EFFECTS OF LEGITIMACY, AGENCY, AND BUSINESS RISK ON BOARD STRUCTURE IN INITIAL PUBLIC OFFERING FIRMS: THE MODERATING IMPACT OF CEO INCENTIVE ALIGNMENT, CEO POWER, AND STOCK MARKET CONDITIONS

By

YOUSUF H. AL-BUSAIDI

Presented to the Faculty of the Graduate School of

The University of Texas at Arlington in Partial Fulfillment

of the Requirements

for the Degree of

DOCTOR OF PHILOSOPHY

THE UNIVERSITY OF TEXAS AT ARLINGTON

May 2006

DEDICATION

To my parents, wife, daughter, and country

ACKNOWLEDGEMENTS

I would like to gratefully and sincerely thank my advisor, Dr. Abdul Rasheed, for his support, guidance, encouragement, understanding, and most importantly, his friendship throughout my doctoral studies. I also truly appreciate his patience and tolerance during my numerous mishaps. Dr. Rasheed encouraged me not to only grow as a researcher but also as an instructor and an independent thinker. His technical and editorial advice was essential to the completion of this dissertation, and he taught me innumerable lessons and insights on the workings of academic research in general. For everything you've done for me, Dr. Rasheed, I thank you.

My thanks also go to the my major filed advisors, Dr. Jeffrey McGee, Dr. Deepak Datta, and Dr. Liliana Nordtvedt for reading previous drafts of this dissertation and providing many valuable comments that improved the presentation and contents of this dissertation. I would like to thank my research field advisor, Dr. Marry Whiteside, for her valuable statistical advice that dramatically improved the methodology of my dissertation.

I would like also to thank Dr. Kenneth Price for his warm welcoming and support in my first few months in the program. His compassion and big heart encouraged me to persevere through the doctoral program. Thank you Dr. Price.

The friendship of Hussain Al-Yousuf and Saleh Al-Shebil is much appreciated. Your friendship provided me with an escape from school pressure. Also, your advice and comments improved the quality of the defense and proposal presentations.

I also want to thanks my fellow colleagues in the program for their support and friendship: Norma Juma, Jennifer Sequeira, Hussam Al-Shammari, Robert Buchanan, and O'Brien Ross.

Finally, and most importantly, I would like to thank my wife, Maida, for her understanding, penitence, and encouragement during the past few years. Her tolerance of my occasional vulgar moods is a testament in itself of her unyielding devotion and love. I thank my parents, Hamed and Shiekha, for their faith in me and their unconditional love.

April 27, 2006

ABSTRACT

EFFECTS OF LEGITIMACY, AGENCY, AND BUSINESS RISK ON BOARD STRUCTURE IN INITIAL PUBLIC OFFERING FIRMS: THE MODERATING IMPACT OF CEO INCENTIVE ALIGNMENT, CEO POWER, AND STOCK MARKET CONDITIONS

Publication No. _____

Yousuf Al-Busaidi, PhD.

The University of Texas at Arlington, 2006

Supervising Professor: Abdul A Rasheed

Board structure is generally seen as a means for acquiring resources, monitoring managerial behaviors, and enhancing firm legitimacy. Further, it is believed that the capacity of the board of directors to accomplish the above would improve with increasing outsider ratio, separation of CEO/chairman positions, and increasing board size. Previous studies found that an independent board plays an essential role in the long-term success of the firm. The role of the board is even more crucial during the firm's transformation from a privately held to a public company (i.e., Initial Pubic Offering).

This study investigated the influence of IPO firms' risk on the structure of the board of directors by: (1) going beyond the agency paradigm and using Investor Confidence and Substitution Effects perspectives; (2) considering the many different kinds of risks (i.e., legitimacy, business, and agency risks) that are unique to IPO firms; and (3) exploring how CEO incentive alignment, CEO power, and stock market conditions moderate the relationship between risk and board structure.

A sample of 410 domestic firms that made initial public offerings in the years 1997, 1998, 2001 and 2002 on the U.S. stock exchanges was collected. Results indicate significant negative relationship between the number of outside directors in the board of directors, on one hand, and firm age and the TMT equity ownership, on the other. The level of VC involvement was found to have significant negative relationship with separation of CEO/chairman positions. Finally, results suggest that board size is influenced positively by number of risk factors and negatively by blockholder equity and TMT equity.

In addition, results suggest that the level and the direction of the influence of the independent variables are determined by the level of CEO stock options, the amount of CEO power at the time of IPO, and stock market conditions. More specifically, the increase in CEO stock option was found to reduce the impact of risk on the dependent variables. In addition, this study found that CEOs use their power and influence on the IPO firms to curb investors' pressure for increasing board independence. Finally, going public during hot markets was found to weaken the impact of risk on board independence.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Board of directors plays a central role in forming and implementation organizational strategies and overall policies. Although studies in board structure emphasized the importance of boards' roles in both big and small companies, very few studies have used samples from small, entrepreneurial firms, such as Initial Public Offering (IPO) firms (Huse, 2000; Zahra & Pearce, 1989). The importance of IPO firms stem from their essential role in capitalism and the U.S. economy. Specifically, from 1990 to 1999, there were 4,963 IPOs, raising a total of about $275 billion (Thomson Financial Securities Data Corporation (SDC) in Peristiani and Hong (2004)). Filatotchev stated that "The Initial Public Offering (IPO) represents an important milestone in the life-cycle of the entrepreneurial firm, and a better understanding of the process of going public may provide a significant contribution to both the development of equity financing and promotion of entrepreneurial and venture capital activities." (2005: 75). Indeed, board structure is of vital importance in small business research due to its influence on venture strategies and policies (Finkle, 1998). Further, Rajan and Zingales (2002) and Daily, McDougall, Covin, and Dalton (2002) pointed out that small and entrepreneurial firms are very unique and different than older organizations. Thus, theories that have been developed and tested in large organizations may not necessarily be applicable to small firms. For example, theories developed in the context of large

organizations tend to assume that riskiness is primarily reflected on the stock price and CEO compensation. However, in IPO firms, risk has been found to have effects on board structures and top management team compensation structures (Beatty & Zajac, 1994).

Moreover, from a research practicality, studying board structures and their determinants in large organizations increases the complexity of what is already a complex phenomenon. That is, many uncontrollable variables have strong impacts on the board structures in large organizations such as path-dependence effects (Hermalin & Weisbach, 1998). Indeed, Hermalin and Weisbach (1991, 1998) argue that it is very unlikely that scholars can find any strong relationship between board composition and any firm outcomes in large firms, mainly because of the fact that the current board structure is a result of past firm characteristics and internal politics.

Literature on board structure is also characterizing by another shortcoming: it is mainly concentrated on the consequences and outcomes of board structure and very little attention has been focused on the examination of the determinants of the structure of the boards of directors (e.g., Hermalin and Weisbach, 1988). This can be attributed to the fact that the composition of board of directors is a very complex phenomenon merely to observe, let lone to explain. The complexities of board of directors emerge from the multiple roles board of directors play in organizational processes (i.e., control, service, and resources dependence). Summarizing this complexity, Huse (2000: 280-281) stated

> "Contingencies may influence the selection and composition of board members. This influence may be direct as well as indirect. External and internal stakeholders as well as the relationships between internal and external stakeholders may also influence the selection and composition of board members… Contingencies may influence the set and attributes of internal and external stakeholders and the relationships between them."

Interestingly, agency logic has dominated the literature on the determinants of the board of directors and little or no attention has been paid to other theories (Daily & Cannella, 2003; Dalton, Daily, Ellstrand, & Johnson, 1998; Shleifer & Vishny, 1997). As a result, only board's control role has been emphasized. In other words, most of the studies posit that board structure is merely a result of agency problems (e.g., Lynall, Golden & Hillman, 2003). The exclusion of other theories from the studies has reduced and limited the number of predictors used and thus reduced the explanatory power of the research models. Thus, results were inconsistent and largely conflicting (Hermalin & Weisbach, 1998). This has led many scholars to call for going beyond the agency theory to describe board composition (Daily, Dalton, & Rajagopalan, 2003a; Filatotchev, 2005; Pettigrew, 1992).

In summary, the stream of board compositions research can be developed further if samples from small companies are used. Nevertheless, extending board structures studies from large firms to small firms is still in its infancy (Huse, 2000). Filatotchev (2005) pointed out that scholars still know very little about both board structures in small firms and factors that determine ex ante board composition. The

main aim of this dissertation is to fill the gap in board literature. More specifically, I will develop a comprehensive model of the determinants of the board structures in small firms (i.e., IPO firms).

1.1 Research Setting and Research Questions

Initial public offerings (IPOs) constitute an important economic activity in the U.S. Consequently, IPOs have been a common topic of study for both practitioners and academic researchers. Also, the availability and accessibility of the data for IPO firms have made it easier for researchers to increase sample sizes and thus increase the reliability of their studies. As a result, IPOs have been a subject of extensive research from various disciplines such as finance, economics, and management.

One of the streams of research on IPOs focuses on their mortality rate. There is strong evidence that despite a high level of scrutiny by investment analysts and the Securities Exchange Commission (SEC), IPO firms have a higher failure rate than other types of firms (e.g., Jain & Kini, 1999). Given the board of directors' central roles in forming and implementing organizational strategies and overall policies (Baysinger & Hoskisson, 1990; Fama & Jensen, 1983; Kerr & Bettis, 1987), scholars have examined the potential impact of governance and board structures on the survival rate and aftermarket performance of the IPO firms (Fischer & Pollock, 2004; Hensler, Rutherford, & Springer, 1997; Welbourne & Cyr, 1999a).

The extensive investigation of the board structure-performance relationship leads use to a more fundamental question: what determines board structures in IPO firms in the first place? An increasing, though still very limited, numbers of studies

have examined the potential impacts of several organizational factors on board structures. Interestingly, previous research asserts that the board of directors is structured mainly to counter CEO opportunism (Beatty & Zajac, 1994; Mak & Roush, 2000). In other words, research in IPOs is overwhelmingly dominated by agency theory. Therefore, the effect of agency risk on board structures was examined and other sources of risk, such as business risk (e.g., Williamson, 1979) and legitimacy risk (e.g., Zimmerman & Zietz, 2002) are mostly ignored.

In addition, at IPOs, investor perception of the firms' riskiness is much more influential than in other types of publicly traded companies (e.g., Finnerty, 1986). Previous research found that investor perception influences their willingness to invest in the company and thus it has a direct influence on the amount of the money raised by the IPO firms during the offering (Sanders & Boivie, 2004; Filatotchev & Bishop 2002). Ibboston (1975), Schultz (1993), and Tinic (1988) found that initial returns have significant positive impacts on aftermarket performance and failure rate of IPO firms. Beatty and Zajac (1994) and Finkle (1998) found that IPO firms' principal owners use board of directors to boost investor confidence in the firms and to alleviate the effects of risk on the firms. Despite this clear impact of investor confidence in the board structures, very little attempt has been made to incorporate it in the studies of board structures.

Another perspective that is gaining increasing attention in corporate governance is the substitution effect perspective (e.g., Jensen, Solberg, and Zorn, 1992). This perspective posits that boards of directors are used to compensate for the lack of a

strong monitoring mechanism in the firms and for the lack of firms' legitimacy. Previous empirical studies found that boards of directors are used to compensate for agency risk (Beatty & Zajac, 1994), business risk (Filatotchev & Bishop, 2002), and legitimacy risk (Finkle, 1998).

Finally, the literature on the board of directors in small firms treated board structure as a closed system (Huse, 2000) and there was little attempt to examine the effects of industry and organizational internal politics on boards structures.

Thus, the objective of this dissertation is to go beyond the boundaries of agency theory to explain board structures. More specifically, the investor confidence perspective and substitution effects perspective will be used as main mechanisms in determining board structures. I will be analyzing various types of risk that impact investor confidence, namely legitimacy, business, and agency risk. I also aim at developing a comprehensive model of the determinants of board's structure at IPO. Last, but not the least, moderator variables that can have an impact on firm riskiness-board structures relationship will be also investigated. An extensive review of prior research help me identify three moderator variables: IPO market conditions, CEO power, and CEO equity-based pay. In short, this dissertation seeks to answer the following research questions:

1. What are the effects of increasing risk (legitimacy, agency, and business) on board structure?

2. How do CEO equity-based pay, CEO power, and stock market conditions affect the relationship between risk and board structure?

1.2 Importance of Research

This dissertation makes several contributions to the literature on board structures and risk, especially in the study of boards in IPO firms. First, IPOs do not only constitute important economic activities to the whole economy, but the IPO process also represents an important stage in the life cycle of firms (Jain & Kini, 1999). How firms manage the transformation from a privately held to a public company will have a critical effect on the long term performance of the IPO firms (Schultz, 1993). Further, there is no guarantee that a firm that was successful as a private company will manage this transformation effectively and successfully (Fischer & Pollock, 2004; Jain & Kini, 2000). Thus, the first contribution of this dissertation is increasing the knowledge about a vital element of the success of any public firm, namely board structures.

Second, this study goes beyond the agency paradigm and uses perspectives that are more relevant to IPOs. In this dissertation, an attempt is made to supplement the dominance of agency theory in board literature. Further, as I mentioned above, the study of determinants of board structures in IPO firms has been largely ignored in the literature. Indeed, the literature is still very limited in both quantity and theoretical bases used.

Related to the first point, the third contribution of the dissertation is the use of the larger number of predictors in the model. In addition, this study incorporates the moderating influence of the industry and organizational variables on the risk-board structures relationship, which has been rarely investigated.

Fourth, this study develops a comprehensive model of the determinants of board structures. The model will help to link all previous studies of the determinants of board structures in IPOs together as well as to pinpoint the areas that need more research. In addition, the model will examine the interdependence relationships among different predictors of board structures.

Going beyond the quantitative, ex-post measures of risk is fifth and final contribution of this dissertation. That is, many previous strategic researchers (e.g., Ruefli, Collins, & Lacugna, 1999) note that the risk literature in strategy is still underdeveloped mainly because of the use of quantitative, ex post financial measures that are not related to actual decision making process in organizations. This study is an attempt to develop a new way of classifying risk that are related to how managers and investors alike assess risk in IPO firms.

1.3 Overview of Dissertation

Chapter 2 provides a review of the literature on board structures, risk, the investor confidence perspective, and substitution effect perspective. First, this chapter will discuss prior research on board structures in large organizations and pinpoint the areas that need more attention. Then, research on board structures in IPO firms will be discussed and a summary of all previous empirical studies will be presented and linked together. A review of the risk literature and the three main sources of risk at IPOs will follow. Finally, research on investor confidence and substitution effect perspectives will be discussed.

Chapter 3 will discuss the theoretical development and hypotheses. Hypotheses will be broken into four main categories: legitimacy risk, business risk, agency risk, and the moderation relationship. The research design, the proposed model, and data analysis will be discussed in chapter 4. First, a discussion of the research setting and data is given. Secondly, the operationalization of the variables is presented. Chapter 5 will be devoted to the discussion of the results and findings.

CHAPTER 2

LITERATURE REVIEW

This chapter focuses on literature relevant to the study of the organizational risk in general and IPO firms' riskiness in specific with emphasis on the literature on the structures of boards of directors at the IPOs. Further, the moderating roles of some organizational and environmental factors on IPO firms' riskiness-board structure relationship will be reviewed. This chapter will consist of six sections. The first section will examine the literature on board of directors. Specifically, the antecedents and outcomes of board structure with special attention to the board literature on IPOs will be reviewed. The second section will briefly review the literature on risk. The third section will define risk in the context of IPO firms and identify and discuss in detail the sources of risk. The fourth section will encapsulate Investor Confidence and Substitution Effects Perspectives, which are the theoretical foundations of this study. The fifth section will examine the moderating effects of organizational politics, CEO compensation package, and IPO market conditions on the risk-board structure relationship. Finally, the sixth section introduces the research model that to be studied.

2.1 Board Structure

Research on board structures has primarily focused on three characteristics: ratio of outsiders, separation (i.e., one person occupying the positions of CEO and chairperson), and board size. As I discuss below, scholars have been examining the

determinants (e.g., Zajac & Westphal, 1994) and outcomes (e.g., Baysinger, Kosnik, & Turk, 1991; Mallette & Fowler, 1992; Stearns & Mizruchi, 1993) associated with boards structure for decades. In this section, I will review the board's roles. A discussion of the antecedents and outcomes of board structures will follow. Finally, I review the studies that have examined board structures on firms undertaking IPOs.

2.1.1 Board Roles

The impact of governance structure, and especially board composition, on different organizational outcomes has been the subject of extensive research (see, for example, Zahra & Pearce (1989), Pettigrew (1992), and more recently, Johnson, Daily, and Ellstrand (1996), for a review). There are three overlapping board roles that have direct effects on firm performance: control, resources dependence, and service (Johnson et al., 1996; Zahra & Pearce, 1989).

In the control role, directors are responsible for monitoring managerial behaviors and for ensuring that management decisions and plans are in accordance with shareholders' interests. Researchers who investigate the control role base their arguments on agency theory (e.g., Jensen & Meckling, 1976; Eisenthardt, 1989). In the resources dependence role, directors work to link the organizations with the external environment and thereby facilitate resources acquisition. In the service role, directors provide advice to CEO and other members of the top management team in various strategic decisions and plans as well as means of implementing them. The theoretical underpinning of the board' resource dependence and service functions are derived from

a resource dependence theory (Pfeffer & Salancik, 1978) and upper echelon theory (Hambrick & Mason, 1984).

Generally speaking, the three board roles have a common relationship with board structure. Specifically, board size and the proportion of outside directors on the boards (Zahra & Pearce, 1989; Johnson et al., 1996) as well as the separation of CEO/chairman positions have been used as indicators of board effectiveness in all three roles. That is, researchers studying the monitoring function have hypothesized that boards dominated by independent outside directors are vigilant in their oversight of managerial decisions and plans (e.g., Baysinger & Buttler, 1985; Daily & Dalton, 1994; Jensen & Meckling, 1976; Weisbach, 1988; Westphal, 1999). Outside directors can also add value to the firms by giving advice to CEO and other top management team members (e.g., Mizruchi, 1983; Finkle, 1998). According to resources dependence theory, due to their connections and relationships with external environment, outside directors are an asset to their respective companies because they can improve a firms' legitimacy (Finkle, 1998; Pfeffer & Salanick, 1978) as well as the firm's capability to acquire resources from the environment (e.g. Pfeffer & Salanick, 1978).

In addition, board size has been hypothesized not only to improve a board's monitoring function, but also to increase the board's potential to provide advice and acquire resources from the environment (Zahra & Paerce, 1989; Johnson et al., 1996). A large board has more resistance power and thereby it is more protected from CEO control (Daily & Schwenk, 1996; Finkelstein & Hambrick, 1996). Also, a larger board

has more potential for providing better direction and advice to management (Hambrick & Mason, 1984; Finkle, 1998).

Finally, the separation of CEO and board positions increases the board's potential strength and power to control opportunism (e.g., Jensen & Meckling, 1976; Eisenhardt, 1989; Fama & Jensen, 1983). Separation of the two positions is also an indication that boards can provide more objective evaluation of the firm and thus improve boards' advice quality. Last, but not the least, Finkle (1998) reports that having an outsider chairing the board increases the board's legitimacy and eventually impacts the firms' overall level of legitimacy.

2.1.2 Research on Board Structure in Large Organizations

Previous research has examined the impact of boards of directors' characteristics, especially board independence, on various organizational outcomes. For example, researchers examined the relationship between board structure and firm financial performance (e.g., Kesner, 1987; Mallette & Fowler, 1992; Hill & Snell, 1988; Pearce & Zahra, 1992), stockholder wealth (e.g., Brickley, Coles, & Terry, 1994; Rosenstein & Wyatt, 1990), executive turnover (e.g., Boeker, 1992; Weisbach, 1988), capital structure (e.g., Stearns & Mizruchi, 1993; Baja, Chan, & Dasgupta, 1998); research and development intensity (e.g., Baysinger et al., 1991), and CEO compensation (e.g., Baysinger & Hoskisson, 1990; David, Kochhar, & Levitas, 1998; Westphal & Zajac, 1994).

Despite the numerous conceptual and empirical studies that looked at board structure-firm effectiveness relationships (e.g., Baysinger & Butler, 1985; Rechner &

Dalton, 1991), results, however, were inconsistent (Zahra & Pearce, 1989; Johnson et al., 1996). In a recent meta-analysis of fifty-four studies on board structure, Dalton, Certo, and Roengpitya (2003) found no significant relationship between board structure and various measures of organizational outcomes.

Another stream of research has examined the determinants of board composition. The determinants of board composition have received relatively less attention from the strategy and organizational theorists compared to the board implications on firm processes, strategies, and outcomes. Results of this stream of research are also mixed. For example, Zajac and Westphal (1994), based on a sample of 405 firms from Fortune 500, found that CEO ownership and the existence of nonboard member blockholders are negatively related to board independence as represented by proportion of outside directors and separation of CEO and board positions. Bathala and Rao (1995), in contrast, reported a positive relationship between managerial ownership and ratio of outside directors, but they found a positive association between blockholders and outsiders ratio.

Hermalin and Weisbach (1998) argued that the lack of consistent results in the board literature can be attributed to the fact that board composition is endogenously determined. In addition, Fiegener, Brown, Derux, and Dennis (2000) and Finkelstien and Hambrick (1996) note that internal organizational politics may has a strong impact on board composition. In short, different forces within as well as outside organizations may impact board composition and thus make the assessment of the board structure-firm performance relationship ambiguous.

Furthermore, previous studies suffered from many methodological and theoretical problems. First, as many scholars noted (e.g., Daily et al., 2003; Filatotchev, 2005; Pettigrew, 1992) agency theory should be used in conjunction with other theories, but very few studies went beyond the agency perspective to link several firm-specific factors with board composition. Second, as a consequence of the first shortfall, apart from Zajac and Westphal's (1994) study, no study has examined the impact of other types of risk that firms face other than agency risk. Finally, the omission of important explanatory variables has added to the mixed results (Rediker & Seth, 1995). That is, board composition is the result of different competing and complementary factors and therefore they need to be examined simultaneously.

2.1.3 Research on Board Structure in IPO Firms

Dalton et al. (1998), Ranft and O'Neill (2001) and, more recently, Daily et al. (2002) have pointed out that the vast majority of studies on board structure are based on samples from large US corporations. They further argue that the use of samples from small firms, such as IPO firms, may provide more insights about both the antecedents and outcomes of board structure.

Nevertheless, the few studies that investigated the impact of IPO firms' board structure on performance reported mixed results. For example, Certo, Daily, and Dalton's (2001b) study of 748 U.S. IPOs that went public from 1990 to 1998, report that there is a positive relationship between outsider ratio and underpricing[1]. In contrast,

---

[1] Underpricing is the percentage change in a stock's price $\{(\text{price}_{end} - \text{Price}_{initial})/ (\text{price}_{initial})\}$ on the first day the stock traded.

in a sample of 251 IPOs in the U.K., Filatotchev and Bishop (2002) found a significant negative relationship between independent outside directors and underpricing. Furthermore, using high-tech IPOs, Finkle (1998) and Sanders and Boivie (2004) examined the association between board structure and organizational outcomes. Finkle's (1998) study reported no significant relationship between board size and IPO offer size (total values of capital raised during IPO), whereas, Sanders and Boivie (2004) noted that outsider ratio was not associated with market evaluation.

In short, studies on the outcomes of board structure of IPO firms reported the same conflicting results as the studies in large corporations. As I mentioned in the previous section, boards are endogenously determined (e.g., Hermalin & Weisbach, 1998). Furthermore, Filatotchev (2005) argued that previous literature does not provide the answer to the question of what factors impact ex ante board composition of the IPO firms in the first place. As a result, in this dissertation I am focusing on incorporating the relevant factors that have effects on board structures.

In addition, examining the determinants of board structures on IPOs provide a unique setting where it is possible to control for contextual factors that are difficult to control in studies of large organizations (e.g., Beatty & Zajac, 1994; Filatotchev, 2005). For example, Beatty and Zajac (1994) argued that IPO firms are less impacted by institutional and isomorphism pressures that large, mature organizations face. In addition, using a sample of large companies, Hermalin and Weisbach (1998) found that the board structure is a result of path-dependence effects (Hermalin & Weisbach, 1998) and thus the current structure is a result of the impacts of past and current internal and

external organizational factors. Because of the IPO firms' smallness am newness to the public market, the problem of path-dependence effect is at its minimum.

Nevertheless, the studies are very limited in both quantity and perspectives used. As Table1.1 illustrates, there are only 6 studies that examined the potential factors that can impact board structure at IPOs. These studies have concentrated on two categories of board determinants: organizational politics and risk. In organizational politics, Baker and Gompers (2003) and Nelson (2003) investigated CEO power and its eventual effects on board composition in U.S. IPO samples. Baker and Gompers (2002), using tenure and voting control as proxies for CEO power, report that the ratio of outside directors decreases with CEO power. They also examined the role of venture capitalists on board composition. They found that venture capitalists' power work as a counter to CEO power and thereby venture capitalists were found to force more outsider directors on the boards. Nelson's (2003) study examined the potential power that a CEO may acquire as the founder of the firm. Specifically, he found that founder CEO firms have significantly lower percentage of outside directors. Moreover, Filatotchev and associates (Filatotchev, 2005; Filatotchev & Bishop, 2002) have expanded the definition of power to include not only the CEO, but also the entire TMT members. Their findings also supported the role of CEO power on board structures. For example, in a study of 251 IPOs in the UK from 1999 to 2000, Filatotchev (2005) report that executives' power (tenure and shareholding) and experiences are associated with lower percentage of outside directors. Interestingly, Filatotchev and Bishop (2002) point out that although investors have more confidence in the firms with higher ratio of outsiders,

as indicated by lower underpricing, CEO and other TMT members with more power tend to ignore the investors' demand and appoint more insiders to the boards.

In summary, the findings of the studies in organizational politics largely support the underlying assumption that CEOs use their power to affect board structure and to reduce the potential of boards' monitoring.

The second stream of research examined how the board is structured around the needs of the organizations to address various types of risk. The main assumption of this research is that the board is structured strategically to overcome the firm's specific shortfalls (Beatty & Zajac, 1994; Filatotchev, 2005). Furthermore, the domination of the agency perspective paradigm in this stream has constrained the number of factors that have been examined. That is, only two types of risk have been examined: agency risk and business risk. Agency risk was operationalized as the percentage of insider ownership (Beatty & Zajac 1994; Filatotchev 2005; Filatotchev & Bishop, 2002; Mak & Roush, 2000) and the components of performance-based CEO compensation package (Beatty & Zajac, 1994). Beatty and Zajac (1994) report that the absence of equity-based compensation for the CEO and other TMT members was associated with more independent boards, as measured by a higher percentage of outsider directors and greater separation of CEO/Chairman positions. However, Filatotchev (2005) and Beatty and Zajac (1994) provided conflicting results regarding the role of venture capital firms in addressing agency risk. Beatty and Zajac (1994) found that venture-capital backing had a positive correlation with independent boards, whereas Filatotchev's (2005) study reported a negative association with independent boards.

The conflicting results can be attributed to the nature of the samples used. Beatty and Zajac used a U.S sample while Filatotchev used a sample from U.K. Also, Beatty and Zajac did not examine the direct impact of VC-backing on board structures. In contrast, Filatotchev's study used multiple regression techniques to directly examine the effects of VC-backing on board structures. Finally, Beatty and Zajac controlled for business risk, while Filatotchev did not.

The effects of business risk on board structure have attracted less attention in the literature. Beatty and Zajac's (1994) study is the only study that examined the *indirect* effects of increasing business risk on board structures. They hypothesized that increasing business risk stimulates agency risk. Put differently, as firms get riskier, the percentage of equity-based compensation in the TMT compensation package decreases and thereby firms' principal owners use board monitoring to control for agency risk. Further, using upper echelon theory, Filatotchev (2005) and Filatotchev and Bishop (2002) examined the role of board on compensating for TMT's lack of experience and the eventual impacts on firms' prosperity. They found that IPO firms' principal owners put more outside directors as TMT experience declines.

In summary, although previous studies on the determinants of board structures have achieved significant progress, there are many inconsistencies and unanswered questions. More specifically, previous studies strongly indicate that risk is a major factor in determining board structures in IPO firms. However, there is a need for new perspectives that can provide a more comprehensive view of the factors that impact board structures, specifically the interdependent relationship among the explanatory

variables. Additionally, risk is a multidimensional construct and therefore there is a need to include multiple types of risk in the study. In other words, to further develop the literature on risk's effects on board structures, we need to include different types of risk that IPO firms' face. Finally, there is a need to examine the effects of moderators on risk-board structures relationship such as IPO market conditions (e.g., Ritter, 1991). To accomplish this objective, in the next section I first define risk and then elaborate on its components.

Table 1.1 A Summary of Empirical Studies of the Predictors of Boards Structures in IPOs

Authors and Year	Sample	Theoretical Bases	Research Questions	Findings
Beatty and Zajac 1994	435 IPOs from 1984	-Agency theory -Human capital Theory	What is the impact of IPO firms' riskiness on CEO incentive alignment? Board Structure?	1. The riskier the firm, the less likely to have stock option (and other non-cash compensation) in the CEO compensation contract. 2. The larger the equity stake held by top management, the less likely they will have stock option (and other non-cash) compensation in their contracts. 3. In case of the absence of incentive alignment in the contract, monitoring by boards is the second-best choice.
Mak and Roush 2000	110 IPOs in New Zealand from 1983 to 1987	-Agency	What is the impact of agency problem (insider ownership and growth opportunities) on board independence?	1. Insider ownership is negatively related to board independence. 2. The availability of growth opportunities is positively related to board independence.
Filatotchev and Bishop 2002	251 IPOs in the UK from 1999-2000	-Agency Theory -Upper echelon theory -CEO power	What are the effects of executive experience and ownership on board structure? What is the impact on underpricing?	1. Executive experience and share ownership are negatively associated with board diversity and nonexecutive share ownership. 2. A high proportion of nonexecutive directors and intensity of their extraorganizational link reduce the extent of underpricing of the share issue.

Table 1.1 Continued

Baker and Gompers 2003	1116 IPOs from 1978 to 1987	Bargaining Power	What are the effects of VC-CEO balance of power on board structure?	1. Firms backed by VC have fewer insider and instrumental directors and more independent outsiders. 2. Representative of independent outsiders on the board decreases with the power of the CEO—tenure and voting control.
Nelson 2003	157 IPOs from 1991	-CEO power	What are the effects of Founder CEO on management, ownership, and performances?	1. A founder in the CEO position is significantly and positively correlated with percent of founder equity, CEO equity, percent of inside board, and firm percent of price premium. 2. A founder CEO is negatively and significantly correlated with duality. 3. Founder CEO IPOs have a higher price premium than non-founder CEO IPOs.
Filatotchev 2005	251 IPOs in the UK from 1999-2000	-Agency -resources-based view -upper echelon theory	What factors determine ex ante board composition, directors' characteristics and ownership structure of the IPO firm in the first place?	1. Contrary to their theory, VC backing and shareholding negatively related to board independence. 2. Executive power (tenure and shareholding) negatively related to board independence. 3. Executive experience is negatively related to board independence. 4. Executive power and experience negatively related to nonexecutive share ownership.

2.2 Overview of Risk Literature

In strategic management and organization theory literature, risk has been hypothesized as both an outcome (e.g., Saunders, Strock, & Travlos, 1990; Wrigth, Ferris, Sairn, & Awasthi, 1996) and an explanatory variable (e.g., Beatty & Zajac, 1994; Gray & Cannella, 1997). Despite the increasing number of risk studies, progress has been hindered by three severe shortcomings. First, strategy researchers relied upon finance and economics studies' ex post risk measures. As a result, strategy research has suffered from a serious methodological problem, i.e., the mismatch between the concept and operationalization. Specifically, managers see risk as ex ante and thereby their estimation of risk is not exclusively based on archival, financial quantitative measures. Rather managers use both qualitative and quantitative measures to determine the level of decision riskiness.

In addition, the financial measures of risk rely heavily upon the variation in the outcomes (e.g., ROE, stock prices, etc.), which does not match managers' view of risk. Supporting this argument, Baird and Thomas (1990) surveyed managers from different industries and found that the majority of managers see risk as size of loss and loss probability.

Moreover, strategic management researchers have used a variety of definitions and inconsistent levels of analysis (e.g., March & Shapira, 1987). For example, Miller and Bromiley (1990), using ex post financial measures of risk, conceptualized risk as a sum of three factors (i.e., income stream risk, stock return risk, and strategic risk) and studied their impact on firm performance. They found that the three factors have

different effects on performance and their effects varied across industries. In contrast, Palmer and Wiseman (1999) conceptualized risk as a two-level construct, i.e., managerial risk and organizational risk. They tried to add an ex ante measure of risk by operationalizing managerial risk as R&D spending and organizational diversification scale.

In short, Ruefli et al. summarized the status of risk studies in strategy stating "…[S]ome substantial changes are required in our current understanding of risk and in the measures, methods, and concepts we employ in future." (1999: 169).

There are, however, an increasing number of conceptual and empirical studies that agree on three fundamental risk characteristics: multidimensional, context-dependence, and process-centered. Baird and Thomas (1990), Miller and Bromiley (1990) and, more recently, Palmer and Wiseman (1999) point out that risk is a multidimensional construct and therefore all dimensions should be incorporated simultaneously in any risk study. Further, in a study of risk in international business, Miller (1992) noted that, compared to absolute financial measures, classifying risk according to their sources is more suitable for studying the role of risk in decision making processes.

Second, the definition of risk depends on the nature of the samples used. Lane and Quack (1999) note that risk is a context-dependent construct and thus the definition and operationalization vary accordingly. Therefore, there is not a universal way to conceptualize risk (Baird & Thomas, 1985; 1990; Martens, 2002; Miller, 1992). That

is, for IPO firms, we need to carefully examine the situation that those firms face and then determine what types of risk they may experience.

Finally, risk has been conceptualized as process-oriented. Fitzpatrick (1983) and Baird and Thomas (1985) point out that most of the previous research in strategy and organization theory are event-centered (e.g., risk in acquisitions, CEO compensation, etc). They advocate that risk should be studied as a process-oriented phenomenon where firms identify the sources of risk and take subsequent steps to minimize or eliminate its effects.

2.2.1 Risk and IPO Firms

An IPO is a unique context to study risk (Martens, 2002). IPO firms do not have long, extensive financial records and therefore traditional quantitative risk measures can not be used. Additionally, the IPO marks the period where firms transform from privately-owned to publicly-owned firms and thus the long-term success depends largely on the success of the transformation (Fischer & Pollock, 2004). Therefore, IPO firm's principal owners see risk from the investors' point of view, which usually try to use observable firm characteristics to determine the firms' future prospects. As a result, firms at the time of IPO give close attention to the level of risk because of its potential effects on investor perception of the firm.

Taking all the above characteristics of risk, I adopt, with modifications, March and Shapira's (1987) definition of risk--risk is the probability of an IPO firm's loss or failure. This definition of risk is wide enough to include different, but complementary perspectives that have been considered in isolation in the past (Palmer & Wiseman,

1999). That is, defining risk as a probability of loss helps us to include all factors that affect IPOs' propensity of death from different perspectives, namely sociology, organization theory, corporate governance, and strategic management. Defining risk as a probability of failure helps us also to clear the ambiguity between risk and uncertainty. More specifically, March and Shapira (1987) pointed out that uncertainty is defined as the possibility of bad outcomes. As I mentioned above, bad outcomes for investors is that they lose their investment in the IPO firms. Miller (1992) argues that uncertainty and risk are two faces of the same coin. In other words, according to my definition of risk, uncertainty is one component of the risk. Therefore, I will use uncertainly and risk interchangeably in this study.

2.2.2 Sources of Risk

Several empirical studies have found that approximately one out of three IPO firms fails within five years of going public (Jain & Kini, 1999). Fischer and Pollock (2004) and Welbourne and Andrews (1996) attributed this a high failure rate to the degree and varieties of risk that IPO firms have to absorb during the transformation period from privately-owned to publicly-owned firms. Generally speaking, those IPO firms' risk can be classified into three categories: legitimacy risk, business risk, and agency risk. Baird and Thomas note that "a method of characterizing strategic risk is useful only to the extent that it is incorporated into the strategy formulation process" (1985: 232). Therefore, at the IPO, there are three sources of risk that directly impact IPOs' survival rate as well as investor confidence: legitimacy, business, and agency risk. Further, the three types of risk (legitimacy, agency, and business) contribute to the

overall firms' level of risk. By the same token, any increase in any type of risk causes an increase in the overall level of firm's riskiness.

2.2.2.1 Legitimacy Risk

Legitimacy risk is associated with low-level of credibility and reputation that IPO firms suffer (Stinchcombe, 1968) which adversely impact firms' propensity to survive (e.g., Baum & Oliver, 1991). In their study of the importance of legitimacy for new ventures, Zimmerman and Zietz described legitimacy as "a social judgment of acceptance, appropriateness, and desirability that enables organizations to access other resources needed to survive and grow" (2002: 414).

Furthermore, the empirical studies on the effects of legitimacy on firms' survival rate report almost consistent results of a positive relationship. For example, Singh, Tucker and House's (1986) study of 289 new voluntary social service organizations found that the acquisition of external legitimacy was associated with a significant reduction in the hazard of death.

Although the end result of legitimacy is clear, the means are still vague. For instance, legitimacy was proposed to increase a firms' potential to secure vital and valuable resources from external environment (Ashforth & Gibbs, 1990; Meyer & Rowan, 1977), to increase a new venture's growth potential (Zimmerman & Zeitz, 2002), and to increase a firms' ability to have access to financial capital (Baum & Oliver, 1991; Baum & Oliver, 1992; Oliver, 1991; Ruef & Scott, 1998; Singh et al, 1986; Roberts & Dowling, 2002). Other scholars describe legitimacy as a strategic value (Dierickx & Cool, 1989; Roberts & Dowing, 2002; Wiegelt & Camerer, 1988). In

addition, empirical studies found that higher level of legitimacy helps to increase a firm's net profit (Roberts & Dowling, 2002), to improve a new firms' market performance (Deephouse, 2000; Fombrun & Shanely, 1990), to reduce market risk (McGuire, Schneeweise, & Branch, 1990), and to increase the premium charged for the products (Landon & Smith, 1997).

Moreover, legitimacy is needed in order to create the firms' own network that is essential for new ventures (Aldrich & Foil, 1994; Oliver, 1991, Deeds, Decarolis, & Coombs, 1998; Higgins & Gulati, 2003). Literature has provided different categorizations of the sources of legitimacy. The consensus that emerges from past research is that there are three sources of legitimacy: regulative, normative, and cognitive (Scott, 1995; Zimmerman & Zeitz, 2002).

Regulative legitimacy is derived from complying with rules and regulations stated by a regulative body (e.g., governments and credential associations) (Scott, 1995), whereby not complying may result in sanctions and penalties (Zimmerman & Zietz, 2002). Regulative legitimacy is the minimum required level of legitimacy. Brau, Francis, and Kohers (2003) point out that the process of going public itself provides a signal to customers and investors that the company is willing to provide the periodical SEC reporting documents and undergo the scrutiny of outside analysts. They concluded that this impacts favorably firms' legitimacy.

Normative legitimacy is a higher level of legitimacy and is derived when the values and norms of the new venture are congruent with that of the wider society and industry (Scott, 1995). Zimmerman and Zietz (2002) note that new ventures need to

adopt the values held by those who control the needed resources (i.e., potential investors). One important source of normative legitimacy is endorsement (Zimmerman & Zietz, 2002). Pollock (2004) report, at the IPO, firms that have the endorsement of reputable underwriters have a higher legitimacy and thereby a higher propensity to survive.

Cognitive legitimacy is derived from the adoption of taken-for-granted assumptions that are used as judgmental bases by stakeholders (Meyer & Rowan, 1977; Scott, 1994; Zimmerman & Zeitz, 2002). At the IPO, the most salient factors that influence cognitive legitimacy are the age and size of the firms. Investors perceive older IPO firms as already tested in the industry with established networks and routines that are vital for survival (e.g., Stinchcombe, 1968). Similarly, bigger firms are also seen as more legitimate due to the big pool of resources that are necessary to cope with competition (e.g., Salancik & Pfeffer, 1980).

In summary, for new firms, the risk of failure increases as the firm's legitimacy level decreases because customers and suppliers alike are reluctant to deal with new, previously unknown, firms. IPO firms must acquire an acceptable level of legitimacy from the industry if it is deemed to have survival chances (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). In other words, legitimacy is a resource (Zimmerman & Zeitz, 2002; Suchman, 1995) and firms may strategically and manipulatively use links to institutionalized structures or procedures to demonstrate the organizational worthiness and acceptability (Elsbach, 1994; Oliver, 1991). New as well as old organizations build their legitimacy by maintaining normative and widely endorsed organizational

characteristics (DiMaggio & Powell, 1983; Elsbach, 1994; Meyer & Rowan, 1977; Scott, 1987) or by adopting corporate strategies that are widely accepted in the industry (Fombrun & Shanely, 1990).

2.2.2.2 Agency Risk

Agency risk results from the separation of management and ownership (Jensen & Meckling, 1976). Before the IPO, insiders' ownership, including the top management team's ownership, is very high and thereby agency risk is very low. After the IPO, the percentage of TMT's stock ownership to the firm's total equity decreases drastically, either because of insider sales or because of the issuance of new stock.

Furthermore, agency theory affirms the notion of managerialism. That is, the ownership of a large corporation is dispersed among thousands of principals who are not actively involved in the day-to-day operations of the organizations. The two main types of agency problems are adverse selection and moral hazard (Eisenhardt, 1989). Adverse selection refers to the hidden information principals are unaware of such as an agent' claims to have certain skills or abilities which he does not posses (Eisenhardt, 1989). Moral hazard accrues from the fact that separation of ownership and control allows agents broad discretion to pursue their own interests (Davis, 1991). Therefore, agents may not put forth the effort they agreed upon (i.e., shirking) or may increase on the job consumption (Eisenhardt, 1989; Jensen & Meckling, 1976). In other words, managers may make decisions that can suboptimize a firms' value or even put a firm's future in jeopardy. The separation of ownership and management provides a chance for managers to act opportunistically.

In summary, a firms' future as well as investors' well-being can be sub-optimized when managers act opportunistically by increasing on the job consumption and by taking decisions that augment their own wealth and welfare at the expense of the firm (Jensen & Meckling, 1976).

2.2.2.3 Business Risk

Business risk is the inherent risk that results from a firm's operations and it is largely out of management's control. Business risk can be defined as risk that results from the various forces in a firms' competitive environment that cause a high variability and uncertainty in organizational returns and increased chances for failure (Barney, Busentiz, Fiet, & Moesel, 1989; Bloom & Milkovich, 1998; Porter, 1980). Earlier studies have proposed that business risk is positively related to firms' failure (e.g., Baird & Thomas, 1985). Furthermore, the uncertainty in the operation makes forecasts of future sales very difficult and thereby increases the inaccuracy of strategic planning. Fiegenbaum and Thomas (1989) and Miller and Bromiley (1990) note business risk causes deterioration in a firms' return and accounting performance.

Another stream of research has examined the effects of business risk on the use of equity-based compensation (Beatty & Zajac, 1994; Bloom & Milkovich, 1998; Zajac & Westphal, 1994). For example, in a sample of large U.S. corporations, Bloom and Milkovich (1998) found that business risk is associated with increased agency risk as measured by the use of incentive pay in managerial pay contracts. They also found that in a firm with a higher business risk, the use of incentive pay was negatively related to organizational performance.

For the CEO and other TMT members, increasing firm risk level means that there is a high chance that they are going to lose their human capital investment in the firms (Beatty & Zajac, 1994) and therefore they will not accept compensation contracts that are highly tied with firm performance (Beatty & Zajac, 1994; Bloom & Milkovich, 1998; Boyd, 1994; Zajac & Westphal, 1994). Consequently, the absence of incentive alignment will create an agency problem. Worse, agency problems will be severe in such case (Jensen & Meckling, 1976) because IPO firms tend to be small and the impact of opportunistic behaviors on firms' operations and profitability is much greater than in larger firms. To reduce such problem, the firms' principal owners will have to strengthen the monitoring of management behavior by forming a board of directors that is independent and capable to evaluate CEO and TMT performance (Beatty & Zajac, 1994; Eisenhardt, 1989; Jensen & Meckling, 1976). As such, the firms' principal owners will resort to the best second-best option (i.e., monitoring by board of directors). In their seminal empirical study of 435 IPO firms, Beatty and Zajac (1994), complementing agency theory with human capital theory, proposed that agency risk will mediate the relationship between business risk and board of directors. As such, increasing business risk causes the CEO and other TMT members to refuse incentive pay in their compensation contracts and therefore the firms' principal owners are forced to use the second-best control mechanism (i.e., boards of directors). Zajac and Westphal (1994) found the same relationships using longitudinal data from the 400 largest US corporations.

In conclusion, business risk has been found to strongly affect a firms' chance of survival. Therefore, investors pay considerable attention to a firm risk in deciding to invest in a firm. Business risk also has been found to be a major factor in the design of compensation packages for TMT members (Beatty & Zajac, 1994).

2.3 Risk and the Structure of the Board of Directors

Previous studies provide little guidance on the relationship between risk and board structures as the preceding review shows. However, the literature provides two broad perspectives that can be used to build a framework of the risk-boards structures relationships at the IPO. These are the investor confidence perspective and the substitutions effects perspective. Together, they help us to develop some useful insights on the relationship between risk and board structures.

2.3.1 Investor Confidence Perspective

Investor confidence perspective argues that the success of going public depends upon the potential investor perception of the uncertainty and risk associated with the IPO firm. IPO firms' principal owners try to manipulate various factors in the organizations in order to increase investor confidence in the firm and its future (Certo, Daily, Cannella, & Dalton, 2003). According to the investor confidence perspective, the high risk is associated with greater investors' demand for independent boards of directors (Barney et al., 1989; Williamson, 1979). The main theoretical basis of this perspective is organizational economics, more specifically transaction costs economics theory (e.g. Williamson, 1975). Thus, I will briefly review transaction costs and its prescriptions for coping with increasing uncertainty and risk.

Organizational economic scholars portray economic activities as cost-benefit choices among alternative economic activities (e.g., Coase, 1937). In the first seminal paper in organizational economics, Coase (1937) analyzed the benefits and the costs of establishing a firm to do a collection of complementing works that used to be done by individual, separate workers. Coase' main argument is centered on the effects of increasing uncertainty on the choice of market structure. More specifically, he points out that as market transactions become uncertain and, thereby costly, a hierarchy (i.e., a firm) is a more efficient means for organizing the economic activities. The cost-benefit analysis of Coase' theory has been incorporated into subsequent theoretical and empirical development in transaction costs theory (e.g., Williamson, 1975, 1979).

Williamson's (1975) transaction costs theory can be studied from both micro and macro level. At the micro level, Williamson notes that there are three critical dimensions of a transaction: uncertainty, frequency with which transactions recur, and the degree to which durable transaction-specific investments are incurred (1979: 239). In other words, these three dimensions of the transactions will determine what is the appropriate governance mechanism; market or hierarchy. More specifically, the increase in the costs of the transactions makes market mechanism unattractive and thus a hierarchy will be chosen.

Furthermore, at this level of analysis (i.e., micro level), transaction costs theory has been extensively applied to explain many social and organizational phenomena (see Carroll, Spiller, & Teece (1999), for a review) such as the choice of international entry mode (Anderson & Gatignon, 1986) and the choice of joint venture (Hennart, 1988).

At the macro level, transaction costs theory suggests that as a transaction is characterized by increasing uncertainty, the need for more elaborate governance structures increase (Sapienza & Gupta, 1994). Specifically, transaction costs theory posits that due to bounded rationality, all contracts are imperfect and incomplete (Hart, 1988). Put differently, at the IPO, a transaction is an act of purchasing equity by investors. The degree of uncertainty around such action (i.e., purchasing IPO stocks) is greatly impacted by the amount of risk IPO firms' pose. When an IPO firm poses more risk, investors will demand more elaborate governance structures such as more independent board of directors (Barney et al., 1989). In other words, firms' principal owners have to prove that uncertainty around a firms' future is low. Otherwise, investors will demand more elaborate contracts whenever uncertainty is high (Barney et al, 1989; Sapienza & Gupta, 1994; Williamson, 1975).

In short, uncertainty in transaction costs theory is associated with costs. Indeed, transaction costs theory incorporates both ex post and ex ante costs that investors may incur such as the costs of legal disputes and the costs of the time spent in designing the contracts (Kim & Mahoney, 2005; Williamson, 1996). Moreover, at the IPO, initial investors are facing the risk of negative initial return (the difference between offer price and first day of closing) as well as the potential for long-term deterioration of performance and the eventual loss of their investments.

Therefore, because of the high uncertainty and the high risk of failure, investors are very active and powerful when dealing with newly formed corporation (Finnerty, 1986). Oviatt (1988) proposes that uncertainty about the new venture at IPO determines

investors' valuation of the firms. Supporting this argument, many empirical studies found that the success of the offering process (i.e., the amount raised during the offer) has a significant positive association with the long term performance of the new venture (Ibboston, 1975; Schultz, 1993; Tinic, 1988). In a sample of 500 executives undertaking IPOs, Blowers, Griffith, and Milan (1999) found that IPO firms' principal owners are responding to investors' pressures and that they restructure the organizations accordingly.

In summary, on one hand, IPO firms are desperate to gain investor confidence and thereby increase their chance of successful transformation to publicly-owned corporation. On the other hand, a firms' riskiness shakes investor confidence in the new venture future. Thus, as transaction costs theory speculates, one mechanism to retain investors confidence is by creating an independent board of directors that can provide unbiased evaluations, increasing firms' potential of resources acquisitions, and have higher ability of monitoring management's behaviors (e.g., Zahra & Pearce, 1989). Supporting this argument, Barney et al. (1989) examined the impact of increasing business and agency risk on the venture capitalists' (VC) confidence in the new venture. They found that as the uncertainty about the new venture's future increases due to the agency and business risk, venture capitalists demanded stronger boards of directors with more seats designated to them. Sapienza and Gupta (1994) examined the relationship between VC-CEO interaction and firms' risk. They reported that as the firms' riskiness increases, the greater will be the frequency of VC-CEO interaction. Similarly, Beatty and Zajac (1994) found that, responding to investors demand, IPO firms' principal

owners create more independent boards as agency risk increases (e.g., lower insider ownership).

2.3.2 Substitution Effects Perspective

Past research on the relationships between board structure and performance has not found consistent results (e.g., Johnson et al. 1996; Pettigrew, 1992; Zahra & Pearce, 1989). Dalton et al.'s (2003b) recent meta-analysis examined the effects of ownership (i.e., insider ownerships, institutional ownerships, and blockholder ownership) on firm financial performance. They found no consistent relationships either, but they attributed the absence of the significant results to the hidden impact of the 'substitution effects" among the different controlling mechanisms. More specifically, the substitution effects perspective postulates that there are interdependent relationships among various control mechanisms and firms' principal owners try to find an optimal level of mix among them. For example, Jensen et al. (1992) considered the simultaneous determination of insider ownership, debt policy, and dividends and reported that a high insider ownership firms choose lower levels of both debt and dividends. Similarly, Moyer, Rao, and Sisneros (1992) examine the substitutability among managerial entrenchment (through increasing voting rights), on one hand, and outsider ratio, institutional holdings, and debt ratio, on the other hand. They found that an increase in managerial voting rights was associated with an increase in the number of outside directors, institutional holding, and debt ratio. Agrawal and Knoeber (1996), in a sample of nearly 400 large US firms, expanded the control mechanism to include both internal and external control mechanisms (i.e., insider shareholding, institutional

shareholdings, shareholdings of large blockholders, representation of outsiders on the board of directors, use of debt, used of external labor market for managers, and takeover activity). They examined both the interdependence between the control mechanism and the simultaneous effects on firm performance (i.e., Tobin Q). Results largely supported the substitution hypothesis.

In addition, the substitution effects perspective is still in the infancy stage and therefore its assumptions and boundaries are still underdeveloped. However, there are three broad assumptions that constitute the foundation of the substitution effects perspective: (1) principal owners intentionally and strategically manipulate board structure, (2) boards have multiple roles, and (3) independent boards is only the second-best option.

First, principal owners of both large and small organizations recognize the strategic importance of the board of directors as well as the boards' power. Therefore, they structure the board of directors according to a firm's needs (e.g., Beatty & Zajac, 1994; Hermalin & Weisbach, 1991). For example, Hermalin and Weisbach (1988; 1991) report that, recognizing the need for stronger boards that have the potential for advice giving and control monitoring, a firm's principal owners appoint outside directors in response to poor performance. Similarly, Filatotchev (2005) found that board composition depends on the level of social capital (experience and tenure) of the top management team.

Second, although the majority of studies on the substitution effects perspective concentrate on organizational economics theories and especially agency theory, there is

an increasing amount of literature on sociology and management that examine the role of boards of directors in compensating for several organizational deficiencies. More specifically, agency theory scholars concentrate on the control role of the board of directors and they argue that other control mechanisms can offset the needs and/or the role of monitoring by the boards (e.g., Demsetz, 1983; Moyer et al, 1992; Rediker and Seth, 1995; Shleifer & Vishny, 1997).

Furthermore, boards have other important roles that principal owners can utilize. One of those roles is the socio-cognitive (Carpenter & Westphal, 2001; Carpenter, Pollock, & Leary, 2003; Samra-Fredricks, 2000). In a sample of IPO firms in UK, Filatotchev (2005), using the socio-cognitive view of the board, examined how IPO firms' principal owners create an independent board to compensate for the relative lack of TMT experience. Similarly, Finkle's (1998) study examines how the boards of directors' legitimacy compensate for the low level of firms' legitimacy based on a sample of 125 IPO firms.

Finally, independent boards have a high potential for advice giving, linkages to the external environment, and control. There are, however, many criticisms of independent boards (see Walsh and Seward (1990), for a review). For examples, board membership is a part-time job and has low compensation packages. Therefore, outsider directors may have neither the time nor the motivation to actively participate in the decisions making process (Walsh & Seward, 1990). Acknowledging those pitfalls of the independent boards, many researchers argued that an independent board of directors comes second to other alternative mechanisms (e.g., Beatty & Zajac, 1994; Rediker &

Seth, 1994). Barney et al. concluded that "managerial risk reducing behaviors act as a substitute for elaborate governance devices" (1989: 65). For example, Beatty and Zajac (1994) and Zajac and Westphal (1994) argued that monitoring by board of directors comes only second after other, more effective, internal control mechanisms such as incentive alignment. Rediker and Seth (1994) argued that monitoring by board of directors may not be the cheapest way to ensure that managers' decisions are aligned with those of shareholders. Specifically, they found that stock ownership by top managers, mutual monitoring by the top management team, and monitoring by outside shareholders determine the level of monitoring potential of the board of directors.

2.4 Board Structure: Firm's Internal and External Environment

As I stated above, there are two mechanisms that are largely used to explain the direct impacts of firms' riskiness on board structures. However, there are other organizational and environmental factors that have a direct influence on board structures or an indirect influence through investor confidence and evaluation of the firms. These organizational factors are organizational politics (e.g., Hermalin and Weisbach, 1998) and CEO incentive alignment (e.g., Jensen & Meckling, 1976; Sanders & Boivie, 2004). The environmental factor is the IPO market conditions (e.g., Ritter, 1991).

2.4.1 CEO Incentive Alignment

Agency theory suggests that the structure of executive compensation can be used to control for agency problems and thus narrow the gap between managers and shareholders (Fama & Jensen, 1983; Jensen & Meckling, 1976). On a sample of large,

mature organizations, research on the effects of CEO incentive alignment on firm's performance has provided mixed results (Barkema & Gomez-Mejia, 1998; Mehran, 1995). Mehran (1995) notes that the structure of executive compensation depends upon the structure of the boards of directors and the severity of the agency problems.

Moreover, the inconsistent results cast a question mark over the instrumental value of CEO equity-based compensation on minimizing agency problems. Beatty and Zajac's (1994) findings question agency theory explanations of executive compensation. Using social capital theory, Beatty and Zajac point out that the main determinant of the executive compensation structure is the level of business risk. As the firm's riskiness increases, executives refuse compensation package with a high alignment to performance (Beatty & Zajac, 1994; Bloom & Milkovich, 1998). Or put differently, the structure of the executive compensation is not related to the agency problems and thereby it is very unlikely to find a strong consistent relationship between compensation package and performance. Moreover, finance scholars are increasingly arguing against the agency theory explanation. Instead, they argue that stock-based pay is used only to boost a firms' stock value in the markets (Bhagat, Brickley, and Lease, 1985; Yermack, 1997) and it is seldom used to curb opportunisms or other agency problems.

In recent studies, IPOs scholars suggest that executive incentive alignment is an important mechanism to increase a firm's valuation (Certo et al., 2003; Sanders & Boivie, 2004). Certo et al.'s (2003) study applied behavioral decision theory and found that investors view stock-based compensation as a mechanism to increase managers'

propensity to take risk. In contrast, Sanders and Boivie (2004) argue that stock-based compensation have been institutionalized and achieved a taken-for-granted status. Using 193 Internet IPOs companies that went public prior to 1999, Sanders and Boivie (2003) report stock-based incentives help to reduce uncertainty regarding new business models and therefore increase firm valuation.

2.4.2 CEO Power

In every organization, there are two forces that compete for organizational control: shareholders, represented by the board of directors, and chief executive officers. Boards' strength stem from the level of independence (Johnson et al., 1996). That is, because of the hierarchal relationship that exists, inside directors are more reliant on the CEO and therefore they are less likely to provide an objective evaluation of the firms (Baysinger & Hoskisson, 1990) and are less able to sack the CEOs after bad performance (Borokhovich, Parrino, & Trapani, 1996).

On the other hand, CEOs acquire power from a variety of sources (Daily & Johnson, 1997), such as personal prestige and social status (Finkelstien, 1992), stock ownership (Cannella & Shen, 2001; Fiegener et al., 2000), age (McKnight & Tomkins; 2004), tenure (Baker & Gompers; 2003; Miller, 1991; Shen, 2003), previous superior performance (Hermalin & Weisbach, 1998), and manipulation behaviors (Westphal, 1998).

Furthermore, IPO researchers have proposed three main sources of CEO power in the IPO firms: CEO is the founder of the firm, CEO tenure in the firm, and CEO ownership. First, Nelson (2003) sampled 157 IPO firms using survey and archival data

and provided concrete evidence of the influential role of the founder chief executive officers on the firm's and, explicitly, their impact on board structure. Nelson's study was correlational in nature, but she found a strong relationship between founder-CEO and board structure. Similarly, founder CEOs were found to be associated with smaller boards of directors (Baker & Gompers, 2003). Salancik and Pfeffer (1980) examined the impact of ownership on CEO tenure in US corporations. They reported that owner-CEOs were able to keep their jobs longer than non-owner CEOs.

Second, CEOs' power increases with their tenure. Sitting in the job for a long time, CEOs will develop a network with both inside and outside members of the organization. Further, using tenure as a proxy for CEO power, Ryan and Wiggins (2004) found that CEOs try to reduce the pressure for boards' monitoring by influencing director's compensation so that they have fewer incentives to monitor. Hermalin and Weisbach (1991, 1998) argued that board independence declines over the course of CEOs tenure. Moreover, CEOs with longer tenures have the ability and capacity to resist external pressure (Myer, 1975; Miller, 1991) and subsequently they tend to stay in the organizations longer even though firms' performance is declining (Coles, McWilliams, & Sen, 2001; Miller, 1991).

Finally, CEOs with a high stockownership have more voting power. Combining the power of the CEO position with that of ownership gives the CEOs more power to resist the outside pressures. The resistance of power will be manifested in the board structures. For example, Baker and Gompers (2003) found that representation of independent outsiders on the board decreases with the power of the CEO—tenure and

voting control. Moreover, studies of IPO firms (Beatty & Zajac, 1994) and small private firms (Fiegener et al., 2000), show that CEOs with larger equity holdings tend to have low level of monitoring as represented by low-level of board independence as well as small board size.

The relationship between the two competing powers (i.e., shareholders and CEOs) is governed by two factors: firms' riskiness (Jensen & Meckling, 1976) and bargaining power of the two forces (Hermalin & Weisbach, 1998). Agency theory argues that managers are self-interested and their actions may not reflect owners' wealth-maximization goals (Jensen & Meckling, 1976) and, hence, an independent board of directors is an essential mechanism to control opportunism and monitor managers' actions. As discussed above, the investors' demand for independent boards intensifies as the firms' riskiness increases. Conversely, lower risk means less pressure for independent boards. Therefore, CEO power becomes more salient in a high risk venture as he/she exercises their power to counter the investors' demand for more independent boards.

2.4.3 IPO Market Conditions

The number of new IPOs goes through a cycle of ups and downs. Scholars have named the periods where the number of IPO is unusually high as a "hot" market and the period where the number of new IPOs is unusually low as a "cold" market (e.g., Ritter, 1991). The existence of "hot" markets is well documented (e.g., Ritter, 1984; Ibbotson, Sindelar, & Ritter, 1994). IPOs scholars have used a variety of models and theories to explain the determinants of hot and cold markets. There are three theories that have

received the most attention in the IPOs literature: asymmetric information theory, signaling theory and irrational investor model.

First, asymmetric information theory predicts that hot markets occur because of productivity shock that causes an unusual increase in the production level and sales. Thus, productivity shock causes an increase in the firm's value and thus inducing external investors to produce more information. As a result in the reduction of information asymmetry, firms have more incentive to go public (Chemmanur & Fulghieri, 1999). Similarly, Choe, Masulti and Nanda (1993) linked hot issue to the growing economy. Specifically, they predicted that when the economy is in the growth stage, firms receive projects with higher expected cash flow and thereby reduce the impact of information asymmetry. Moreover, information asymmetry models postulate that hot IPO periods are of better quality and would enjoy more prosperous performance in the future (e.g., Helwege & Liang, 2004; Lowry, 2003; Ritter & Welch, 2002). However, the empirical evidence on the quality of firms that issue equity in a hot market is largely unsupported. For example, in a recent study, using 3,698 firms from 1975 to 2000, Helwege and Liang (2004) compared hot market IPOs with cold market IPOs in terms of operating performance, long-term performance, and stock price performance. They found conclusive evidence that there are no significant differences between hot and cold IPOs along these three measures. Similarly, in a seminal work, Lowry (2003) directly measured the information asymmetry model using the dispersion of abnormal returns around public firm's earning announcements and the dispersion of analyst forecast of public firms' earnings. Again, her findings did not support the

information asymmetry hypothesis and found that there is no relationship between information asymmetry and IPO volume. Lowry's (2003) results confirmed earlier findings by Pagano, Panetta, and Zingales (1998) who used IPOs from Milan Stock Exchange.

Signaling theory, while adhering to the general theme of information asymmetry, explicitly argues that hot markets occur because of the fact that good quality firms try to distinguish themselves from low quality firms by underpricing their stock so their future offering will be priced higher (Allen & Faulhaber, 1989; Grinblatt & Hwang, 1989). For example, Allen and Faulhaber (1989) predict a positive relationship between hot markets and the expectation of improvement of firms' overall performance in the near future. Further, signaling models posit that hot market IPOs have better quality than cold market IPOs. However, both theories have received only a very weak empirical support. Indeed, more recent findings by Helwege and Laing (2004) and Lowry (2003) suggest that hot markets are not driven by asymmetric information and thereby there is not any significant difference between hot and cold IPOs.

Results from empirical studies on the relationship between signaling model and underpricing indicate that there is no association between the two variables. Michaley and Shaw (1994) and Spiess and Pettway (1997) examined this relationships and both studies did not find any empirical support. For example, in sample of 947 IPOs from 1984-1988, Michaley and Shaw's (1994) findings show, contrary of the signaling

theory, IPOs that underprice more return less to the reissue markets and IPOs that underprice less have better stock performance.

Finally, the investor overoptimism model predicts hot markets occur when investors become overly, irrationally, optimistic and thus they tend to overvalue the new IPOs. This causes a reduction in the cost of issuing equity and therefore an increase in the number of IPOs (e.g., Lee Shleifer, & Thaler, 1991; Loughran & Ritter, 1995; Rajan & Servaes, 1997; Ritter, 1991). Moreover, this model predicts that managers of IPO firms take advantage of the investor overoptimism by going pubic during hot market period (De Long, Shleifer, Summers, & Waldmann**,** 1990; Lerner, 1992; Loughran, Ritter, & Rydqvist, 1994). As such, "hot markets are made by lower quality firms who knowingly take advantage of investor overoptimism" (Helwege & Laing, 1996: 4). By the same token, Jain and Kini (1994) compared the operating performance of IPO firms before and after going public. Their findings largely supported the argument that IPO firms time their offering to coincide with peak operating performance. Using a sample from seasonal equity issue, Loughran and Ritter's (1997) findings show that firms that has issued equity during hot market had poorer operating performance than others firms.

Notably, only two studies have systematically tested the relative power of several potential determinants of IPO volume. Pagano et al. (1998) used 139 Italian IPOs that went public from 1982 through 1992. They compared information asymmetric and investors' sentiment models. Their results showed support to the investor overoptimism model in that companies appear to go public not to finance

future investment and growth, rather to take advantage of an overvalued, heated, IPO market. Similarly, Lowry (2004) compared three models (capital demand model, information asymmetry model, and investor confidence model) using IPOs from US stock exchanges. The results gave a strong support to the investor confidence hypothesis, while refuting information asymmetry hypothesis.

In summary, literature on the determinants of IPOs volume seems to favor investor confidence model over other alternative models. Thus, I will use only investor confidence model to examine the potential impact of hot markets on the relationship between risk and board structure.

Organizational and finance scholars have largely ignored the impact of IPO market conditions (that stem from investor behavior) on the composition of board of directors. Moreover, only two studies in organization literature looked at the possible "noise" that market conditions may cause in their analysis: Deeds et al. (1997) and Finkle (1998). Deeds and his colleagues and Finkle examined the impact of board composition on IPOs proceeds and size. Both studies controlled for the market conditions without speculation on their hypothesized impact. Further, the two studies used different measures-Deeds et al (1997) used 1983, 1986, 1991, and 1992 as hot IPO markets, while in Finkle's (1998) study, hot market was measured when S&P 500 had a return greater than 10%. Regardless of the measure used, both studies report that hot markets have a positive moderation effect on the board structure-IPO proceeds relationship.

2.5 The Model

Legitimacy risk, business risk, and agency risk, as I argued earlier, have the potential of impacting boards of director structure of the IPO firms. In this dissertation, I argue that these three types of risk constitute the overall firms' riskiness and individually and collectively contribute to the level of board's independence. Further, while I argue that firms' riskiness impact on board structures, I anticipate this relationship will be moderated by organizational (i.e., CEO incentive alignment and CEO power) and environmental (i.e., IPO market condition) factors. Figure 2.1 below illustrates those relationships.

2.5.1 Legitimacy Risk

Legitimacy risk is one of the most salient factors that affect investors' evaluation of the IPO firms. Generally, firms size, firms age, and underwriter reputations have been found to be the most reliable proxies for firm legitimacy (e.g., Pollock, Porac, & Wade, 2004; Stinchcombe, 1968).

2.5.2 Business Risk

Business risk has been investigated heavily in finance and strategy literature. Bloom and Miklovich defined business risk as "Risk is uncertainty about outcomes or events especially with respect to the future." (1998: 285). As a result, business risk causes a decreased investor confidence in the firms. Furthermore, IPO researchers agree with the financial definition of business risk, but, because of the availability and nature of IPOs data, they adopted different measures. The most common measures used

are prior performance (Barney et al, 1989), number of risk factors (Beatty & Zajac, 1994), and number of uses of the IPO proceeds.

2.5.3 Agency Risk

Agency risk is the result of agency problems (Jensen & Meckling, 1976). As the severity of the agency problems increases, the probability of a firm's failure increases dramatically. Consequently, investor confidence in the firm dwindles. That is, agency problems exist when the gap between managers' interests and shareholders' interests widen. Agency researchers propose that the "agency gap" is bigger when IPOs are not backed by venture capital firms (Carpenter et al.; Van den Berghe & Levrau, 2002), when the IPO firms do not have blockholders (Demsetz & Lehn, 1985; Shleifer & Vishny, 1986), and when insiders have low ownership after the offer (Engle, Gordon, Hayes, & Core, 2002).

2.5.4 Risk-Board Structures Relationship

Firms' riskiness is defined in terms of the above three components: legitimacy, business, and agency risk. The research model is based on two propositions: (1) risk will impact board structure and (2) CEO power, CEO incentive alignment, and IPO market condition will moderate risk-board structure relationship. In the next chapter each of the relations will be discussed in detail.

As I stated above, there are two perspectives on the influence of risk on board structures: investor confidence perspective and substitution effects perspective. Those two perspectives propose the same impacts of risk on board structures and thereby it is not possible to study their effects separately.

Furthermore, it is noteworthy to mention that previous analysis of the IPO processes postulated that the final prospectus accompanying an IPO is the product of intensive negotiations between potential investors, on one hand, and IPO firms' principal owners and lead underwriter, on the other hand (cf. Sutton & Benedett (1988, 1990), for an elaborate detail of the IPO process).

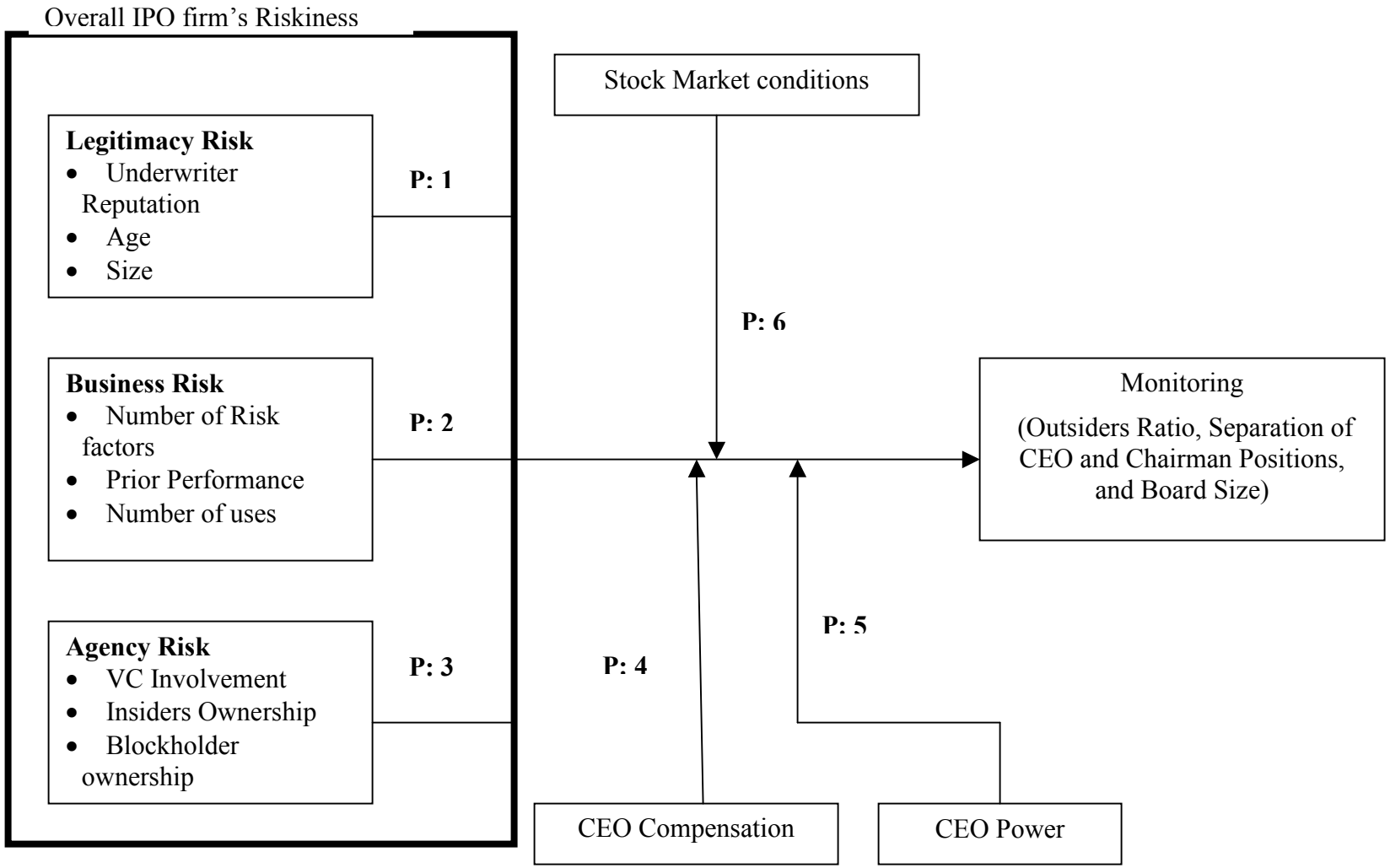


Figure 2.1 A Model of Predictors of the Board Structures

CHAPTER 3

HYPOTHESES DEVELOPMENT

The previous chapter presented past research on risk and theories that link risk to board structures. Chapter 3 will focus on hypotheses development. Risk, as defined in the previous chapter, comprises of legitimacy risk, business risk, and agency risk.

3.1 Legitimacy Risk

Legitimacy risk has a direct impact on the level of investor confidence in IPO firms. Specifically, legitimacy risk impacts investor confidence through its role in increasing firms' mortality rate. For example, Deeds et al. (1997) found that high-tech firms reveal their firm-specific capabilities by locating their headquarters in the high-tech areas, spending more on product in development, hiring well-known researchers, and increasing number of patents. Pollock and Rindova (2003) reported that media exposure positively impact IPO firms' legitimacy and subsequently help to increase firm value. In other words, there is a negative relationship between legitimacy and risk. That is, as the legitimacy decrease, firms' riskiness increases. Consequently, in order to compensate for the lack of legitimacy (and subsequently increasing investor confidence), an independent board of directors is likely to be formed.

Furthermore, legitimacy is an important resource that helps firms to survive (Meyer & Rowan, 1977, Stinchcombe, 1968). For example, in an empirical study, Baum and Oliver (1992) investigated the founding and failure rates in a population of

daycare centers in metropolitan Toronto. They found that the relationships between the daycare center and the external environment influence the new daycare center legitimacy and the ability to access resources and eventually reduced the rate of failure. Similarly, Delmar and Shane (2004) studied 223 new Swedish ventures and found that obtaining legitimacy is a necessary precondition to commence social ties with stakeholders and obtain resources. As such, from the substitution effect prospective, the increasing potential of boards' capacity of acquiring resources can substitute for IPO firms' lack of legitimacy.

Interestingly, Certo et al. (2001a) suggested a bigger and/or more independent board at IPO can compensate for the IPO's low level of legitimacy. Conversely, IPO firms with a higher level of legitimacy see a low need for independent boards. Thus, I propose the following:

Proposition 1: The higher the level of IPO firms' legitimacy risk, the greater the level of board independence.

3.1.1 Underwriter Reputation

Underwriters play a significant role in the IPO process. One of the important roles for the underwriter is to form the kernel of each deal network in the IPO market (Pollock et al., 2004). The quality and strength of the kernel depends largely on the underwriters' relationships with the IPO market, which subsequently determine the success of the transformation of the firm from a private to a public company. Through this kernel, the lead underwriter works closely with the entire participants in the IPO

market (e.g., principal owners, lawyers, accountant and SEC) (Huscik & Arrington, 1998).

Not all underwriters, however, have the same credibility and power. Mainly due to their market share and reputation, some underwriters are more credible and effective than others. In other words, the reputation of the underwriter is mainly determined by the success of previous deals they have undertaken in the past. As an underwriter is successfully leading more private firms to the public market, it gradually gains the confidence and credibility of the IPO market. In short, developing a good reputation takes time and therefore losing their reputation will be very costly to them. Supporting this argument, several studies showed that underwriters take steps to protect their reputation by performing up to IPO markets' expectations (e.g., Ferris Hiller, Wolfe, & Cooperman, 1992; Pollock, 2004). As such, the IPO market expects that a reputable underwriter will only lead quality and credible IPO firms. Dalton, Certo, and Daily (2003) pointed out that underwriters will put their reputation at risk if the IPO firms that they had led did not perform up to the expectations in the aftermarket.

Empirical studies provide a strong support to fact that a reputable underwriter is very selective in choosing the IPO firms to lead. For example, Michaely and Shaw (1994) and Chernow (1997), among others, examined the impact of underwriters' quality on IPO firms in the aftermarket. Results were consistent in that IPOs that are issued by more prestigious underwriters are significantly outperforming those issued by less prestigious underwriters.

Moreover, due to the central role they play in forming of IPO deal networks and due to their power in the IPO market (Certo, Covin, Daily & Dalton, 2001b), reputable underwriters have a high power to influence the IPO firms' legitimacy and credibility. More specifically, given that reputable underwriters are a key stakeholder in the IPO industry and therefore they have the power to help the new firms to be accepted as credible and legitimate (Aldrich & Fiol, 1994). As a result, the endorsement of a reputable underwriter will provide normative legitimacy to the IPO firms (Zimmerman & Zietz, 2002). This endorsement will also provide IPO firms with two services: increase firm's legitimacy in the market and reduce knowledge asymmetry.

First, endorsement by reputable underwriters will increase a firm's legitimacy and thereby ease the process of forming networks for IPO firms. Therefore, underwriters' reputation indirectly helps to increase IPO firms' potential for acquiring resources from the environment (Carter & Manaster, 1990). Furthermore, the presence of a reputable underwriter leading the offer will compensate for the need for an independent board of directors. As a result, IPO firms will have a diminished need for the boards' service role of helping the firm to establish their network in the industry.

Second, IPO firms suffer from knowledge asymmetry between the buyers (investors) and sellers (IPO firms' principal owners). Due to the fact that reputable underwriters have the trust of various participants in the IPO market, they are reliable sources of information about the new venture (Pollock, 2004). Investors will have a favorable judgment about the firms and thus have more confidence in its future (Uzzi,

1996). In other words, highly reputable underwriters enhance the legitimacy of those IPO firms they lead and subsequently reduce the risk of failure.

The impact of underwriters' reputation on IPO survival rate is not confined to legitimacy alone (Michaely & Shaw, 1994). Previous research notes that underwriters' reputation influences IPO process and outcomes (Beatty & Ritter, 1986; Carters & Manaster, 1990; Fischer & Pollock, 2004; Higgins & Gulati, 2003; Stuart, Hoang, & Hybel, 1999). For instance, investors have more faith in IPO firms that are lead by reputable underwriters and thereby the perception of uncertainty and risk decreases drastically. More specifically, being a new company, an IPO firm suffers from a high level of uncertainty about its quality as a company as well as about its prospective future. Therefore, external stakeholders rely on the prominence of the affiliates of those companies to make judgments about their quality (Stuart et al., 1999). Because of their ties to the IPO market, reputable underwriters are considered the most prominent player that IPO firms can affiliate with. Carter and Manaster (1990) and Carter Dank, and Singh (1998) found that the reputation of the underwriters leading the offering to be negatively associated with investor perception of uncertainty.

In summary, underwriter reputations enhance IPO firms' legitimacy and subsequently reduce a firms' death chance. As a result of reduced probability of death as well as a high legitimacy level, outside investors will not pressure the principal owners for forming an independent board to assess management. Also, underwriters' ties will provide the legitimacy level as well as the needed networks for the IPO firms and thus will work as a substitute for boards' networks.

Hypothesis 1: Underwriter reputation will be negatively associated with

H 1a: the percentage of outside directors.

H 1b: the separation of CEO and Board chairman positions.

H 1c: the size of the board of directors.

3.1.2 Firm Age and Size

As discussed above, the level of firm legitimacy is directly related to the level of investor confidence in the IPO firms. Further, firm age and the size of the IPO firms are important indicators of firm legitimacy. Extensive empirical research has confirmed the role of age and size on firms' overall level of legitimacy. For example, Baum and Oliver (1990), in a sample of Child Care Centers in Toronto, found that, through improving firms' legitimacy in the market, increasing firms' age and size have improved firms' survival chances Shane and Foo (1999) examined the survival of 1292 new franchisors established in the US from 1979-1996. The results show that increasing firms' age and size helped to decrease mortality rates among the franchises.

Stinchcombe (1965) was the first to propose that age is positively related to organizational propensity to die. He termed this phenomenon "liability of newness." Liability of newness posits that young firms are challenged with more barriers to entry such as scarce resources, competitor's reactions, low-level of trust from suppliers as well as customers, and technological barriers. Moreover, population ecology researchers (e.g., Freeman, Carroll, & Hannan, 1983; Hannan & Freeman, 1984) have looked at age-mortality relationship from different perspectives. They argued that

environment and selection processes tend to favor firms that exhibit a high level of reliability and accountability in their performance and structure. Because reliability and accountability (i.e., inertia) increases with age, firms' mortality rate should decrease as the firms get older.

Institutional theorists give the age-mortality relationship another dimension. They argue that older organizations have a higher level of legitimacy than younger ones (e.g., Baum & Oliver, 1990; Shane & Foo, 1999; Singh et al., 1986). That is, firms with a higher legitimacy have a higher ability to acquire resources and can deflect questions about an organization's rights and competency to provide specific products (Baum & Oliver, 1990). Young organizations are particularly likely to fail because they do not have the needed level of legitimacy that is essential to establish relationships with customers and suppliers.

Organizational size is another factor that has been used to predict mortality rate. This is referred to as "liability of smallness" (Alderich & Auster, 1983; Freeman et al., 1983). Hannan and Freeman (1984) proposed that larger organizations a have higher inertia. Because a high inertia is favored by the selection processes, older organizations have a higher propensity to survive than smaller ones.

Summarizing, via their direct impact of morality rate, firm age and size will determine investor confidence in the future of the firm and thus their decision to invest in an IPO. Consequently, as I stated in previous section, investor confidence and the level of pressure they exercise on IPO firms' principal owners will be positively associated with firms' age and size.

Furthermore, strategy researchers found that firm age and size also impact investor confidence through firm performance. That is, studies in strategy and entrepreneurship research suggest that a firm age and size are important indictors of its future performance (e.g., Covin & Slevin, 1997; Sandberg & Hofer, 1987) and therefore they determine firms' riskiness.

In summary, younger and/or smaller IPO firms carry higher risk and thereby they are likely to have higher death rates. Thus, I hypothesize the following:

Hypothesis 2: IPO firm age will be negatively associated with

H 2a: the percentage of outside directors.

H 2b: the separation of CEO and Board chairman positions.

H 2c: the size of the board of directors.

Hypothesis 3: IPO firm size will be negatively associated with

H 3a: the percentage of outside directors.

H 3b: the separation of CEO and Board chairman positions.

H 3c: the size of the board of directors.

3.2 Business Risk

The negative effects of business risk on firms' prosperity are well documented in finance (e.g., Baird & Thomas, 1985; Fiegenbaum & Thomas, 1988) and in management literatures (Beatty & Zajac, 1994; Bloom & Milkovich, 1998). The

increase in business risk reduces investor confidence in the firms, thereby pressuring principal owners for forming independent boards. Investor demand for independent boards stems from the fact that independent boards have a more potential to provide advice and direction to CEO and other TMT members (Johnson et al., 1996; Zahra & Pearce, 1989). An independent board can also provide unbiased and objective evaluation of the company as well as the TMT (Mizruchi, 1983; Westphal, 1999).

An increase in business risk necessitates more need for broader participation and thereby greater investment in information processing capacity (Galbraith, 1973; Sapienza & Gupta, 1994). As such, the diversity and size of board of directors are the most effective means to increases IPO firms' information processing capacity. In other words, in order to help top managers to deal with a high-risk environment, firms' principal owners will form independent boards that add value by giving advice to top managers. Thus I propose the following

Proposition 2: The higher the level of IPO firms' business risk, the greater the level of board independence.

Leading to the following testable hypothesis:

Hypothesis 4: The level of IPO firm's business risk will be positively associated with

H 4a: the percentage of outside directors.

H 4b: the separation of CEO and Board chairman positions.

H 4c: the size of the board of directors.

3.3 Agency Risk

Agency risk can be minimized by having an effective monitoring mechanism, such as an independent board of directors (Lynall et al., 2003). Indeed, independent boards are an effective means for ensuring that firm's top management is making shareholders' wealth-maximizing decisions (Eisenhardt, 1989; Jensen & Meckling, 1976). Extensive empirical and conceptual studies provide a strong support to the fact that increasing agency risk has a positive impact on board independence (e.g., Beatty & Zajac, 1994; Fama & Jensen, 1983; Hoskisson, Hitt, Turk, & Tyler, 1989).

Moreover, substitution effects perspective suggests that agency risk can be reduced by other, more effective control mechanisms such as performance-based compensation for TMT (Beatty & Zajac, 1994), having blockholders (Rediker & Seth, 1995), and by venture capitalist involvement (Gompers, 1996). Thus, I propose the following:

Proposition 3: The higher the level of IPO firms' agency risk, the greater the level of board independence.

3.3.1 Venture Capitalist Backing and Risk of Failure

Although VCs are found to be concentrated in a high-risk venture (Gompers, 1995, Jain & Kini, 2000), empirical studies provide a strong support that VC-backed firms outperform non-VC backed firms. For instance, Jain and Kini (2000) found that VC-backed IPO firms have 72 percent probability of surviving 60 months or more compared to 66 percent for non-VC-backed IPO firms.

A large number of conceptual and empirical studies have examined VCs' role in improving IPO firm performance and eventually the survival rate. An important stream of research has attributed this relationship to the fact that VCs have inherent interests in not only the creation of public corporations, but also in their short and long term success (Barry, Muscarella, Peavy, & Vetsuypens, 1990; Gompers & Lerner, 199; Lerner, 1992; Jain & Kini, 2000; Megginson & Weiss, 1991). Furthermore, VCs' interests go beyond the financial performance of the IPO firms (Fischer & Pollock, 2004). VCs have a reputation at stake (Gompers**,** 1996; Jain & Kini, 2000; Megginson & Weiss, 1991). Gompers (1996) reported that VCs' reputation and the numbers of successful IPOs brought to market are strongly related. In order to protect their reputation, VCs are very selective in choosing the firms to finance and to take to the IPO market (Tyebjee & Bruno, 1984).

Given their high stake in seeing IPO firms succeed, VCs provide the ventures with three important services: advice given, networking and monitoring. First, most entrepreneurs have only the technical expertise and they are lacking the managerial knowledge (Tommons & Bygrave, 1986; Perry, 1988; Forbes & Milliken, 1999). In contrast, by the virtue of their specialization on few industries as well as the long experience in the market, VCs develop an extensive pool of knowledge and expertise on both managing and operating new ventures (Sapienza & Gupta, 1994). As a result, VCs constitute a major source of advice and consultation for the entrepreneur (Sanders & Boivie, 2004). In addition, through their involvement in the day-to-day activities as well as frequent visits, they have a clearer understanding of the firms' operations and

management (Lerner, 1992). As such, it is not surprising that Sapienza and Gupta (1994) found that the interaction between CEO and VCs are vital, especially in a high-risk venture. VCs also combine the technical and managerial expertise, which are the pillars to create a competitive advantage and to successfully position the venture in the industry. Jain and Kini (2000) concluded that VCs help entrepreneurs to create competitive advantages by advising him/her on how to allocate the strategic resources. Furthermore, VCs are rational risk-takers. Carpenter et al. (2003) found that VCs play a significant role in guiding the firm's management to take a rational level of internationalization.

Second, by virtue of their established network and social capital, VCs build relationships with all participants in the offering process. Those relationships are a valuable social capital that can be used to the advantage of the IPO firms. On of those advantages is that it helps to reduce the cost of public offering process such as initial underpricing, gross underwriter spread, legal, and auditing fees. Those expenses constitute a big burden to the new firms (Ang & Brau, 2002). For example, Megginson and Weiss's (1991) study found that, through the impact of VCs' social capital on the uncertainty reduction and on information asymmetry, VC-backed firms have lower underpricing associated with the issue as well as the costs of underwriters, legal, auditors, and other miscellaneous expenses.

Moreover, VCs' established relationships also indirectly influence IPO firms' survival. Megginson and Weiss (1991) suggested that VCs tend to hire a reputable underwriter to lead the offering. Additionally, using a sample of 277 ventures that went

public in 1996, Florin (2005) found that ventures where VCs owned a controlling share of the stock before the IPO had a better educated and experienced top management and were able to accumulate more assets for growth through the IPO.

Third, VCs are very active shareholders and thus they have the ability and willingness to monitor managers' behaviors and thereby reduce the agency risk. The unique position that VCs occupy in the venture provides them with a wide variety of control mechanisms that they can use to curb managers' self-interested behaviors and reduce agency and information problems (Carpenter et al., 2003; Van den Berghe & Levrau, 2002). In a time-series study that investigated the factors that can impact the adoption of anti-takeover provision in the IPO firm's charter, Field and Karpoff (2002) report that VC backing does not have a statistically significant effect. They concluded that VCs institute alternative internal control mechanisms for monitoring the management, such as ownership. Put differently, VCs have several control mechanisms at their disposal such as staging of the investment (Bergemann & Hege, 1998; Gompers, 1995), incentives to exit (Berglof, 1994), syndication of investment (Admati & Peleiderer, 1994; Lerner, 1992), and frequency of interaction (Fischer & Pollock, 2004; Sapienza & Gupta, 1994). Furthermore, Van den Berghe and Levrau (2002) surveyed a panel of Belgian VCs and found that VCs monitor firms through voting rights, board membership, relationships with management, and through stages financing. Accordingly, in the presence of VCs in the IPO firms, I would expect that the level of monitoring by the board of directors to represent a less important control mechanism,

i.e., there will be a reduced need to have an independent board to provide the service of monitoring management.

Moreover, as a direct result of lower failure rate, VC-backed IPO firms experience less pressure from outside investors for creating an independent board. Previous studies showed that outside investors have more confidence in VC-backed than non-VC-backed IPO firms. For example, Sanders and Boivie (2004) and Stuart et al. (1999), among others, found that IPO market evaluates VC-backed firms higher than non-VC-backed firms. This indicates that outside investors are less concerned about risk when dealing with VC-backed-firms.

In summary, VCs have the ability and willingness to monitor management decisions, which can substitute for the monitoring by board of directors. Moreover, VCs are a major factor in increasing IPO firms' survivability rate and thus lessen the pressure from outside investors for having an independent board of directors. This leads us to propose:

Hypothesis 5: Venture-Capitalist-backed firms will have

H 5a: a lower percentage of outside directors than non-venture-capitalist firms.

H 5b: a lower separation of CEO and Board chairman positions than non-venture-capitalist firms.

H 5c: a smaller board of directors than non-venture-capitalist firms.

3.3.2 Blockholders-Monitoring Relationships

Jensen and Meckling (1976) proposed that the gap between managers and shareholders widen as ownership becomes more dispersed. That is, dispersed ownership will create a vacuum in the controlling and monitoring of firms management. Moreover, because of their capability and expertise, blockholders are active shareholders; they have been shown to vigilantly monitor managerial behaviors on behalf of other shareholders (Demsetz & Lehn, 1985; Shleifer & Vishny, 1986). Furthermore, given their large equity stake, blockholders have the incentive to involve and to be part of firms' internal governance mechanism. In other words, because of their large shareholdings, blockholders bear a greater proportion of any loss incurred by firms and thereby they are motivated to monitor and to control managerial decisions (Demsetz, 1983; Rediker & Seth, 1995).

A large number of empirical studies confirmed the positive impact of reducing agency problems via ownership structure on firms' value and subsequent performance (Bethel & Liebeskind, 1993; Shleifer & Vishny, 1997; Thomsen & Pedersen, 2000). Additionally, other studies have examined the relationship between ownership and board structures. For example, tracking the changes in ownership and board structures of big U.S. companies, Denis and Sarin (1999) noted that ownership and board structure are interdependent. Rediker and Seth (1995), using Bank Holding companies in the U.S., hypothesized that the presence of blockholder ownership will work as a substitute controlling mechanism for an independent board of directors. Their results, however, provided only partial support for the hypothesized relationship.

In the IPO context, blockholder ownership provides a signal of IPO firm's unobservable quality to the outside investors which help to boost their confidence in the future of the firm. Being a new venture in the public market, IPO firms find it difficult to assure the public and outside investors that management is taking agency risk seriously. Hertzel and Smith (1993) showed that firms entertain abnormal return from private equity placement because of the reduction in asymmetric information about firm value and its associated risk of adverse selection and moral hazard. Examining 184 Internet firms that have completed an initial public offering on or before 1993, Sanders and Boivie (2004) report that blockholder ownership was strongly and significantly associated with higher investor confidence in the firms as represented by higher firm valuation. Similarly, research in finance examined the relationship between underpricing and blockholder ownership (e.g., Brenna & Franks, 1997; Stoughton & Zechner, 1998). For example, Field and Sheehan (2004) and Booth and Chua (1996) found that IPO firms that do not have blockholders in place at the IPO had more underpricing than firms who do.

In summary, given the active role of blockholders in monitoring and reducing agency, outside investors are less likely to pressure the principal owners of the IPO firms for having an independent board of directors in the presence of blockholders at the IPO. This logic leads to the following hypotheses:

Hypothesis 6: IPO firms that have large blockholders at the time of going public will have

H 6a: a lower percentage of outside directors than firms without blockholders.

H 6b: a lower separation of CEO and Board chairman positions than firms without blockholders.

H 6c: a smaller board of directors than firms without blockholders.

3.3.3 Insiders' ownership-Monitoring Relationships

An important indication of the divergence of agent's interests from those of principals is the level of firms' equity owned by insiders (TMT and employees). In the IPO context, the percentage of insider ownership correlates directly to the extent of agency problem. In other words, because of a high level of insider ownership, agency risk is low prior to IPO (Jenkinson & Ljungqvist, 1996). During the IPO, the percentage of insiders' ownership usually decreases and thereby agency risk tends to increase (Engle et al., 2002). Empirical support for this argument was reported by Field and Karpoff (2002). They found that IPO firms that have a high percentage of insiders' ownership tended to support less the takeover defense provision as it directly and negatively impact firm valuation.

Moreover, the low level of insiders' ownership and the resulting agency risk have been found to jeopardize IPO firms' future and therefore increase investors' pressures for having an independent board of directors. Khurshed, Mudambi, and

Goergen (1999) noted that the greater the dilution[2] of original shareholders' ownership at IPO, the worse the long-term firm performance. Similarly, several studies reported a positive relationship between insiders' ownership and long-term performance of the new ventures (Howton, Howton, & Olson, 2001; Mudambi & Treichel, 2005; Welbourne & Cyr, 1999b). In terms of survival rate, Hensler et al. (1997) found that survival rate (not get delisted from major stock market) of the IPO firms increased by about ten percentage with the one percentage increase of insider ownership.

In summary, the above analysis implies that when insiders' holdings of stock are large, the manager-shareholders agency conflict is alleviated (e.g., Jensen & Meckling, 1976; Rediker & Seth, 1995). Rediker and Seth (1995) suggest that ownership helps to align the interests of insiders and shareholders and therefore the monitoring role of the board of directors should become relatively less important.

Thus, I hypothesize that the equity by insiders is negatively related to level of board monitoring.

Hypothesis 7: insiders' ownership stake in the new ventures at the IPO will be negatively associated with

H 7a: the percentage of outside directors.

H 7b: the separation of CEO and Board chairman positions.

H 7c: the size of board of directors.

---

[2] Dilution is equal to the number of shares sold at IPO divided by the total number of shares.

3.4 The Moderating Role of CEO Incentive Alignment

Research on the effects of CEO incentive alignment on firm's performance has provided mixed results (see Barkema & Gomez-Mejia (1998) for a review). However, two common findings can be extracted from the literature. First, a large number of scholars have reported a negative relationship between incentive pay and firm performance in high-risk ventures (e.g., Bloom & Miklovich, 1998; Hoskisson et al., 1989; Eisenhardt, 1988). Second, multiple studies have provided a positive abnormal return effect from announcement of stock-based pay (Bhagat et al., 1985; Yermack, 1997). That is, the first findings argue that as the firms' riskiness increases, IPO firms' are better off not using performance-based rewards. The second finding points out that performance-based compensation are appreciated by investors regardless of the firms' environment.

At the IPO, the optimal objective of CEO compensation structure is not to improve firm's future performance; rather it is to improve investor confidence in the firm and its future (Blowers et al, 1999; Certo et al, 2003). Indeed, Blowers et al. (1999) note that CEO compensation is one of the most important signals IPO firms principal owners use to attract investors. Similarly, Leland and Pyle (1977) reported that CEO incentives in the form of both stock option and equity serve a valuable signal to potential IPO investors.

In a sample of 773 IPOs from different industries, Certo, et al. (2003), controlling for risk as measured by the number of risk factors, examined the relationship between CEO stock option and IPO firm valuation. The results showed a significant

relationship between performance-based compensation and price premium paid. Further, they found that risk factors are not significant. The lack of significance of risk indicates that equity-based compensation alleviated the impact of firms' riskiness on investor confidence. Welbourne and Andrews (1996) used IPOs from 1988 and reported that organizational-based rewards (including CEO equity-based compensation) had a positive impact on initial investor reaction (premium paid in IPO) and long-term survival.

Sanders and Boivie (2004: 171) summarized the implications of CEO stock-based financial incentives on investor perception of the firms: (1) incentives like stock ownership and stock option pay requires that executive and directors share the risk; (2) the risk-transfer properties of stock-based financial incentives also serve as managerial certifications of quality; and (3) incentive alignment mechanisms have achieved normative, taken-for-granted status among many in the financial community. Their analysis strongly supported this argument. Sanders and Boivie report that the intensity of stock-based financial incentives (i.e., executive stock option pay, executive stock ownership, and outside director stock ownership) is positively associated with market valuations of new firms in new industries.

Summarizing, the existence of stock-based financial incentives in CEO compensation is an observable signal (Sanders & Boive, 2004) that helps to boost up investor confidence in the firms, especially in risky ventures. Therefore, this will lessen investors' pressure on IPO firms' principal owners for creating an independent board.

Beatty and Zajac (1994) reported that the existence of CEO incentive alignment lessens the need for independent boards. Thus, I propose the following:

Proposition 4: The relationship between the level of IPO firms' risk and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the IPO firms' risk-board independence relationship.

That is,

Hypothesis 8: The relationship between underwriter reputation and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between underwriter reputation and

H 8a: the percentage of outside directors.

H 8b: the separation of CEO and Board chairman positions.

H 8c: the size of the board of directors.

Hypothesis 9: The relationship between firm age and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between firm age and

H 9a: the percentage of outside directors.

H 9b: the separation of CEO and Board chairman positions.

H 9c: the size of the board of directors.

Hypothesis 10: The relationship between firm size and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between firm size and

H 10a: the percentage of outside directors.

H 10b: the separation of CEO and Board chairman positions.

H 10c: the size of the board of directors.

Hypothesis 11: The relationship between the level of IPO firm's business risk and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between business risk and

H 11a: the percentage of outside directors.

H 11b: the separation of CEO and Board chairman positions.

H 11c: the size of the board of directors.

Hypothesis 12: The relationship between the venture capitalist backing and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between venture capitalist backing and

H 12a: the percentage of outside directors.

H 12b: the separation of CEO and Board chairman positions.

H 12c: the size of the board of directors.

Hypothesis 13: The relationship between the presence of large blockholders and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between the presence of large blockholders and

H 13a: the percentage of outside directors.

H 13b: the separation of CEO and Board chairman positions.

H 13c: the size of the board of directors.

Hypothesis 14: The relationship between insiders' ownership stake and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between insiders' ownership stake and

H 14a: the percentage of outside directors.

H 14b: the separation of CEO and Board chairman positions.

H 14c: the size of the board of directors.

3.5 The Moderating Role of CEO Power

Zahra and Pearce (1989) and Fiegener et al. (2002), to name a few, argue that CEOs are self-interested and that they strive to maximize their discretion and power. Further, CEOs are consistently trying to keep the level of monitoring low through undermining boards' controlling role (Lynall et al., 2003; Shivdasani & Yermack, 1999). Stated differently, the board's ability to monitor managers' behavior effectively

depends upon the distribution of power between the board (i.e., degree of independence) and the CEO (Fiegener et al., 2000; Finkelstien & Hambrick, 1996).

Since board of directors is the main competing force for control in firms, CEOs will use their power to reduce or restrain boards' power. Indeed, a dependent board enhances CEOs power (Pollock & Fischer, 2002). One method CEOs employ to reduce board power is through their involvement in the director's selection process as well as other internal governance mechanisms (Fama & Jensen, 1983; Pfeffer, 1981). CEOs will use their power to weaken board of directors' monitoring capacity (e.g.., to lower ratio of outside to inside directors, to have a smaller board size, and to integrate board chairman and CEO positions). Staw, Sandelands and Dutton (1981) noted that CEOs will veto any proposal that would threaten their power and prestige. Empirically, CEOs were found to use various techniques to reduce pressure from active monitoring by the board such as assuming the role of board chair (Daily & Dalton, 1994; Daily & Schwenk, 1996), assigning more insider directors to the board (Westphal & Zajac, 1995; Daily & Schwenk, 1996); and recruiting directors with greater demographic similarity to them (Westphal & Zajac, 1995).

In addition, CEOs power, because of the IPO firms' newness and smallness, have more salient impact on the board of directors than in any other type of organizations. Daily and Dalton (1992, 1993) pointed out that CEOs in small organizations are less constrained by organizational structures. Eisenhardt and Schoonhoven (1990) and Fiegener et al. (2002) found that CEOs' impact on operational outcomes of small firms is larger than that in big firms. Similarly, in Fiegener et al.'s

(2002) study of small private firms, CEOs power (measured in terms of CEO equity ownership) was found to have a detrimental impact on board monitoring potential. Lynall et al. (2003) point out that IPO firms are new to the public market and, hence, they have low experience in forming board of directors. Therefore, CEOs power at the IPO will be an influential force in determining the board composition. Daily and Schwenk, (1996) reported that when the balance of power is in favor of the board, the level of board independence is very high. Similarly, in a sample of IPO firms from 1978 to 1987, Field and Karpoff (2002) found the CEO power was associated with increase in the probability of adopting anti-takeover provisions in the IPO charters and subsequently expanding CEO control and power over the firms.

In short, with increasing firms overall risk (due to increasing legitimacy, business, or agency risk), investors' pressure for having an independent boards will intensify. However, CEOs would use their power as a competing force to lessen the level of board independence. Thus, I propose the following:

Proposition 5: The relationship between the level of IPO firms' risk and level of board independence will be moderated by CEO power. That is, the higher CEO power, the weaker IPO firms' risk-board independence relationship.

Leading to the following hypotheses:

Hypothesis 15: The relationship between underwriter reputation and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between underwriter reputation and

H 15a: the percentage of outside directors.

H 15b: the separation of CEO and Board chairman positions.

H 15c: the size of the board of directors.

Hypothesis 16: The relationship between firm age and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between firm age and

H 16a: the percentage of outside directors.

H 16b: the separation of CEO and Board chairman positions.

H 16c: the size of the board of directors.

Hypothesis 17: The relationship between firm size and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between firm size and

H 17a: the percentage of outside directors.

H 17b: the separation of CEO and Board chairman positions.

H 17c: the size of the board of directors.

Hypothesis 18: The relationship between the level of IPO firm's business risk and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between business risk and

H 18a: the percentage of outside directors.

H 18b: the separation of CEO and Board chairman positions.

H 18c: the size of the board of directors.

Hypothesis 19: The relationship between the venture capitalist backing and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between venture capitalist backing and

H 19a: the percentage of outside directors.

H 19b: the separation of CEO and Board chairman positions.

H 19c: the size of the board of directors.

Hypothesis 20: The relationship between the presence of large blockholders and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between the presence of large blockholders and

H 20a: the percentage of outside directors.

H 20b: the separation of CEO and Board chairman positions.

H 20c: the size of the board of directors.

Hypothesis 21: The relationship between insiders' ownership stake and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between insiders' ownership stake and

H 21a: the percentage of outside directors.

H 21b: the separation of CEO and Board chairman positions.

H 21c: the size of the board of directors.

3.6 The Moderating Role of Stock Market Conditions

Helwege and Liang note "behavioral finance models that focus on investor irrationality might help explain the poor long-term performance of IPOs and dramatic cycles in the number of IPOs sold" (2004: 546). In addition, Ljungqvist, Nanda and Singh's (2003) model posits that there is an association between firms' overall riskiness and IPO market conditions. Specifically, their model predicts that during hot market periods, investor overoptimism will make the various economic risks irrelevant to firms' valuation. Stated differently, investors during hot markets are overly optimistic and thereby they tend to underestimate the potential effects of economic risk on the firms.

Combining Helwege and Liang's argument with Ljungqvist et al's model, I argue that, during hot markets, investors' behaviors (i.e., overoptimism syndrome) may influence risk-board structure relationship.

As I mentioned above, board composition is the result of the bargaining power between investors and the CEO (Hermalin & Weisbach, 1998). Investors exercise their

power by putting pressure on the firms' principal owners for creating an independent board. The level of investors' pressures is positively related to firm's level of risk (e.g., Beatty & Zajac, 1994). That is, during hot markets and because investor overoptimism (Helwege & Liang, 2003) and over confidence (Daniel, Hirshleirfer, & Subrahmanyam, 1998) investors are exercising less pressure on firms' principal owners for having independent boards than that of cold markets. Moreover, empirical evidence provides support for this argument. For example, investors in hot markets were found to be seeking a quick profit by selling their stocks in the markets soon after they start trading (Aggarwal, 2003; Ritter & Welch, 2002). Aggarwal (2003) reported that the amount of flipping in hot markets is larger than in cold markets. He attributed this to the fact that underwriters do not penalize flippers in the hot market because of the plentiful supply of investors who are willing to buy the shares for a higher price.

In addition, firms' principal owners are found to prefer a lower-level of monitoring in place (e.g., Pagano & Roell, 1998). That is, firms' principal owners see hot markets as an opportunity to issue equity (Lerner, 1992, Loughran & Ritter, 1995; Rajan & Servas, 1997; Teoh, Welch & Wong, 1998; Baker & Wurgler, 2000). Deeds et al.'s (1997) and Finkle's (1998) findings support this conclusion in that board composition correlation with IPOs proceeds get distorted during hot markets. Brau et al. (2003) report that the relative hotness of the IPO market is positively related to the probability of firms to go public and issue equity. Further, Derrien (2005) studied 73 French IPOs and found that large investor demand leads to higher IPO prices, large initial returns, and poor long-term performance. I speculate that poor long term

performance may be a direct result of a low-level of board independence which causes inadequate control mechanisms.

In summary, as discussed above, investors tend to increase pressure on firms' principal owners for creating an independent board as the level of firms' risk increases. In hot markets, however, investors are overoptimistic and thereby they tend to be indifferent about firm risk. Consequently, they exercise less influence on firms' principal owners for having an independent board of directors. Therefore,

Proposition 6: The relationship between the level of IPO firms' risk and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between IPO firms risk and level of board independence will be weaker than in a cold market.

Leading to the following hypotheses:

Hypothesis 22: The relationship between underwriter reputation and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between underwriter reputation and

H 22a: the percentage of outside directors will be weaker than in a cold market.

H 22b: the separation of CEO and Board chairman positions will be weaker than in a cold market.

H 22c: the size of the board of directors will be weaker than in a cold market.

Hypothesis 23: The relationship between firm age and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between firm age and

H 23a: the percentage of outside directors will be weaker than in a cold market.

H 23b: the separation of CEO and Board chairman positions will be weaker than in a cold market.

H 23c: the size of the board of directors will be weaker than in a cold market.

Hypothesis 24: The relationship between firm size and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between firm size and

H 24a: the percentage of outside directors will be weaker than in a cold market.

H 24b: the separation of CEO and Board chairman positions will be weaker than in a cold market.

H 24c: the size of the board of directors will be weaker than in a cold market.

Hypothesis 25: The relationship between the level of IPO firm's business risk and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between firm's business risk and

H 25a: the percentage of outside directors will be weaker than in a cold market.

H 25b: the separation of CEO and Board chairman positions will be weaker than in a cold market.

H 25c: the size of the board of directors will be weaker than in a cold market.

Hypothesis 26: The relationship between the venture capitalist backing and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between venture capitalist backing and

H 26a: the percentage of outside directors will be weaker than in a cold market.

H 26b: the separation of CEO and Board chairman positions will be weaker than in a cold market.

H 26c: the size of the board of directors will be weaker than in a cold market.

Hypothesis 27: The relationship between the presence of large blockholders and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between the presence of large blockholders and

H 27a: the percentage of outside directors will be weaker than in a cold market.

H 27b: the separation of CEO and Board chairman positions will be weaker than in a cold market.

H 27c: the size of the board of directors will be weaker than in a cold market.

Hypothesis 28: The relationship between insiders' ownership stake and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between insiders' ownership stake and

H 28a: the percentage of outside directors will be weaker than in a cold market.

H 28b: the separation of CEO and Board chairman positions will be weaker than in a cold market.

H 28c: the size of the board of directors will be weaker than in a cold market.

CHAPTER 4

RESEARCH METHODS

4.1 Data

The data set for this study is composed of 410[3] firms that made initial public offerings in years 1997, 1998, 2001 and 2002 in the U.S. stock exchanges. The period was chosen because of the large number of IPOs issued, which makes it an interesting period to explore. During this period, 1,084 domestic firms made initial public offerings (Thomson Financial Securities Data Corporation (SDC) in Peristiani and Hong (2004)). Furthermore, this period consists of both hot and cold periods. Moreover, from 1996 on word, the securities exchange commission's website give access to all the prospectuses of the companies going public.

Out of those 1,084 IPOs, I excluded 295 IPOs offered by financial companies and 45 offered by other regulated industries (i.e., transportation, utilities, and agriculture). After excluding those IPOs, I had a total sample of 744 IPOs. To increase the homogeneity of the sample, among all the firms that prepared an S-1 filing in this period, I further excluded spin-offs, units offering, Common A offering, Common B offerings, and firms that had part of its offering was international.

---

[3] In dealing with missing data, I used a listwise deletion method (using only those cases that have complete data). Although this technique reduces the sample size, it provides higher accuracy (Hair, Anderson, Tatham, & Black, 1998).

Finally, unless otherwise stated, all the variables included in this research were retrieved from the IPO prospectuses that are publicly available on the Securities Exchange Commission's website.

4.2 Measures

Table 4.1 summarizes the various indicators used as well as the citation of previous studies that used the same operationalization of the variables.

4.2.1 Dependent Variables

The three dependent variables in this dissertation are outsider ratio, separation of CEO/chairman positions, and board size. Outsider ratio was measured by dividing the number outside directors by the total number of directors. The number of outside board members is defined as the number of board members who were not current or former employees of the organization or family members of current or former employees (e.g., Beatty & Zajac, 1994).

The second measure is separation of CEO/chairman positions and was measured by a proxy variable (1 = separation, 0 = no separation). Finally, board size was measured by the total number of directors on the board.

4.2.2 Independent Variables

4.2.2.1 Legitimacy Risk

Three legitimacy risk indicators were used as independent variables. A first measure was the underwriter reputation and was measured using an index developed by Carter and Manaster (1990) and further developed by Carter et al. (1998). This scale has gained momentum in both finance (e.g., Baker & Gompers, 2003; Megginson &

Weiss, 1991) and management (e.g., Higgins & Gulati, 2003) studies. Scores may assume a value ranging from 0, indicating lowest prestige, to 9, indicating highest prestige.

Firm age was the second measure and was calculated by taking the nature logarithm of the number of years since inception up to when the venture went public.

Firm size was operationalized using firm sales in the last full fiscal year reported in the prospectus.

4.2.2.2 Business Risk

Business risk is defined as the firms-specific factors that can cause fluctuation and unpredictability in firms' performance and returns. Furthermore, business risk is the emphasis in finance and management literature (e.g., Baird &Thomas, 1990). However, those measures cannot be used to study risk in IPOs mainly because they are based on variation in either accounting performance or stock price performance. Because IPO firms are required only to publish up to three years of financial statements, there is not a lengthy financial history for the firms that are needed for calculating variation in firms' profitability. Furthermore, since IPO firms are new to the public market, there is no stock price information where variation in stock prices can be measured. Considering those shortcomings, researchers in IPOs have used several proxies for business risk. The first proxy for risk is the *number of risk factors* described in the prospectus. This proxy has been seen as a reliable measure of the level of riskiness of IPO firms because of two reasons. First, all IPOs are obliged to list all the relevant risk factors that can effects firms' future performance in the registration

statements and failure to comply or misrepresenting the risk factors may result in a lawsuit by initial investors (e.g., Sutton & Benedetti, 1990). Second, the number of risk factors has been widely accepted as a proxy for business risk by leading researchers and journals (e.g., *Administrative Science Quarterly* (Beatty & Zajac, 1994) and *Academy of Management Journal* (Pollock & Rindova, 2003)).

The second risk measure is based on the firm's profitability reported in the prospectus. Due to the lack of continuous profitability records, profitability was measured as a dichotomous variable (1 for profitability and 0 for unprofitability) (Beatty & Zajac, 1994). Moreover, the use of binary variable to measure profitability is well established in the literature. For example, Altman (1968) uses binary proxy for profitability to calculate Alman's Z-score of financial distress.

The third measure is the number of uses which refers to how the proceed of an IPO will be allocated. IPO firms are required by the SEC to specify as closely as possible how it is intended to use the proceeds of the offering. Beatty and Ritter (1986) and Clarkson and Merkley (1994) used the number of the uses of proceeds as an indication of the uncertainty and riskiness of the venture. More recent research by Rasheed, Datta, and Chinta (1997) found that the number of uses of proceeds negatively related to price premium (issue price over book value).

4.2.2.3 Agency Risk

The study used three measures of agency risk: VC involvement, insiders' ownership, and blockholders equity. A summated scale was created for venture capital involvement by adding the standardized individual measures of VC equity and total

number of VCs. VC equity was measured as the percentage of firm equity owned by VC firms on the date of IPO (e.g., Florin, 2005; Sanders & Boivie, 2004). The total number of VCs was measured by counting individual VC firms that owned equity in the firms at the time of IPO.

The next measure is the insiders' ownership. Prior studies have provided several measures for insider ownership. Specifically, some scholars argue in favor of the percentage change of insider ownership (e.g., Mudambi & Treichel, 2005; Sanders & Boivie, 2003) while other use the absolute value of the insider ownership at the time of the IPO (e.g., Beatty & Zajac, 1994; Field & Karpoff, 2002). In this study, I used both types of measures were used. That is, I measured insider ownership by two proxies. First, the percentage of dilution which is equal the number of shares offered at the IPO divided by the total number of shares (Mudambi & Treichel, 2005). The second measure is the percentage of firms' equity owned by top management team after the IPO (Beatty & Zajac, 1994).

The third measure was blockholders equity. This measure is based on Sanders and Boivie's (2003) operationalization of blockholder ownership. More specifically, it is calculated by summing up the firms stock owned by parties with at least a 5 percent stake in the company, who were not in the management

4.2.3 Moderating Variables

4.2.3.1 CEO Compensation

One proxy was used to measure the CEO incentive alignment. I used the total value of stock options granted to CEO during the last year ended before the IPO. The

calculations are based on the potential realizable value over the 10-year term of the options, which is based on assumed rates of stock appreciation of 10%, compounded annually and subtracting from that result the aggregate option exercise price. These calculation and assumed rates of appreciation are required by the SEC.

4.2.3.2 CEO Power

As I discussed in Chapters 2 and 3, there are three major sources of CEO power in IPO firms: CEO is the founder of the firm (Fischer & Pollock, 2004), the percentage of firm's equity held by CEO after the IPO (Finkelstein & Hambrick, 1989, Beatty & Zajac, 1994), and CEO tenure (Miller, 1991; Finkelstein & Hambrick, 1989). The CEO/founder measure is binary proxy (1 = CEO/founder, 0 = the CEO is not the founder). The CEO ownership will be a continuous variable calculated by dividing the number of stocks held by the CEO by the total number of stocks. Finally, CEO tenure is the number of years the CEO has been with the firms.

4.2.3.3 Market Conditions

Market conditions was measured by a dummy variable where "1" indicates hot period and "0" indicates cold market. Although the field of hot/cold market is very well-established, scholars still do not agree on a universal definition and operationalization of this concept. Indeed, the extent to which those operationalizations provide similar results is still unknown (e.g., Helwege & Liang, 2004). In this analysis, hot and cold markets are defined based on the number of IPOs in one full year (Deeds et al., 1997; Helwege & Liang, 1996). As such, according to SDC, from 1997 and 1998, there are more than 350 IPOs per year. However, the number of IPOs declined sharply

afterward; there are only 91 and 86 IPOs in years 2001 and 2002, respectively. That is, I define hot IPO as the IPO that went public in the years 1997 and 1998. Cold IPO, in contrast, is the IPO that have its offering in the years 2001and 2002.

4.2.4 Control Variables

Three control variables were used. The first set of control variables addresses the potential impacts of top management teams' characteristics on investor perception of firms' riskiness (Certo, 2003; Cohen & Dean, 2005). Thus, I controlled for TMT Tenure by taking the average of the summation of tenure of TMT member listed on the prospectus (e.g., Certo, 2003).

The second measure was the offer size (total value of capital raised during IPO) (Finkle, 1998). I used this measure because of the fact that the large offers are more likely to be associated with higher scrutiny by financial analysts as well as higher media coverage, which may impact investors' perception of firms' risk.

Finally, I controlled for industry by using the procedure advocated by Certo and associates (Certo et al. 2001b; Certo et al., 2003). Specifically, I coded the high-technology industry by assigning firms with the high-tech SIC codes a 1 those with low-tech SIC codes a 0[4].

[4] I also run the analysis using the first digit in SIC codes. Results were not substantially different.

Table 4.1 A Summary of the Operationalization of the Variables

Independent Variables	
Legitimacy Risk	
Underwriter reputation (e.g., Baker & Gompers, 2003; Carter, Dark, & Singh. 1998)	Using Carter, Dark, & Singh's ranking.
Firm Age	Natural log of the number of years since inception up to when the venture went public.
Firm Size	Firm sales recorded for the year prior to IPO.
Business Risk	
Prior Performance	Profit =Reported profitability or unprofitability (1 = Profitability, 0 = Unprofitability)
Number of Risk factors (e.g., Beatty & Zajac, 1994)	Number of risk factors described in IPO prospectus.
Number of uses of Proceeds (Beatty & Ritter, 1986)	Number of use for the IPO proceeds listed in the "Use of Proceeds" section on prospectus.
Agency Risk	
VC involvement	A summation measure was created consisted of: 1. Standardized measure of the number of VCs that owned shares after the IPO (e.g., Beatty & Zajac, 1994; Fischer & Pollock, 2004). 2. Standardized measure of the percentage of firm's equity owned by VC firms on the date of IPO (e.g., Florin, 2005; Sanders & Boivie, 2004).
Insider ownership (e.g., Mudambi & Treichel, 2005)	1. Dilution = number of shares offered at the IPO divided by the number of shares. 2. TMT ownership = the percentage of firm's equity owned by TMT members.
Blockholders (Sanders & Boivie, 2003)	The percentage of firms stock owned by parties with at least a 5 percent stake in the company, who had no business ties to the firm.

Table 4.1 Continued

Dependent Variables	
Outsiders ratio	Outsiders ratio = number of outsiders directors divided by the total number of directors.
Separation	1 = Separation of CEO/Chairman positions and 0 = No separation of CEO/Chairman positions.
Board size	Total number of directors on the board.
Moderating Variables	
CEO Compensation (Certo, Daily, Cannella, & Dalton, 2003)	The value of stock option grants in the year prior to the IPO
CEO power	1. CEO/Founder-- CEO is the founder of the firms (Fischer and Pollock, 2004) 2. Ownership—Percentage of firms owned by the CEO at the time of the IPO (e.g., Finkelstein and Hambrick, 1989) 3. Tenure—Number of years CEO with the firms (Miller, 1991; Finkelstein and Hambrick, 1989).
Market Conditions	Year of the offer = hot if the offer is in 1997 and 1998. Cold if the offer is in 2001 and 2002. 1 = Hot and 0 = Cold.
Control Variables	
TMT characteristics (Certo, 2003; Cohen & Dean, 2005).	Tenure = the average of summation of total tenure of top management team listed on prospectus.
Industry (Certo, Covin, Daily, and Dalton, 2001; Certo, Daily, Cannella, and Dalton, 2003)	Coded high-technology industry by assigning firms with high-tech SIC codes a 1 those with low-tech SIC codes a 0.
Firm characteristics (Finkle, 1998)	Offer Size= number of shares offered times offer price.

4.3 Data Analysis

The data were analyzed using multiple regression analysis and logistic regression analysis. Multiple regression analysis was used to test the effects of risk on outsider ratio and board size (Model 2 of Table 5.5 (page 121) and Model 2 of Table 5.7 (page 123)). Since the dependent variable in duality is dichotomous, a logistic regression will be used for this analysis (Berenson, Levine & Goldstein, 1983) and the results are presented in Model 3 of Table 5.6 (page 122). To check for homoscedasticity assumption, I have looked at scatterplots between each IV and the each of the three DV's. These plots showed that there are serious departures from homoscedasticity and therefore a formal test was warranted. As a result, I have used Levene's test of homogeneity of variance. The results in Levene's test confirmed the earlier results found in scatterplots. Therefore, I used Stata 9.0 program and implemented the "robust option," which computes standard errors that are robust to departure from homoscedasticity (Certo et al., 2003).

Furthermore, to clarify interpretations and to reduce potential multicollinearity, all continuous variables used in the interactions were first mean-centered before entering regression (Jaccard, Turrisi, & Wan, 1990). Moreover, to ease interpretation of the significant interactions, I used Cohen and Cohen's (1983) procedures to plot the significant interactions. That is, value represented +1 and -1 standard deviation from the mean were used to split the graphs and to generate the plotted regression lines.

In order to test for the moderating effects, a series of moderated multiple regression (when outsiders ratio and board size are used as dependent variables) and a

series of moderated logistic regression (when duality used as a dependent variable) were used. Specifically, I used Baron and Kenny's (1986) procedure to test for moderation. This procedure has two steps. First, I regressed the dependent variable on the independent variables (i.e., reduced model). Second, a full model was tested with interaction terms between each moderated variable and each independent variable. If the moderating effects are present, two conditions must be present: (1) the interaction terms should be statistically significant and (2) the change in r-square from the reduced to full models should be statistically significant as well.

Diagnostics tests indicated that including all interaction simultaneously created a high multicollinearity and reduced significantly the power of the regression and logistics models. Therefore, a two-step analysis technique was used:

Step 1. I ran separate regression models for each moderating variable (Sanders & Boive, 2004; Finkelstein & Hambrick, 1989). Table 5.2 (page 105) and Table 5.4 (page 109) show the results of the moderating multiple regression analysis when "outsiders ratio" and "board size" are the dependent variables, respectively. Table 5.3 (page 107) presents the results of multiple logistic regressions when duality is the dependent variable. If the model is significant, only significant interaction was chosen and used in the final analysis (Step 2). All non-significant interaction terms where excluded and therefore all hypotheses associated with those excluded interactions were considered not supported.

That is, for the dependent variable "outsider ratio", I ran three regression models (see Table 5.2): Model 1 (for the moderating variable of CEO incentive alignment),

Model 2 (for the moderating variable of stock market conditions) and Model 3 (for moderating variable of CEO power)*.

Y (outsider ratio/Model 1) = Constant + Control Variables+ Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, CEO Tenure) + Market Conditions + Interactions between Stock Option Value and each IV

Y (outsider ratio/Model 2) = Constant + Control Variables+ Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, CEO Tenure) + Market Conditions + Interactions between Market Conditions and each IV

Y (outsider ratio/Model 3) = Constant + Control Variables+ Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, CEO Tenure) + Market Conditions + Interactions between each measure of CEO power (i.e., CEO-Founder, CEO Equity, and CEO Tenure) and each IV

* Control Variables = Industry, TMT Tenure, and Offer Size.
Legitimacy Risk Variables = Underwriter Rank, Firm Age, and Firm Size.
Business Risk Variables = Risk Factors, Profitability, and Number of Uses.
Agency Risk Variables = VC Involvement, Dilution, TMT Equity, and Blockholders Equity

For the dependent variable "separation", I ran three logistic regression models (Table 5.3): Model 1 (for the moderating variable of CEO incentive alignment), Model 2 (for the moderating variable of stock market conditions) and Model 3 (for moderating variable of CEO power)*.

P (Separation/Model 1) = $e^{\text{Constant + Control Variables + Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, and CEO Tenure) + Market Conditions + Interactions between Stock Option Value and each IVs.}}$

P (Separation/Model 2) = $e^{\text{Constant + Control Variables + Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, and CEO Tenure) + Market Conditions + Interactions between Market Conditions and each IVs}}$

P (Separation/Model 3) = $e^{\text{Constant + Control Variables + Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, and CEO Tenure) + Market Conditions + Interactions between each measure of CEO power (CEO-Founder, CEO Equity, and CEO Tenure) and each IVs}}$

* Control Variables = Industry, TMT Tenure, and Offer Size.
Legitimacy Risk Variables = Underwriter Rank, Firm Age, and Firm Size.
Business Risk Variables = Risk Factors, Profitability, and Number of Uses.
Agency Risk Variables = VC Involvement, Dilution, TMT Equity, and Blockholders Equity

For the dependent variable "board size", I ran three regression models (Table 5.4): Model 1 (for the moderating variable of CEO incentive alignment), Model 2 (for the moderating variable of stock market conditions) and Model 3 (for moderating variable of CEO power).

Y (Board size/Model 1) = Constant + Control Variables+ Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, CEO Tenure) + Market Conditions + Interactions between Stock Option Value and each IV

Y (board size/Model 2) = Constant + Control Variables+ Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, CEO Tenure) + Market Conditions + Interactions between Market Conditions and each IV

Y (Board size/Model 3) = Constant + Control Variables+ Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, CEO Tenure) + Market Conditions + Interactions between each measure of CEO power (i.e., CEO-Founder, CEO Equity, and CEO Tenure) and each IV

* Control Variables = Industry, TMT Tenure, and Offer Size.
Legitimacy Risk Variables = Underwriter Rank, Firm Age, and Firm Size.
Business Risk Variables = Risk Factors, Profitability, and Number of Uses.
Agency Risk Variables = VC Involvement, Dilution, TMT Equity, and Blockholders Equity

Step 2. I combined all the significant interactions found in Step 1 and run one regression model for each dependent variable. The results of the final models are presented in Model 3 of Table 5.5 (page 121), Model 3 of Table 5.6 (page 122), and Model 3 of Table 5.7 (page 123). Through this analysis, I was able to capture the most of the significant variation in the regression model and simultaneously avoid the problems of multicollinearity and a low statistical power.

CHAPTER 5

RESULTS

5.1 Descriptive Statistics and Correlations

Means, standard deviations, and the correlations among the variables are shown in Table 5.1. The IPO firms in this sample had an average offer size of $46.8 millions, ranged from $5 million to $360 million. Out of 410 firms used in this dissertation, 74 companies were from the years 2001 and 2004 (representing the cold markets) and the rest from years 1997 and 1998 (representing the hot markets). Furthermore, the average value of CEO stock option was $0.87 million. It is notable that only 35% of the sample had stock option programs in place and the value ranged from $0 to $33 million. Regarding board structure, outsiders ratio averaged 62% which is below that found in large companies (72% in Zajac and Westphal (1990), but higher than what is found in that of Beatty and Zajac's (1994) and Sanders and Boivie's (2004) studies. The differences in outsider ratio may be attributed to the operationalization of variables. Indeed, the current definition of outsider ratio does not provide a clear guidance to the researchers as whether the seats occupied by venture capitalists in the board of directors are considered as outsider directors or not. In addition, separation (43.7% had a separate CEO and chairman positions) was close to Zajac and Beatty's (1994) study of 48%. Furthermore, the size of the board of directors averaged 6.34 and ranged from 3 to 11 members.

With respect to venture-capitalist backing, 38.3% of my sample had one or more VCs as a principal owner at the time of IPO, which is lower than what is reported in Beatty and Zajac's (1994) study. The differences in venture capitalist backing may be caused by the differences in the firms included in the sample. That is, Beatty and Zajac used wider range of industries and did not exclude the financial companies. In contrast, the sample used in this dissertation is restricted to fewer numbers of industries (see Data section in Chapter 4 for more details).

Among all the independent variables in Table 4, intercorrelations are generally modest (< 0.40). The only three exceptions are the correlations between offer size and underwriter reputation ($r = .41$, $p < .01$), offer size and firm size ($r = .45$, $p < .01$), and CEO-founder and CEO equity ($r = .46$, $p < .01$). All the three correlation are expected and they are also in the proposed directions. That is, I would expect that the underwriter reputation will be positively associated with offer size. Similarly, if the CEO is the founder of the firms, I would expect that his/her equity ownership will be higher than those CEO's who are not the founders. However, as I stated above, there was no multicollinearity in the regression models as measured by Variance Inflation Factors (VIF). That is, VIF for all of my regression and logistic regression equations were less than three, which is well below the guideline of ten recommended by Chatterjee and Price (1991).

In term of the correlation between the independent and dependent variables, outsiders ratio was significantly and positively correlated with VC involvement ($r = .39$, $p < .01$) and blockholder equity ($r = .44$, $p < .01$), but significantly and negatively

correlated with CEO equity ($r = .38$, $p < .01$). Separation of CEO/chairman position was significantly and negatively correlated with two measure of CEO power: CEO-founder ($r = .38$, $p < .01$) and CEO equity ($r = .39$, $p < .01$).

Table 5.1 Descriptive Statistics and Correlations

Variables[a]	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. Outsiders Ratio	0.62	0.161	1.00									
2. Board Size	6.34	1.54	0.29***	1.00								
3. Separation	0.56	0.50	-0.09*	-0.11**	1.00							
4. Industry	0.37	0.48	0.03	-0.11**	-0.04	1.00						
5. TMT Tenure	7.73	12.32	-0.06	0.00	-0.06	-0.25***	1.00					
6. Offer Size	46.82	41.65	0.21***	0.18***	-0.04	-0.05	-0.02	1.00				
7. Underwriter Rank	7.31	2.03	0.15***	0.11**	-0.10**	-0.01	0.06	0.41***	1.00			
8. Firm Age	0.84	0.383	-0.10*	-0.08	-0.05	-0.08	0.01	0.07	0.07	1.00		
9. Firm Size (Sales)	1.34	0.68	0.00***	0.04	0.02	-0.09*	-0.04	0.45***	0.28***	0.33***	1.00	
10.Risk Factors	22.69	5.91	0.13**	0.10*	-0.04	0.22***	-0.07	0.12**	0.02	-0.10*	-0.15***	1.00
11.Profit	0.43	0.50	-0.11**	-0.07	0.02	-0.12**	0.06	0.00	-0.04	0.17***	0.22***	-0.20****
12.Number of Uses	3.34	1.57	-0.08	0.03	0.03	-0.06	0.00	-0.17***	-0.35***	-0.07	-0.24***	0.10**
13.VC Involvement	-.004	1.83	0.39***	0.16***	-0.15***	0.04	-0.04	0.33***	0.34***	-0.07	0.09*	0.16***
14.Dilution	30.08	10.87	-0.10**	0.02	0.07	-0.20***	0.06	-0.05	-0.31***	0.10**	0.09*	-0.17***
15.TMT Equity	9.04	11.60	-0.29***	-0.17***	0.03	0.17***	-0.04	-0.11**	-0.10*	0.03	-0.01	-0.03
16.Blockholder Equity	23.11	21.68	0.44***	0.13**	-0.23***	0.00	-0.01	0.29***	0.32***	-0.02	0.08	0.16***
17.CEO Option Values	0.87	3.06	0.18***	0.12**	-0.11**	-0.04	0.00	0.23***	0.12**	-0.05	0.06	0.21***
18.CEO-Founder	0.55	0.50	-0.24***	-0.19***	0.38***	0.01	-0.03	-0.18***	-0.11**	-0.03	-0.06	-0.08
19.CEO Equity	16.69	18.42	-0.38***	-0.28***	0.39***	-0.06	-0.06	-0.21***	-0.20***	0.13**	0.05	-0.10*
20.CEO Tenure	7.62	20.85	-0.12**	-0.08*	0.12**	-0.06	0.02	-0.05	-0.02	0.19***	0.08	-0.12**
20.Market Conditions	0.82	0.385	-0.23***	-0.16***	0.06	0.06	0.00	-0.51***	-0.17***	-0.05	-0.25***	-0.43***

[a] Firm age was logged. Outsiders ratio, dilution, TMT equity, blockholder equity, and CEO equity is expressed as a percentage. Offer size and CEO options are in millions of dollars.
* p < .10, ** p<.05, *** p<.01

Table 5.1 Continued

	11	12	13	14	15	16	17	18	19	20	21
1.Outsiders Ratio											
2.Board Size											
3.Separation											
4.Industry											
5.TMT Tenure											
6.Offer Size											
7.Underwriter Rank											
8.Firm Age											
9.Firm Size (Sales)											
10.Risk Factors											
11.Profit	1.00										
12.Number of Uses	0.00	1.00									
13.VC Involvement	-0.08*	-0.16***	1.00								
14.Dilution	0.12**	0.15***	-0.18**	1.00							
15.TMT Equity	0.10*	0.04	-0.26***	-0.04	1.00						
16.Blockholder Equity	-0.11**	-0.17***	0.73***	-0.15***	-0.24***	1.00					
17.Stock Option Values	-0.09*	-0.04	0.25***	-0.16***	-0.11**	0.20***	1.00				
18.CEO-Founder	0.00	0.01	-0.24***	0.07	0.08	-0.33***	-0.15***	1.00			
19.CEO Equity	0.13**	0.05	-0.44***	-0.06	0.06	-0.49***	-0.18***	0.46***	1.00		
20.CEO Tenure	0.10*	-0.02	-0.11**	0.08*	0.09*	-0.13**	-0.05	0.15***	0.12	1.00	
21.Market Conditions	0.08	-0.03	-0.30***	0.09*	0.12**	-0.26***	-0.33***	0.16***	0.22	0.06	1.00

* p < .10, ** p<.05, *** p<.01

5.2 Preliminary Analysis

As I mentioned in the last section, I conducted a two-step analysis. In Step 1 (the preliminarily analysis), I ran a separate regression model for each moderating variable. The results of those regression models are presented below in Tables 5.2, 5.3, and 5.4[5]. Then, in Step 2, I have excluded all insignificant interaction terms and have combined all significant interaction terms in one full model. Therefore, the final models (that are presented in Tables 5.5, 5.6, and 5.7 in pages 121, 122, and 123, respectively) are as following*:

Y (outsider ratio) = Constant + Control Variables+ Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, CEO Tenure) + Market Conditions + Stock option*Underwriter + Stock option*Sales + Stock option*Profit + Stock option*Uses + Market conditions*Underwriter + Market conditions*VC Involvement + Market conditions*Sales + CEO Equity*Sales + CEO Equity*VC Involvement + CEO Tenure*TMT Equity

P (Separation/Model 2) = $e^{\text{Constant + Control Variables + Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, and CEO Tenure) + Market Conditions + Stock Option*Age + Stock Option*Profit + Stock Option*Dilution + Market conditions*Blockholders equity + CEO-Founder*Sales + CEO-Founder*Uses + CEO Equity*Firm age + CEO Equity*Sales + CEO Equity*Uses + CEO Equity*VC Involvement + CEO Equity*TMT Equity}$

Y (board size) = Constant + Control Variables+ Independent Variables (Legitimacy Risk, Business Risk, and Agency Risk) + Stock Option Value + CEO Power (CEO-Founder, CEO Equity, CEO Tenure) + Market Conditions + Stock option*Sales + Stock option*VC Involvement + Stock option*TMT Equity + Market Conditions*Risk Factors + CEO-Founder*Underwriter + CEO-Founder*Risk Factors + CEO Equity*Firm age + CEO Equity*Sales

* Control Variables = Industry, TMT Tenure, and Offer Size.
Legitimacy Risk Variables = Underwriter Rank, Firm Age, and Firm Size.
Business Risk Variables = Risk Factors, Profitability, and Number of Uses.
Agency Risk Variables = VC Involvement, Dilution, TMT Equity, and Blockholders Equity

[5] Because the results presented on those tables are irrelevant to my analysis of the results and hypotheses testing, they will not be discussed further.

Table 5.2 The Preliminary Analysis:
The Effects of Risk on Outsiders Ratio[a]

Variables	*Moderators:*	Model 1[b] CEO Option Value		Model 2[c] Market Conditions	
Constant		0.654***	(0.031)	0.646	(0.033)
Industry		0.001	(0.016)	-0.004	(0.016)
TMT Tenure		-0.001	(0.001)	-0.001	(0.001)
Offer Size		0.000	(0.000)	0.000	(0.000)
Underwriter Rank		-0.008*	(0.005)	0.021**	(0.010)
Firm Age		-0.025	(0.020)	-0.035	(0.038)
Sales		-0.004	(0.014)	-0.004	(0.015)
Risk Factors		0.000	(0.001)	0.003	(0.002)
Profitability		-0.001	(0.016)	-0.035	(0.033)
No. of Uses		-0.005	(0.005)	-0.006	(0.009)
VC Involvement		0.010*	(0.005)	-0.011	(0.010)
Dilution		-0.001	(0.001)	-0.001	(0.001)
TMT Equity		-0.003***	(0.001)	0.001	(0.002)
Block holder Equity		0.001***	(0.000)	0.002**	(0.001)
Stock Option Value		0.001	(0.006)	0.001	(0.002)
CEO-Founder		-0.012	(0.017)	-0.011	(0.016)
CEO Equity		-0.002***	(0.001)	-0.002***	(0.000)
CEO Tenure		0.000	(0.000)	0.000	(0.000)
Market Conditions		-0.030	(0.025)	-0.030	(0.027)
Moderator * Underwriter		-0.004*	(0.002)	-0.030***	(0.011)
Moderator * Age		-0.004	(0.011)	0.015	(0.044)
Moderator * Sales		-0.009**	(0.003)	0.005	(0.022)
Moderator * Risk Factors		0.000	(0.000)	-0.005	(0.003)
Moderator * Profit		0.012*	(0.006)	0.031	(0.037)
Moderator * Use		-0.007***	(0.002)	0.004	(0.011)
Moderator * VC Involvement		-0.003	(0.002)	0.027**	(0.011)
Moderator * Dilution		0.000	(0.000)	0.000	(0.002)
Moderator * TMT Equity Ownership		0.000	(0.000)	-0.004**	(0.002)
Moderator * Blockholder Ownership		0.000	(0.000)	0.000	(0.001)
R^2		.336		.346	
Full Model F		11.28***		9.420***	
N =		393		393	

* p < .10, ** p < .05, *** p < .01
[a] Standard errors are in parentheses.
[b] Model 1 tests the moderating impact of *Stock Option Value* on Risk-Outsider ratio relationship.
[c] Model 2 tests the moderating impact of *Market Conditions* on Risk-Outsider ratio relationship.
[d] Model 3 tests the moderating impact of *CEO Power* on Risk-Outsider ratio relationship.

Table 5.2 Continued

Variables	Model 3[d] CEO Power				
Constant	0.670	(0.037)	CEO Equity * Underwriter	0.000	(0.000)
Industry	-0.002	(0.016)	CEO Equity * Age	0.000	(0.001)
TMT Tenure	-0.001*	(0.001)	CEO Equity * Sales	-0.001*	(0.001)
Offer Size	0.000	(0.000)	CEO Equity * Risk Factors	0.000	(0.000)
Underwriter Rank	-0.001	(0.008)	CEO Equity * Profit	0.000	(0.001)
Firm Age	-0.042	(0.033)	CEO Equity * Use	0.000	(0.000)
Sales	-0.003	(0.022)	CEO Equity * VC Involvement	0.001**	(0.001)
Risk Factors	0.002	(0.002)	CEO Equity * Dilution	0.000	(0.000)
Profitability	-0.007	(0.026)	CEO Equity * TMT Equity Ownership	0.000	(0.000)
No. of Uses	-0.006	(0.008)	CEO Equity * Blockholders Ownership	0.000	(0.000)
VC Involvement	0.009	(0.010)	CEO Tenure * Underwriter	0.001	(0.001)
Dilution	-0.001	(0.001)	CEO Tenure * Age	0.000	(0.004)
TMT Equity	-0.003***	(0.001)	CEO Tenure * Sales	0.003	(0.003)
Block holder Equity	0.002*	(0.001)	CEO Tenure * Risk Factors	0.000	(0.000)
Stock Option Value	0.002	(0.002)	CEO Tenure * Profit	0.000	(0.003)
CEO-Founder	-0.039	(0.024)	CEO Tenure * Use	0.001	(0.001)
CEO Equity	-0.001	(0.001)	CEO Tenure * VC Involvement	-0.001	(0.001)
CEO Tenure	0.004	(0.003)	CEO Tenure * Dilution	0.000	(0.000)
Market Conditions	-0.019	(0.028	CEO Tenure * TMT Equity Ownership	0.000**	(0.000)
Moderator * Underwriter	-0.009	(0.012)	CEO Tenure * Blockholders Ownership	0.000	(0.000)
CEO-Founder * Age	-0.025	(0.051)			
CEO-Founder * Sales	0.005	(0.027)			
CEO-Founder * Risk Factors	-0.002	(0.003)			
CEO-Founder * Profit	0.019	(0.040)			
CEO-Founder * Use	0.007	(0.011)			
CEO-Founder * VC Involvement	0.017	(0.012)			
CEO-Founder * Dilution	-0.001	(0.002)			
CEO-Founder * TMT Equity Ownership	0.000	(0.002)			
CEO-Founder * Blockholders Ownership	-0.001	(0.001)			
			R^2	.382	
			Full Model F	15.41***	
			N =	392	

* p < .10, ** p < .05, *** p < .01
[a] Standard errors are in parentheses.
[b] Model 1 tests the moderating impact of *Stock Option Value* on Risk-Outsider ratio relationship.
[c] Model 2 tests the moderating impact of *Market Conditions* on Risk-Outsider ratio relationship.
[d] Model 3 tests the moderating impact of *CEO Power* on Risk-Outsider ratio relationship.

Table 5.3 The Preliminary Analysis:
The Effects of Risk on Separation[a]

Variables	*Moderators:*	Model 1[b] CEO Stock Option Value		Model 2[c] Stock Market Conditions	
Constant		-0.126	(0.607)	-0.092	(0.614)
Industry		0.239	(0.287)	0.106	(0.281)
TMT Tenure		0.016	(0.010)	0.016	(0.010)
Offer Size		-0.006	(0.004)	-0.005	(0.004)
Underwriter Rank		0.001	(0.086)	0.152	(0.269)
Firm Age		2.046***	(0.460)	1.589*	(0.878)
Sales		0.078	(0.237)	0.746	(0.458)
Risk Factors		0.004	(0.025)	-0.034	(0.047)
Profitability		0.271	(0.272)	-0.448	(0.675)
No. of Uses		0.013	(0.086)	0.239	(0.208)
VC Involvement		-0.119	(0.102)	0.063	(0.189)
Dilution		0.000	(0.014)	-0.025	(0.027)
TMT Equity		-0.018	(0.014)	0.010	(0.034)
Block holder Equity		0.003	(0.008)	-0.026	(0.016)
Stock Option Value		0.349**	(0.147)	0.042	(0.074)
CEO-Founder		-0.655**	(0.288)	-0.622**	(0.283)
CEO Equity		-0.048***	(0.011)	-0.052***	(0.012)
CEO Tenure		-0.120***	(0.034)	-0.123***	(0.034)
Market Conditions		0.326	(0.468)	-0.022	(0.509)
Moderator * Underwriter		-0.009	(0.060)	-0.144	(0.274)
Moderator * Age		0.477*	(0.268)	0.165	(0.948)
Moderator * Sales		-0.041	(0.135)	-0.781	(0.517)
Moderator * Risk Factors		-0.011	(0.008)	0.049	(0.055)
Moderator * Profit		0.271*	(0.153)	0.696	(0.736)
Moderator * Use		-0.029	(0.059)	-0.285	(0.227)
Moderator * VC Involvement		0.035	(0.083)	-0.282	(0.216)
Moderator * Dilution		0.036***	(0.011	-0.003	(0.030)
Moderator * TMT Equity Ownership		-0.010	(0.010)	-0.022	(0.036)
Moderator * Blockholder Ownership		-0.003	(0.006)	0.036**	(0.018)
-2 Log Likelihood (-2LL)		-202.778		-206.706	
Chi-square		99.22***		86.87***	
Pseudo R^2		.249		.235	
% of cases classified correctly		73.98%		73.28%	

* p < .10, ** p < .05, *** p < .01
[a] Standard errors are in parentheses.
[b] Model 1 tests the moderating impact of *Stock Option Value* on Risk-Outsider ratio relationship.
[c] Model 2 tests the moderating impact of *Market Conditions* on Risk-Outsider ratio relationship.
[d] Model 3 tests the moderating impact of *CEO Power* on Risk-Outsider ratio relationship.

Table 5.3 Continued

Variables	Model 3[d] CEO Power				
Constant	-1.422	(0.676)	CEO Equity * Underwriter	-0.003	(0.006)
Industry	0.539	(0.324)	CEO Equity * Age	-0.058*	(0.030)
TMT Tenure	0.024**	(0.012)	CEO Equity * Sales	0.097***	(0.026)
Offer Size	-0.004	(0.004)	CEO Equity * Risk Factors	0.005	(0.003)
Underwriter Rank	0.029	(0.148)	CEO Equity * Profit	-0.012	(0.029)
Firm Age	0.872	(0.654)	CEO Equity * Use	0.040***	(0.010)
Sales	1.658***	(0.475)	CEO Equity * VC Involvement	-0.041**	(0.016)
Risk Factors	0.017	(0.047)	CEO Equity * Dilution	0.001	(0.001)
Profitability	-0.356	(0.473)	CEO Equity * TMT Equity Ownership	0.002*	(0.001)
No. of Uses	0.534***	(0.168)	CEO Equity * Blockholders Ownership	0.001	(0.001)
VC Involvement	-0.525**	(0.232)	CEO Tenure * Underwriter	0.018	(0.018)
Dilution	-0.011	(0.024)	CEO Tenure * Age	-0.021	(0.082)
TMT Equity	0.007	(0.021)	CEO Tenure * Sales	0.018	(0.055)
Block holder Equity	0.016	(0.015)	CEO Tenure * Risk Factors	-0.006	(0.006)
Stock Option Value	0.021	(0.063)	CEO Tenure * Profit	-0.019	(0.065)
CEO-Founder	-0.670	(0.451)	CEO Tenure * Use	0.008	(0.021)
CEO Equity	-0.120***	(0.027)	CEO Tenure * VC Involvement	-0.010	(0.023)
CEO Tenure	-0.092*	(0.053)	CEO Tenure * Dilution	-0.004	(0.003)
Market Conditions	0.365	(0.448	CEO Tenure * TMT Equity Ownership	0.001	(0.003)
Moderator * Underwriter	0.039	(0.200)	CEO Tenure * Blockholders Ownership	0.000	(0.002)
CEO-Founder * Age	0.372	(0.899)			
CEO-Founder * Sales	-1.579***	(0.504)			
CEO-Founder * Risk Factors	-0.010	(0.055)			
CEO-Founder * Profit	0.516	(0.659)			
CEO-Founder * Use	-0.717***	(0.241)			
CEO-Founder * VC Involvement	0.027	(0.196)			
CEO-Founder * Dilution	-0.027	(0.029)			
CEO-Founder * TMT Equity Ownership	-0.008	(0.032)			
CEO-Founder * Blockholders Ownership	-0.025	(0.018)			
			-2 Log Likelihood (-2LL)	-183.753	
			Chi-square	99.41***	
			Pseudo R^2	0.320	
			% of cases classified correctly	77.35%	

* p < .10, ** p < .05, *** p < .01
[a] Standard errors are in parentheses.
[b] Model 1 tests the moderating impact of *Stock Option Value* on Risk-Outsider ratio relationship.
[c] Model 2 tests the moderating impact of *Market Conditions* on Risk-Outsider ratio relationship.
[d] Model 3 tests the moderating impact of *CEO Power* on Risk-Outsider ratio relationship.

Table 5.4 The Preliminary Analysis:
The Effects of Risk on Board Size[a]

Variables	*Moderators:*	Model 1[b] CEO Stock Option Value		Model 2[c] Stock Market Conditions	
Constant		6.558	(0.343)	6.861	(0.378)
Industry		-0.406**	(0.177)	-0.373**	(0.177)
TMT Tenure		-0.007	(0.006)	-0.007	(0.006)
Offer Size		0.004*	(0.002)	0.003	(0.002)
Underwriter Rank		0.019	(0.049)	0.288	(0.186)
Firm Age		-0.312	(0.232)	-0.854	(0.526)
Sales		0.063	(0.140)	0.267	(0.318)
Risk Factors		0.025	(0.015)	-0.021	(0.027)
Profitability		-0.152	(0.165)	-0.532	(0.465)
No. of Uses		0.051	(0.056)	0.141	(0.185)
VC Involvement		-0.016	(0.062)	-0.106	(0.143)
Dilution		0.000	(0.008)	0.010	(0.020)
TMT Equity		-0.012	(0.008)	-0.047**	(0.018)
Block holder Equity		-0.007	(0.005)	-0.011	(0.010)
Stock Option Value		0.047	(0.057)	0.021	(0.027)
CEO-Founder		-0.187	(0.176)	-0.260	(0.174)
CEO Equity		-0.021***	(0.006)	-0.021***	(0.006)
CEO Tenure		-0.002	(0.001)	-0.002*	(0.001)
Market Conditions		0.020	(0.255)	-0.272	(0.300)
Moderator * Underwriter		-0.013	(0.033)	-0.265	(0.189)
Moderator * Age		0.013	(0.117)	0.691	(0.593)
Moderator * Sales		-0.082*	(0.042)	-0.193	(0.346)
Moderator * Risk Factors		0.000	(0.003)	0.056*	(0.032)
Moderator * Profit		-0.030	(0.075)	0.516	(0.492)
Moderator * Use		-0.011	(0.030)	-0.103	(0.194)
Moderator * VC Involvement		-0.043*	(0.024)	0.101	(0.159)
Moderator * Dilution		-0.005	(0.005)	-0.009	(0.022)
Moderator * TMT Equity Ownership		0.009*	(0.005)	0.032	(0.019)
Moderator * Blockholder Ownership		0.003	(0.002)	0.004	(0.012)
R^2		.176		.171	
Full Model F		7.74***		4.490***	
N =		392		392	

* p < .10, ** p < .05, *** p < .01
[a] Standard errors are in parentheses.
[b] Model 1 tests the moderating impact of *Stock Option Value* on Risk-Outsider ratio relationship.
[c] Model 2 tests the moderating impact of *Market Conditions* on Risk-Outsider ratio relationship.
[d] Model 3 tests the moderating impact of *CEO Power* on Risk-Outsider ratio relationship.

Table 5.4 Continued

Variables	Model 3[d] CEO Power				
Constant	6.507	(0.384)	CEO Equity * Underwriter	0.003	(0.002)
Industry	-0.418**	(0.178)	CEO Equity * Age	0.044***	(0.015)
TMT Tenure	-0.007	(0.006)	CEO Equity * Sales	-0.013*	(0.008)
Offer Size	0.003	(0.002)	CEO Equity * Risk Factors	-0.001	(0.001)
Underwriter Rank	0.156**	(0.074)	CEO Equity * Profit	0.001	(0.011)
Firm Age	0.235	(0.375)	CEO Equity * Use	0.000	(0.004)
Sales	0.023	(0.243)	CEO Equity * VC Involvement	0.007	(0.005)
Risk Factors	-0.014	(0.023)	CEO Equity * Dilution	0.000	(0.000)
Profitability	0.107	(0.282)	CEO Equity * TMT Equity Ownership	0.000	(0.000)
No. of Uses	0.152*	(0.085)	CEO Equity * Blockholders Ownership	0.000	(0.000)
VC Involvement	0.109	(0.116)	CEO Tenure * Underwriter	0.005	(0.009)
Dilution	-0.013	(0.012)	CEO Tenure * Age	0.003	(0.047)
TMT Equity	-0.001	(0.012)	CEO Tenure * Sales	0.039	(0.034)
Block holder Equity	-0.002	(0.009)	CEO Tenure * Risk Factors	0.000	(0.003)
Stock Option Value	0.010	(0.025)	CEO Tenure * Profit	0.038	(0.030)
CEO-Founder	0.062	(0.262)	CEO Tenure * Use	0.011	(0.010)
CEO Equity	-0.013	(0.011)	CEO Tenure * VC Involvement	0.010	(0.015)
CEO Tenure	-0.044*	(0.025)	CEO Tenure * Dilution	-0.001	(0.001)
Market Conditions	-0.061	(0.277)	CEO Tenure * TMT Equity Ownership	0.001	(0.001)
Moderator * Underwriter	-0.281**	(0.108)	CEO Tenure * Blockholders Ownership	-0.001	(0.001)
CEO-Founder * Age	-0.708	(0.557)			
CEO-Founder * Sales	0.432	(0.324)			
CEO-Founder * Risk Factors	0.054*	(0.031)			
CEO-Founder * Profit	-0.468	(0.434)			
CEO-Founder * Use	-0.169	(0.122)			
CEO-Founder * VC Involvement	-0.119	(0.138)			
CEO-Founder * Dilution	0.019	(0.017)			
CEO-Founder * TMT Equity Ownership	-0.026	(0.018)			
CEO-Founder * Blockholders Ownership	-0.007	(0.012)			
			R^2	.236	
			Full Model F	4.470***	
			N =	393	

* p < .10, ** p < .05, *** p < .01
[a] Standard errors are in parentheses.
[b] Model 1 tests the moderating impact of *Stock Option Value* on Risk-Outsider ratio relationship.
[c] Model 2 tests the moderating impact of *Market Conditions* on Risk-Outsider ratio relationship.
[d] Model 3 tests the moderating impact of *CEO Power* on Risk-Outsider ratio relationship.

5.3 Risk Effects on Outsider Ratio

Table 5.5 (page 121) presents the multiple regression results for the Model 1 (independent variables only) and Model 2 (independent and moderator variables). As Table 5.2 indicates, R^2 significantly improved from Model 1 to Model 2 ($\Delta R^2 = .038$, $p < .01$). Model 2 explain 31.8% of the variance in outsider ratio.

One out of the seven hypotheses was supported. As expected, firm age has a negative and a significant coefficient at $p < .01$ (hypothesis 2a). As such, as firm ages increases, the number of outside directors decreases.

Consistent with hypothesis 6a, increases in TMT equity ownership causes a decline the ratio of outsiders ($p < .01$). This result therefore suggests that as the percentage of TMT equity increases, the need for higher monitoring (as measured by higher ratio of outside directors in the boards) decreases. A detailed examination of the results will be discussed in Hypotheses Testing section. Overall, hypotheses 1a, 3a, 4a, 5a, and 7a were not supported.

Before examining the moderating relationship proposed in Hypotheses 9a to 28a, the main effects of moderating variables were examined in Model 2, Table 5.5 (page 123). Although I did not hypothesize any direct relationship, it was necessary to control for their direct effects on the level of monitoring (i.e., outsiders ratio). Out of the four moderating variables, CEO equity is negatively associated with outsiders ratio ($b = -.002$, $p < .01$). As such, consistent with my broader theory, as CEO ownership increases, the number of outsiders directors on the board of directors decreases.

To test for the moderating effects of CEO incentive alignment, CEO power, and market conditions, interaction terms were added in Model 3 of Table 5.5 (page 121). Overall, the interaction terms explained a significant amount of the variance in outsider ratio. That is the change in R^2 was significant at $p < .01$. Moreover, Model 3 explains 38.5% of the variance in outsiders ratio ($R^2 = .385$).

Option value has significant interactions with underwriter rank ($b = -.0006$, $p < .01$), revenues ($b = -.0009$, $p<.01$), profit ($b = .012$, $p < .01$), and number of uses ($b = -.0006$, $p < .01$). Market conditions had a significant interaction with underwriter rank ($b = -.033$, $p < .01$) and VC involvement ($b = .029$, $p < .01$). Finally, CEO equity ownership has a positive and significant interaction with TMT equity ownership ($b = .001$, $p < .01$), while CEO tenure has positive and significant interaction with TMT equity ($b = .000$, $p < .01$). Generally speaking, however, the results partially supported the moderating hypotheses. Again, the interpretation of those interactions will be discussed in details in the Hypotheses Testing section.

5.4 Risk Effects on Separation of CEO/Chairman Positions

To test for the direct effects of risk on separation, I conducted a binary logistic regression analysis to predict whether IPO firms will have a separate CEO/chairman positions or not (where 1 = the CEO and chairman positions are separated and 0 = CEO is the chairman of the board) using legitimacy, business, and agency as predictor variables. The results are summarized in Table 5.6 (page 122). The results of the logistic regression using only the independent variables are presented in Model 1 of

Table 5.6 (page 122). In Model 2, I introduced the effects of the moderating variables. Comparing the values of chi-square in Model 1 and Model 2, adding the moderating variables has improved the accuracy of the model significantly. That is, chi-square increased from 27.08 ($p < .01$) to 81.02 ($p < .01$). Also, my analysis shows that Model 1 classifies 61.77% with correct classification for a separation or not. After adding the five moderating variables, the model improves the classification of separation to 71.52%. The cutoff value used was 0.5. In addition, Model 2 had a better fit as can be seen in a smaller -2 Log Likelihood (-2LL) (from -257.7 to -211.3) and a higher pseudo R^2 (Δ pseudo $R^2 = .167$, $p < .01$). Overall, Model 2 indicates that the ten predictors and five moderating variables account for 21.8% variance in the separation.

As can be seen in Model 2 of Table 5.6 (page 122), of the ten predictor variables, only VC Involvement uniquely predicted group membership ($b = -.123$, $p < .10$). This is evident from the significant Wald test (not reported here). As expected, the result suggests that the level of monitoring (i.e., separation of CEO/chairman positions) decreases as the involvement of VCs increases (hypothesis 5a). Therefore, Hypotheses 1b, 2b, 3b, 4b, 6b, and 7b were not supported.

Model 3 also investigates the effects of the direct impact of the four moderating variables on the probability of separation of CEO/Chairman positions. As expected, the three measures of CEO power (CEO-Founder ($b = -.571$, $p < .05$), CEO Equity ($b = -.051$, $p < .01$), and CEO Tenure ($b = -.119$, $p < .01$)) had significant and negative relationships with separation. That is, as CEO power increases, the probability of

having a separate CEO and chairman position diminishes.

Model 3 in Table 5.6 (page 122) examines the moderating roles of CEO incentive alignment, CEO power, and market conditions on the relationship between risk and separation. Model 3 was significant at $p < .01$, and had a 76.84% accuracy rate between the actual and the predicted values. Introducing the interaction terms have significantly improved pseudo R^2 ($\Delta R^2 = .103$, $p < .01$). Moreover, Model 3 had a better fit than Model 2 as shown by a statistically significant lower -2LL and a higher chi-square. Therefore, the moderating effects are strongly and significantly present.

As can be seen in Model 3, CEO stock option value has significant interactions with firm age ($b = .415$, $p < .05$) and dilution ($b = .131$, $p < .01$). Further, two measures of CEO power have significant interactions with some of the predictor variables. Specifically CEO-founder has significant interaction with two of the predictors: revenues ($b = -1.259$, $p < .01$) and number of uses ($b = -.589$, $p < .01$). Finally, CEO equity has significant interactions with firm age ($b = -.044$, $p < .1$), revenues ($b = .074$, $p < .01$), number of uses ($b = .032$, $p < .01$), VC involvement ($b = -.032$, $p < .05$), and TMT equity ($b = .002$, $p < .01$). The interpretation of those interactions will be discussed in detail in the next section (hypotheses testing). Overall, I can conclude that the hypotheses of the moderating effects are partially supported.

5.5 Risk Effects on Board Size

In my final research question, I wanted to see whether firm risk impacts board size. I used multiple regression analysis and the results are shown in Table 5.7 (page

123). As Model 2 in Table 5.7 exhibits, including the moderating variables have improved R^2 significantly ($\Delta R^2 = .057$, $p < .01$). Model 2 was also significant (F-value = 5.06, $p < .01$). A test of main effects showed that three predictors (risk factors, TMT equity ownership, and blockholders equity) have significant coefficients. As expected, risk factors have a positive and significant coefficient ($b = .021$, $p < .10$). In support to hypothesis 6c, blockholders equity has a significant and negative effects on board size (($b = -.008$, $p < .10$). Similarly, the coefficient of TMT equity ownership was statistically significant ($b = -.019$, $p < .01$), supporting hypothesis 7c. Consequently, hypotheses 1c, 2c, 3c, and 5c, and were not supported.

Next I introduced the interactions terms to test for the moderation effects of CEO incentive alignment, CEO power, and market conditions. Model 3 of Table 5.7 (page 123) summarizes the results of the moderating multiple regression analysis. As can be seen in the table, R^2 was significantly different in Model 3 than in Model 2 ($\Delta R^2 = .030$, $p < .10$). Furthermore, Model 3 was significant (F-value = 5.16, $p < .01$) and explained 17.7% of the variance in board size. Thus, I can confidently conclude that the moderating effects are present.

The direct effects of the moderator variables were also examined in Model 2. As can be seen, both CEO equity ($b = -.021$, $p < .01$) and CEO tenure ($b = -.002$, $p < .05$) had significant and negative relationships with board size. These results suggest that increases in CEO power are associated with a smaller board of directors and subsequently a lower level of monitoring.

Of the several interaction terms included in Model 3, only two interactions had significant coefficients. Specifically, CEO-founder had a significant and a negative interaction with underwriter rank ($b = -.162$, $p < .05$) and CEO equity had a statistically significant interaction with firm age ($b = .031$, $p < .01$).

5.6 Hypotheses Testing

In this section I will discuss the result of each hypothesis. Table 5.8 (page 150) summarizes all the findings.

5.5.1 Hypotheses 1a, 2a, 3a, 4a, 5a, 6a, and 7a

Hypotheses 1a, 2a, 3a, 4a, 5a, 6a, and 7a predict the relationship between risk and outsider ratio. Hypothesis 1a predicts that underwriter reputation will have a negative relationship with the percentage of outsider directors. Examining Model 2 of Table 5.5 (page 121), I found that underwriter rank is not significantly predicting outsiders ratio ($b = -.005$, $p = .128$). Therefore, hypothesis 1a was not supported. Hypothesis 2a suggests a negative relationship between firm age and outsider ratio. As can be seen in Model 3 of Table 5.5, firm age has a negative and significant effect on outsiders ratio (($b = -.053$, $p = .006$). Thus, hypothesis 2a was supported. Hypothesis 3a poses an inverse relationship between firm size, as measured by sales, and outsider ratio. As can be seen in Model 2, although sales has a negative coefficient, beta was insignificant ($b = -.001$, $p = .463$). Thus, hypothesis 3a was not supported.

The second set of hypothesis argues for a positive relationship between business risk and outsider ratio. Specifically, hypothesis 4a suggests that number of risk factors,

number of uses, and unprofitability will be positively associated with the number of outside directors on the board. Examination of Model 2 of Table 5.5 reveals that none of the coefficients of the three measures are significantly predicting outsider ratio [number of risk factors (b = .00, p = .463), number of uses (b = -.003, p = .315), and profitability (b = -.002, p = .439)]. Consequently, hypothesis 4a was not supported.

The third set of hypotheses predicts an inverse relationship between the four measures of agency risk and outsiders ratio. Hypothesis 5a suggests that VC involvement will be negatively associated with outsider ratio. As it is shown in Model 2 of Table 5.5, VC involvement failed to explain a significant portion of the variance in outsider ratio (b = .011, p = .983). Hypothesis 6a predicts a negative relationship between blockholder equity and outsiders ratio. Again, Model 2 shows coefficient of blockholders equity is insignificant (b = .001, p = .998). Therefore, hypotheses 5a and 6a were not supported.

Hypothesis 7a predicts a negative relationship between insiders' ownership and outsider ratio. In a strong support of the hypothesis, as can be seen in Model 2 of Table 5.5, TMT equity was significantly and negatively associated with outsider ratio (b = -.003, p = .000). The second measure of insiders' ownership (dilution), however, has an insignificant association with outsiders ratio, as shown in Model 3 of Table 5.5 (b = -.001, p = .945). Overall, hypothesis 7a was partially supported.

5.5.2 Hypotheses 1b, 2b, 3b, 4b, 5b, 6b, and 7b

Hypotheses 1b, 2b, 3b, 4b, 5b, 6b, and 7b predict the relationship between risk

and the level of separation of CEO/chairman positions (1 = separation and 0 = no separation). Hypothesis 1b predicts that as underwriter rank increases, the level of separation decrease. However, Model 2 of Table 5.6 (page 122) shows underwriter rank is not significantly predicting separation (b =.024, p = .626). Hypothesis 2b suggests a negative relationship between firm age and separation; the older the firms, the lower the separation. As can be seen in Model 2 of Table 5.6, firm age has an insignificant coefficient (b = 1.602, p = .999). Hypothesis 3b predicts a negative relationship between firm size, as measured by sales, and separation. As Model 2 shows, sales does not significantly explain the variance in separation (b = .065, p = .617). Consequently, hypotheses 1b, 2b, and 3b were not supported.

Hypothesis 4b predicts a positive relationship between business risk and separation. According to Model 2 of Table 5.6, number of risk factors had insignificant coefficient ratio (b = .004, p = .437). Also, neither profit (b = .108, p = .655) nor number of uses (b = .007, p = .534) are significantly predicating separation. Thus, hypothesis 4b was not supported.

The last set of hypotheses predicts the relationship between agency risk (VC involvement, blockholder equity, and insiders' ownership) and separation. Hypothesis 5b poses a negative relationship between VC involvement and separation. Model 2 of Table 5.6, shows that VC involvement is significantly predicting separation (b = -.123, p = .083). In other words, the negative sign of the coefficient indicates that as involvement of VCs increases, the level of separation decreases (i.e., the level of

monitoring decreases). Thus, hypothesis 5b was strongly supported.

Hypothesis 7b tests the relationship between blockholders and separation. As indicated in Model 2 of Table 5.6, the coefficient for blockholders equity is not significant (b = .002, p = .585). The same insignificant coefficient was also found for the two measures of insiders' ownership: dilution ratio (b = -.021, p = .949) and TMT equity ownership (b = -.009, p = .472). Therefore, hypotheses 6b, and 7b were not supported.

5.5.3 Hypotheses 1c, 2c, 3c, 4c, 5c, 6c, and 7c

Hypotheses 1c, 2c, 3c, 4c, 5c, 6c, and 7c suggest a positive relationship between risk and board size. Hypothesis 1c predicts a negative relationship between underwriter rank and board size. As Model 2 of Table 5.7 (page 123) indicates, underwriter rank is not significantly predicting board size (b = .031, p = .763). Hypothesis 2c suggests a negative relationship between firm age and the size of the board. As can be seen in Model 2, firm age has a negative coefficient, but not a statistically significant (b = -.242, p = .146). Hypothesis 3c suggests a negative relationship between firm sales and the size of the board of directors. As Model 2 of Table 5.7 indicates, sales is not significantly predicting board size (b = .089, p = .736). Thus, hypothesis 1c, 2c, and 3c were not supported.

Hypothesis 4c predicted a positive relationship between business risk and board size. As it is shown in Model 2 of Table 5.7, number of risk factors has a significant and a positive coefficient (b = .021, p = .073). This result therefore suggests that as the

number of risk factors increases, the pressure for more monitoring increases as well, which would be translated into larger board size. The other two measures of business risk [profitability (b = -.107, p = .257) and number of uses (b = .055, p = .160)] are not significantly predicting board size at p< .10. Therefore, hypothesis 4c was partially supported.

Hypothesis 5c, 6c, and 7c predict a negative relationship between board size and VC involvement, blockholders' equity, and insiders' ownership, respectively. As it is shown in Model 2 of Table 5.7, VC involvement (b = -.009, p = .440) is not significantly predicting board size and thus hypothesis 5c was not supported. In addition, examination of Model 2 reveals that blockholders equity is significant predicting board size (b = -.00, p = .062). The negative sign of the coefficient indicates that the increase in blockholders equity was associated with the decline in the number of directors in the size and subsequently a lower level of monitoring. Thus, hypotheses 6c was supported.

Hypothesis 7c suggests a negative relationship between insiders' ownership and board size. As Model 3 shows, TMT equity ownership has a statically significant and negative coefficient (b = -.019, p = .003). Dilution, however, did not explain a significant portion of the variance in board size (b = .002, p = .407). Overall, hypothesis 7c was partially supported.

Table 5.5 Results of Regression Analysis: The Effects of Risk on Outsiders Ratio[a]

Variables	Model 1 Only IVs		Model 2 IVs+ Moderators		Model 3 Full Model	
Constant	0.606***	(0.016)	0.650***	(0.031)	0.688	(0.031)
Industry	0.007	(0.015)	0.003	(0.015)	-0.006	(0.015)
TMT Tenure	-0.001	(0.001)	-0.001	(0.001)	-0.001*	(0.001)
Offer Size	0.000*	(0.000)	0.000	(0.000)	0.000	(0.000)
Underwriter Rank	-0.005*	(0.005)	-0.005	(0.005)	0.020**	(0.010)
Firm Age	-0.028	(0.020)	-0.020	(0.020)	-0.053***	(0.021)
Sales	-0.003	(0.013)	-0.001	(0.013)	-0.002	(0.013)
Risk Factors	0.001	(0.001)	0.000	(0.001)	0.000	(0.001)
Profitability	-0.009	(0.015)	-0.002	(0.015)	-0.002	(0.015)
No. of Uses	-0.001	(0.005)	-0.003	(0.005)	-0.004	(0.005)
VC Involvement	0.016	(0.005)	0.011	(0.005)	-0.007	(0.010)
Dilution	-0.001	(0.001)	-0.001	(0.001)	-0.001	(0.001)
TMT Equity	-.003***	(0.001)	-0.003***	(0.001)	-0.001	(0.002)
Block holder Equity	0.002	(0.000)	0.001	(0.000)	0.002	(0.000)
CEO Stock Option Value			0.000	(0.002)	0.004***	(0.001)
CEO-Founder			-0.015	(0.016)	-0.026	(0.016)
CEO Equity			-0.002***	(0.000)	-0.001	(0.001)
CEO Tenure			0.000	(0.000)	0.004***	(0.001)
Market Conditions			-0.030	(0.024)	-0.032	(0.024)
CEO Option Value * Underwriter Rank					-0.006***	(0.001)
CEO Option value * Sales					-0.009***	(0.002)
CEO Option Value * Profit					0.012***	(0.004)
CEO Option Value * No. of Uses					-0.006***	(0.001)
Market Condition * Underwriter Rank					-0.033***	(0.011)
Market Condition * VC Involvement					0.029***	(0.010)
Market Condition * TMT Ownership					-0.003	(0.002)
CEO Equity * Sales					-0.001	(0.001)
CEO Equity * VC involvement					0.001***	(0.000)
CEO Tenure * TMT Equity					0.000***	(0.000)
R^2	.280		.318		.385	
Full Model F	12.94***		11.39***		19.23***	
ΔR^2			.038***		.067***	
N =	395		393		393	

[a] Standard errors are in parentheses.
* p < .10, ** p < .05, *** p < .01

Table 5.6 Results of Logistic Analysis: The Effects of Risk on Separation[a]

Variables	Model 1 Only IVs		Model 2 IVs+ Moderators		Model 3 Full Model	
Constant	-0.430*	(0.259)	-0.365	(0.578)	-1.181*	(0.645)
Industry	0.297	(0.239)	0.175	(0.276)	0.425	(0.314)
TMT Tenure	0.013	(0.009)	0.015	(0.010)	0.022**	(0.011)
Offer Size	-0.001	(0.003)	-0.005	(0.004)	-0.003	(0.004)
Underwriter Rank	0.051	(0.066)	0.024	(0.076)	0.003	(0.081)
Firm Age	0.393	(0.305)	1.602	(0.431)	1.679	(0.501)
Sales	-0.178	(0.207)	0.065	(0.221)	1.269	(0.352)
Risk Factors	0.006	(0.020)	0.004	(0.024)	0.006	(0.027)
Profitability	0.021	(0.226)	0.105	(0.263)	0.065	(0.281)
No. of Uses	0.026	(0.074)	0.007	(0.079)	0.458***	(0.150)
VC Involvement	0.000	(0.078)	-0.123*	(0.089)	-0.456***	(0.173)
Dilution	-0.003	(0.011)	-0.021	(0.013)	0.001	(0.015)
TMT Equity	-0.001	(0.010)	-0.009	(0.012)	-0.002	(0.012)
Block holder Equity	0.021***	(0.006)	0.002	(0.007)	-0.015	(0.014)
CEO Stock Option Value			0.032	(0.064)	0.334***	(0.109)
CEO-Founder			-0.571**	(0.277)	-0.562*	(0.308)
CEO Equity			-0.051***	(0.012)	-0.110***	(0.025)
CEO Tenure			-0.119***	(0.032)	-0.117***	(0.036)
Market Conditions			0.244	(0.445)	0.431	(0.471)
CEO Option Value * Age					0.415**	(0.188)
CEO Option Value * Profit					0.131	(0.134)
CEO Option Value * Dilution					0.032***	(0.009)
Market Condition * Blockholders Equity					0.020	(0.015)
CEO-Founder * Sales					-1.259***	(0.416)
CEO-Founder * No. of Uses					-0.589***	(0.223)
CEO Equity * Firm Age					-0.044*	(0.025)
CEO Equity * Sales					0.074***	(0.019)
CEO Equity * No. of Uses					0.032***	(0.009)
CEO Equity * VC Involvement					-0.032**	(0.013)
CEO Equity * TMT Equity					0.002***	(0.001)
-2 Log Likelihood (-2LL)	-257.701		-211.289		-183.257	
Chi-square	27.08***		81.02***		107.84***	
Pseudo R2	0.051		0.218		.321	
ΔR^2			.167***		.103***	
% of cases classified correctly	61.77%		72.52%		76.84%	

[a] Standard errors are in parentheses.
* p < .10, ** p < .05, *** p < .01

Table 5.7 Results of Regression Analysis: The Effects of Risk on Board Size[a]

Variables	Model 1 Only IVs		Model 2 IVs+ M		Model 3 Full Model	
Constant	6.333***	(0.184)	6.524***	(0.337)	6.720***	(0.358)
Industry	-0.278	(0.174)	-0.362**	(0.175)	-0.406**	(0.175)
TMT Tenure	-0.003	(0.006)	-0.006	(0.006)	-0.007	(0.006)
Offer Size	0.005**	(0.002)	0.003	(0.002)	0.002	(0.002)
Underwriter Rank	0.043	(0.044)	0.031	(0.043)	0.128**	(0.058)
Firm Age	-0.353*	(0.239)	-0.242	(0.229)	-0.196	(0.225)
Sales	0.030	(0.142)	0.088	(0.140)	0.097	(0.140)
Risk Factors	0.021*	(0.013)	0.021*	(0.014)	-0.010	(0.027)
Profitability	-0.165	(0.166)	-0.107	(0.163)	-0.144	(0.163)
No. of Uses	0.064	(0.055)	0.055	(0.055)	0.061	(0.055)
VC Involvement	0.052	(0.059)	-0.009	(0.062)	-0.025	(0.062)
Dilution	0.011*	(0.007)	0.002	(0.008)	0.002	(0.008)
TMT Equity	-0.014**	(0.007)	-0.019***	(0.007)	-0.015**	(0.008)
Block holder Equity	0.000	(0.005)	-0.008*	(0.005)	-0.007*	(0.005)
CEO Stock Option Value			0.010	(0.024)	0.034	(0.038)
CEO-Founder			-0.209	(0.171)	-0.213	(0.172)
CEO Equity			-0.021***	(0.006)	-0.025***	(0.005)
CEO Tenure			-0.002**	(0.001)	-0.002**	(0.001)
Market Conditions			0.015	(0.250)	-0.100	(0.262)
CEO Option Value * Sales					-0.031	(0.050)
CEO Option value * VC Involvement					-0.004	(0.011)
CEO Option Value * TMT Equity					0.004	(0.005)
Market Condition * Risk Factors					0.035	(0.029)
CEO-Founder * Underwriter Rank					-0.162**	(0.067)
CEO-Founder * Risk Factors					0.017	(0.026)
CEO Equity * Firm Age					0.031***	(0.012)
CEO Equity * Sales					-0.005	(0.007)
R^2	.090		.147		.177	
Full Model F	2.730		5.060		5.16***	
ΔR^2			.057***		.030*	
N =	395		393		394	

[a] Standard errors are in parentheses.
* p < .10, ** p < .05, *** p < .01

5.5.4 Hypotheses 8a, 9a, 10a, 11a, 12a, 13a, and 14a

Hypotheses 8a, 9a, 10a, 11a, 12a, 13a, and 14a predict the moderating impact of CEO incentive alignment on the relationship between risk and outsiders ratio. Due to the insignificant interaction terms in Step 1 of the analysis (see Table 5.2, page 105), of the seven hypotheses, three have been tested in the final model as presented in Model 3 of Table 5.5 (page 121). As such, hypotheses 9a, 12a, 13a, and 14a were not supported.

Hypothesis 8a predicts CEO incentive alignment will negatively moderate underwriter rank-outsiders ratio relationship. In other words, for a given underwriter rank, firms with a higher CEO incentive alignment (i.e., stock option value) will have a lower outsiders ratio. As indicated in Model 3 of Table 5.5, the interaction between underwriter rank and stock option value did explain a significant amount of the variance in outsiders ratio (b = - .006, p = .000). The relationship is depicted in Figure 5.1a. As it is shown in the figure, although higher underwriter reputation was associated with a greater outsider ratio for low CEO stock option, there was no relationship between them for high CEO stock option. These results therefore suggest that a high CEO stock option minimizes the effects of changes in underwriter rank on outsider ratio. Thus, hypothesis 8a was partially supported.

Hypothesis 10a suggests that CEO stock option value will negatively moderate sales-outsider ratio relationship. As such, for a given level of sales, IPO firms with higher stock option value will have lower outsider ratio. Examining Model 3 of Table 5.5, the interactions between stock option and sales is significant (b = - .009, p = .000).

Figure 5.1b depicts this relationship. Figure 5.1b displays a negative association between sales and outsiders ratio for high CEO stock option, whereas this effects is positive for low CEO stock option. In other words, this plot suggests that an increase in firm size will only be associated with a decrease in outsider ratio for firms with high CEO stock option values. Thus, hypothesis 10a was not supported.

Hypothesis 11a predicted that CEO stock option will negatively moderate business risk-outsider ratio relationship. As such, for a given business risk, IPO firms with higher stock option values will have a lower outsider ratio. As indicated in Model 3 of Table 5.5, two measures of business risk (profitability and number of uses) explain a significant amount of the variance in outsider ratio. Specifically, the interaction term between CEO stock option and profitability is significant and positive ($b = .012$, $p = .006$). The significant relationship is depicted in Figure 5.2a. As shown in the figure, the combination of a high CEO stock option and unprofitability is associated with the highest ratio of outsider directors. Contradicting the hypothesis, the relationship between profitability and outsider ratio is strongly negative for high CEO stock option and strongly positive for low CEO stock option.

CEO stock option has a significant and negative interaction with the number of uses ($b = -.006$, $p = .000$). In a partial support of the hypothesis, as it is shown in Figure 5.2b, IPO firms who have a high CEO stock option has experienced a decline in outsider ratio as business risk increases (i.e., higher number of uses), whereas this effects is reversed for IPO firms with a low CEO stock option.

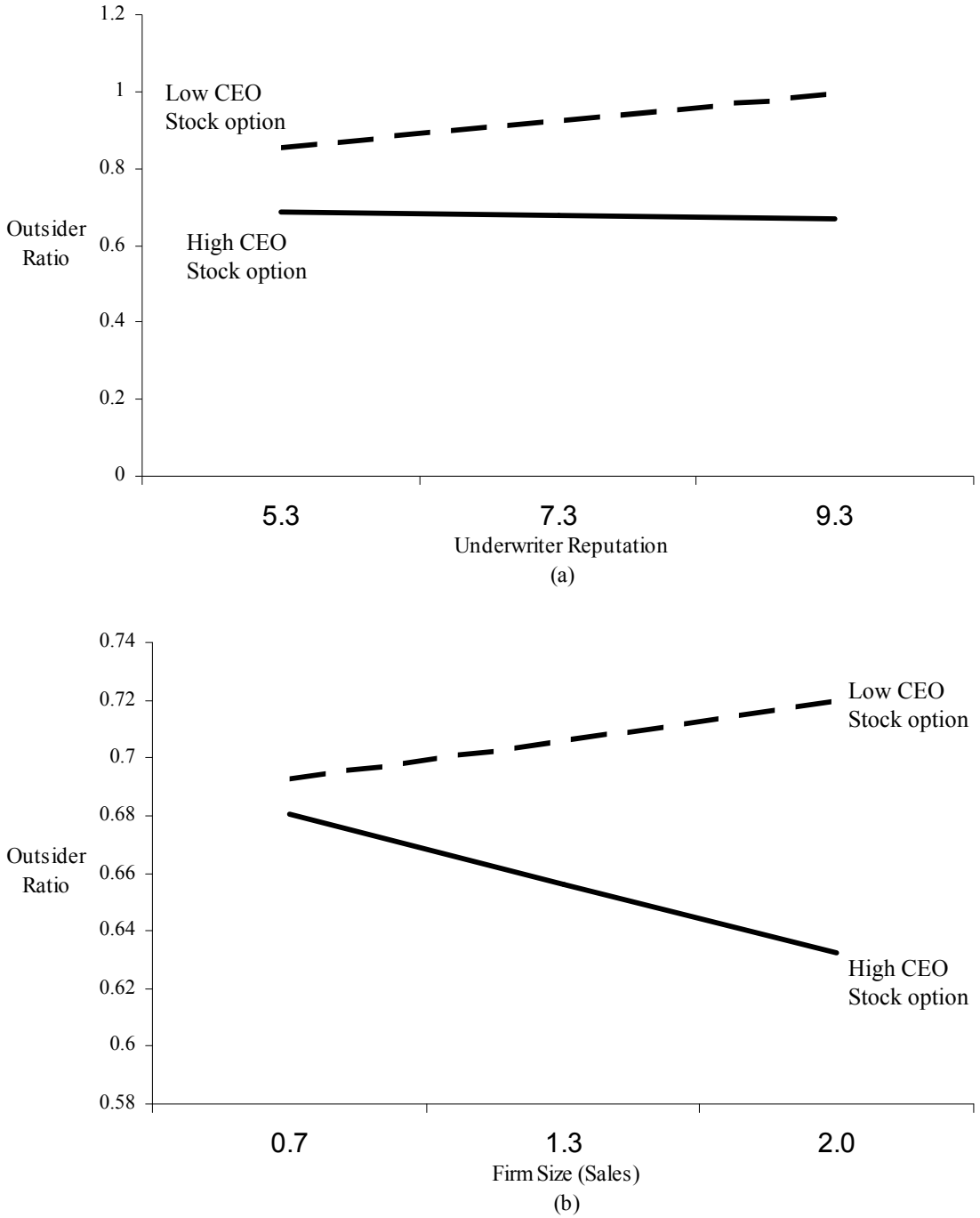


Figure 5.1 Moderating Impact of (a) CEO Incentive Alignments on Underwriter Rank-Outsiders Ratio Relationship and (b) CEO Incentive Alignment on Firm Size-Outsider Ratio Relationship

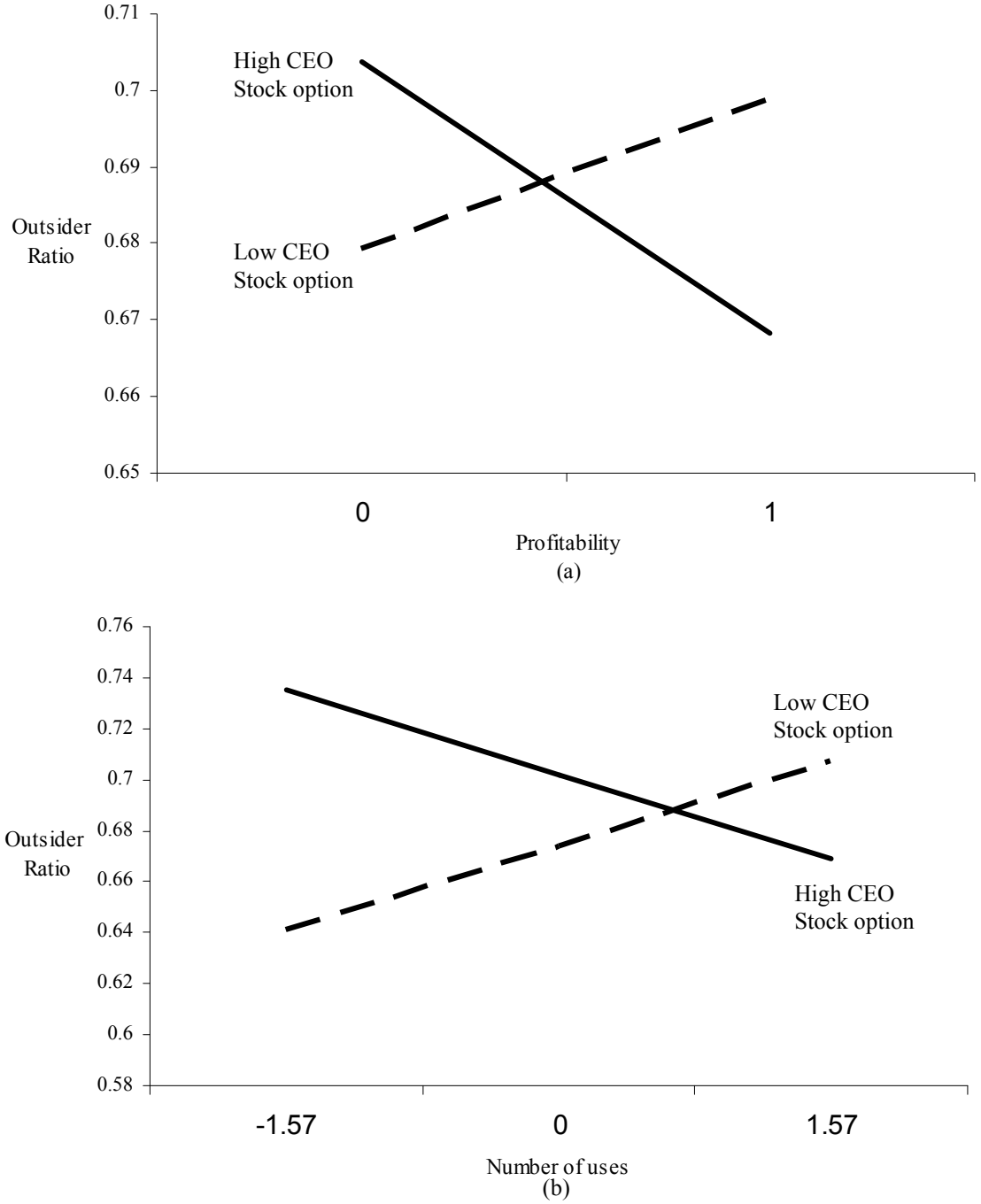


Figure 5.2 Moderating Impact of (a) CEO Incentive Alignments on Profitability-Outsiders Ratio Relationship and (b) CEO Incentive Alignment on Number of Uses-Outsider Ratio Relationship

5.5.5 Hypotheses 15a, 16a, 17a, 18a, 19a, 20a, and 21a

Hypotheses 15a, 16a, 17a, 18a, 19a, 20a, and 21a suggested CEO power (CEO/founder, CEO equity, and CEO tenure) will moderate the risk-outsider ratio relationship. Only three interaction terms (CEO equity * Sales, CEO equity * VC involvement, and CEO tenure * TMT equity) were included in the final model (Model 3 of Table 5.5). All other interactions have been excluded due to the fact that they failed to explain a significant portion of the variance in outsider ratio in Step 1 of the analysis (see Table 4.2, page 105). Consequently, hypotheses 15a, 16a, 18a, and 20a were not supported.

Hypothesis 17a predicts that CEO power will negatively moderate sales-outsiders ratio relationship. Only the CEO equity interaction with sales was found to be significantly explaining outsider ratio in Step 1 of the analysis. In Step 2 of the analysis and as indicated in Model 3 of Table 5.5, however, the interaction between CEO equity and sales failed to explain a significant portion of the variance in outsiders ratio ($b = -.001$, $p = .226$). Thus, hypothesis 17a was not supported.

Hypothesis 19a poses a negative moderation effect of CEO power in VC involvement-outsiders ratio relationship. According to Step 1 of the analysis, only CEO equity interaction with VC involvement was significant and therefore it has been included in the final Model (Model 3 in Table 5.5). As can be seen in Model 3, the interaction between CEO equity and VC involvement is explaining a significant portion of the variance in outsiders ratio ($b = .007$, $p = .008$). A plot of the interaction effect

(Figure 5.3a) shows that the association between VC involvement and outsider ratio is positive for high CEO equity, whereas this relationship is negative for low CEO equity. Looking at the movement of the lines from right to left (as VC involvement decreases and thus firms riskiness increases), the results therefore suggest that as VC involvement decline (and therefore risk increases), powerful CEO (a high CEO equity ownership) will manage to resist investors' pressure and to reduce the number of outsider directors on the boards, instead of increasing it. In contrast, firms with relatively less powerful CEO (low CEO equity ownership) will comply with investors' pressures and therefore a decline in VC involvement will be associated with increase in outsider ratio. Hypothesis 19a was supported.

Hypothesis 21a predicts that the CEO power will negatively moderate insiders' ownership-outsider ratio relationship. In Step 1 of the analysis (Table 5.2, page 105), the interaction between CEO tenure and TMT equity was the only significant interaction in this set of hypothesis. In Step 2 of the analysis (Model 3 of Table 5.5, page 121), CEO tenure interaction with TMT equity ownership continued to explain a significant portion of the variance in outsider ratio (b = .000, p =.001). Specifically, the positive sign of the coefficient for the interaction between CEO tenure and TMT equity indicates that CEO tenure enhances the relationship between TMT equity and outsiders ratio. As Figure 5.3b shows, reading the lines from right to left, firms with high CEO tenure has experienced a slight decrease in outsiders ratio, whereas firms with low CEO tenure has experienced a small increase in outsider ratio. Moreover, keeping TMT

equity constant, firms with a high CEO tenure always maintained a higher outsider ratio than that with low CEO tenure. Therefore, hypothesis 21a was weakly supported.

5.5.6 Hypotheses 22a, 23a, 24a, 25a, 26a, 27a, and 28a

Hypotheses 22a, 23a, 24a, 25a, 26a, 27a, and 28a predict a negative moderating impact of market conditions (1 = hot and 0 = cold) on risk-outsider ratio relationship. Furthermore, due to insignificant interaction terms in Step 1 of the analysis, the interaction terms between stock market conditions and underwriter rank, VC involvement, and TMT equity were included in Model 3 of Table 5.5. Consequently, hypothesis 23a, 24a, 25a, and 27a were not supported.

Hypothesis 22a suggests that keeping underwriter rank constant, the hotter the stock market the lower the number of outside directors on the boards. As indicated in Model 3 of Table 5.5, the coefficient for the market conditions and underwriter rank is significant and negative (b = -.033, p = .003). Figure 5.4a depicts this relationship. As Figure 5.3a indicates, the higher the underwriter rank, the greater the outsiders ratio for cold market IPOs, whereas this relationship reverse for hot market IPOs. Thus, hypothesis 22a was not supported.

Hypothesis 26a predicts a negative moderating impact of market conditions on the relationship between VC involvement and outsider ratio. As indicated in Model 3 of Table 5.5, the interaction between market conditions and VC involvement is significant and positive (b = .029, p =.005). Figure 5.4b indicates that, for hot market IPOs, the decrease in VC involvement (and thus increase in firm riskiness) is negatively

related to outsiders ratio. In contrast, for cold market IPOs, the relationship between VC involvement and outsider ratio is insignificant. Thus, hypothesis 26a was partially supported.

Hypothesis 28a argues that market conditions will have a negative moderating impact on insiders' ownership-outsider ratio relationship. Examination of Model 3 of Table 5.5, the interaction between market conditions and TMT equity ownership is not significant ($b = -.003$, $p = 0.138$) and therefore hypothesis 28a was not supported.

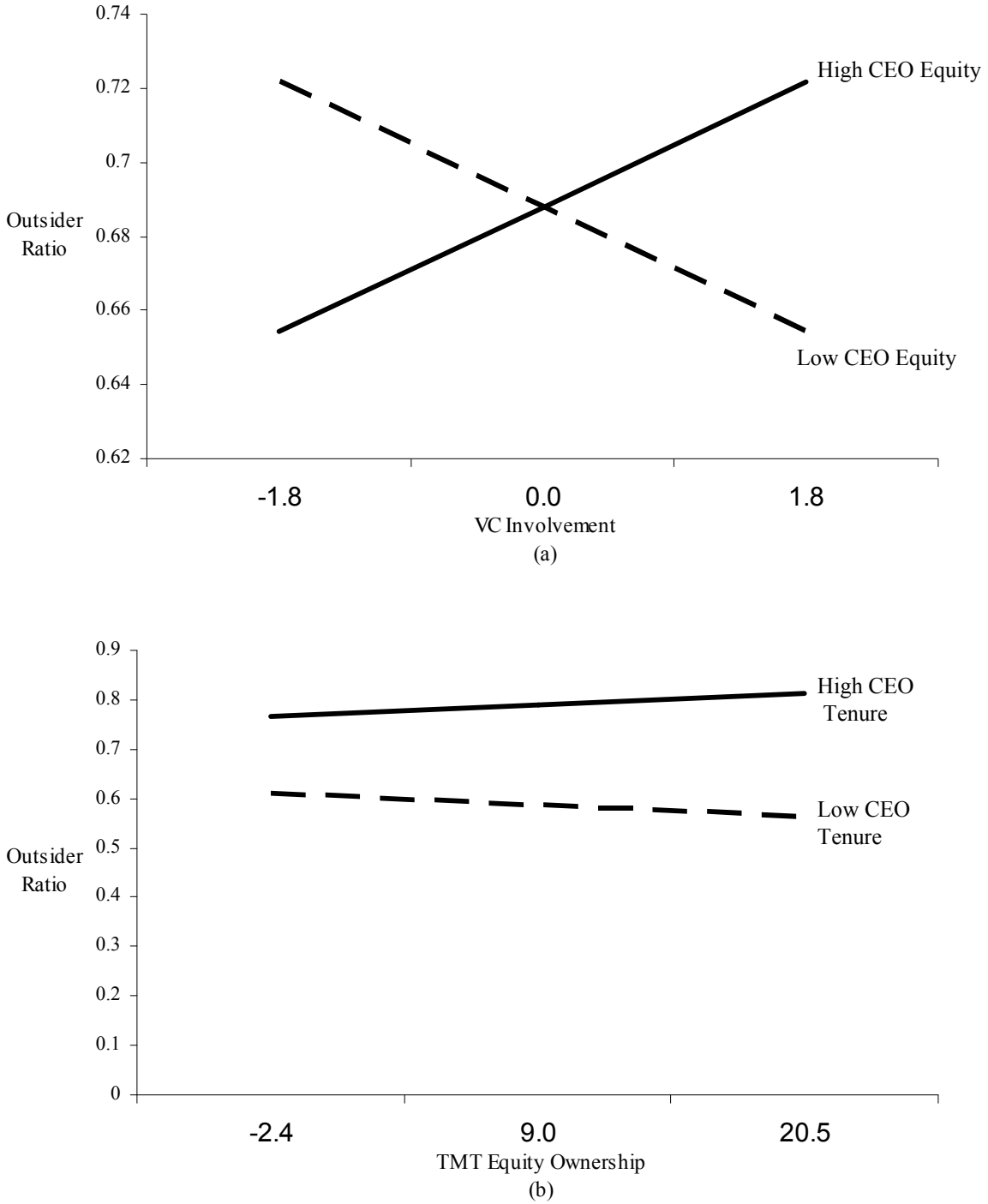


Figure 5.3 Moderating Impact of CEO Power on (a) VC Involvement-Outsiders Ratio Relationship and (b) TMT Equity Ownership-outsider Ratio Relationship

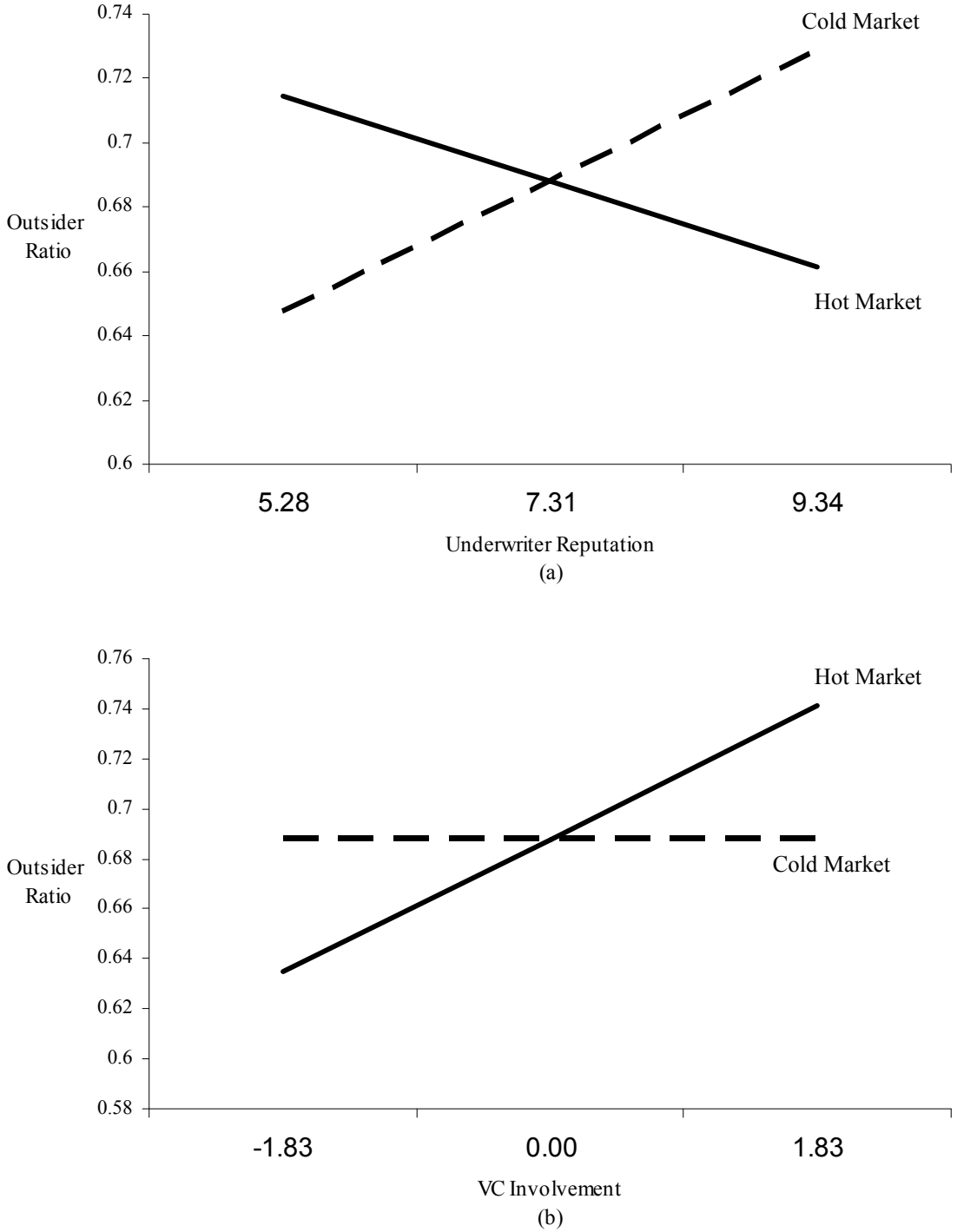


Figure 5.4 Moderating Impact of Stock Market Conditions on (a) Underwriter Rank-Outsiders Ratio Relationship and (b) VC Involvement-outsider Ratio relationship

5.5.7 Hypotheses 8b, 9b, 10b, 11b, 12b, 13b, and 14b

Hypotheses 8b, 9b, 10b, 11b, 12b, 13b, and 14b predict the moderating impact of CEO incentive alignment (i.e., CEO stock option value) on risk-separation relationship. Furthermore, in Step 1 of the analysis (see Table 5.3, page 107), all but three interaction terms between CEO stock option value and independent variables were insignificant (i.e., CEO stock option value * firm age, CEO stock option value * profit, and CEO stock option value * dilution). Consequently, hypotheses 8b, 10b, 12b, and 13b were not supported.

Hypothesis 9b suggests that, keeping firm age constant, IPO firms with a high CEO stock option value will have lower level of separation than firms with a low CEO stock option value. As indicated in Model 3 of Table 5.6 (page 122), the interaction between CEO stock option and firm age was significant and positive ($b = .415$, $p = .028$). This relationship is depicted in Figure 5.5a. As shown in the figure, the relationship between firm age and separation is strongly positive only for high CEO stock option. In contrast, for low CEO stock option, the relationship between age and separation was minimized. In both cases, however, as firm age increase, so does the outsider ratio. Thus, hypothesis 9b was not supported.

Hypothesis 11b states that CEO option value will have a negative moderating impact on business risk-separation of CEO/chairman positions relationship. As Model 3 of Table 5.6 indicates, only the interaction between CEO stock option and profit was included in the final model. Further, this interaction failed to explain a significant

portion of the variance in separation in the final model as shown in Model 3 of Table 5.6 (b = .131, p = .328). Therefore, hypothesis 11b was not supported.

Hypothesis 14b predicts that the CEO stock option will negatively moderate insiders' ownership-separation relationship. Only the interaction between CEO stock option and dilution was significant in Step 1 of the analysis and therefore was included in the final model. Examining Model 3 of Table 5.6, I found that the interaction between CEO stock option and dilution explains a significant portion of the variance in separation (b = .032, p = .000). The shape of CEO stock Option * dilution interaction was investigated further in Figure 5.5b. The results indicate that when CEO stock option was relatively high, the percentage of dilution was positively related to separation. In contrast, when CEO stock option was relatively low, the relationship became strongly negative. Therefore, hypothesis 14b was not supported.

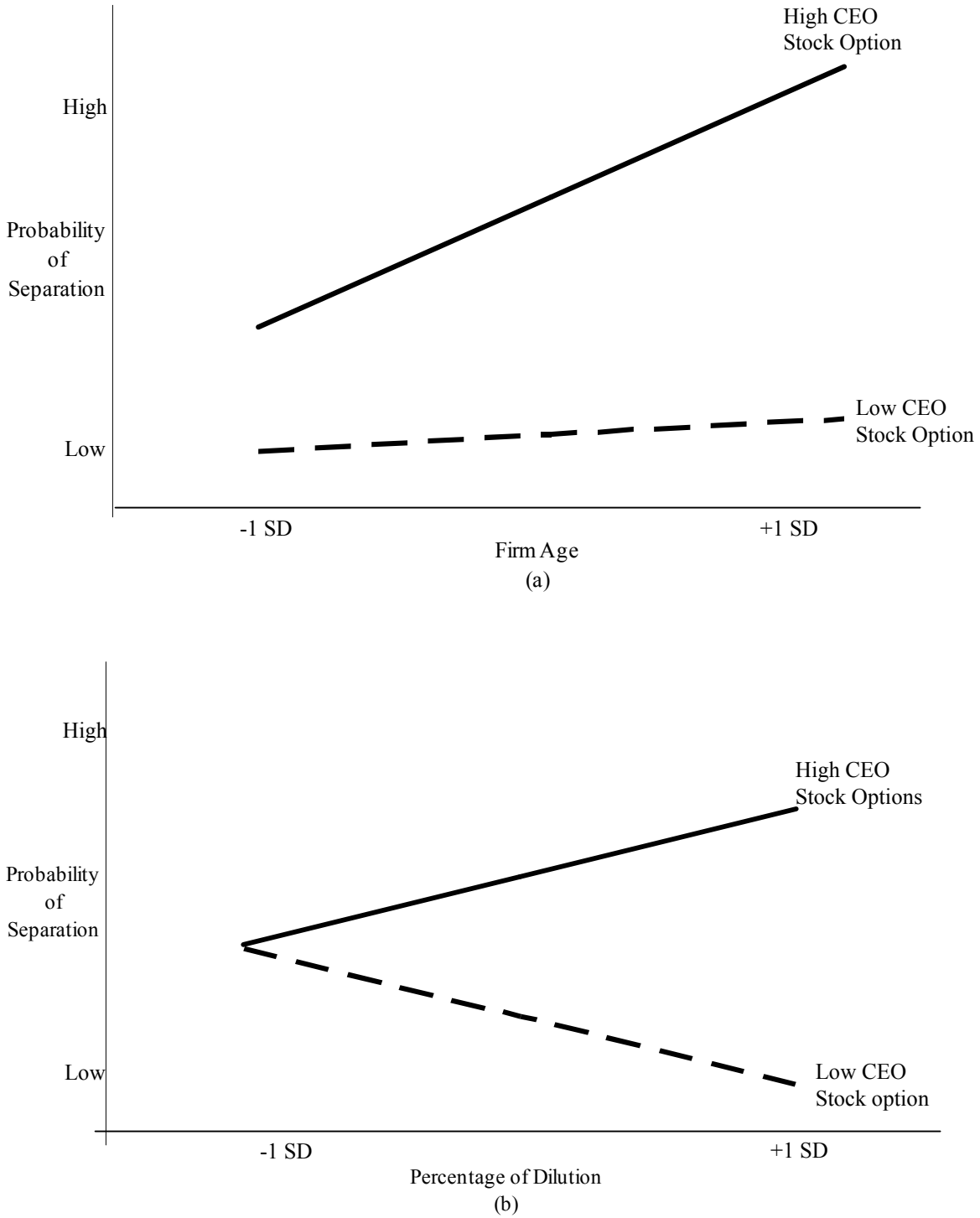


Figure 5.5 Moderating Impact of CEO Incentive Alignment on (a) Firm Age-Separation Relationship and (b) Percentage of Dilution-Separation Relationship

5.5.8 Hypotheses 15b, 16b, 17b, 18b, 19b, 20b, and 21b

Hypotheses 15b, 16b, 17b, 18b, 19b, 20b, and 21b suggested that CEO power (i.e., CEO/founder, CEO equity, and CEO tenure) will have a negative moderating impact on risk-separation relationship. Because of the failure to explain a significant portion of the variance in separation in Step 1 of the analysis (see Table 5.3, page 107), hypotheses 15b and 20b were not supported.

Hypothesis 16b suggests that, keeping firm age constant, IPO firms with more powerful CEO will have a lower probability of separation than firms with less powerful CEO. Only one measure of CEO power (i.e., CEO equity) was found to have a significant interaction with firm age in Step 1 of the analysis and thus included in the final Model (Model 3 of Table 5.6). As Model 3 indicates, the interaction between CEO-equity and firm age explains a significant portion of the variance in separation ($b = -.044$, $p = .073$). Figure 5.6a depicts the relationship. As Figure 5.6a illustrates, when CEO equity was relatively low, firm age was positively related to separation. In contrast, when CEO equity was relatively high, the positive relationship was reduced. Additionally, keeping firm age constant, firms with low CEO equity have a higher probability of separation than firms with a high CEO equity. Therefore, hypothesis 16b was strongly supported.

Hypothesis17b predicts a negative moderating impact of CEO power on firm size (sales)-separation relationship. Examination Model 3 of Table 5.6, firm size interaction with two measures of CEO power is explaining a significant portion of the

variance in separation: CEO-founder (b = -1.259, p = .002) and CEO-Equity (b = .074, p = .000). Figure 5.6b and Figure 5.7a depicts the relationship of CEO-Founder interaction with sales and CEO equity interaction with sales, respectively. Figure 5.6b indicates that when the CEO is not the founder of the firm, firm sales was positively related to separation. In contrast, when the CEO is the founder, the relationship became insignificant. The latter effect confirms that when CEO is the founder, the size of the firm does not determine separation; rather the will of the CEO does; thus supporting the hypothesis.

Moreover, Figure 5.7a shows that a higher firm size (sales) was associated with greater separation for high CEO equity, but was a negligible association between these variables for low CEO equity. In addition, keeping sales constant, CEO with high equity always has a lower separation than CEO with low equity. Overall, hypothesis 17b was supported.

Hypothesis 18b predicts that a negative moderating impact of CEO power on business risk-separation relationship. As indicated in Model 3 of Table 5.6, the interactions between CEO-founder and number of uses (b = -.589, p = .008) and between CEO equity and number of uses (b = .0324, p = .000) explain a significant portion of the variance in separation.

The shape of CEO-founder * number of uses interaction was investigated further in Figure 5.7b. Results indicate that when CEO is not the founder, number of uses of the proceeds was positively related to separation. In contrast, when CEO is the

founder, the relationship became slightly negative. The results therefore suggest that for a given investors' pressure for a higher separation, CEO founder always experiences a lower level of separation than CEO is not the founder.

Figure 5.8a depicts the significant interaction between CEO equity and number of uses. This figure displays a positive association between number of uses and separation for low CEO equity, whereas this effect is slightly negative for high CEO equity. Furthermore, Figure 5.8a also shows that, keeping number of uses constant, CEO with a high equity has a lower separation than CEO with low equity. Overall, hypothesis 18b was partially supported.

Hypothesis 19b suggests that the CEO power will negatively moderate the relationship between VC involvement and separation. As Model 3 of Table 5.6 indicates, the interaction between CEO equity and VC involvement is significant and negative ($b = -.032$, $p = .016$). That is, in a strong support to the hypothesis, the negative sign of the coefficient means that the higher the CEO equity the lower the separation. This significant interaction is depicted in Figure 5.8b. Examining this plot reveals that VC involvement was negatively related to separation when CEO equity was high, but it was not significant when CEO equity was low. Additionally, Figure 5.8b shows that firms with low CEO equity constantly kept a higher separation than firms with high CEO equity. Thus hypothesis 19b received a weak support.

Hypothesis 21b suggests that CEO power will have a negative impact on insiders' ownership-separation relationship. As indicated in Model 3 of Table 5.6, the

coefficient for the interaction between CEO equity ownership and TMT equity is significant and positive (b = .002, p = .003). Figure 5.9 depicts this relationship. This figure displays a slight positive relationship between TMT equity and separation for high CEO equity, whereas this effect is slightly negative for low CEO equity. Also, across all levels of TMT equity, high equity CEOs has a lower separation than low equity CEOs. Thus, hypothesis 21b was supported.

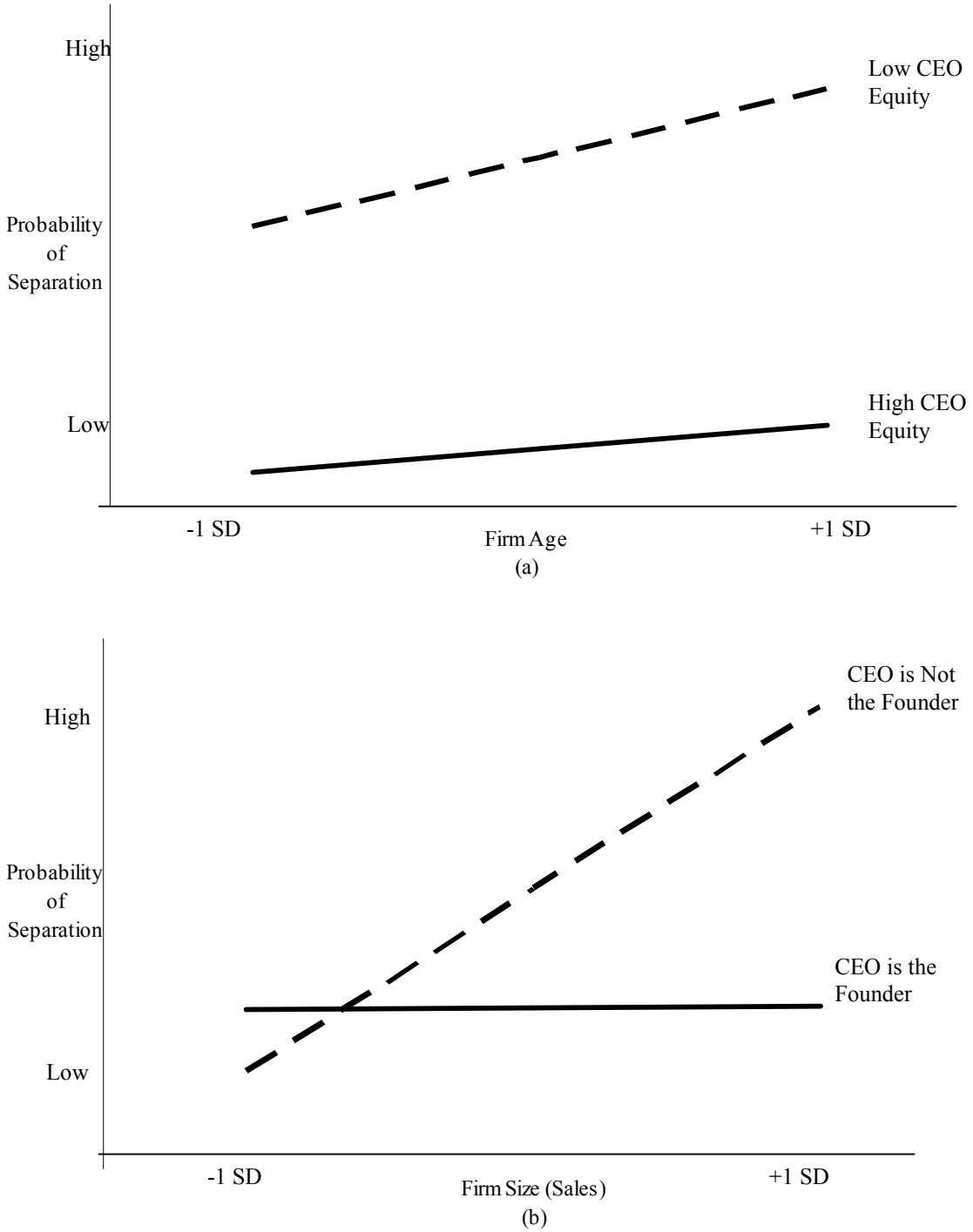


Figure 5.6 Moderating Impact of (a) CEO Equity on Firm Age-Separation Relationship and (b) CEO-Founder on Firm Size-Separation Relationship

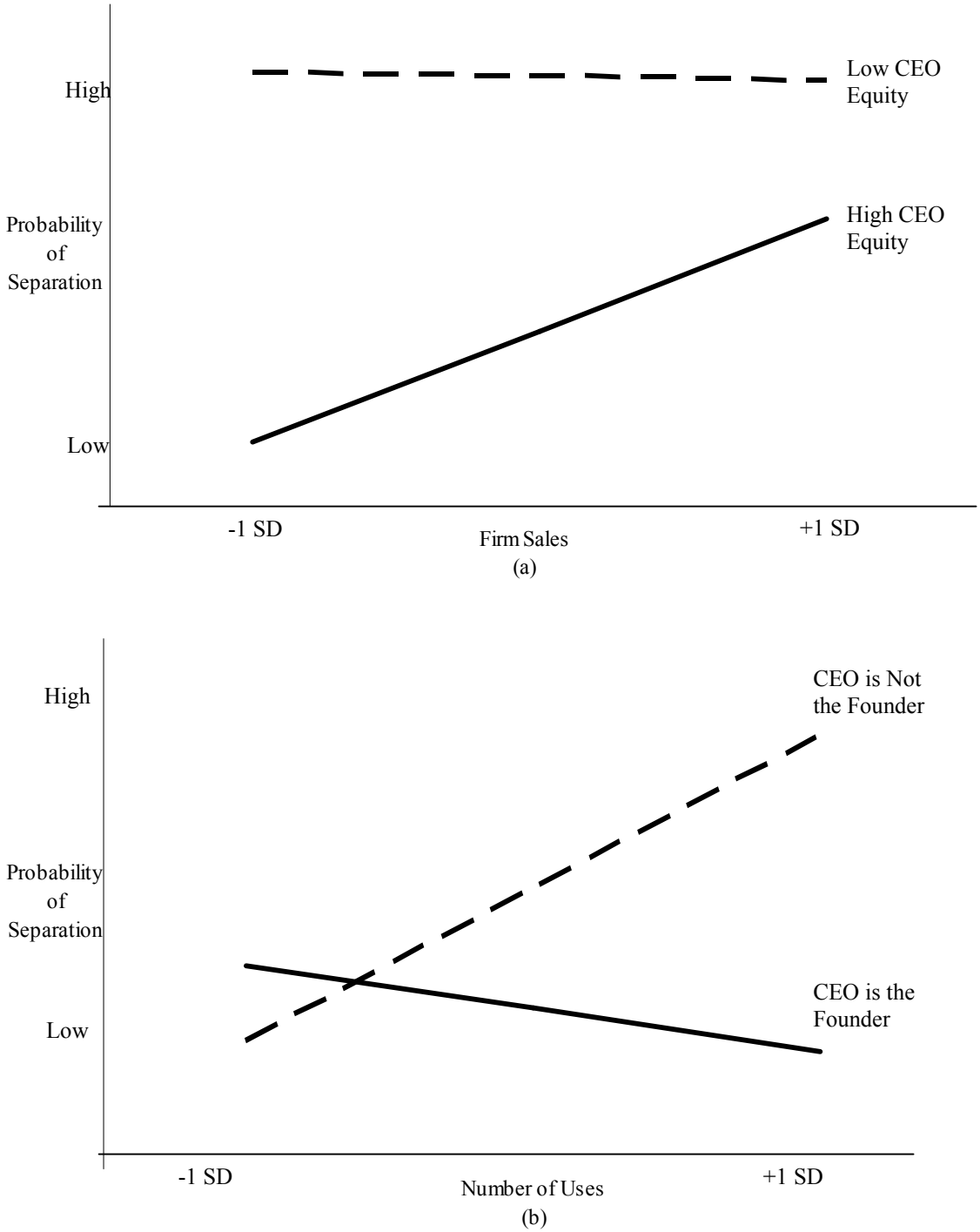


Figure 5.7 Moderating Impact of (a) CEO Equity on Firm Size-Separation Relationship and (b) CEO-Founder on Number of Uses-Separation Relationship

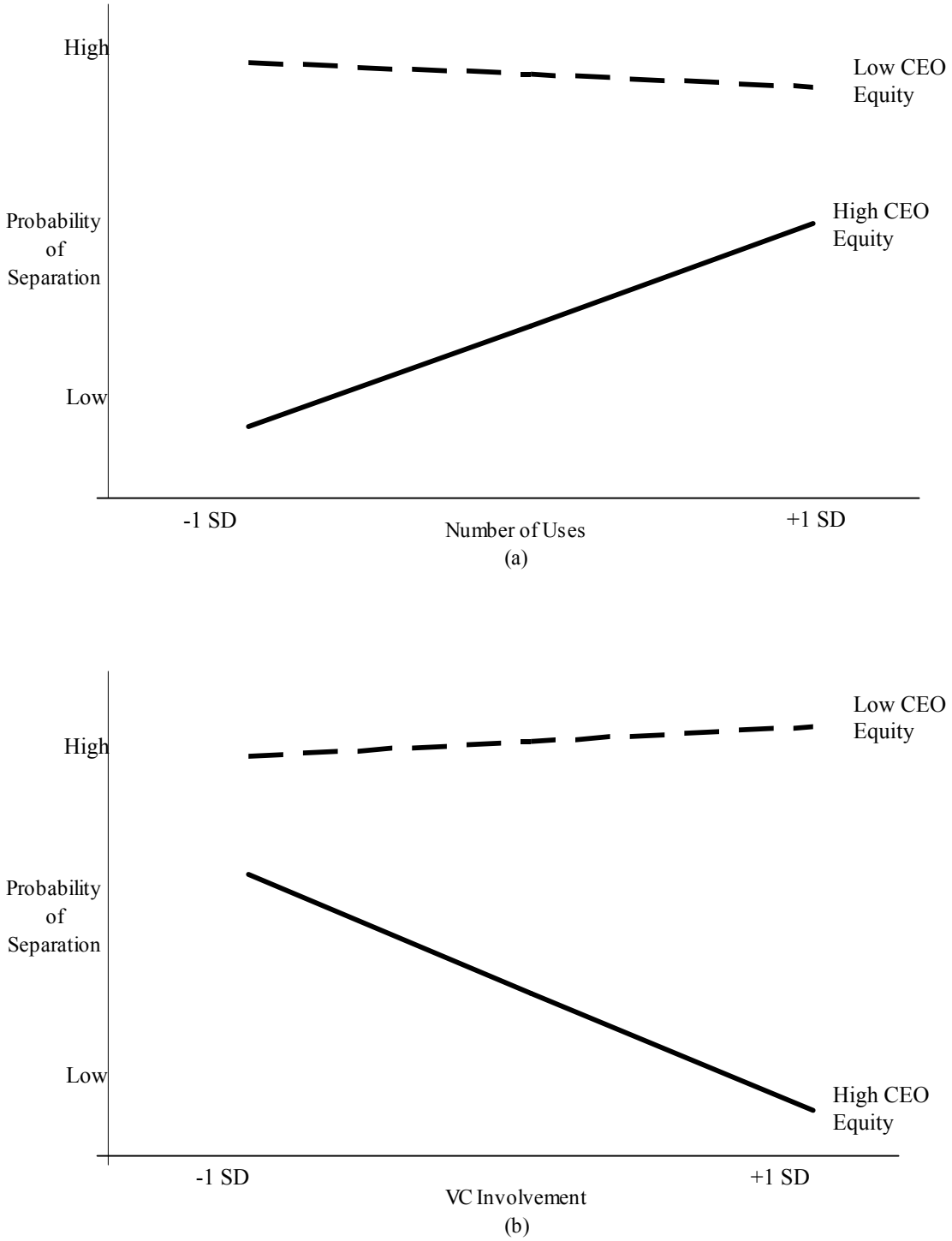


Figure 5.8 Moderating Impact of CEO Equity on (a) Number of Uses-Separation Relationship and (b) VC Involvement-Separation Relationship

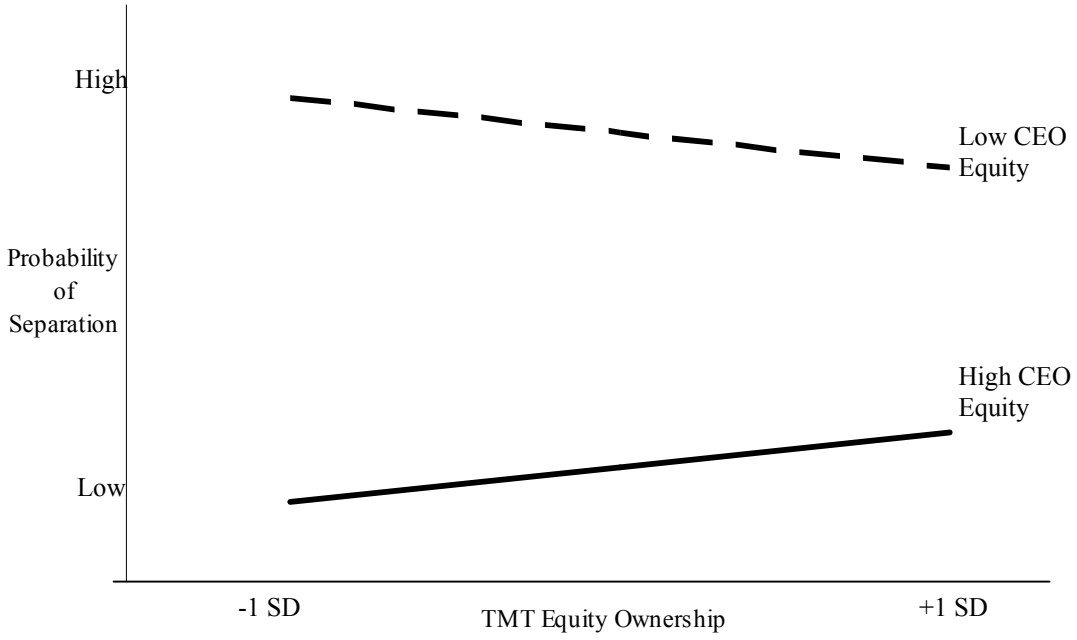


Figure 5.9 Moderating Impact of CEO Equity on TMT Equity Ownership-Separation Relationship

5.5.9 Hypotheses 22b, 23b, 24b, 25b, 26b, 27b, and 28b

Hypotheses 22b, 23b, 24b, 25b, 26b, 27b, and 28b suggest that market conditions (1 = hot and 0 = cold) will have a negative impact on risk-separation relationship. In Step 1 of the analysis (see Table 5.3, page 107), only one interaction had a significant coefficient (i.e., the interaction between market conditions and blockholders' equity) and therefore was included in the final model (Model 3 of Table 5.6, page 122). Consequently, hypotheses 22b, 23b, 24b, 25b, 26b and 28b were not supported.

Hypothesis 27b predicts that, keeping blockholders equity constant, IPO firms will have a lower outsider ratio in hot markets than in cold markets. As can be seen in Model 3 of Table 5.6, the interaction between market conditions and blockholders' equity failed to explain a significant amount of variance in separations (b = .020, p = .187) and thus hypothesis 27b was not supported.

5.5.10 Hypotheses 8c, 9c, 10c, 11c, 12c, 13c, and 14c

Hypotheses 8c, 9c, 10c, 11c, 12c, 13c, and 14c predict that the CEO incentive alignment will moderate the relationship between firm risk and board size. Due to insignificant interactions in Step 1 of the analysis (see Table 5.4, page 109), the following hypotheses were not supported: 8c, 9c, 11c, and 13c.

Hypothesis 10c predicts that, keeping firm sales constant, a high CEO stock option value will have a smaller board of directors than a low CEO stock option value. As Model 3 of Table 5.7 (page 123) shows, the interaction between CEO stock option

and firms sales does not explain a significant variance in board size (b = -.031, p = .542). Thus, hypothesis 10c was not supported.

Hypothesis 12c suggests that, keeping VC involvement constant, high CEO stock option values will have a smaller board of directors than low CEO stock option values. As indicated in Model 3, the interaction between stock option and VC involvement was insignificant (b = -.004, p = .719). Therefore, hypothesis 12c was not supported.

Hypothesis 14c predicts that, keeping TMT equity constant, high CEO stock option values will have a smaller board of directors than low CEO stock option values. As Model 3 of Table 5.7 indicates, the interaction between CEO stock option and TMT equity failed to explain a significant portion of the variance in board size (b = .004, p = .469). Therefore, hypothesis 14c was not supported.

5.5.11 Hypotheses 15c, 16c, 17c, 18c, 19c, 20c, and 21c

Hypotheses 15c, 16c, 17c, 18c, 19c, 20c, and 21c predict that CEO power will have a negative effect on the relationship between risk and the size of the board of directors. Because of insignificant interaction terms in Step 1 of the analysis (see Table 5.4, page 109), the following hypotheses were not supported: 19c, 20c, and 21c.

Hypothesis 15c predicts that, keeping underwriter rank constant, IPO firms with more powerful CEO will have a smaller board of directors than IPO firms will less powerful CEO. Examination of Model 3 of Table 5.7, the interaction between CEO-founder and underwriter rank explains a significant portion of the variance in size of the

board (b = -.162, p = .016). The significant interaction is depicted in Figure 5.10a. Figure 5.10a displays a positive relationship between underwriter rank and board size for CEO is not the founder, whereas this effect is slightly negative for CEO is the founder. Thus, hypothesis 15c was not supported.

Hypothesis 16c suggests a negative moderating effect of CEO power on firm age-board size relationship. Model 3 shows that the coefficient for the interaction between CEO equity and firm age is significant and positive (b = .031, p = .009). The significant interaction is depicted in Figure 5.10b. As expected, firm age and board size were positively related when CEO equity was high; negative relationship was found when CEO equity was low. Therefore, hypothesis 16c was strongly supported.

Hypothesis 17c predicts that, keeping firm size constant, IPO firms with high CEO power will have a smaller board than firms with low CEO power. As can be seen in Model 3 of Table 5.7, the interaction between CEO equity and sales was insignificant (b = -.005, p = .423). Therefore, hypothesis 17c was not supported.

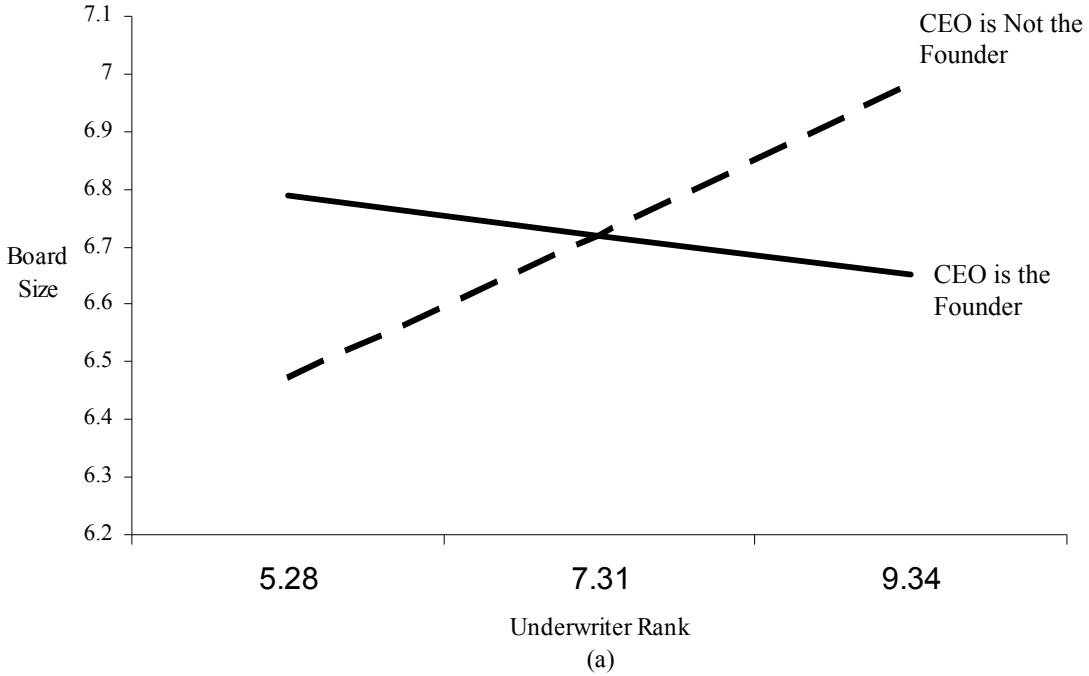
Hypothesis 18c predicts that, keeping business risk constant, IPO firms with high CEO power will have a smaller board than firms with low CEO power. Again, Model 3 shows that the interaction between CEO-founder and number of risk factors does not explain a significant variance in board size (b = .017, p = .516); hypothesis 18c was not supported.

5.5.12 Hypotheses 22c, 23c, 24c, 25c, 26c, 27c, and 28c

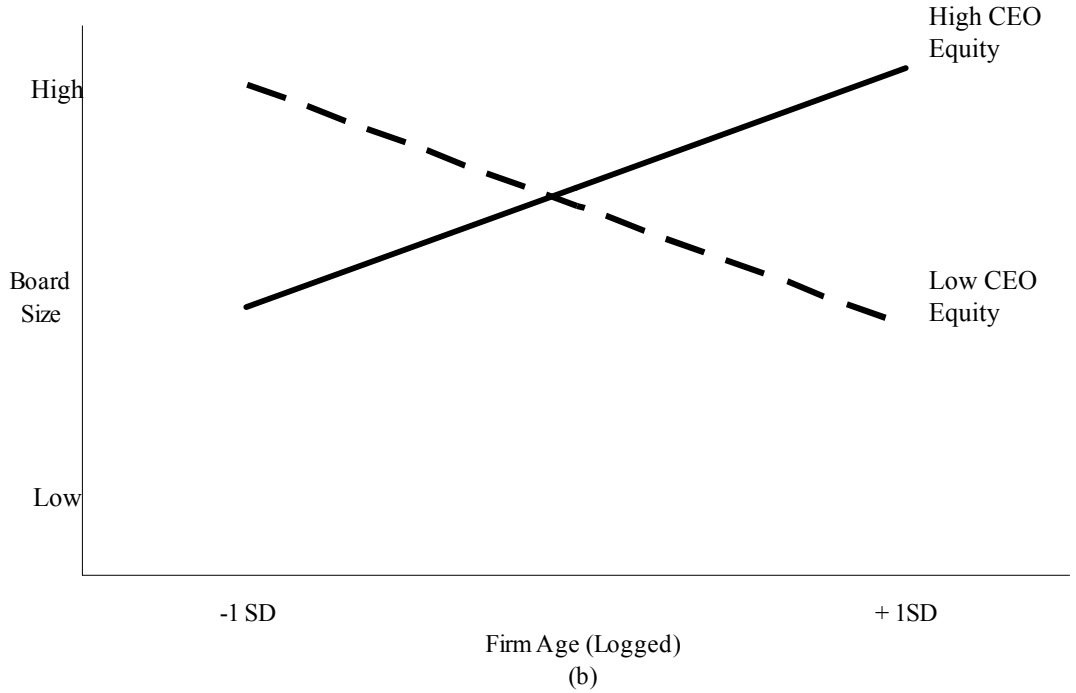
Hypotheses 22c, 23c, 24c, 25c, 26c, 27c, and 28c predict that stock market

conditions will moderate the relationship between risk and the size of the board of directors. Only the interaction with number of risk factors was significant in Step 1 of the analysis (see Table 4.3, page 109). Thus, hypotheses 22c, 23c, 24c, 26c, 27c, and 28c were not supported.

Hypothesis 25c suggests a negative moderating impact of market conditions on the business risk-board size relationship. As can be seen in Model 3, Table 5.7, the interaction between market conditions and risk factors failed to explain a signification amount of variance in board size (b = .035, p = .231) and, consequently, hypothesis 25c was not supported.



(a)



(b)

Figure 5.10 Moderating Impact of (a) CEO-Founder on Underwriter Rank-Board Size Relationship and (b) CEO Equity on Firm Age-Board Size Relationship

Table 5.8 Summary of Findings

#	Hypotheses	Results
1	Underwriter reputation will be negatively associated with	
	H 1a: the percentage of outside directors.	*Not Supported*
	H 1b: the separation of CEO and Board chairman position.	*Not Supported*
	H 1c: the size of the board of directors	*Not Supported*
2	IPO firm age will be negatively associated with	
	H 2a: the percentage of outside directors.	*Supported*
	H 2b: the separation of CEO and Board chairman position.	*Not Supported*
	H 2c: the size of the board of directors.	*Not Supported*
3	IPO firm size will be negatively associated with	
	H 3a: the percentage of outside directors	*Not Supported*
	H 3b: the separation of CEO and Board chairman position	*Not Supported*
	H 3c: the size of the board of directors	*Not Supported*
4	The level of IPO firm's business risk will be positively associated with	
	H 4a: the percentage of outside directors	*Not Supported*
	H 4b: the separation of CEO and Board chairman position	*Not Supported*
	H 4c: the size of the board of directors	*Partially Supported (Only Risk Factors is Significant)*
5	Venture-Capitalist-backed firms will have	
	H 5a: a lower percentage of outside directors than non venture-capitalist firms	*Not Supported*
	H 5b: a lower separation of CEO and Board chairman position than non-venture-capitalist firms	*Supported*
	H 5c: a smaller board of directors than non-venture-capitalist firms	*Not Supported*
6	IPO firms that have large blockholders at the time of going public will have	
	H 6a: a lower percentage of outside directors than firms without blockholders	*Not Supported*
	H 6b: a lower separation of CEO and Board chairman position than firms without blockholders	*Not Supported*
	H 6c: a smaller board of directors than firms without blockholders	*Supported*
7	Insiders' ownership stake in the new ventures at the IPO will be negatively associated with	
	H 7a: the percentage of outside directors	*Partially Supported (Only TMT significant)*
	H 7b: the separation of CEO and Board chairman position	*Not Supported*
	H 7c: the size of board of directors	*Partially Supported (only TMT significant)*

Table 5.8 Continued

8	The relationship between underwriter reputation and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between underwriter reputation and	
	H 8a: the percentage of outside directors	*Partially Supported*
	H 8b: the separation of CEO and Board chairman position	*Not Supported*
	H 8c: the size of the board of directors	*Not Supported*
9	The relationship between firm age and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between firm age and	
	H 9a: the percentage of outside directors	*Not Supported*
	H 9b: the separation of CEO and Board chairman position	*Not Supported*
	H 9c: the size of the board of directors	*Not Supported*
10	The relationship between firm size and level of board independence will be moderated by CEO Compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between firm size and	
	H 10a: the percentage of outside directors	*Not Supported*
	H 10b: the separation of CEO and Board chairman position	*Not Supported*
	H 10c: the size of the board of directors	*Not Supported*
11	The relationship between the level of IPO firm's business risk and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between business risk and	
	H 11a: the percentage of outside directors.	*Weakly Supported*
	H 11b: the separation of CEO and Board chairman position	*Not Supported*
	H 11c: the size of the board of directors	*Not Supported*
12	The relationship between the venture capitalist backing and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between venture capitalist backing and	
	H 12a: the percentage of outside directors	*Not Supported*
	H 12b: the separation of CEO and Board chairman position	*Not Supported*
	H 12c: the size of the board of directors	*Not Supported*
13	The relationship between the presence of large blockholders and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between the presence of large blockholders and	
	H 13a: the percentage of outside directors	*Not Supported*
	H 13b: the separation of CEO and Board chairman position	*Not Supported*
	H 13c: the size of the board of directors	*Not Supported*

Table 5.8 Continued

14	The relationship between insiders' ownership stake and level of board independence will be moderated by CEO compensation structure. That is, the stronger the CEO incentive alignment, the weaker the relationship between insiders' ownership stake and	
	H 14a: the percentage of outside directors	*Not Supported*
	H 14b: the separation of CEO and Board chairman position	*Not Supported*
	H 14c: the size of the board of directors	*Not Supported*
15	The relationship between underwriter reputation and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between underwriter reputation and	
	H 15a: the percentage of outside directors	*Not Supported*
	H 15b: the separation of CEO and Board chairman position	*Not Supported*
	H 15c: the size of the board of directors	*Not Supported*
16	The relationship between firm age and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between firm age and	
	H 16a: the percentage of outside directors	*Not Supported*
	H 16b: the separation of CEO and Board chairman position	*Supported*
	H 16c: the size of the board of directors	*Supported*
17	The relationship between firm size and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between firm size and	
	H 17a: the percentage of outside directors	*Not Supported*
	H 17b: the separation of CEO and Board chairman position	*Supported*
	H 17c: the size of the board of directors	*Not Supported*
18	The relationship between the level of IPO firm's business risk and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between business risk and	
	H 18a: the percentage of outside directors	*Not Supported*
	H 18b: the separation of CEO and Board chairman position	*Supported*
	H 18c: the size of the board of directors	*Not Supported*
19	The relationship between the venture capitalist backing and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between venture capitalist backing and	
	H 19a: the percentage of outside directors	*Not Supported*
	H 19b: the separation of CEO and Board chairman position.	*Weakly Supported*
	H 19c: the size of the board of directors	*Not Supported*

Table 5.8 Continued

20	The relationship between the presence of large blockholders and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between the presence of large blockholders and	
	H 20a: the percentage of outside directors	*Not Supported*
	H 20b: the separation of CEO and Board chairman position	*Not Supported*
	H 20c: the size of the board of directors.	*Not Supported*
21	The relationship between insiders' ownership stake and level of board independence will be moderated by CEO power. That is, the higher the CEO power, the weaker the relationship between insiders' ownership stake and	
	H 21a: the percentage of outside directors.	*Weakly Supported*
	H 21b: the separation of CEO and Board chairman position	*Supported*
	H 21c: the size of the board of directors.	*Not Supported*
22	The relationship between underwriter reputation and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between underwriter reputation and	
	H 22a: the percentage of outside directors will be weaker than in a cold market.	*Not Supported*
	H 22b: the separation of CEO and Board chairman position will be weaker than in a cold market.	*Not Supported*
	H 22c: the size of the board of directors will be weaker than in a cold market.	*Not Supported*
23	The relationship between firm age and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between firm age and	
	H 23a: the percentage of outside directors will be weaker than in a cold market	*Not Supported*
	H 23b: the separation of CEO and Board chairman position will be weaker than in a cold market	*Not Supported*
	H 23c: the size of the board of directors will be weaker than in a cold market.	*Not Supported*
24	The relationship between firm size and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between firm size and	
	H 24a: the percentage of outside directors will be weaker than in a cold market.	*Not Supported*
	H 24b: the separation of CEO and Board chairman position will be weaker than in a cold market.	*Not Supported*
	H 24c: the size of the board of directors will be weaker than in a cold market.	*Not Supported*

Table 5.8 Continued

25	The relationship between the level of IPO firm's business risk and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between firm's business risk and	
	H 25a: the percentage of outside directors will be weaker than in a cold market.	*Not Supported*
	H 25b: the separation of CEO and Board chairman position will be weaker than in a cold market.	*Not Supported*
	H 25c: the size of the board of directors will be weaker than in a cold market.	*Not Supported*
26	The relationship between the venture capitalist backing and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between venture capitalist backing and	
	H 26a: the percentage of outside directors will be weaker than in a cold market.	*Partially Supported*
	H 26b: the separation of CEO and Board chairman position will be weaker than in a cold market.	*Not Supported*
	H 26c: the size of the board of directors will be weaker than in a cold market.	*Not Supported*
27	The relationship between the presence of large blockholders and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between the presence of large blockholders and	
	H 27a: the percentage of outside directors will be weaker than in a cold market	*Not Supported*
	H 27b: the separation of CEO and Board chairman position will be weaker than in a cold market	*Not Supported*
	H 27c: the size of the board of directors will be weaker than in a cold market	*Not Supported*
28	The relationship between insiders' ownership stake and level of board independence will be moderated by market condition. That is, in a hot market, the relationship between insiders' ownership stake and	
	H 28a: the percentage of outside directors will be weaker than in a cold market.	*Not Supported*
	H 28b: the separation of CEO and Board chairman position will be weaker than in a cold market.	*Not Supported*
	H 28c: the size of the board of directors will be weaker than in a cold market	*Not Supported*

CHAPTER 6

DISCUSSION

6.1 Implications of Results

Following calls for integrative board structure research in IPO firms (Filatotchev & Bishop 2002) my objective in this dissertation was to develop a comprehensive framework for the determinants of board structure. Specifically, given the increasing interest in the role of risk on IPOs in general and IPO board structure in particular (e.g., Beatty & Zajac, 1994; Filatotchev, 2005), I investigated the impact of three types of risk (i.e., legitimacy, agency and business risk) on board structures. Through my focus on those three types of firm risk and the moderating impacts of CEO incentive alignment, CEO power, and stock market conditions, I have presented a pattern of results that largely supports this objective.

Furthermore, while previous theories (e.g., agency theory and resources dependence theory) have been of tremendous importance to the board structure stream of research, they do not take into account the uniqueness of IPO firms and the role of investors in shaping IPO board structure (Huse, 2000). Indeed, IPO firms face a very different environment than large organizations. For example, investors' pressure and their confidence in the IPO firms have a strong impact not only on the success of IPO firms' transformation from privately-held to publicly-held company, but also on the

future performance of the company (e.g., Schultz, 1993).

I therefore borrowed from two emerging theories (Investor Confidence and Substitution Effect perspectives) to (1) go beyond agency paradigm and include more significant indicators of board structure, (2) provide a classification of risk that takes account the characteristics of IPO firms and the environment in which they operate, and (3) show how the internal organizational politics and stock market conditions directly and indirectly impact board structure.

Given that I have used three characteristics of board structures as dependent variables (i.e., outsider ratio, separation of CEO/Chairman positions), I will discuss the implications of results of each one separately.

6.1.1 The determinants of Outsiders Ratio

The first set of hypotheses (1a, 2a, 3a, 4a, 5a, 6a, and 7a) predicted the relationship between risk and the level of monitoring as measured by outsiders ratio. The model was significant and some of the theorized associations explained greater variance than control models. Generally speaking, the number of outside directors on the board of directors is determined by firm age and TMT equity. Both age (Hypothesis 2a) and TMT equity (Hypothesis 7a) had significant and negative coefficients. We found that as firm age increases, outsider ratio decreases suggesting that decreasing legitimacy risk is associated with lower levels of monitoring.

Similarly, the results strongly support the theorized impact of TMT equity ownership on the investor confidence in the firms. As the equity holding of the TMT

members increases, the level of trust and confidence in the IPO firm increases as well. Subsequently, the need for stronger monitoring mechanism would decrease, which would be translated into a lower level of outsider directors in the board.

In terms of the moderating effects of CEO incentive alignment, the amount of investors' pressures that are exercised will depend largely on level of CEO incentive alignment. Generally speaking, the results show that a higher CEO stock options was found to either neutralize the effects of increasing risks on outsider ratio (as the case for decreasing underwriter rank) or even causes outsider ratio to decreases (as the case for increasing number of uses of the proceeds).

It was striking to find that CEO stock option pay has a positive moderation impact on profitability-outsider ratio and sales-outsider ratio relationships. As legitimacy and business risk increased, the level of monitoring increased for firm with high CEO stock option pay. These results are contrary to what was predicted by hypothesis 10a (for sales) and hypothesis 11a (for profitability). However, upon reflection, the positive moderation effects of CEO stock are consistent with my argument suggesting that the investors' pressures do change according to the level of CEO stock option. The positive moderation impact of CEO stock option may be easier to understand if we take into account how CEO stock option value was measured in this dissertation (i.e., CEO stock option was measured as the value of stock granted to CEO in the year prior of going public). Given that the stock options have been awarded year before the IPO and therefore investors may expect that the effects of those stock option

should be materialized into a higher firm sales or profitability. As such, for a firm with high CEO stock option pay, but have low profitability and sales, investor confidence in CEOs' ability to run the firm may get shaken because of that the stock options did not result in a reduction of firms' riskiness. As a result of the lack of confidence in CEO, investors would pressure for higher board independence.

My predictions about the role of CEO power were largely supported (hypotheses 19a and 21a). As expected, as risk increases (and as consequently investors' pressures intensifies) CEO uses his power to try to curb the pressures for increasing the level of monitoring (i.e., increasing outsider ratio). Specifically, we found that as VC involvement decreases (and therefore agency risk increases), only firms with low CEO equity was found to have increasing outsider ratio (Hypothesis 19a). In addition, results also show that a decreasing of TMT equity as associated with decreasing outsider ratio for firm with long-tenured CEOs (hypothesis 21a) suggesting that long-tenured CEOs were able to limit the influence of increasing firms' risk on the level of board independence. In short, these results therefore suggest that regardless of firm risk, firm with powerful CEO tend to resist pressure for higher level of monitoring.

Regarding the moderating role of stock market conditions, the results provided mixed support to my argument. Contrary to hypothesis 22a, underwriter rank is negatively associated with outsider ratio for hot market and positively associated for cold market. Indeed, I expected investors' pressures will be higher when underwriter rank goes down for cold market, which will result in a higher outsider ratio. In contrast,

for hot market, I expected this relationship be less negative. However, upon reflection on the literature and the role of underwriter in both the stock market and IPO firms, some support of my argument becomes clear. That is, as I expected, underwriters with lower rank have less power over IPO principal owners than underwriters with a high power. Furthermore, given that number of IPOs in cold markets is much lower than in hot markets and therefore IPO principal owners have more power over the underwriters in cold markets, especially over those underwriters with low rank. Therefore, in cold markets where IPO principal owners have more power, low reputatable underwriter will not be able to translate investors' concerns into an independent board. In contrast, investors' demand for an independent board will be implemented as the underwriters rank (and therefore, the power) increases. Moreover, in hot markets, even underwriters with low reputation enjoy more power over IPOs principal owners due to the high number of IPOs in the markets. Therefore, to substitute for the lack of legitimacy, they put more outside directors on the board. A high reputation underwriter will not need to have high board independence mainly because their presence substitutes for its roles.

Secondly, the negative moderating impact of stock market conditions on VC involvement-outsider ratio relationship provided support to hypothesis 26a. Specifically, the results suggest that stock market condition do have an impact on investor perception of risks. Therefore, in case of low VC involvement, firms that went public in hot markets had lower outsider ratio than similar firms went public in cold markets. In other words, investors are more critical on increasing firm risk (as

measured by decreasing VC involvement) in cold markets than in hot markets. Thus, keeping firm risk constant, investors' pressure for board independence may fluctuates substantially from cold to hot markets.

6.1.2 The determinants of Separation of CEO/Chairman Positions

The first set of hypotheses (1b, 2b, 3b, 4b, 5b, 6b, and 7b) predicted the relationship between risk and probability of separation of CEO/chairman positions. Although the model was significant, only VC involvement was significantly and positively predicting the probability of separation (hypothesis 5b). The result provides a strong support to my argument that there is an inverse relationship between VC involvement and firm risk. Specifically, a high the level of VC involvement causes a decrease in firm risk and subsequently, a lower level of board monitoring (i.e., a lower separation).

Interestingly, contradicting the theory, this study found that CEO stock option has a positive moderation impacts on firm age-separation and percentage of dilution-separation relationships. The results therefore suggest that IPO firms seem to compensate CEO with more option as they are removed from the position of chairman of the board of directors. Specifically, IPO principal owners use CEO stock options strategically to motivate the CEO and boost their morale as the level of monitoring over them increase as evidence in increasing separations.

My view of CEO power effects on the relationship between risk and the

likelihood of separating CEO/chairman positions (level of monitoring) received support (hypotheses 16b, 17b, 18b, 19b, and 21b). We argued that the effect of risk on probability of separation is determined by CEOs power. That is, keeping risk level constant, IPO firms with more powerful CEO are less likely to have a separate CEO/chairman position than firms with less powerful CEOs. First, whereas the association between firm age and separation is constantly positive, the high CEO equity firms were found to be less responsive (as shown by less sleeper slope in the graph) to the investors' pressures for having a higher separation as firm age goes down than low CEO equity firms (hypothesis 15b). Specifically, CEOs use their power (i.e., CEO equity) to combine CEO and chairman positions regardless of the investors' pressures that are stemming from lower firms age. Second, CEO-founder firms were found to make the likelihood of separation irrelevant to firms' sales (hypothesis 17b). In contrast, non CEO-founder firms were found to be more responsive to investors' pressures and therefore the likelihood of separation changes accordingly. Furthermore, a similar effect of CEO power on sales-separation relationship was also found with CEO equity. Despite increasing pressures for a higher separation (as measured by decreasing sales), the likelihood of separation was steadily declining for high CEO equity.

Third, the effects of the number of uses on separation were also found to be influenced by CEO power (hypothesis 18b). That is, for IPO firms with less powerful CEO (non-CEO-founder), the study found that the increase in the number of uses (a

proxy for increasing firms' riskiness) to be associated with a higher board independence. In contrast, the likelihood of separation was decreasing as the number of uses increased for CEO-founder firms.

Fourth, investors' pressure to have high board independence is more likely to be translated into reality when CEOs have low equity (hypothesis 19b). More specifically, a higher CEO equity will limit the impact of decreasing risk on board independence.

Finally, casting a strong support of my view of CEO power, results showed that, as TMT equity goes down, high CEO equity was strongly associated with decreasing of likelihood of separation, regardless of investors' pressures of more control and monitoring (hypothesis 21b). Further, low CEO equity firm was found, as TMT equity decline, to be more responsive to investors' pressure for increasing the level of monitoring, as represented by a higher probability of separation.

6.1.3 The determinants of Board Size

My view of the effects of risk on monitoring received very little support when board size was used as a proxy for the level of monitoring. Specifically, board size was found to be the least related to risk as evidenced by few significant main and interactions effects as well as low r-squares in the models are estimated. The first set of hypotheses (1c, 2c, 3c, 4c, 5c, 6c, and 7c) predicted the direct effects of risk on board size. Only firm age and TMT equity were found to be significant predictors of board size (hypothesis 2a and 7a, respectively). Although firm age has significant effect, it was entirely opposite the predicted direction. That is, results showed that board size

increases as firms gets older. One possible explanation of this is that, board size is not used as a control mechanism in IPO firms. Rather it is a result of the increasing number and diversity of firms' stakeholders. As such, as firms gets older, the number of strategic partners, principal owner increases. Consequently, the number of directors on the boards increases to accommodate those diverse groups with different interests.

In terms of TMT equity, the effect of TMT equity on board size was as expected (i.e., negative). I doubt, however, that this can be attributed to reduced need for monitoring. That is, as I stated above, board size seems not be a control mechanism in IPO firms, rather it is a result of increasing diversity and numbers of IPOs stakeholders. That is, the significant inverse relationship between TMT equity and board size can attributed to the fact that percentage of TMT ownership increases, the number of overall IPO principal owners decreases as well. Consequently, the number of directors on the boards is likely to decrease.

6.2 Contributions to the Literature

The contribution of the study and its results are five fold. First, this study was the first to link firms' risk to board structure using investor confidence perspective and substitution effect perspective. Indeed, the findings of the study supported my argument that investor confidence plays an essential role in IPO in general and in IPO board structure in particular. Moreover, I found that the IPO principal owners try to increase investors' interests in the firm by structuring board of directors to compensate for firms weakness (e.g., Filatotchev, 2005). As I will discuss below, IPO principal

owners work under tremendous constraint and resistance from the various players in IPO market such as VCs and CEOs. Therefore, the extent of satisfying investor concerns greatly depends on many contextual factors.

A second contribution is to agency theory. This study join many previous calls by management scholars (e.g., Daily et al., 2003a; Filatotchev, 2005; Pettigrew, 1992) to use agency theory in conjunction with other theories. That is, the main shortcoming of the agency theory is the assumption that the main role of board of directors is monitoring CEOs and curbing TMT opportunisms. Indeed, this study found that board is structured not only to curb opportunistic behaviors, but also to deal with investor concerns and substitute for the weakness of the firms. For example, I found that board structures are affected by underwriter rank, firm profitability, number of uses of the proceeds, and percentage of dilution.

Moreover, as a limited number of previous studies postulated (Beatty & Zajac, 1994; Filatotchev & Bishop, 2002; Nelson, 2003), I found that the predictive power of agency theory significantly improves when it is used in conjunction with bargaining power theory (e.g., Baker & Gompers, 2003). This study gives a strong support to the notion that CEOs use their power and influence on the firms to reduce the level of monitoring by the boards. Nevertheless, the literature is still unclear regarding the type and the level of influence that CEOs exercise. Specifically, in this study I argued for a moderating role of CEO power and I found a strong support of this view, but Baker and Gompers (2003) view CEO power as a direct influence on board structure.

A third contribution is also related to bargaining power theory (e.g., Baker & Gompers, 2003). Bargaining power theory argues that the competition for controlling the firms between VCs and CEOs directly determine the structure of the board of directors. The findings here add two important contributions to bargaining power theory: the role of underwriters and principal owners and role of stock market conditions. First, the findings of this study suggest that the board structure is the result of the dynamic interaction and balance of power between VCs, CEOs, underwriters, and IPO principal owners. In short, studies that do not take into account the influence of all the central players in the IPO market are at best incomplete.

Second, the number of IPOs offered in a certain year (i.e., stock market conditions) impacts how balance shifts from one player to another. As it is seen in the finding, in hot markets where the number of IPOs is very high, underwriters have more power than IPO principal owners. In contrast, due to the small number of offering in cold market, the power shifts from underwriters to principal owners. Again, the finding of the shift in power finding is exploratory in nature and more in-depth analysis is required.

A fourth major contribution of this study is to the literature of underwriters' roles in IPO and IPO board structures. Previous study emphasized the role of underwriters as a resources acquisition mechanism that stem from its networks and power in the IPOs (Pollock et al., 2004; Pollock, 2004). Additionally, Higgins and Gulati (2003) went further and postulated that underwriters' rank is only a reflection of

the quality and strength of the IPO firms; that is, the better the IPO firms, the higher the lead underwriters' rank.

In short, all those studies strongly argued that the role of underwriters is confined to linking IPO firms to external environment and the role of shaping and structuring of IPO firms do not exist. The findings of the study, however, do not entirely conform to such an argument. Indeed, I found that in order to protect their reputation, underwriters' play a central role in structuring IPO boards of directors. Nevertheless, this study only sheds limited insight on the roles that underwriters play in shaping the IPO firms and further examination is warranted.

Finally, the findings of this study confirmed the expected changes in the behaviors of the various players in hot and cold IPO markets. Specifically, in examining the stock market conditions, previous research mainly concentrated on finding the differences in IPO firms' quality (e.g., Helwege & Liang, 2004; Lowry, 2003; Ritter & Welch, 2002) and little attention was given to how changes in market activity may change the behaviors of investors, principal owners, VCs, and underwriters. The results provided clear evidence that the player' behavior change depends on stock market conditions and subsequently affecting the structure of the board of directors. The findings, however, did not give a very clear picture of how investors' behaviors change and may be attributed to the sampling problems.

6.3 Limitations and Future Research Directions

Like all research, this dissertation has left questions unanswered, which in turn suggests future research opportunities. Eighth of these questions are particularly important. The first question concerns the operationalization of business risk. The literature is lacking a qualitative study that examines how strongly three measures (profitability, number of uses, and risk factors) surrogate the level of firm business risk. Thus, further studies need to examine the reliability of those measures. In addition, a modified measure of firm's health (e.g., Barron, Kile, & Keefe, 1999; Miller and Skinner, 1998; Hayes, Hunton, and Reck, 2001) for IPO firms can be used as a proxy for business risk. Another interesting measure could be a survey that is designed to examine different IPO firms' characteristics and its effects of investor perception on firms' riskiness.

Related to the first research question, in measuring the number of risk factors, I assumed that all factors have equal weight in firms' riskiness. However, this may not be true. Thus, a future research question could be a qualitative study that aims to classify and assign a weight to risk factors.

A third question relates to the consequences of IPO principal owner's refusal to comply with investors' demands. I assumed that all IPO principal owners are always rational decision makers and they would try to please the investors at all times. Indeed, I did not actually measure the interests of the principal owners. Therefore, future research questions should look at what types of "penalty" or "punishment" that

investors' would inflict on principal owners if their demands are not met. Future studies should try to link the extent of implementing investors' demands to some IPO performance measures, such as price premium (e.g., Nelson, 2003) or underpricing (e.g., Filatotchev & Bishop, 2002).

A fourth research question is raised by my argument that underwriters and VCs are passive actors in IPO process in general and IPO board structure in particular. Indeed, the results of the study showed that underwriters and VCs are active players in board structure. Although bargaining theory (e.g., Ryan & Wiggins, 2004) examined the direct effects of VCs' power on board structure, underwriters' role was largely ignored. In addition, previous studies confined underwriters' roles to networking (e.g., Pollock et al., 2004) or signaling firms' quality (e.g., Certo et al., 2001a; Titman and Truman, 1986). Consequently, more is needed to be known about the role of underwriters and underwriters' power on structuring of the board of directors as well as the dynamic relationship between the four pillars of IPOs: underwriters, VCs, principal owners, and investors.

A fifth question is raised by my operationalization of outsider ratio. Although I used operationalization of outsider ratio that is very well-established in finance and management literature (cf. Baysinger & Buttler, 1985; Daily & Dalton, 1993), some questions still remain unresolved. Specifically, according to this definition of outsider ratio, it is highly likely that friends of CEOs are going to be counted as "outsiders." In other words, there is need for more research to establish a direct link between the

definition of outsider ratio and level of monitoring by board of directors.

A sixth question is also related to the measurement of stock market conditions. In this dissertation, I only used one definition; the year of IPO. However, increasing number of studies, especially in finance and accounting, are pushing for more powerful operationalizations, such as three-month centered moving averages of the number of IPOs scaled by new business formations for each month in the sample (Helwege & Liang, 2004). In addition, Finkle (1998) proposed another measure using the level of activities in S&P 500 index; that is, hot market is operationalized if the S&P 500 had a return greater than 10 per cent, otherwise cold market. To accomplish this, however, I need a larger sample size that span over a long period of time.

A seventh research question is related to the sources of data. Almost all measures used in this study are prospectus-based operationalization. Depending on single data source has decreased the reliability of the measures. Therefore, a promising future study is a replication of this study using different data sources.

Finally, measuring CEO incentive alignment as the value of CEO stock option given in the past year gives rise to a sixth research question—one that is concerned with the real meaning of stock option value to investors. This measure, however, did not capture exactly the essence of investors' reaction to the CEO incentive alignment. Indeed, as the results showed, investors seem to perceive CEO stock option value as a proxy for CEOs' ability to run the firms. Specifically, investor perception of firms' riskiness increases when risky firms compensate CEO with relatively a high stock

options value. Regardless, for future studies to strengthen the measurement of CEO incentive alignment, they need to adopt different measures such as the one provided in Black-Scholes (1973) or Beatty and Zajac (1994) and Certo et al. (2003).

6.4 Managerial Implications

The results of the study provide four promising implications for managers and investors. First, although board structure is a powerful control mechanism, managers need to know that investors view board of directors as a mean to reduce uncertainty around their investments. The results indicate that an independent board of directors is not always demanded by investors. Rather in the case of low risk firms, the level of board independence seems irrelevant to investors. A second implication is that managers should know that investors are more conscious about their investments during cold markets and therefore the structure of the board of directors will be under intense scrutiny.

A third implication deals with the use of CEO power. CEOs may not like to be monitored by the boards (i.e., independent boards) and therefore they may resist it. CEOs in risky firms, however, should know that investors look at the independent boards as the only means to compensate for firm's weaknesses. Therefore, independent boards may be directly linked to successful offering process.

Finally, having the high-ranked underwriters is a two-edged weapon. On the one hand, the high-ranked underwriters are very well connected in the market which will provide a higher legitimacy as well as a high potential for resource acquisition to

IPO firms. On the other hand, the high-ranked underwriters may intervene in IPO firm's internal matters such as appointing outsiders and separating CEO and chairman positions. In addition, given the fact that the main objective of underwriters is short-term (that is, the success of the offerings), those changes and intervention may have undesirable long term consequences in some cases.

6.5 Conclusion

This research has argued that, through investors' pressures, the level of riskiness is positively associated with board independence. The level of the pressure exercised largely depends on two contextual factors: investors' attitude toward risk and CEO incentive alignment. First, this study showed that investor perception of risk changes according to stock market conditions; that is, in cold markets investors are more risk-averse than in hot markets. Second, investors get some comfort as they see that CEO compensation is more aligned to investors' interests and their level of pressure for independent board is adjusted accordingly.

The major finding of this study is that investors' demand for independent boards may not be answered mainly because of CEO resistance. As such, the level of board independence depends largely on how much power the CEO has.

REFERENCES

Admati, A. R. and Pfleiderer, P. 1994. Robust financial contracting and the role of venture capitalists. *Journal of Finance*, 49(2): 371-402.

Aggarwal, R. 2003. Allocation of initial public offerings and flipping activity. *Journal of Financial Economics*, 68: 111-135.

Agrawal, A. and Knoeber, C.R. 1996. Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31: 377-397.

Aldrich, H. and Auster, E. 1986. Even dwarfs started small. *Research in Organizational Behavior*, 8: 165-198.

Aldrich, H. E. and Fiol, C. M. 1994. Fools rush in? The institutional context of industry creation. *Academy of Management Review*, 19: 645-670.

Allen, F. and Faulhaber, G. 1989. Signaling by underpricing in the IPO market. *Journal of Financial Economics*, 23: 303-323.

Altman, E. I. 1968. Financial ratio, discriminate analysis and prediction of corporate bankruptcy. *Journal of Finance*, 23: 589-610.

Amit, R., Glosten, L., and Muller, E. 1990. Entrepreneurial ability, ventures investments, and risk sharing. *Management Science*, 36(10): 1232-1245.

Anderson, E. and Gatignon, H. 1986. Modes of foreign entry: A transaction cost analysis and propositions. *Journal of International Business Studies*, Fall: 1-26.

Ang, J.S. and Brau, J.C. 2002. Firm transparency and the costs of going public. *The Journal of Financial Research,* XXV: 1-17.

Ashforth, B. and Gibbs, B.W. 1990. The double-edged of organizational legitimation. *Organizational Science*, 1: 177-194

Bagley, C. and Dauchy, C. 1999. Venture capital. In the Entrepreneurial Venture, 2nd edition, Sahlman W. Stevenson H, Roberts M, Bhide A (eds). Harvard Business School Press: Boston, MA; 262-303

Baird, I. S., and Thomas, H. 1990. What is risk anyway? In R. A. Bettis, and H. Thomas (eds.). *Risk, Strategy, and Management*. JAI Press, Greewich, CT, pp, 21-52.

Baird, I.S. and Thomas, H. 1985. Toward a contingency model of strategic risk taking. *Academy of Management Review*, 10: 230-243.

Bajaj, M., Chan, Y.C, and Dasgupta, S. 1998. The relationship between ownership, financing decisions and firm performance: A signaling model. *International Economic Review*, 39(3): 723-744.

Baker, M. and Gompers, P.A. 2003. The determinants of board structure at the initial public offering. *Journal of Law and Economics*, XLVI: 569-598.

Baker, M. P. and Wurgler, J. 2000. The equity share in new issues and aggregate stock returns. *The Journal of Finance,* 55: 2219-2257.

Barkema, H.G. and Gomez-Mejia, L.R. 1998. Managerial compensation and firm performance: a general research framework. *Academy of Management Journal*, 41: 135-145.

Barney, J.B, Busenitz, L., Fiet, J.O., and Moesel, D. 1989. The structure of venture capital governance: an organizational economic analysis of relations between venture capital firms and new ventures. *Academy of Management Proceeding*, p. 64-68.

Baron, R. & Kenny, D. 1986. The moderator-mediator variable distinction in social psychology research: Conceptual, strategic, and statistical considerations. *Journal of Applied Psychology*, 51: 1173-1182.

Barron, O. E., Kile, C. O., & Keefe, T. B. 1999. MD& A quality as measured by the SEC and analysts earnings forecasts. Contemporary Accounting Research, 16(1): 75-109.

Barry, C., Muscarella, C., Peavy III, J. and Vetsuypens, M., 1990. The role of venture capital in the creation of public companies. *Journal of Financial Economics.* 27: 447–471.

Bathala, C.T. and Rao, R.P. 1995. The determinants of board composition: an agency theory perspective. *Managerial and Decision Economics*, 6: 59-69.

Baum, J. A. and Oliver, C. 1992. Institutional Embeddedness and the dynamic of organizational populations. *American Sociology Review*, 57: 540-560.

Baum, J.A. and Oliver, C. 1991. Institutional linkages and organizational mortality. *Administrative Science Quarterly*, 36: 187-218.

Baysinger, B. and Hoskisson, R. E. 1990. The composition of boards of directors and strategic control: effects on corporate strategy. *Academy of Management Review,* 15: 72-87.

Baysinger, B.D., Kosnik, R.D., & Turk, T.A. 1991. Effects of board and ownership structure on corporate R&D strategy. *Academy of Management Journal*, 34: 205-214.

Baysinger, W. B. and Butler, H. 1985. Corporate governance and the board of directors: performance effects of change in board composition. *Journal of Law, Economics and Organization*, 1: 101-134.

Beatty, R. P. and Ritter, J. R. 1986. Investment banking, reputation, and the underpricing of initial public offerings. *Journal of Financial Economics*, 15:213-32.

Beatty, R. P. and Zajac, E. J. 1994. Managerial incentives, monitoring, and risk bearing: a study of executive compensation, ownership, and board structure in initial public offerings. *Administrative Science Quarterly*, 39: 313-335.

Berenson, M.L., Levine, D.M., and Goldstein, M. 1983. *Intermediate Statistical Methods and Applications*. Englewood Cliffs, NJ: Prentice-Hall.

Bergemann, D. and Hege, U. 1998. Venture capital financing, moral hazard, and learning. *Journal of Banking & Finance*, 22: 703-735.

Berglof, E. 1994. A control theory of venture capital finance. *The Journal of Economics & Organization,* 10: 247-267.

Bernardo, A. E. and Welch, I. 2001. On the evolution of overconfidence and entrepreneurs. *Journal of Economics and Management Strategy,* 10: 301-330.

Bethal, J. E. and Liebeskind, J. 1993. The effects of ownership structure on corporate restructuring. *Strategic Management journal*, Summer Special Issue 14:15-31.

Bhagat, S., Brickley, J. A., and Lease, R, C. 1985. Incentives effects of stock purchase plans. *Journal of Financial Economics*, 14: 195-215.

Bloom, M. and Milkovich, G.T. 1998. Relationships among risk, incentive pay, and organizational performance. *Academy of Management Journal*, 41: 283-297.

Blowers, S. C., Griffith, P. H. and Milan, T. L. 1999. *The Ernst & Young LLP Guide to the IPO Value Journey*. New York: Wiley.

Boeker, W. 1992. Power and managerial dismissal: Scapegoating at the top. *Administrative Science Quarterly*, 37: 400-421.

Booth, J.R. and Chua, L. 1996. Ownership dispersion, costly information, and IPO underpricing. *Journal of Financial Economics*, 41: 291-310.

Borokhovich, K.A., Parrino, R. and Trapani, T. 1996. Outside directors and CEO selection. *Journal of Financial and Quantitative Analysis*, 31: 337-355.

Boyd, B.K. 1994. Board control and CEO compensation. *Strategic Management Journal*, 15: 335-344.

Brau, J.C., Francis, B., and Kohers, N. 2003. The choice of IPO versus takeover: empirical evidence. *Journal of Business*, 76: 583-612.

Brennan, M. and Franks, J. 1997. Underpricing, ownership and control in initial public offerings of equity securities in the UK. *Journal of Financial*, 45: 391-414.

Brickley, J.A., Coles, J.L. and Terry, R.L. 1994. Outside directors and the adoption of poison pills. *Journal of Financial Economics*, 35: 371-390.

Bushee, B. J. 1998. The influence of institutional investors on myopic R&D investment behavior. *Accounting Review*, 73: 305-333.

Cannella, A. A. and Shen, W, 2001. So close and yet so far: promotion versus exit for CEO heirs apparent. *Academy of Management Journal*, 44: 252-270.

Carpenter, M. A. and Westphal, J. D. 2001. The strategic context of external network ties: Examining the impact of director appointments on board involvement in strategic decision-making. *Academy of Management Journal*, 44: 639–660.

Carpenter, M. A., Pollock, T. G. and Leary, M. M. 2003. Testing a model of reasoned risk-taking: Governance, the experience of principals and agents, and global strategy in high-technology IPO firms. *Strategic Management Journal*, 24: 803–820.

Carroll, G. R., Spiller, P. T., and Teece, D. J. 1999. Transaction cost economics: its influence on organizational theory, strategic management, and political economy. In *Firms, Markets, and Hierarchies: the Transaction Cost Economies Perspective*, Carroll, GR, Teece DJ (eds). Oxford University Press: New York; 60-88.

Carter, R. B. and Manaster, S. 1990. Initial public offerings and underwriter reputation. *Journal of Finance*, 65: 1045-1067.

Carter, R. B., Dark, F. and Singh, A. 1998. Underwriter reputation, initial returns, and the long-run performance if IPO stocks. *Journal of Finance*, 53: 285-311.

Certo, S.T. 2003. Influencing initial public offering investors with prestige: signaling with board structures. *Academy of Management Review*, 28: 432-446.

Certo, S.T., Covin, J.G., Daily, C.M. and Dalton, D.R. 2001a. Wealth and the effects of founder management among IPO-stage new ventures. *Strategic Management Journal*, 22: 641-685.

Certo, S.T., Daily, C.M., and Dalton, D.R. 2001b. Signaling firm value through board structure: an investigation of initial public offerings. *Entrepreneurship Theory and Practice*, 25: 33-49.

Certo, S.T., Daily, C.M., Cannella, A.A., and Dalton, D.R. 2003. Giving money to get money: how CEO stock options and CEO equity enhance IPO valuation. *Academy of Management Journal*, 46: 643-953.

Chatterjee, S. and Price, B. 1991. *Regression Analysis by Example*. New York: Wiley.

Chemmanur, T.J. and Fulghieri, P. 1999. A theory of going public decisions. *The Review of Financial Studies*, 12: 249-279.

Chernow, R. 1997. The death of banker: the decline and fall of great financial dynasties and the triumph of the small investors. *New York: Random House*.

Choe, H., Masulis, R. and Nanda, V. 1993. Common stock offering across the Business Cycle. *Journal of Empirical Finance*, 1: 1-29.

Clarkson, P. and Merkley, J. 1994. Ex ante uncertainty and the underpricing of initial public offerings: further Canadian evidence. *Revue Canadienne des Sciences de l'Administration*, 11: 54-67.

Coase, R. H. The nature of the firm. *Economics*, 4: 386-405.

Cohen, B. and Dean, T.J. 2005. Informational asymmetry and investor valuation of IPOs: top management team legitimacy as a capital market signal. *Strategic Management Journal*, 26: 683-690.

Cohen, J. and Cohen, P. Applied Multiple Regression/Correlation Analysis for the Behavioral Science (2nd ed.) Hillsdale, NJ: Lawrence Erlbaum

Coles, J.W., McWilliams, V. B., and Sen, N. 2001. An examination of the relationship of governance mechanism to performance. *Journal of Management*, 27(1): 23-51.

Covin, J. G., Selvin, D. P. 1997. High growth transitions: theoretical perspectives and suggested directions. In Sexton D. L., Smilor, R. W. (Eds.), *Entrepreneurship 2000*: 9-126.

Daily, C. and Schwenk, C. 1996. Chief executive officers, top management teams and boards of directors: Congruent or countervailing forces? *Journal of Management*, 22: 185-202.

Daily, C. M. and Cannella, A. A. 2003. Corporate governance: decades of dialogue and data. *Academy of Management Review,* 28: 371-382.

Daily, C. M. and Dalton, D. R. 1994. Bankruptcy and corporate governance: The impact of board composition and structure. *Academy of Management Journal*, 37: 1603-1617.

Daily, C. M. and Johnson, J. L. 1997. Sources of CEO power and firm financial performance: a longitudinal assessment. *Journal of Management*, 23: 97-117.

Daily, C. M., Dalton, D. R. and Rajagopalan, N. 2003a. Governance through ownership: Centuries of practice, decades of research. *Academy of Management Journal*, 46: 151–159.

Daily, C.M. and Dalton, D.R. 1992. The relationship between governance structure and corporate performance in entrepreneurial firms. *Journal of Business Venturing*, 7: 375-386.

Daily, C.M. and Dalton, D.R., 1993. Board of directors leadership and structure: control and performance implication. *Entrepreneurship Theory and Practice*, 17: 65-810

Daily, C.M., Certo, S.T., Dalton, D.R., and Roengpita, R. 2003b. IPO underpricing: a meta-analysis and research synthesis. *Entrepreneurship Theory and Practice*, 27: 271-295.

Daily, C.M., McDougall, P.P., Covin, J.G., and Dalton, D.R. 2002. Governance and strategic leadership in entrepreneurial firms. *Journal of Management*, 28: 387-412.

Dalton, D. R., Daily, C. M., Ellstrand, A. E. and Johnson, J. L. 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal*, 19: 269-290.

Dalton, D.R., Certo, S.T., and Daily, C.M. 2003. Initial public offerings as a web of conflicts of interests: an empirical assessment. *Business Ethics Quarterly*, 13: 289-314.

Dalton, D.R., Certo, S.T., and Roengpitya, R. 2003. Meta-Analysis of financial performance and equity: fusion or confusion? *Academy of Management Journal*, 46: 13-26.

Daniel, D., Hirshleirfer, D. and Subrahmanyam, A. 1998. Investor psychology and security market under- and over-reaction. *Journal of Finance,* 53: 1839-1886.

David, P., Kochhar, R., and Levitas, E. 1998. The effect of institutional investors on the level, and mix of CEO compensation. *Academy of Management Journal*, 41: 200-208.

Davis, G. F. 1991. Agents without principles? The spread of the poison pill through the intercorporate network. *Administrative Science Quarterly*, 36: 583-613.

De Long, J. B., Shleifer, A., Summers, L. H. and Waldmann, R. J.1990. Positive feedback investment strategies and destabilizing rational expectations. *Journal of Finance,* 45:379-395.

Deeds, D.L., Decarolis, D., and Coombs, J.E. 1997. The impact of firm-specific capability on the amount of capital raised in an initial public offering: evidence from the biotechnology industry. *Journal of Business Venturing*, 12: 31-46.

Deephouse, D. L. 2000. Media reputation as a strategic resource: integration of mass communication and resources-based theories. *Journal of Management*, 26(6): 1091-1112

Delmar, F. and Shane, S. 2004. Legitimating first: Organizing activities and the survival of new ventures. *Journal of Business Venturing*, 19: 385-411.

Demsetz, H. 1983. The structure of ownership and the theory of the firm. *Journal of law and Economics*, 26: 375-390.

Demsetz, H. and Lehn, K. 1985. The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, 93: 1155-1177.

Denis, D. and Sarin, A. 1999. Ownership and board structures in publicly traded corporations. *Journal of Financial Economics*, 52: 187-223.

Derrien, F. 2005. IPO pricing in "hot" market conditions: who leaves money on the table? *The Journal of Finance*, LX: 487-521.

Dierickx, I. and Cook, K. 1989. Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35(12): 1504-1511.

DiMaggio, P.J. and Powell, W.W. 1983. The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48: 147-160.

Eisenhardt, K. M. 1988. Agency- and institutional-theory explanation: The case of retail sales compensation. *Academy of Management Journal*, 31: 488-511.

Eisenhardt, K. M. 1989. Agency theory: An assessment and review. *Academy of Management Review*, 14(1): 57-75.

Eisenhardt, K.M. and Schoonhoven, C. B. 1990. Organizational growth: Linking founding team, strategy, environment, and growth among U.S. semiconductor ventures, 1978-1988. *Administrative Science Quarterly*, 35:504-529.

Elsbach, K.D. 1994. Managing organizational legitimacy in the California cattle industry: the construction and effectiveness of verbal accounts. *Administrative Science Quarterly*, 39: 57-88.

Engel, E., Gordon, E.A., and Hayes, R.M. 2002. The roles of performance measures and monitoring in annual governance decisions in entrepreneurial firms. *Journal of Accounting Research*, 40: 485-518.

Fama, E. F. and Jensen, M. C. 1983. Separation of ownership and control. *Journal of Law and Economics*, 26: 301-325.

Ferris, S. P., Hiller, J. S., Wolfe, G. A. and Cooperman, E. S. 1992. An analysis and recommendation for prestigious underwriter participation in IPOs. *The Journal of Corporation Law*, Spring: 581-603.

Fiegenbaum, A. and Thomas, H. 1988. Attitudes toward risk and risk-return paradox. *Academy of Management Journal*, 31: 85-106.

Fiegener, M.K., Brown, B.M., Dreux, D.R. and Dennis, W.J. 2000. CEO stakes and board composition in small private firms. *Entrepreneurship Theory and Practice*, 24:5-24.

Field, L.C. and Karpoff, J.M. 2002. Takeover defenses of IPO firms. *The Journal of Finance*, LVII: 1857-1889.

Field, L.C. and Sheehan, D.P. 2004. IPO underpricing and outside blockholdings. *Journal of Corporate Finance*, 10: 263-280.

Filatotchev, I. 2005. Effects of executive characteristics and venture capital involvement on board composition and share ownership in IPO firms. *British Journal of Management*, 16: 1-18.

Filatotchev, I. and Bishop, K. 2002. Board composition, share ownership, and underpricing of U.K. IPO firms. *Strategic Management Journal*, 23: 941-955.

Finkelstein, S. 1992. Power in top management teams: dimensions, measurement, and validation. *Academy of Management Journal*, 35:505-538.

Finkelstein, S. and Hambrick, D.C. 1989. Chief executive compensation: a study of the intersection of markets and political processes. *Strategic Management Journal*, 10: 121-134.

Finkelstien, S. and Hambrick, D. C. 1996. *Strategic Leadership: Top Executives and their Effects on Organizations*. Minneapolis/St. Paul: West.

Finkle, T.A. 1998. The relationship between boards of directors and initial public offerings in the biotechnology industry. *Entrepreneurship Theory and Practice*, 22: 5-29.

Finnerty, J.D. 1986. *Corporate Financial Analysis*. New York: McGraw-Hill.

Fischer, H.M. and Pollock, T.G. 2004. Effects of Social capital and power on surviving transformational change: the case of initial public offerings. *Academy of Management Journal*, 47: 463-481.

Fitzpatrick, M. 1983. The definition and assessment of political risk in international business: A review of the literature. *Academy of Management Review*, 3: 249-254.

Florin, J. 2005. Is venture capital worth it? Effects on firm performance and founder returns. *Journal of Business Venturing*, 20: 113-135.

Fombrun, C. and Shanely, M. 1990. What is a name? Reputation building and corporate strategy. *Academy of Management journal*, 33(2): 233-258.

Forbes, D. P. and Milliken, F. J. 1999. Cognition and corporate governance: understanding boards of directors as strategic decision making groups. *Academy of Management Review*, 24: 489-505.

Freeman, J. H. and Corroll, G. R. and Hannan, G. R. 1983. The liability of newness: Age dependence in organizational death rates. *American Sociological Review*, 48: 692-710.

Galbraith, J. R. 1973. *Designing Complex Organizations.* Reading, MA: Addison-Wesley.

Gompers, P. A. and Lerner, J. 1997. Venture capital and the creation of public companies: Do venture capitalists really bring more than money? *Journal of Private Equity*, Fall: 15-30.

Gompers, P.A. 1995. Optimal investment, monitoring, and the staging of venture capital. *The Journal of Finance*, L: 1461-1489.

Gompers, P.A. 1996. Grandstanding in the venture capital industry. *Journal of Financial Economics*, 42: 133-156.

Gray, S.R. and Cannella, A.A. 1997. The role of risk in executive compensation. *Journal of Management*, 23: 517-540.

Grinblatt, M. and Hwang, C. Y. 1989. Signaling and the pricing of new issues. *Journal of Finance,* 44: 393-420.

Hair, J. F., Anderson, R.E., Tatham, R. L. and Black, W.C. 1998. *Multivariate Data Analysis* (5th Ed.) Upper Saddle River, NJ: Prentice Hall.

Hambrick; D. C., and Mason, P. A. 1984. Upper echelons: the organization as a reflection of its top managers. *Academy of Management Review,* 9(2): 193-206.

Hannan, M. T. and Freeman, J. 1984. Structural inertia and organizational change. *American Sociological Review*, 49: 149-164.

Harley E. Ryan, E. H. and Wiggins, R. 2004. Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring. *Journal of Financial Economics*, 73: 497-525.

Hart, O. 1988. Incomplete contracts and the theory of the firm. *Journal of Law, Economics, and Organization*, 4: 119-139.

Hayes, D. C., Hunton, J. E., & Reck, J. L. 2001. Market reaction to ERP implementation announcement. Journal of Information System, 15(1): 3-18

Helwege J. and Liang N. 1996. Initial Public Offering in Hot and Cold Markets. Board of Governors of the Federal Reserve System, *Finance and Economics Discussion Paper series*, 34.

Helwege, J. and Liang, N. 1996. Initial public offering in hot and cold markets. *Unpublished Paper*, Federal Reserve Bank of New York.

Helwege, J. and Liang, N. 2004. Initial public offerings in hot and cold markets. *Journal of Financial and Quantitative Analysis*, 39: 541-569.

Hennart, J-F. 1988. A transaction costs theory of equity joint ventures. *Strategic Management Journal*, 9: 361-374.

Hensler, D.A., Rutherfor, R.C., and Springer, T.M. 1997. The survival of initial public offerings in the aftermarket. *The Journal of Financial Research*, XX: 93-110.

Hermalin, B.E. and Weisbach, M.S. 1988. The determinants of board composition. *RAND Journal of Economics*, 19: 589-606.

Hermalin, B.E. and Weisbach, M.S. 1991. The effects of board composition and direct incentives on firm performance. *Financial Management*, Winter: 101-112.

Hermalin, B.E. and Weisbach, M.S. 1998. Endogenously chosen boards of directors and their monitoring of the CEO. *The American Economic Review*, 88: 96-118.

Hertzel, M. and Smith, R.L. 1993. Market discounts and shareholder gains for placing equity privately. *The Journal of Finance*, XLVIII: 459-485.

Higgins, M.C. and Gulati, R. 2003. Getting off to a good start: the effects of upper echelon affiliations on underwriter prestige. *Organization Science*, 14: 244-263.

Hill, C.W.L. and Snell, S.A. 1988. External control, corporate strategy, and firm performance in research intensive industries. *Strategic Management Journal*, 9: 577-590.

Hoskisson, R. E., Hitt, M. A., Turk, T. A., and Tyler, B. B. 1989. Balancing corporate strategy and executive compensation: agency theory and corporate governance. In G. R. Ferrris and K. M. Rowland (Eds.). *Research in Personal and Human Resources Management*, Vol. 7: 25-57. Greenwich, CT: JAI Press.

Howton, S.D., Howton, S.W., and Olson, G.T. 2001. Board ownership and IPO returns. *Journal of Economics and Finance*, 25: 100-114.

Huse, M. 2000. Boards of directors in SMEs: a review and research agenda. *Entrepreneurship & Regional Development*, 12: 271-290.

Husick, G. C. and Arrington, J. M. 1998. The initial public offering: A practical guide for executives. *New York: Bowne & Co.*

Ibbotson, R. 1975. Price performance of common stock new issues. *Journal of Financial Economics*, 2: 235-272.

Ibbotson, R. G, Jody L. Sindelar, J. L., and Jay R. Ritter, J. R. 1994. The market's problems with the pricing of initial public offerings. *Journal of Applied Corporate Finance*, Spring: 66-74.

Jaccard, J., Turrisi, R., and Wan, C. 1990. Interaction Effects in Multiple Regressions. Newbury Park, CA: Sage.

Jain, B. A. and Kini, O. 1999. The life cycle of initial public offering firms. *Journal of Business Finance and Accounting*, 26(9&10): 1281-1307.

Jain, B. A. and Kini, O. 2000. Does the presence of venture capitalists improve the survival profile of IPO firms? *Journal of Business Finance and Accounting,* 27: 1139-79.

Jain, B. and Kini, O. 1994. The post-issue operating performance of IPO firms. *Journal of Finance*, 49: 1966-1726.

Jayaraman, N., Khorana, A., and Nelling, E. 2000. CEO founder status and firm financial performance. *Strategic Management Journal*, 21: 1215-1224.

Jenkinson, T. and Ljungqvist, A., 1996. Going Public: Theory and Evidence on How Companies Raise Equity Finance. , Oxford University Press, Oxford.

Jensen, G.R., Solberg, D.P., and Zorn, T.S. 1992. Simultaneous determination of insider ownership, debt, and dividend policies. *Journal of Financial and Quantitative Analysis*, 27: 247-263.

Jensen, M. C. and Meckling, W. H. 1976. Theory of the firm managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3 (4): 305-360.

Johnson, J. L., Daily, C. M., and Ellstrand, A. E. 1996. Board of directors: A review and research agenda. *Journal of Management*, 22(3): 409-438.

Kerr, J. and Bettis, R. A. 1987. Boards of directors, top management compensation, and share-holders returns. *Academy of Management Journal*, 30: 645-664.

Kesner, I.F. 1987. Directors' stock ownership and organizational performance: An investigation of Fortune 500 companies. *Journal of Management*, 13: 499-507.

Khurshed, A., Mudambi, R. and Goergen, M., 1999. On the long run underperformance of IPOs: the effect of pre-IPO management decisions. *University of Reading Discussion Papers in Economics and Management* XII 401: 1–42

Kim, J. and Mahoney, J.T. 2005. Property rights theory, transaction costs theory, and agency theory: an organizational economics approach to strategic management. *Managerial and Decision Economics*, 26: 223-242.

Landon, S. and Smith, C.E. 1997. The use of quality and reputation indicators by consumers: the case of Bordeaux Wine. *Journal of Consumer Policy*, 20: 289-323.

Lane, C. and Quack, S. 1999. The social dimensions of risk: bank financing of SMEs in Britain and Germany. *Organization Studies*, 20: 987-1010.

Lee, C. Shleifer, A. and Thaler, R. 1991. Investor sentiment and the closed-end puzzle. *Journal of Finance*, 46:75-109.

Leland, H. and Pyle, D. 1997. Informational asymmetries, financial structure, and financial intermediation. *Journal of Finance*, 32:1507-1508.

Lerner, J. 1994. Venture capitalists and the decision to go public. *Journal of Financial Economics*, 35: 293-316.

Liungqvist, A., Nandia, V., and Singh, R. 2003. Hot markets, investor sentiment, and IPO pricing. *Working Paper.*

Loughran, T. and Ritter, J. 1995. The new issues puzzle. *Journal of Finance*, 50: 23-51.

Loughran, T. and Ritter, J. 1997. The operating performance of firms conducting seasoned equity of offerings. *Journal of Finance*, 52(5): 1823-1850.

Loughran, T., Ritter, J. R. and Rydqvist, K. 1994. Initial-public offerings: International insight, *Pacific-Basin Finance Journal,* 2: 165-199.

Lowry, M. 2003. Why does IPO volume fluctuate so much? *Journal of Financial Economics*, 67: 3-40.

Lynall, M.D., Golden, B.R., and Hillman, A.J. 2003. Board composition from adolescence to maturity: a multitheoretic view. *Academy of Management Review*, 28: 416-431.

Mak, Y.T. and Roush, M.L. 2000. Factors affecting the characteristics of boards of directors: an empirical study of new Zealand initial public offering firms. *Journal of Business Research*, 47: 147-159.

Maksimovic, V. and Pichler, P. 2001. Technological innovation and initial public offerings. *The Review of Financial Studies*, 14: 459-494.

Mallette, P. and Fowler, K.L. 1992. Effects of board composition and stock ownership on the adoption of "poison pills". *Academy of Management Journal*, 35: 1010-1035.

March, J. and Shapira, Z. 1987. Managerial perspectives on risk and risk taking. *Management Science*, 33: 1404-1418.

Martens, M. 2002. Mapping risk, strategy and performance in IPO organizational knowledge structures. Unpublished *PhD Dissertation*, University of British Colombia, Vancouver, BC.

McGuire, J.B., Schneeweis, T. and Branch, B. 1990. Perception of firm quality: a cause or result of firm performance. *Journal of Management*, 16: 167-180.

McKnight, P. and Tomkins, C. 2004. The implications of firm and individual characteristics on CEO pay. *European Management Journal*, 22: 27-40.

Megginson, W.L. and Weiss, K.A. 1991. Venture capitalist certification in initial public offerings. *The Journal of Finance*, XLVI: 879-903.

Mehran, H. 1995. Executive compensation structure, ownership, and firm performance. *Journal of Financial economics*, 38: 163-184.

Meyer, J.W. and Rowan, B. 1977. Institutionalized organizations: formal structure as myth and ceremony. *American Journal of Sociology*, 82: 340-363.

Meyer, M. W. 1975. Leadership and organizational structure. *American Journal of Sociology*, 81: 514-542.

Michaely, R. and Shaw, W.H. 1994. The pricing of initial public offerings: tests of adverse-selection and signaling theories. *The Review of Financial Studies*, 7: 279-319.

Miller, D. 1991. Stale in the saddle: CEO tenure and the match between organization and environment. *Management Science*, 37: 34-52.

Miller, G. S., & Skinner, D. j. 1998. Determinants of the valuation allowance for deferred tax assets under SFAS No. 109. The Accounting Review, 73(2): 213-233.

Miller, K. and Bromiley, P. 1990. Strategic risk and corporate performance: An analysis of alternative risk measures. *Academy of Management Journal*, 33: 759-779.

Miller, K.D. 1992. A framework for integrated risk management in international management. *Journal of International Business Studies*, Second Quarter: 311-331.

Mitchell, R., Agle, B. and Wood, D. 1997. Toward a theory of stakeholder identification and salience: Defining the principles of who and what really counts. *Academy of Management Review,* 22:853-886.

Mizruchi, M.S. 1983. Who controls whom? An examination of the relation between management and boards of directors in large American corporations. *Academy of Management Review*, 8: 426-435.

Moyer, C.R., Rao, R. and Sisneros, P.M. 1992. Substitutes for voting rights: evidence from dual class recapitalizations. *Financial Management*, Autumn: 35-47.

Mudambi, R. and Treichel, M.Z. 2005. Cash crisis in newly public internet-based firms: an empirical analysis. *Journal of Business Venturing,* 20: 543-571.

Nelson, T. 2003. The persistence of founder influence: management, ownership, and performance effects at initial public offering. *Strategic Management Journal*, 24: 707-724.

Oliver, C. 1991. Strategic responses to institutional processes. *Academy of Management Review*, 16: 145-179.

Oviatt, B. M. 1988. Agency and transaction cost perspectives on the managers-shareholder relationship: Incentives for congruent interests. *Academy of Management Review*, 13: 214-226.

Pagano, M. and Roell, A. 1998. The choice of stock ownership structure: agency costs, monitoring, and the decision to go public. *The Quarterly Journal of Economics*, 113: 187-225.

Pagano, M., Panetta, F. and Zingales, L. 1998. Why do companies go public? An empirical analysis. *Journal of Finance*, 53: 27-64.

Palmer, T.B. and Wiseman, R.M. 1999. Decoupling risk taking from income stream uncertainty: a holistic model of risk. *Strategic Management Journal*, 20: 1037-1062.

Pearce, J.A. and Zahra, S.A. 1992. Board composition from a strategic contingency perspective. *Journal of Management Studies*, 29: 411-438.

Peristiani, S. and Hong, G. 2004. Pre-IPO financial performance and aftermarket survival. *Federal Reserve Bank of New York*, 10: 1-7.

Perry, L. T. 1988. The capital connection: how relationships between founders and venture capitalists affect innovation in new ventures. *Academy of Management Executive*, 2: 205-212.

Pettigrew, A. M. 1992. On studying managerial elites. *Strategic Management Journal*, 13, pp. 163–182.

Pfeffer, J. 1981. *Power in Organizations.* Marshifield, MA: Pitman.

Pfeffer, J. and Salancik, G. R. 1978. *The external control of organizations: A resource dependence perspective.* New York: Harper and Row.

Pollock, T. G. 2004. The benefits and costs of underwriters' social capital in the US initial public offering market. *Strategic Organization*, 2: 357-388.

Pollock, T.G. and Rindova, V.P. 2003. Media legitimation effects in the market of initial public offerings. *Academy of Management Journal*, 46: 631-642.

Pollock, T.G., Fischer, H.M., and Wade, J.B. 2002. The role of power and politics in the repricing of executive options. *Academy of Management Journal*, 45: 1172-1182.

Pollock, T.G., Porac, J.F., and Wade, J.B. 2004. Constructing deal networks: brokers as network "Architects" in the U.S. IPO market and other examples. *Academy of Management Review*, 29: 50-72.

Porter, M. E. 1980. *Competitive Advantage: Techniques for Analyzing Industries and Competitors*. New York: The Free Press

Provan, K. G, 1980. Recognizing, measuring, and interpreting the potential/enacted power distinction in organizational research. 1980. *Academy of Management Review*, 5(4): 549-559.

Rajan, R. and Servaes, H. 1997. Analyst following initial public offerings. *Journal of Finance*, 52: 507-530.

Rajan, R. and Zingales, L. 2002. The governance of the new enterprise. In *Corporate Governance: Theoretical and Empirical Perspectives*, edited by X. Vives. Cambridge UK: Cambridge University Press.

Ranft, A. L.; O'Neill, H. M. 2001. Board composition and high-flying founders: Hints of trouble to come? *Academy of Management Executive*, 15: 126-138.

Rasheed, A.M., Datta, D.K., and Chinta, R.R. 1997. Determinants of price premiums: a study of initial public offerings in the medical diagnostics and devices industry. *Journal of Small Business Management*, 11: 11-23.

Rechner, P. K. and Dalton, D. R..1991. CEO duality and organizational performance: A longitudinal analysis. *Strategic Management Journal*, 12(2): 155-160.

Rediker, K.J. and Seth, A. 1995. Boards of directors and substitution effects of alternative governance mechanisms. *Strategic Management Journal*, 16: 85-99.

Ritter, J. 1991. the long-run performance of initial public offerings. *Journal of Finance*, 46: 3-27.

Ritter, J.R. and Welch, I. 2002. A review of IPO activity, pricing, and allocation. *The Journal of Finance*, LVII: 1795-1828.

Roberts, R.W. and Dowling, G.R. 2002. Corporate reputation and sustained superior financial performance. *Strategic Management Journal*, 23: 1077-1093.

Rosenstein, S. and Wyatt, J.G. 1990. Outside directors, board independence, and shareholder wealth. *Journal of Financial Economics*, 26: 175-191.

Ruef, M. and Scott, W.R. 1998. A multidimensional model of organizational legitimacy: hospital survival in changing institutional environment. *Administrative Science Quarterly*, 43: 877-904.

Ruefli, T.W., Collins, J.M. and Lacugna, J.R. 1999. Risk measures in strategic management research: auld lang syne? *Strategic Management Journal*, 20: 167-194.

Ryan, H. E. and Wiggins, R.A. 2004. Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring. *Journal of Financial Economics*, 73: 497-524.

Salanick, G. R., and Pfeffer, J. 1980. Effects of ownership and performance on executive tenure in U.S. corporations. *Academy of Management Journal,* 23: 653-664.

Samra-Fredricks, D. 2000. Doing 'boards-in action' research –An ethnographic approach for the capture and analysis of directors' and senior managers' interactive routines. *Corporate Governance: An International Review*, 8: 244–257.

Sandberg, W. R., Hofer, C. W. 1987. Improving new venture performance: the role of strategy, industry structure, and the entrepreneur. *Journal of Business Venturing*, 2: 5-28.

Sanders, W. G. and Boivie, S. 2004. Sorting thing out: valuation of new firms in uncertain markets. *Strategic Management Journal,* 25: 167-186.

Sapienza, H.J. and Gupta, A.K. 1994. Impact of agency risk and task uncertainty on venture capitalists-CEO interaction. *Academy of Management Journal*, 37: 1618-1632.

Saunders, A., Strock, E. and Travlos, N. G. 1990. Ownership structure, deregulation, and bank risk-taking. *Journal of Finance*, 45: 643-654.

Schultz, P. 1993. Unit initial public offerings. *Journal of Financial Economics*, 34: 199-229.

Scott, W. R. 1994. Institutional analysis: Variance and process theory approaches. Employee training. The expansion of organizational citizenship. In W. R. Scott, J. W. Meyer, & Associates (eds.). *Institutional Environments and Organizations: Structural Complexity and Individualism:* 81-99. Thousand Oaks, CA: Sage.

Scott, W. R. 1995. *Institutions and organizations*. Thousand Oaks, CA: Sage.

Scott, W.R. 1987. *Organizations: Rational, Natural, and Open Systems.* Englewood Cliffs, NJ: Prentice Hall.

Shane, S. and Foo, M. 1999. New firm survival: institutional explanations for new franchisor mortality. *Management Science*, 45(2): 142-160.

Sheliefer, A., and Vishny, R. W. 1997. A survey of corporate governance. *Journal of Finance*, 52: 737-783.

Shen, W. 2003. The dynamic of the CEO-board relationship: an evolutionary perspective. *Academy of Management Review*, 28: 466-476.

Shivdasani, A. and Yermack, D. 1999. CEO involvement in the selection of new board members: an empirical analysis. *The Journal of Finance*, LIV: 1829-1854.

Shleifer, A and Vishny. 1986. Large shareholders and corporate control. *Journal of Political Economy,* 95:461-488.

Singh, J.V., Tucker, D.J., and House, R. J. 1986. Organizational legitimacy and the liability of newness. *Administrative Science Quarterly*, 31: 171-193.

Spiess, D.K. and Pettway, R.H. 1997. The IPO and first seasoned equity sale: Issue proceeds, owner/managers' wealth, and the underpricing signal. *Journal of Banking andFinance,* 21: 967–988.

Staw, B., Sandelands, L. and Dutton, J. 1981. Threat-rigidity effects in organizational behavior: A multilevel analysis. *Administrative Science Quarterly*, 26:501-524.

Stearns, L.B., and Mizruchi, M.S. 1993. Board composition and corporate financing: The impact of financial institution representation on borrowing. *Academy of management Journal*, 36: 603-618.

Stinchcombe, A. L. 1968. Organizational and social structure. In J. G. March (Ed.), *Handbook of Organizational*, 153-193. Chicago: Rand McNally.

Stoughtonn, N, M. and Zechner, J. 1998. IPO-mechanisms, monitoring and ownership structure. *Journal of Financial economics,* 49: 1045-1082.

Stuart, T. E., Hoang, H., and Hybels, R. C. 1999. Interorganizational endorsements and the performance of entrepreneurial ventures. *Administrative Science Quarterly*, 44:315-349.

Suchman, M.C. 1995. Managing legitimacy: strategic and institutional approaches. *Academy of Management Review*, 20: 571-610.

Sutton, D. P. and Benedetto, M. W. 1988. *Initial Public Offering: All You Need to Know about Taking A Company Public*. Chicago: Probus Publication Company.

Sutton, D. P. and Benedetto, M. W. 1990. *Initial Public Offering: All You Need to Know about Taking A Company Public*. Chicago: Probus Publication Company.

Teoh, S., Welch, I., and Wong, T. 1998. Earnings management and the long-run market performance of initial public offerings. *Journal of Finance*, 53: 1935-197

Thomsen, S. and Pedersen, T. 2000. Ownership structure and economic performance in the largest European companies. *Strategic Management Journal*, 21(6):689-705.

Timmons, J. A. and Bygrave, W. D. 1986. Venture capital role in financing innovation for economic growth. *Journal of Business Venturing*, 1: 161-176.

Tinic, S. 1988. Anatomy of initial public offerings of common stock. *Journal of Finance*, 43: 739-822.

Titman, S. and Trueman, B. 1986. Information quality and the valuation of new issues. *Journal of Accounting and Economics*, 8: 159-172.

Tyebjee, T.T. and Bruno, A.V. 1984. A model of venture capitalist investment activity. *Management Science*, 30: 1051-1065.

Uzzi, B. 1996. Embeddedness and economic performance: The network effect. *American Sociological Review*, 61: 674-98.

Van den berghe LAA, and Levrau, A. 2002. The role of venture capitalist as monitor of the company: a corporate governance perspective. *Corporate Governance: An international Review*, 10: 124-135.

Walsh, J.P. and Seward, J.K. 1990. One the efficiency of internal and external corporate control mechanisms. *Academy of Management Review*, 15: 421-458.

Weisbach, M.S. 1988. Outside directors and CEO turnover. *Journal of Financial Economics*, 20: 431-460.

Welbourne, T.M. and Andrews, A.O. 1996a. Predicting the performance of initial public offerings: should human resource management be in the equation? *Academy of Management Journal*, 39: 891-919.

Welbourne, T.M. and Cyr, L.A. 1999. Using ownership as an incentive. *Group & Organization Management*, 24: 438-460.

Welbourne, T.M. and Cyr, L.A. 1999b. The human resource executive effect in initial public offering firms. *Academy of Management Journal*, 42: 616-629.

Welch, J. 1989. Seasoned offerings, imitation costs, and the underpricing of initial public offerings. *Journal of Finance*, 44: 421-449.

Westphal, J. D. 1998. Board games: how CEOs adapt to increases structural board independence from management. *Administrative Science Quarterly*, 43: 511-537.

Westphal, J. D. and Zajac, E. J. 1995. Who shall govern? CEO-Board power, demographic similarity and new director selection. *Administrative Science Quarterly*, 40: 60-83.

Westphal, J.D. 1999. Collaboration in the boardroom: behavioral and performance consequences of CEO-board social ties. *Academy of Management Journal*, 42: 7-24.

Wiegelt, K. and Camerer, C. 1988. Reputation and corporate strategy: a review of recent theory and applications. *Strategic Management Journal*, 9: 443-454.

Williamson, O.E. 1975. Markets and Hierarchies: Analysis and Antitrust Implications. The Free Press: New York.

Williamson, O.E. 1979. Transaction cost economics: The governance of contractual relations. *Journal of Law and Economics*, 22: 233-261.

Williamson, O.E. 1985. The Economic Institutions of Capitalism: Firms. Markets, Relational Contracting. The Free Press: New York.

Williamson, O.E. 1996. *The Mechanisms of Governance*. Oxford University Press: New York.

Wright, P., Kroll, M. and Elenkov, D. 2002. Acquisition returns, increase in firm size, and chief executive officer compensation: the moderating role of monitoring. *Academy of Management Journal*, 45: 599-608.

Wrigth, P., Ferris, P. S., Sarin, A., and Awasthi, V. 1996. Impact of corporate insider, blockholders, institutional equity ownership on firm risk-taking. *Academy of Management Journal*, 39: 441-463.

Yermack, D. 1997. Good timing: CEO stock option awards and company news announcements. *Journal of Finance*, 52: 449-476.

Zahra, S. A, and Pearce, J. A. II. 1989. Boards of directors and corporate financial performance: A review and integrative model. *Journal of Management*, 15:291-334.

Zajac, E.J. and Westphal, J.D. 1994. The costs and benefits of managerial incentives and monitoring in large U.S. corporations: when is more not better? *Strategic Management Journal*, 15: 121-142.

Zimmerman, M. A. and Zeitz, G. J. 2002. Beyond survival: Achieving new venture growth by building legitimacy. *Academy of Management Review*, 27: 414-431.

BIOGRAPHICAL INFORMATION

Yousuf Al-Busaidi graduated with a B.S in Commerce and Economics from Sultan Qaboos University in the Sultanate of Oman, and M.B.A from Kansas State University. His current research interests include corporate governance, initial public offerings, and risks' effects on organizations. His future plan is to start an academic career in the Sultanate of Oman.