17**	0.08	0.14**
11. Industry Technology	0.68	0.47	-0.01	0.08	0.08	-0.01	-0.02	-0.20
12. CEO Founder Status	0.57	0.50	-0.13*	-0.05	-0.18**	-0.04	-0.16**	-0.13*
13. One-Year Change in Board Independence	1.39	0.58	-0.01	0.01	-0.05	0.05	-0.03	0.03
14. One-Year Change in Original TMT	0.68	0.59	0.06	0.03	-0.02	-0.18**	-0.02	-0.06
15. One-Year Change in Managerial Ownership	0.25	0.59	0.04	-0.03	0.08	-0.13**	0.09	0.08

N = 241, †p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

Table 4.1^a (continued) Descriptive statistics and correlations for the one-year change data

Variables	Mean	s.d.	7	8	9	10	11	12	13	14
1. Sales Growth	0.48	1.57								
2. Holding Period Returns	0.25	1.65								
3. Venture Capitalist Backing	0.64	0.48								
4. Firm Age at IPO	5.30	2.67								
5. Total Assets	169.77	277.30								
6. Number of Employees	0.73	1.60								
7. Percentage of Outside Directors	0.59	0.38								
8. Original TMT Size	6.85	2.50	0.02							
9. Prior Sales Growth	1.49	3.15	-0.01	-0.07						
10. Prior ROA	-51.10	88.36	-0.03	0.08	-0.3***					
11. Industry Technology	0.68	0.47	0.09	-0.01	0.10	-0.07				
12. CEO Founder Status	0.57	0.50	-0.17**	-0.07	-0.04	0.08	0.08			
13. One-Year Change in Board Independence	1.39	0.58	-0.36***	-0.03	0.02	0.10	-0.04	-0.01		
14. One-Year Change in Original TMT	0.68	0.59	-0.14**	0.13**	0.14**	-0.01	0.01	0.09	0.02	
15. One-Year Change in Managerial Ownership	0.25	0.59	0.03	0.09	0.04	-0.02	0.01	-0.01	0.02	0.00

N = 241, †p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

^aMeans and standard deviations of Sales Growth, Holding Period Returns, Venture Capitalist Backing, Percentage of Outside Board members, Prior Sales Growth, Prior ROA are presented in decimal form of percentage; Total Assets are in millions of dollars. Number of Employees is in thousands; Venture Capitalist Backing, Industry Technology and CEO founder Status are dummy variables; Change in Board Independence, Change in Original TMT Membership, and Change in Managerial Ownership are change scores.

Table 4.2 Descriptive statistics and correlations for the three-year change data

Variables	Mean	s.d.	1	2	3	4	5	6
1. Sales growth	0.28	1.10						
2. Holding period returns	0.15	1.33	0.00					
3. Venture capitalist backing	0.64	0.48	0.03	0.03				
4. Firm age at IPO	5.30	2.67	0.02	0.00	-0.07			
5. Total assets	204.30	319.73	-0.05	0.01	-0.18 ***	0.22 ***		
6. Number of employees	0.88	2.03	-0.05	-0.04	-0.12 †	0.10	0.68 ***	
7. Percentage of outside directors	0.73	0.31	0.02	0.02	-0.17 **	0.01	0.03	0.00
8. Original TMT size	6.85	2.50	-0.05	0.2 ***	-0.18 **	0.15 **	0.12 †	0.15 **
9. Prior sales growth	0.48	1.57	-0.02	-0.06	-0.01	0.07	0.03	0.00
10. Prior ROA	-37.70	70.83	-0.02	-0.09	-0.06	0.13 †	0.05	0.14 **
11. Industry technology	0.68	0.47	0.07	0.04	-0.08	0.01	-0.05	-0.21 ***
12. CEO founder status	0.57	0.50	-0.03	-0.05	-0.18 ***	0.04	-0.13 **	-0.12 †
13. Three-year change in board independence	1.66	0.54	-0.09	-0.07	-0.08	0.03	-0.02	0.08
14. Three-year change in TMT membership	1.05	0.78	-0.06	-0.01	-0.03	0.17 **	0.16 **	0.03
15. Three-year change in managerial ownership	0.48	0.61	0.01	0.03	-0.15 **	0.13	0.11	0.06

N = 241, †p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

Table 4.2^a (continued) Descriptive statistics and correlations for the three-year change data

Variables	Mean	S.E.	7	8	9	10	11	12	13	14
1. Sales growth	0.28	1.10								
2. Holding period returns	0.15	1.33								
3. Venture capitalist backing	0.64	0.48								
4. Firm age at IPO	5.30	2.67								
5. Total assets	204.30	319.73								
6. Number of employees	0.88	2.03								
7. Percentage of outside directors	0.73	0.31								
8. Original TMT size	6.85	2.50	0.03							
9. Prior sales growth	0.48	1.57	0.05	-0.09						
10. Prior ROA	-37.70	70.83	0.07	-0.04	0.04					
11. Industry technology	0.68	0.47	0.08	-0.01	-0.01	-0.16 **				
12. CEO founder status	0.57	0.50	-0.15 **	-0.07	-0.13 *	0	0.08			
13. Three-year change in board independence	1.66	0.54	0.05	0.10	-0.07	0.07	0.00	0.08		
14. Three-year change in TMT membership	1.05	0.78	-0.03	0.01	0.13 **	-0.06	0.02	0.01	-0.07	
15. Three-year change in managerial ownership	0.48	0.61	0.07	0.11 *	0.04	-0.08	0.01	0.00	-0.06	0.02

N = 241, †p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

^aMeans and standard deviations of Sales Growth, Holding Period Returns, Venture Capitalist Backing, Percentage of Outside Board members, Prior Sales Growth, Prior ROA are presented in decimal form of percentage; Total Assets are in millions of dollars. Number of Employees is in thousands; Venture Capitalist Backing, Industry Technology and CEO founder Status are dummy variables; Change in Board Independence, Change in Original TMT Membership, and Change in Managerial Ownership are change scores.

The mean subsequent annual sales growth and the mean subsequent annual holding period returns corresponding to one-year changes in post-IPO corporate governance were 48 percent and 25 percent, respectively. Sixty-four percent of the firms in this sample were backed by venture capitalists. Certo and colleagues (2003) reported that 44 percent of the IPO firms in their study were backed by venture capitalists. Carpenter and colleagues used a sample of IPO firms from the period 1990 to 1999, and reported that venture capitalists backed 79 percent of these firms.

The average firm age at the time of their IPO was 5.3 years. The average firm age has varied in previous studies depending on the years in which the IPOs occurred and the selection criteria employed. For example, Certo and colleagues (2001) found the average age to be 5.31 years for all U.S. firms that went public from in 1990 through 1998, while Carpenter and colleagues (2003) reported the average age to be 6.29 years for firms that went public from 1990 to 1999 (Carpenter et al., 2003).

The mean percentage of outside board members in this study was 73 percent. The proportion of outside directors reported in Certo and colleagues (2001)'s study was 61 percent, while that proportion in Carpenter and colleagues (2003)'s study was 68 percent. Fifty-five percent of the firms in my sample were still managed by the founder CEO. Previous studies documented this number to be about 50 percent. For instance, Andrews and Welbourne (2001) reported that IPO firms with the founder CEO accounted for 49 percent of their sample. Similarly, Certo and colleagues (2001) found 48% of the firms in their sample having the founder CEO. Sixty-eight percent of the firms were categorized as high-tech firms. The one-year change in board independence was

estimated to be 1.39. This variable indicates the changes in the percentage of outside board members and the turnover of original board members.

The one-year change in the original TMT was 0.68. This variable represents the ratio of the number of top managers added or removed from the TMT plus the number of original top managers that exited in the one-year period following the IPO divided by the number of top managers at the time of the IPO. On average, managerial ownership in my sample fell by 25 percent in the year following the IPO. Mikkelsen and colleagues (1997) reported that managerial ownership fell 24 percent one year after the IPO. One-year change in managerial ownership following the IPO in Bouresli and colleagues' study (2002) was 20 percent. The mean subsequent annual sales growth and the mean annual holding period returns corresponding to the three-year change in corporate governance were 28 percent and 15 percent, respectively. Three-year change in board independence was 1.66. The mean three-year change in TMT membership variable was 1.05. Finally, the mean three-year change in managerial ownership was 48 percent. Mikkelsen and colleagues (1997) reported that managerial ownership fell 51 percent over the five-year period following an IPO.

The correlation matrices indicated that some independent variables were correlated. In the correlation matrix of variables of the first data set, venture capitalist backing was significantly related to total assets, number of employees, percentage of outside board members, original TMT size, prior sales growth, and founder CEO status. Firm age at the time of the IPO was significantly related to total assets, original TMT size, prior sales growth, prior ROA, change in TMT membership and change in managerial ownership. Total assets were significantly related to the number of

employees, original TMT size, prior sales growth and founder CEO status. The number of employees was significantly associated with original TMT size, prior ROA and founder CEO status. The percentage of outside directors at the time of the IPO was significantly associated with CEO founder status, change in board independence and change in TMT membership. Original TMT size was significantly related to change in TMT membership. Finally, prior sales growth was significantly associated with prior ROA and change in TMT membership.

Similarly, there are a number of correlations between independent variables in the data set assessing three-year change in post-IPO corporate governance. ROA was significant related to the number of employees and firm age at the time of the IPO. Three-year change in TMT membership was significantly associated with firm age at the time of the IPO, total assets and prior sales growth (sales growth from year 2 to year 3). Three-year change in managerial ownership was significantly related to venture capitalist backing and original TMT size.

The intercorrelations among the variables in the data suggested the possibility of problems with multicollinearity or lack of orthogonality. However, regression models are not affected when multicollinearity is not too serious (Chatterjee & Rice, 1977). When extreme multicollinearity is present, the results of regression models are ambiguous and it is difficult to assess the effect of various independent variables (Chatterjee & Rice, 1977).

To check whether multicollinearity in my data affected the OLS estimates, I calculated variance inflation factors for all independent variables in the study. The variance inflation factor statistic for an independent variable indicates the strength of the

linear relationship between the variable and the remaining independent variables.

According to Chatterjee and Rice (1977), if variance inflation factors are less than 10, multicollinearity does not seriously affect the OLS estimates. As none of the variance inflation factors was greater than 10, the data did not appear to suffer from serious problems with multicollinearity. Table 4.3 reports the variance inflation factors of the independent variables in this study.

Table 4.3 Variance inflation factors

Sales Growth in Year t_2 (SAS1)

Other Independent Variables	VC	Year	SEMP1	SROA1	OB96	NM96	SSAL0	TECH	CEO	SM12	SB12	SOW12
Variance Inflation Factors	1.29	1.16	1.19	1.18	1.32	1.13	1.17	1.09	1.09	1.14	1.06	1.05

Returns On Assets in Year t_1 (SROA1)

Other Independent Variables	Year	VC	SAS1	SEMP1	OB96	NM96	SSAL0	TECH	CEO	SM12	SB12	SOW12
Variance Inflation Factors	1.17	1.3	1.7	1.66	1.29	1.13	1.18	1.1	1.1	1.13	1.06	1.05

Firm Age at IPO (YEAR)

Other Independent Variables	SAS1	VC	SEMP1	SROA1	OB96	NM96	SSAL0	TECH	CEO	SM12	SB12	SOW12
Variance Inflation Factors	1.69	1.3	1.72	1.18	1.32	1.12	1.15	1.11	1.09	1.13	1.06	1.04

Number of Employees in Year t_1 (SEMP1)

Other Independent Variables	VC	Year	SAS1	SROA1	OB96	NM96	SSAL0	TECH	CEO	SM12	SB12	SOW12
Variance Inflation Factors	1.28	1.18	1.18	1.15	1.31	1.13	1.19	1.05	1.1	1.14	1.06	1.05

Ratio of Outside Board Members in Year t_0 (OB96)

Other Independent Variables	SAS1	VC	Year	SEMP1	SROA1	NM96	SSAL0	TECH	CEO	SM12	SB12	SOW12
Variance Inflation Factors	1.7	1.17	1.17	1.7	1.15	1.13	1.18	1.11	1.07	1.12	1.02	1.05

One-Year Change in TMT Membership (SM12)

Other Independent Variables	SSAL0	VC	Year	SAS1	SEMP1	OB96	NM96	SROA1	TECH	CEO	SB12	SOW12
Variance Inflation Factors	1.18	1.3	1.16	1.7	1.71	1.3	1.1	1.17	1.11	1.09	1.06	1.05

One-Year Change in Board Independence (SB12)

Other Independent Variables	TECH	VC	Year	SAS1	SEMP1	OB96	NM96	SROA1	SSAL0	CEO	SM12	SOW12
Variance Inflation Factors	1.11	1.29	1.18	1.71	1.72	1.28	1.13	1.18	1.2	1.1	1.14	1.05

Table 4.3 (continued) Variance inflation factors

One-Year Change in Managerial Ownership (SOW12)

Other Independent Variables	CEO	VC	Year	SAS1	SEMP1	OB96	NM96	SROA1	SSAL0	TECH	SM12	SB12
Variance Inflation Factors	1.1	1.3	1.17	1.71	1.72	1.33	1.12	1.19	1.2	1.11	1.13	1.06

Number of Employees in Year t_3 (SEMP2)

Other Independent Variables	VC	Year	SAS1	SROA1	OB99	NM96	SAL3	TECH	CEO	SM14	SB14	SOW14
Variance Inflation Factors	1.23	1.14	1.19	1.08	1.16	1.1	1.04	1.06	1.11	1.07	1.07	1.1

Ratio of Outside Directors (OB99)

Other Independent Variables	SAS1	VC	Year	SEMP2	SROA1	NM96	SAL3	TECH	CEO	SM14	SB14	SOW14
Variance Inflation Factors	1.79	1.17	1.13	1.78	1.16	1.1	1.03	1.11	1.08	1.08	1.05	1.1

Sales Growth in Year t_3 (SAL3)

Other Independent Variables	SROA1	VC	Year	SAS1	SEMP2	OB99	NM96	TECH	CEO	SM14	SB14	SOW14
Variance Inflation Factors	1.18	1.23	1.12	1.78	1.78	1.16	1.1	1.12	1.11	1.07	1.08	1.1

Three-Year Change in TMT Membership (SM14)

Other Independent Variables	SAL3	VC	Year	SAS1	SEMP2	OB99	NM96	SROA1	TECH	CEO	SB14	SOW14
Variance Inflation Factors	1.03	1.23	1.12	1.77	1.78	1.17	1.1	1.18	1.12	1.11	1.07	1.09

Three-Year Change in Board Independence (SB14)

Other Independent Variables	TECH	VC	Year	SAS1	SEMP2	OB99	NM96	SROA1	SAL3	CEO	SM14	SOW14
Variance Inflation Factors	1.12	1.23	1.13	1.79	1.77	1.14	1.08	1.18	1.04	1.11	1.07	1.09

Three-Year Change in Managerial Ownership (SOW14)

Other Independent Variables	CEO	VC	Year	SAS1	SEMP2	OB99	NM96	SROA1	SAL3	TECH	SM14	SB14
Variance Inflation Factors	1.1	1.21	1.13	1.78	1.79	1.16	1.1	1.18	1.03	1.12	1.07	1.07

Model Specification

Four sets of models were developed to test the hypotheses of the study. The first two sets of models examine the relationships between one-year changes in post-IPO corporate governance and subsequent firm performance. The dependent variables used in the first and second sets of models were sales growth and holding period returns, respectively. The third and fourth sets of models examine the relationships between three-year changes in post-IPO corporate governance and subsequent sales growth and holding period returns. Aiken and West (1991) recommend that independent variables of regression models with interaction terms be centered to reduce the problems of multicollinearity and heteroscedasticity. Accordingly, I centered the variables in the study before running the models.

To ensure that the models were well specified, I conducted several examinations of OLS assumptions. I plotted standardized residuals against predicted dependent values and the independent variables. The standardized residuals of the four models appeared to be fairly randomly distributed about zero. There were no clear patterns in the distributions of residuals. There were a number of residuals lying beyond 2 and -2 standard deviations. These residuals appeared to be outliers and might overly affect parameter estimates. Following the procedure suggested by Judge, Hill, Griggeths, Luckepohl and Lee (1988), I deleted observations having standardized residuals greater than four in order to reduce the undue effects of the outliers and the problems of heteroscedasticity. Six observations were eliminated through this procedure. In addition to using plots to check for heteroscedasticity, I also conducted formal tests to assess heteroscedasticity in the four models. The results from White's test and Breusch-

Pagan's test showed that the variances were not significantly different from one another, indicating that heteroscedascity was not a serious problem in these models (see Table 4.4).

Table 4.4 Heteroscedasticity tests

The first set of models (One-year change and sales growth)

Test	Statistic	DF	Pr > Chi Sq	Variables
White's Test	235	240	0.4697	Cross of all variables
Breusch-Pagan	32.48	31	0.3936	All variables

The second set of models (One-year change and holding period returns)

Test	Statistic	DF	Pr > Chi Sq	Variables
White's Test	235	240	0.4697	Cross of all variables
Breusch-Pagan	38.1	31	0.1778	All variables

The third set of models (Three-year change and sales growth)

Test	Statistic	DF	Pr > Chi Sq	Variables
White's Test	235	240	0.4697	Cross of all variables
Breusch-Pagan	35	33	0.3732	All variables

The fourth set of models (Three-year change and holding period returns)

Test	Statistic	DF	Pr > Chi Sq	Variables
White's Test	235	240	0.4697	Cross of all variables
Breusch-Pagan	32.11	33	0.5111	All variables

Finally, I used a Q-Q plot to check the normality of residuals. Since the residual points were fairly close to a straight line, the distribution of residuals was fairly normal. Additionally, regression analysis is robust with respect to misspecification of the probability law of residuals (Chatterjee & Rice, 1977). In sum, the four models did not violate basic OSL assumptions and could be used for testing the hypotheses of this study with some confidence.

Hypothesis Tests and Results

The results of the four sets of models are presented in Tables 4.5, 4.6, 4.7, and 4.8. Table 4.5 presents the results of the first set of models testing one-year changes in corporate governance and subsequent sales growth. Table 4.6 presents the results of the second set of models testing one-year changes in corporate governance and subsequent holding period returns. Table 4.7 presents the results of the third set of models testing three-year changes in corporate governance and subsequent sales growth. Table 4.8 presents the results of the fourth set of models testing three-year changes in corporate governance and subsequent holding period returns. All the sets of models could be used to test the hypotheses of the study since they were statistically significant ($p < 0.1$), except the first set of models. Results of these four sets of models, taken together, were used to determine whether the hypotheses of the study were supported.

Table 4.5 Results of regression analyses examining the impact of one-year change in post-IPO corporate governance on subsequent sales growth

Independent Variables	Model 1		Model 2		Model 3	
	β	s.e.	β	s.e.	β	s.e.
Intercept	0.06	0.07	0.18 [†]	0.08	0.17	0.08
Venture capitalist backing	-0.05	0.06	-0.05	0.06	-0.06	0.06
Firm age at IPO	-0.01	0.01	-0.01	0.01	-0.01	0.01
Total assets	-0.12	0.08	-0.13 [†]	0.08	-0.13 [†]	0.08
Number of employees	0.06	0.06	0.04	0.06	0.04	0.06
Prior ROA	0.11*	0.05	0.11*	0.05	0.11*	0.05
Percentage of outside directors	0.03	0.05	0.01	0.06	0.01	0.06
Original TMT size	-0.04	0.04	-0.05	0.04	-0.05	0.04
Prior sales growth	0.33**	0.05	0.33**	0.05	0.34**	0.05
Firm technology			-0.07	0.05	-0.07	0.06
CEO founder status			-0.13*	0.05	-0.13**	0.05
One-year change in original TMT membership			0.05	0.04	0.02	0.08
One-year change in board independence			-0.04	0.03	-0.03	0.07
One-year change in managerial ownership			0.03	0.05	0.05	0.06
One-year change in managerial ownership x three-year change in original TMT membership					0.12	0.09
One-year change in managerial ownership x three-year change in board independence					0.04	0.07
CEO founder status x one-year change in original TMT					0.12	0.07
CEO founder status x one-year change in board independence					0.01	0.06
Industry technology x one-year change in original TMT					-0.07	0.08
Industry technology x one-year change in board independence					-0.03	0.07
R2	0.23		0.27		0.28	
Δ R2			0.04		0.00	

N = 235, [†]p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

Table 4.6 Results of regression analyses examining the impact of one-year change in post-IPO corporate governance on subsequent holding period returns

Independent Variables	Model 1		Model 2		Model 3	
	β	s.e	β	s.e.	β	s.e.
Intercept	-0.13	0.09	-0.11	0.11	-0.11	0.11
Venture capitalist backing	0.08	0.08	0.07	0.08	0.07	0.08
Firm age at IPO	0.01	0.01	0.00	0.01	0.00	0.01
Total assets	-0.09	0.10	-0.11	0.10	-0.13	0.10
Number of employees	-0.03	0.08	0.00	0.08	0.00	0.09
Prior ROA	0.09	0.06	0.09	0.06	0.06	0.06
Percentage of outside directors	0.01	0.07	-0.03	0.07	-0.04	0.08
Original TMT size	0.06	0.05	0.05	0.05	0.06	0.05
Prior sales growth	-0.10	0.06	-0.11 [†]	0.06	-0.11 [†]	0.06
Industry technology			0.11	0.07	0.11	0.08
CEO founder status			-0.13 [†]	0.07	-0.14 [†]	0.07
One-year change in original TMT membership			0.01	0.05	0.09	0.11
One-year change in board independence			-0.04	0.04	-0.08	0.09
One-year change in managerial ownership			-0.11	0.07	-0.13 [†]	0.08
One-year change in managerial ownership x one-year change in original TMT					-0.06	0.12
One-year change in managerial ownership x one-year change in board independence					0.17 [†]	0.09
CEO founder status x one-year change in original TMT					-0.05	0.10
CEO founder status x one-year change in board independence					0.06	0.08
Industry technology x one-year change in original TMT					-0.07	0.11
Industry technology x one-year change in board independence					-0.01	0.09
R ²	0.044*		0.079*		0.098*	
ΔR^2			0.035		0.002	

N = 235, [†]p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

Table 4.7 Results of regression analyses examining the impact of three-year change in post-IPO corporate governance on subsequent sales growth

Independent variables	Model 1		Model 2		Model 3	
	β	s.e	β	s.e	β	s.e
Intercept	-0.14 *	0.07	-0.15	0.09	-0.15	0.09
Venture capitalist backing	0.09	0.06	0.08	0.06	0.09	0.06
Firm age at IPO	0.01	0.01	0.01	0.01	0.00	0.01
Number of employees	-0.05	0.08	-0.04	0.08	-0.02	0.08
Total assets	-0.04	0.08	-0.03	0.09	-0.05	0.09
Prior ROA	0.04	0.05	0.03	0.05	0.03	0.05
Percentage of outside directors	0.09	0.08	0.11	0.08	0.12	0.08
Original TMT size	-0.03	0.04	-0.02	0.04	-0.03	0.04
Prior sales growth	0.23 **	0.07	0.23 **	0.23	0.23 **	0.07
CEO founder status			0.03	0.06	-0.02	0.06
Industry technology			-0.01	0.06	0.04	0.06
Three-year change in board independence			-0.06 †	0.03	-0.04	0.07
Three-year change in original TMT membership			-0.09 †	0.05	-0.04	0.11
Three-year change in managerial ownership			-0.02	0.07	0.00	0.08
Three-year change in managerial ownership x three-year change in board independence					-0.03	0.07
Three-year change in managerial ownership x Three-year change in original TMT					0.05	0.15
CEO founder status x Three-year change in original TMT					-0.19 †	0.11
CEO founder status x Three-year change in board independence					-0.02	0.07
Industry technology x Three-year change in board independence					-0.02	0.08
Industry technology x Three-year change in original TMT					0.09	0.11
R2	0.08*		0.10*		0.12*	
Δ R2			0.02		0.00	

N = 235, †p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

Table 4.8 Results of regression analyses examining the impact of three-year change in post-IPO corporate governance on subsequent holding period returns

Independent variables	Model 1		Model 2		Model 3	
	β	s.e	β	s.e	β	s.e
Intercept	-0.12	0.09	-0.10	0.11	-0.14	0.11
Venture capitalist backing	0.05	0.07	0.06	0.07	0.07	0.08
Firm age at IPO	0.01	0.01	0.01	0.01	0.01	0.01
Number of employees	-0.19 [†]	0.09	-0.2 [†]	0.09	-0.22*	0.10
Total assets	0.30**	0.10	0.32**	0.10	0.33**	0.10
Prior ROA	-0.06	0.06	-0.07	0.06	-0.07	0.06
Percentage of outside directors	0.02	0.09	0.04	0.09	0.02	0.09
Original TMT size	0.02	0.05	0.03	0.05	0.03	0.05
Prior holding period returns	-0.05	0.06	-0.05	0.06	-0.04	0.07
CEO founder status			-0.05	0.07	0.05	0.07
Industry technology			0.03	0.07	-0.04	0.08
Three-year change in board independence			-0.02	0.04	0.02	0.09
Three-year change in original TMT membership			-0.07	0.06	-0.23 [†]	0.13
Three-year change in managerial ownership			0.00	0.09	-0.02	0.09
Three-year change in managerial ownership X three-year change in board independence					0.01	0.08
Three-year change in managerial ownership X Three-year change in original TMT membership					-0.20	0.18
CEO founder status X Three-year change in original TMT					0.03	0.13
CEO founder status X Three-year change in board independence					0.00	0.09
Industry technology X Three-year change in board independence					-0.03	0.09
Industry technology X Three-year change in original TMT					0.21	0.14
R2	0.07 [†]		0.08 [†]		0.09 [†]	
$\Delta R2$			0.01		0.01	

N = 235, [†]p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001.

Hypotheses Supporting Rapid Pace of Change in Post-IPO Corporate

Governance. There are three hypotheses that anticipate rapid change in post-IPO corporate governance being beneficial for firm performance. Hypothesis 1.1 states that rapid change in post-IPO managerial ownership is positively associated with subsequent firm performance. Hypothesis 1.2 predicts that rapid change in post-IPO board independence is positively associated with subsequent performance. Hypothesis 1.3 states that rapid change in post-IPO TMT membership is positively associated with subsequent firm performance.

The first set of models did not show any significant relationships between one-year changes in post-IPO managerial ownership, board independence and TMT membership and subsequent sales growth. The second set of models indicated that the pace of one-year change in managerial ownership was significantly and negatively associated with subsequent holding period returns ($r = -0.13$, $p < 0.1$). This result runs counter to the prediction of hypothesis 1.1. The third set of models exhibited statistically significant negative relationships between three-year changes in board independence ($r = -0.09$, $p < 0.1$) and three-year changes in TMT membership ($r = -0.09$, $p < 0.1$) and subsequent sales growth. The results were opposite those predicted by hypotheses 1.2 and 1.3. In the fourth set of models, the pace of three-year change in TMT membership was significantly and negatively associated with subsequent holding period returns ($r = -0.23$, $p < 0.1$). This result runs counter to the prediction of hypothesis 1.2.

In sum, the results were not supportive of hypotheses 1.1, 1.2, and 1.3. There were a number of statistically significant relationships between change in corporate governance and subsequent performance in the first set of models. However, the signs of

these relationships were negative, indicating that the results did not favor the hypotheses supporting a rapid pace of change in post-IPO corporate governance.

Hypotheses Supporting Slow Pace of Change in Post-IPO Corporate Governance.

Hypothesis 2.1 predicts that rapid change in post-IPO managerial ownership will be negatively associated with subsequent firm performance. Hypothesis 2.2 predicts that rapid change in post-IPO board independence will be negatively associated with subsequent performance. Hypothesis 2.3 states that rapid change in post-IPO TMT membership will be negatively associated with subsequent firm performance.

As described above, there were some significant relationships between change in post-IPO managerial ownership, board independence, and TMT membership and subsequent firm performance in the four sets of models. The relationship between the pace of change in managerial ownership and subsequent performance was significant and negative in the second set of models but not in the other sets of models. Thus, hypothesis 2.1 was somewhat supported. The relationship between the pace of change in post-IPO board independence and subsequent firm performance was significant in the fourth set of models but not the other sets of models. Thus, hypothesis 2.2 was somewhat supported. The relationship between the pace of change in post-IPO original TMT membership and firm performance was negative and significant in the second and fourth sets of models. Therefore, hypothesis 2.3 was supported. In general, the results of the analysis supported hypotheses 2.1, 2.2 and 2.3.

Hypotheses Regarding the Moderating Effect of the Pace of Change in Post-IPO Managerial Ownership. Hypothesis 3.1 predicts that rapid change in post-IPO board independence will have a positive impact on subsequent firm performance when post-IPO managerial ownership changes rapidly. Hypothesis 3.2 states that rapid change in

post-IPO board independence will have a positive impact on subsequent firm performance when post-IPO managerial ownership changes rapidly. The interaction terms between change in post-IPO board independence and change in post-IPO managerial ownership were only significant in the second set of models ($r = 0.17$, $p < 0.1$). The beta coefficient of this interaction term was positive. The graphing procedure outlined by Aiken and West (1991) was used to visually demonstrate this moderation effect (Figure 4.1). The results provided some empirical evidence to support hypothesis 3.1, predicting that firms that change their board of directors to be more independent in response to rapid dilution of managerial ownership will have better subsequent performance. The interaction terms between change in post-IPO original TMT membership and change in post-IPO managerial ownership were not significant in any of the four sets of models. Thus, there was no evidence supporting hypothesis 3.2.

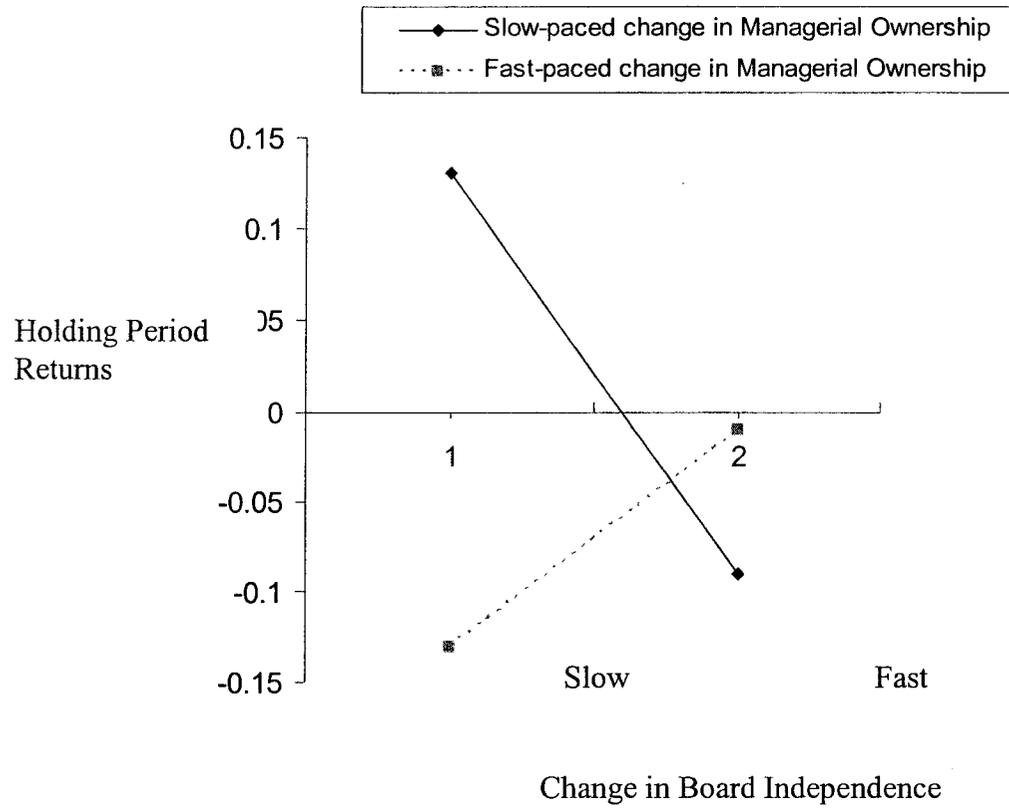


Figure 4.1 Moderating effect of change in managerial ownership

Hypotheses Regarding the Moderating Effect of the Presence of a Founder CEO.

Hypothesis 4.1 predicts that changes in board independence will negatively affect firm performance in firms with the presence of a founder CEO. Hypothesis 4.2 predicts that changes in original TMT membership will negatively affect firm performance in firms with the presence of a founder CEO. The interactions between the presence of the founder CEO and change in board independence were not significant in any of the four sets of models. This indicated that the presence of the founder CEO did not have any effect on the relationship between change in board independence and subsequent firm performance. Hypothesis 4.1 was therefore not supported. The interactions between the presence of the founder CEO and change in original TMT membership were only significant in the third set of models ($r = -0.19, p < 0.1$). Figure 4.2 presents a plot of the interaction effect found in the third set of models. The results provided some evidence supporting hypothesis 4.2 regarding the moderating effect of the presence of the founder CEO on the relationship between change in TMT membership and firm performance.

Hypotheses Regarding the Moderating Effect of Technology. Hypotheses 5.1 and 5.2 predict the moderating effect of technology on the relationship between change in post-IPO board independence and subsequent firm performance, and the relationship between the change in TMT membership and subsequent firm performance, respectively. No significant interaction terms were found in the four sets of models. Hypotheses 5.1 and 5.2 were therefore not supported.

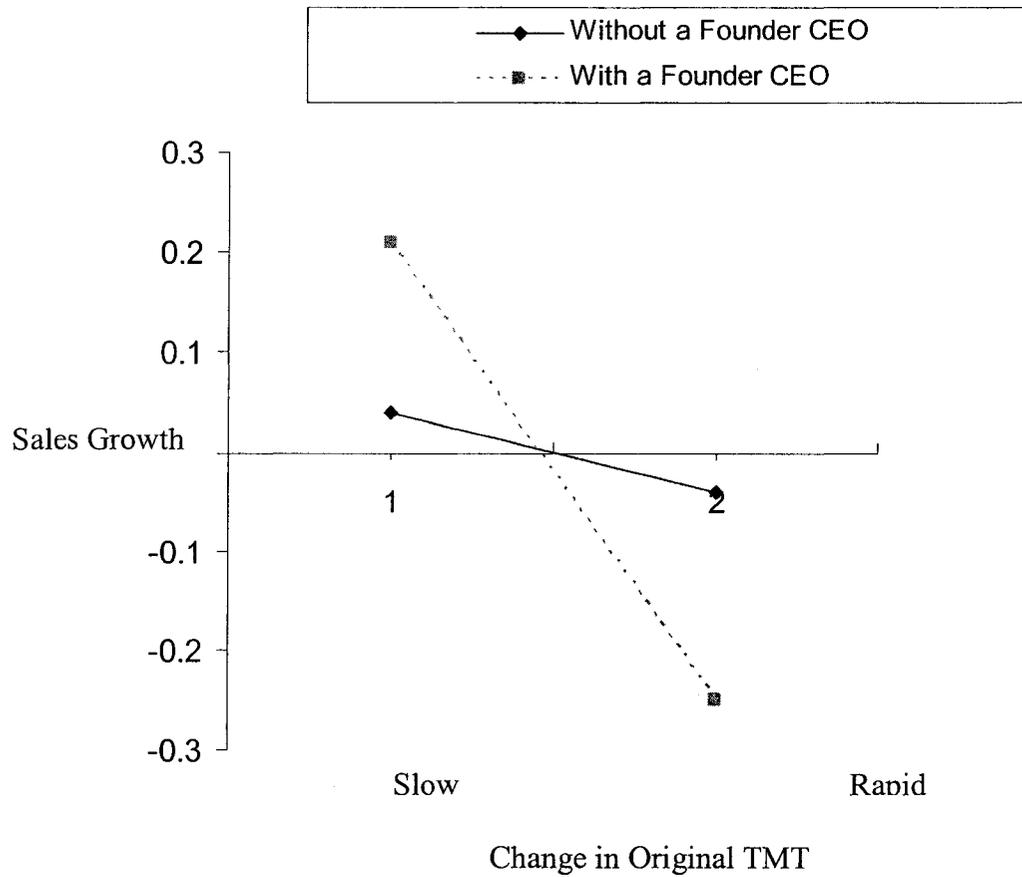


Figure 4.2 Moderating effect of the presence of a founder CEO

Summary. The results did not support hypotheses 1.1, 1.2, and 1.3. There was some empirical evidence supporting hypotheses 2.1, 2.2, and 2.3. Hypothesis 2.1 was supported by the results of the second set of models that examined the relationship between one-year change in managerial ownership and subsequent holding period returns. Hypothesis 2.2 was supported by the results of the third set of models involving the relationship between three-year change in board independence and subsequent sales growth. Hypothesis 2.3 was supported by the results of the third and fourth sets of models that examined the relationship between three-year change in post-IPO corporate governance and subsequent performance. The results provided some evidence supporting hypothesis 3.1 regarding the interaction effects of change in managerial ownership on the relationship between change in board independence and subsequent holding period returns. The results provided no support for hypothesis 3.2. With regard to the moderating effect of the presence of the founder CEO, hypothesis 4.1 was not supported, whereas there was some support found for hypothesis 4.2. The study provided no support for hypotheses 5.1 and 5.2.

CHAPTER 5

DISCUSSION, CONTRIBUTIONS AND LIMITATIONS

Research Findings

In this study, I developed competing hypotheses regarding the relationship between the pace of change in post-IPO corporate governance and subsequent firm performance. Drawn from agency and resource dependence theories, hypotheses 1.2 and 1.3 stated that fast-paced change in post-IPO board independence and post-IPO original TMT membership is associated with better subsequent firm performance. Based on a resource-based view, particularly human and social capital perspectives, hypotheses 2.1, 2.2, and 2.3 offered opposite predictions that slow-paced change in post-IPO corporate governance is associated with higher subsequent firm performance. I also examined the moderating effects of change in managerial ownership, the presence of a founder CEO, and technology on the relationship between change in post-IPO corporate governance and firm performance. Hypotheses 3.1 and 3.2 predicted that change in managerial ownership would interact with change in TMT membership and change in board independence following the IPO to positively affect firm performance. Hypotheses 4.1 and 4.2 suggested that the presence of a founder CEO would interact with changes in TMT membership and changes in board independence following the IPO to negatively affect firm performance. Hypotheses 5.1 and 5.2 offered that technology would interact

with changes in TMT membership and change in board independence following the IPO to negatively affect firm performance. Important findings of the empirical analysis are presented below.

The first and major finding is that slow-paced change in post-IPO corporate governance has a less negative impact on subsequent firm performance than does fast-paced change in post-IPO corporate governance. The results showed that the relationships between corporate governance variables, including changes in managerial ownership, changes in board independence, and changes in original TMT membership, and subsequent firm performance were negative and statistically significant. This indicates that a greater rate of change in post-IPO corporate governance may result in lower subsequent firm performance.

The second finding is that change in managerial ownership moderated the relationship between change in board independence and subsequent firm performance. When managers diluted their ownership in the firm rapidly, changing board composition toward greater board independence appears to have enhanced subsequent performance. The final finding involved the moderating effect that the presence a founder CEO has on the relationship between changes in original TMT membership and subsequent performance. My findings suggest firms with a founder CEO, and a greater pace of change in original TMT membership will experience lower subsequent firm performance. These findings have a number of theoretical and practical implications which will be discussed in the following sections.

Theoretical implications

The findings of this study have important implications for the literature concerning corporate governance in the context of IPO firms, the role of an entrepreneurial TMT in IPO firms, as well as the relationships among investors, boards of directors, and entrepreneurs.

Contributions to the Study of Corporate Governance in the Context of IPOs

This study extends the literature regarding corporate governance in the context of IPO firms. Going public, firms have to undertake a transformation in their corporate governance (Certo et al., 2001; Fisher & Pollock, 2004). A large number of studies have examined the relationship between corporate governance, IPO activity, and performance (e.g., Andrews & Welbourne, 2000; Balatbat et al., 2004; Boursesli et al., 2002; Brav & Gompers, 1997; Carpenter et al., 2003; Certo et al., 2001; Higgins, & Gulati, 2003; McConaughy et al., 1995). Most of these studies have focused on static corporate governance variables such as percentage of outside directors, board ownership, or the presence of founders and venture capitalists, and they have typically examined the relationships between these variables and IPO underpricing or long-run performance. However, to my knowledge, no previous studies have comprehensively examined the impact of the pace of change in post-IPO corporate governance and subsequent firm performance.

This study fills the gap in the literature on corporate governance in the context of IPOs by providing theoretical predictions and empirical results regarding the relationship between the pace of change in post-IPO corporate governance and firm performance. The empirical findings indicate that slow-paced transformation of corporate governance

in IPO firms has less of a negative impact on subsequent firm performance than does fast-paced transformation. It is plausible that original TMTs need time to learn how to cope with increased control from investors and boards of directors. Swiftly increasing board independence and control are likely to discount the original TMTs' social and human capital and thus firm competitiveness. This insight is consistent with the proposition offered by Daily and Schwenk (1996) that firms in a period of organizational change or transition (such as an IPO) with an insider dominated governance structure have higher post-change/transition performance than firms with alternative governance structures.

This study also sheds light on factors that moderate the relationship between change in post-IPO corporate governance and firm performance. Particularly, the empirical results suggest that when managerial ownership dilutes rapidly, rapid change in post-IPO corporate governance should be undertaken to enhance subsequent firm performance. In firms with a founder CEO, change in post-IPO corporate governance should be undertaken more slowly in order to avoid psychological opposition from the CEO and other original top managers, which may result in decreased motivation and efforts from these managers.

This finding not only extends the study of corporate governance in the context of IPOs but also has implications for related work in such areas as entrepreneurship, long-term IPO performance, and the relationship between investors, boards of directors and managers. These contributions will be discussed in greater detail below.

Contribution to Entrepreneurship Literature
Regarding the Role of the Founding TMT

IPO firms are often young firms (Certo et al., 2001) and often struggle with the liabilities of newness and smallness (Stinchcome, 1965). In such firms, founding top managers play an important role, and in effect they may represent an important source of competitive advantage (Eisenhardt & Schoonhoven, 1990; Westphal, 1998). However, it is also argued that going public signifies firms' transition to the next stage of their organizational life cycle (e.g., Jani & Kini, 1999; Zingales, 1995). According to this view, an IPO firm's TMT often lacks skills to manage their firm in a "more professional" stage, and thus new managers should be brought in and the management structure should become more formalized (Boeker & Karichalil, 2002; Gompers, 1995). The results of this study indicate that firms that keep their original TMT stable outperform those that rapidly change their TMT. It is therefore reasonable to conclude that founding managers are important for IPO firms at least in the first three years after going public. By providing this insight, my study makes an important contribution to the research regarding the role of original top managers in newly listed firms.

Contribution to Research Regarding the
Relationship between Investors, Boards
of Directors and Top Managers

Change in corporate governance influences the relationships between investors, boards of directors and top managers. Top managers may find it costly and oppressive when their board of directors imposes more control requirements (Sapienza & Korsgaard, 1996). Similarly, increasing board independence and monitoring may lead to conflicts between the board of directors and managers (Van de Ven & Walter, 1984; Westphal, 1998). Thus, slow-paced change in corporate governance results in less opposition and

more collaboration between investors and top managers than does fast-paced change. On the contrary, some studies imply that rapid change in post-IPO corporate governance is necessary to reduce agency costs due to the increased separation between ownership and control after IPOs (e.g, Balatbat et al., 2004; Gompers, 1995; Mikkelsen et al., 1997).

My findings indicate that for entrepreneurial IPO firms, slow-paced change in post-IPO corporate governance is associated with better performance. Rapid change in post-IPO corporate governance leads to poorer performance partly because it creates conflicts between investors, directors and managers, resulting in the deterioration of original top managers' social and human capital (Fisher & Pollock, 2004; Sapienza & Korsgaard, 1996; Wesphal, 1998). This argument is consistent with several previous studies recommending that the collaboration and positive relationships between entrepreneurs and investors will enhance firm performance. Rapid change in post-IPO corporate governance toward imposing greater control on the firm may not be viewed as a procedural justice practice by original top managers of IPO entrepreneurial firms, diminishing their motivation and commitment to the firm (Sapienza & Korsgaard, 1996). Similarly, rapid change in an IPO entrepreneurial firm's TMT is likely to undermine the friendship and cohesion within entrepreneurial teams, resulting in a negative impact on firm performance (Francis & Sanberg, 2000).

Implications for Management

Corporate governance matters to managers, investors, firms and the government as it affects the interests of managers and investors, determines firm capacities to attract and deploy resources, and influences the performance of the whole private sector. The pace of corporate governance reform has been hastened by recent high-profile corporate

scandals such as Enron, Worldcom, Xerox, Shell and Global Crossing. Particularly, the 2002 Sarbanes – Oxley Act and new SEC rules have been introduced to increase the monitoring and control of publicly held firms (Dalton & Dalton, 2005). In the wake of the corporate governance reform efforts, my study has several timely implications for policy-makers, investors, and managers.

Implications for Policy Makers

My results indicate that slow-paced change in post-IPO corporate governance is more effective for IPO entrepreneurial firms. Thus, it is important that new corporate governance rules not require IPO entrepreneurial firms to swiftly change their corporate governance. Oversight agencies should allow IPO entrepreneurial firms to take some time to adopt rules related to board composition. For example, they may give IPO entrepreneurial firms several years to comply with the rule regarding outside board membership. In addition, legislation and oversight agencies should take into consideration both the need to protect investors and the need to support entrepreneurial teams in IPO entrepreneurial firms.

Implications for Investors and Directors

The implications for investors are that it is important for them to create positive relationships with the original TMTs of IPO firms. They should not require rapid change in the boards of directors and the original TMTs because this is likely to cause conflicts and lead to the deterioration of TMT motivation and commitment to the firm. Developing trust and collaboration between investors and managers will enhance IPO entrepreneurial firm performance. These practices are even more important in IPO entrepreneurial firms with the presence of a founder CEO, as a founder CEO tends to have a great deal of firm-specific human capital and are more sensitive to changes in

corporate governance. However, in IPO firms in which original top managers rapidly cash out their ownership, investors should push for change in the firm's corporate governance structure quickly in order to prevent potential agency problems.

Implications for Managers/Entrepreneurs

This study has several implications for managers and entrepreneurs in entrepreneurial firms. First managers should take into consideration the requirements for change in corporate governance when making the decision as to whether or not they should take their firm public. This is because after going public, original managers are likely to have much less control over important issues such as human resources, strategic decisions and governance structures. Second, if they decide to take their firm public, they must learn how to cope with increased control from outside investors. It is important that managers develop trust and collaborative relationships with investors. When investors trust and support managers, they will not exercise excessive monitoring and managers can maintain control over strategic decisions. To build trust from investors, it is necessary that managers have strategies to work with the board of directors and investors. For example, managers may share information with investors in a timely manner to foster trust and support from investors.

Limitations and Future Research

In this section, I will discuss some limitations of my study, which involve the data and the operationalization of change in board independence and TMT membership. The limitations of this study may suggest directions for future research.

The data for this study did not include firms that went bankrupt during the time frame in which I examined the impact of change in post-IPO corporate governance on subsequent firm performance. I excluded bankrupt firms because their data were no

longer available on *Hoovers*, *Edgar* and *Compustat*. There were 246 firms that went bankrupt or discontinued during the period of my study, accounting for 16.5% of the total IPO firms with the age of 10 years or less. Since these firms did not survive long enough (many of them went bankrupt in the first or second year after their IPO) to undergo governance change, they are excluded from the sample for this study. The exclusion of bankrupt firms might lead to potential survivorship bias. Future research can use different data collection methods and/or different analytical techniques, which can overcome the potential survivorship bias, to examine the impact of change in post-IPO corporate governance.

In this study, I assume that outside board representation and the turnover of original outside board members indicate the level of board independence and board power vis-à-vis managers. I also assume that the greater the pace of change in board independence, the greater the conflicts between the board and original managers and the lower the level of psychological commitment of these original managers. Although these assumptions have been made in previous studies (e.g., Daily & Dalton, 1994; Romanelli and Tushman, 1994; Sapienza & Korsgaard, 1996; Westphal, 1998), they may not always hold true.

Similarly, based on the findings of previous studies (e.g., Baun et al., 2001; Bergh, 2001; Brown & Eisenhardt, 1997; Fisher & Pollock, 2004; Nelson, 2003), I anticipate that fast-paced change in original TMT membership discounts original top managers' psychological motivation, and human and social capital. This assumption may not always hold true. Other data collection methods and direct measures of board power vis-à-vis managers, and TMTs' motivation and human capital may be helpful in

examining the impact of the pace of change in post-IPO corporate governance and firm performance.

This study also revealed that relationships between top managers/entrepreneurs, directors and investors would enhance the performance of newly listed firms if they were more fully understood. The investor-entrepreneur relationship has been examined in some recent studies (e.g. Francis & Sandberg, 2000; Sapienza & Korsgaard, 1996; Westphal, 1998), but more research is needed to provide insights into how investors, managers, and entrepreneurs foster trust and collaboration.

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