A POWER MODEL OF MANAGEMENT TEAM RESTRUCTURING AND EXECUTIVE EXIT IN IPO-STAGE FIRMS: ANTECEDENTS AND PERFORMANCE EFFECTS

A Dissertation

by

JUN LI

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2004

Major Subject: Management

A POWER MODEL OF MANAGEMENT TEAM RESTRUCTURING AND EXECUTIVE EXIT IN IPO-STAGE FIRMS: ANTECEDENTS AND PERFORMANCE EFFECTS

A Dissertation

by

JUN LI

Submitted to Texas A&M University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Approved as to style and content by:

Albert A. Cannella, Jr. (Chair of Committee)	S. Trevis Certo (Member)
Haiyang Li (Member)	Dudley L. Poston, Jr. (Member)
Angelo S. DeNisi (Head of Department)	

August 2004

Major Subject: Management

ABSTRACT

A Power Model of Management Team Restructuring and Executive Exit in IPO-Stage Firms: Antecedents and Performance Effects. (August 2004)

Jun Li, B.S., Peking University;

M.S., Peking University

Chair of Advisory Committee: Dr. Albert A. Cannella, Jr.

Despite an abundance of executive turnover research in the context of large public firms, little has focused on top executive change in entrepreneurial settings. This study attempts to develop a foundation of theory and evidence on management team restructuring and executive exit in new venture firms, especially for ventures which eventually go public. Taking a political perspective, the study develops and empirically tests a power model of management team restructuring and executive exit in the pre- and post-IPO periods.

A central thesis of this study is that the relative power of the executive cadre shifts as an entrepreneurial firm converts from a private venture to a public company, due to the drastic change in firm political coalition structure and the skill requirements for executives. The change of power distribution among the top executives affects the likelihood of management team restructuring and executive exit. Both firm level and individual level factors were examined. The study also investigates the performance implications of pre-IPO management team restructuring and post-IPO executive exit.

Empirical results support the major propositions of the power model. VC prestige was found to have a positive impact on management team restructuring and new executive entry before the IPO. Technical skills are negatively associated with pre-IPO executive exit but positively associated with post-IPO executive exit. The addition of new senior executives in the post-IPO period increases the likelihood of executive exit. In addition, when firm performance is low, adding new outside directors tends to increase the probability of executive exit in the post-IPO stage. The study found that firms that had restructured management teams before the IPO tend to have lower likelihood of executive exit in the post-IPO period. In the post-IPO stage, executives with prior public company managerial experience have a significantly lower likelihood of exit than non-managerial executives.

Further, the study found that pre-IPO management team restructuring improves the firm's pre-money market valuation at the IPO. The exits of managerial executives in the post-IPO period have negative effects on subsequent average ROA. The exits of financial executives negatively affect average shareholder return in the years following the exit events.

DEDICATION

To my wife,

Quan Zhang.

Thanks for your love and support in this journey.

To my parents,

Wenying Gao and Xianhui Li, who are in China.

Thanks for your love in all these years.

ACKNOWLEDGEMENTS

I offer my gratitude first and foremost to God Almighty who made all this possible. I am deeply indebted to my dissertation chair, Bert Cannella, without whose patience, encouragement, guidance and support, this dissertation would never have been completed in a timely manner. Bert, thank you for your dedication and hard work on my behalf during this process. Besides our regular weekly meetings, many occasions you provided feedback to me even when you were on the road. I can't imagine having had a better mentor in any school, anywhere in the world.

I would also like to express my appreciation to my committee members, Trevis Certo, Haiyang Li, and Dudley Poston. The comments, suggestions and encouragement you provided were essential to the completion of this dissertation. Thanks for making this endeavor an enjoyable process.

I also want to thank the faculty members at Texas A&M whom I had the opportunity to work with and learn from, in particular Javier Gimeno, Dick Woodman, Asghar Zardkoohi, Klaus Ulenbruck, Lorraine Eden and Michael Pustay. Thanks also go to our department administrative secretary- Phyllis Washburn, for her sincere help and support during these years.

I would also like to acknowledge the help of my past and present colleagues at Texas A&M: Tieying Yu, Matt Semadini, Dick Lester, Feirong Yuan, Fernanda Garcia, Chris Tuggle, Eugene Kang, Dan Li, Lily Ren and Jenny Keng. Thanks for your support and encouragement and making my tenure as doctoral student much more enjoyable. I am especially thankful to Tieying for offering ongoing support after her

graduation, and always being a great friend for listening and sharing. Tieying, I am so glad you got here first!

Thanks also go to my friends at the University of Southern California before I transferred to Texas A&M. Especially to Yongliang, who provided enormous help after I first arrived in the U.S. and who always had the time to ask how things are going after I left USC. Also to Jingfeng, thanks for your great support and friendship. I would like to also thank Yan Zhang, for your friendship and party times at your home after you moved to Texas!

Finally I want to thank my wife and my parents, who boldly stood behind me at every turn in my doctoral student process. Your love, patience, and sacrifices made this work possible. I thank God for all of these individuals and the many other blessings I have received.

TABLE OF CONTENTS

Page

CHAPTER Page

CHAPTER Page

Page

LIST OF TABLES

TABLE Page

LIST OF FIGURES

FIGURE Page

CHAPTER I

INTRODUCTION

The role of executive leadership in strategy formation and organization performance has been extensively addressed in the strategic management literature. Emanating from Hambrick and Mason's (1984) upper echelon perspective, research on strategic leadership suggests that organizational outcomes reflect the characteristics and preferences of their top executives. In the past two decades, a rich stream of literature has developed investigating top executives and their influences on organizations (see Finkelstein & Hambrick, 1996 for a comprehensive review).

Despite an abundance of top executive research, a review of this area reveals that much work has been conducted in the context of well-established firms, yet little has focused on top executives in entrepreneurial settings. This is unfortunate since scholars have long suggested that the influence of top executives in entrepreneurial firms is more salient than that in large established firms (Cooper, Gimeno, & Woo, 1994; Daily & Dalton, 1992). As entrepreneurial firms often lack resources and legitimacy (Singh, Tucker, & House, 1986), they do not have much to rely on except for their top executives. Also, new ventures are less constrained by history, organizational inertia, and precedent (Eisenhardt & Schoonhoven, 1990), therefore their top executives usually have higher levels of managerial discretion (Hambrick & Finkelstein, 1987) and more latitude than their larger firm counterparts (Daily & Dalton, 1992; Norburn & Birley, 1988). Due to their important influence on new venture strategy and performance,

---

This dissertation follows the style and format of the ***Academy of Management Journal***.

recently, scholars have called for research on strategic leaders in entrepreneurial settings (Daily, McDougall, Covin, & Dalton, 2002).

To date, the majority of studies on entrepreneurial executives focus on how top executives (either their demographic characteristics or team-process characteristics) affect venture strategies and performance (e.g., Chandler & Hanks, 1994; Ensley, Pearson, & Amason, 2002; West & Meyer, 1998). A common underlying assumption of these studies is that venture executives (and their characteristics) are stable over time, i.e., the studies emphasize the initial characteristics of top executives and do not account for changes in the entrepreneurial team as the venture grows. However, it has been suggested that during different developmental stages, the competencies and behaviors required for entrepreneurial executives are likely to change (Birley & Stockley, 2000), which necessitates executive changes. Also, as a new venture grows, the actions of its top executives become more constrained in its formalization and professionalization process (Burton & Khurana, 2000), therefore likely eliciting executive changes. Furthermore, since new ventures typically rely heavily on external investments for sustainable growth, empirical evidence suggests that conflict over power and control of the new firm is frequently present as the firm develops, especially to the point of professional management (Clifford, 1973). Therefore, a new venture's growth is often accompanied by executive change and management team restructuring. With only a few exceptions (e.g., Boeker & Karichalil, 2002; Chandler, Honig, & Wiklund, 2002; Rubenson & Gupta, 1996; Willard, Krueger, & Feeser, 1992), however, there is no systematic investigation on the change of top executives in an entrepreneurial firm and even less research on the performance implications of these changes.

More importantly, theoretical discussion of top executive change in new venture contexts is lacking. Largely influenced by agency theory (Jensen & Meckling, 1976), current large-corporation studies on executive change usually take a governance perspective, suggesting that the primary force of executive change come from the disciplining actions of owners taken to align the interests of the agents with their own (Kesner & Sebora, 1994). However, applying agency theory directly in new venture firms may not be appropriate because of the marked differences existing between large corporations and entrepreneurial firms. For example, unlike their large-corporation counterparts, founding executives in new ventures usually hold large proportions of ownership (Wasserman, 2003), thus the problem of managerial opportunism, which is a major concern of agency theorists for large public corporations, may not exist to the same extent in entrepreneurial settings. Also founding executives have strong desires to personally oversee and control the venture they created (Mintzberg, 1984; Schein, 1983). Due to their strong presence in entrepreneurial firm, they may have greater control over the boards of directors than professional managers in large public corporations and have the ability to influence the succession processes. Further, agency theorists suggest one of the reasons of executive departure in large public companies is because executives and owners are quite different in their risk tolerance therefore often have conflicts on firm strategic decisions (Eisenhardt, 1989), however, such differences are less salient in entrepreneurial firms as founding executives typically are risk-seeking and willing to bear the uncertainties involved in new ventures (Shane, 1995). All these differences violate the assumptions of agency theory, making it difficult to simply extrapolate

agency theory to explain management team restructuring and executive exit in new venture firms.

Another perspective of executive turnover in extent research emphasizes the power distribution between firm stakeholders and management in explaining executive turnover (Cannella & Lubatkin, 1993; Hambrick, 1981; Pfeffer, 1992; Shen & Cannella, 2002a). While much of this perspective has been employed in large company contexts, recently it has been applied to entrepreneurial settings (see Fiet, Busenitz, Moesel, & Barney, 1997). However, more work needs to be done. In particular, how the power of executives changes over the new venture's different developmental stages, how this change relates to executive replacement, and what factors induce executive changes in these different stages still remain unclear.

PURPOSE

This study attempts to develop a foundation of both theory and evidence on top executive change in new venture firms, especially for ventures which eventually go public. Drawing heavily from the literature in organization theory, strategic management, and entrepreneurship, and mainly taking a political perspective, the present study develops and empirically tests a power model of management team restructuring and executive exit through different phases in the development of an IPO firm, with special attention to the pre- and post- IPO periods. The model proposes that the power of the executive cadre changes during these two phases, therefore affecting the likelihood of management team restructuring and executive exit. According to the model, executive change reflects the power distribution in a venture firm, which is determined by both firm level and individual level factors. The model also explores the

performance implications of pre-IPO management team restructuring and post-IPO executive exit.

CONTRIBUTIONS OF THE STUDY

The present study makes several contributions to research on strategic leadership, entrepreneurial teams, and IPO firms. First, it develops a theoretical model for explaining management team restructuring and executive exit in entrepreneurial firms. With few exceptions, previous studies on executive changes focus on large corporations or established organizations, and largely ignore young venture firms. As executive change has important implications for new venture strategy and growth and has different patterns relative to those in established companies, the model enriches the current executive turnover literature by investigating the antecedents as well as consequences of executive change in a different context.

Second, this study attempts to fill a gap in entrepreneurial team research by examining how entrepreneurial executives change over the time. As argued by Kamm et al. (1990), entrepreneurial team studies lack sufficient attention to team building process and lack a theoretical base. By looking into executive change in the pre- and post-IPO periods, the present study provides a theoretical model to explain executive changes in different phases, helping us better understand the team building process of an entrepreneurial firm.

Third, the present study contributes to IPO firm studies. There has been an increase in research on IPO firms in the literature in recent years. While many studies have explored the determinants of going public (e.g., Lerner, 1994; Pagano, Panetta, & Zingales, 1998); IPO underpricing (e.g., Hanley, 1993), and post-IPO performance (e.g.,

Beatty & Ritter, 1986; Ritter, 1991), fewer studies have examined how an IPO firm's executives change over time, especially when a previously private firm transforms to a public company. Although scholars have emphasized the impact of top executives in the firm's IPO process, less have considered how IPO process changes the management team. This study attempts to fill this gap.

Finally, the present study provides a dynamic approach to the study of executive turnover. Most previous research on executive turnover takes a static, cross-sectional approach and assumes that the relationships between certain variables, such as the power of executives, firm governance structure, and firm performance are fixed across settings. The current study addresses this limitation by examining how changes of these factors affect the likelihood of management team restructuring and executive exit over the development of an IPO firm.

RESEARCH QUESTIONS

As noted above, the present study examines both the antecedents and performance consequences of executive change in new ventures which eventually transform to public companies. This study has three major research questions:

1. What are the major antecedents of management team restructuring and executive exit in the pre-IPO stage of an IPO firm?
2. What are the major antecedents of executive exit in the post-IPO stage of an IPO firm?
3. What are the performance implications of pre-IPO management team restructuring and post-IPO executive exit?

OUTLINE OF THE DISSERTATION

To effectively present the theoretical development, methodology, empirical results, and conclusions and implications of this study, I organize the dissertation into eight chapters. Chapter I presents an overview of the dissertation, along with the purpose and the contribution of the study, and proposes the major research questions. Chapter II reviews the literature of strategic leadership and executive turnover in both large company contexts and entrepreneurial settings. Both theoretical perspectives and the major findings of previous studies are discussed. Chapter III and Chapter IV develop a theoretical model and hypotheses of management team restructuring and executive exit in IPO-stage firms. Chapter V provides a detailed explanation of the research design and methodology employed to test the hypotheses. Data sources, sample selection, major variables, measurement issues, and statistical analysis techniques will be discussed. Chapter VI reports the results for the data analysis and the findings with the level of support for each hypothesis. Chapter VII discusses the main findings of this study. Chapter VIII discusses the potential impact of the study on both theory and practice. Both limitations and potential contributions of this study are presented.

CHAPTER II

LITERATURE REVIEW

The last few decades have witnessed an explosive growth in the research on top executives and their influences on organizational strategies and performance (Finkelstein & Hambrick, 1996). An important research stream in this literature surrounds top executive turnover in organizations. For example, studies have examined the antecedents of executive turnover (e.g., Drazin & Rao, 1999), the performance consequences of executive turnover (e.g., Kesner & Sebora, 1994; Shen & Cannella, 2002b), and the stock market reactions to executive turnover (e.g., Davidson, Worrell, & Dutia, 1993). However, most of the research on executive turnover has focused on large, public companies and very few have examined the change of leadership in small firms, especially in entrepreneurial ventures. Scholars have argued that some marked differences exist between large companies and small companies which may prevent us from applying the findings about large-company executive turnover directly to small firms (Wasserman, 2003).

The following section will review the relevant literature on strategic leaders and their turnovers (both the antecedents and the consequences) in both large, public companies and entrepreneurial firms. In particular, this paper focuses on executive exit in the initial public offering firms (hereafter IPO firms) therefore the literature surrounding IPO process will also be discussed. The chapter is organized into four parts: (1) Strategic leadership and executive turnover (mostly of which emphasizes large-companies); (2) Strategic leadership in entrepreneurial firms; (3) Executive turnover in entrepreneurial firms; and (4) Executives in the IPO context. The objective

of this chapter is to give readers a basic understanding of current executive turnover research and set the stage for the power model of management team restructuring and executive exit in IPO-stage firms developed in this study.

STRATEGIC LEADERSHIP AND EXECUTIVE TURNOVER

As corporate leaders who retain the ultimate responsibility for the design and implementation of firm strategies, top executives have been a common topic of research in organizational science (Cannella & Monroe, 1997). Studies on strategic leaders date back to early years as organization theorists emphasized the roles of top executives in determining organization outcomes (Barnard, 1938; Selznick, 1957; Thompson, 1967). Recently, this research stream has been reinvigorated by the upper echelon perspective (Hambrick & Mason, 1984) and has developed into a formal strategic leadership theory (Finkelstein & Hambrick, 1996). Generally speaking, the literature of strategic leadership suggests that organizations are reflections of their top executives and the decisions they make. Scholars have shown, both theoretically and empirically, that top executives and their characteristics importantly affect strategic choices, such as R&D spending (Barker & Mueller, 2002), alliance formation (Tyler & Steensma, 1998), innovation (Hoffman & Hegarty, 1993), and also affect their firms' financial performance (Day & Lord, 1988; Haleblian & Finkelstein, 1993).

Given the significant influence of top executives on firm strategy and performance, it is not surprising that a large percentage of studies in this area have focused on the change of the leadership – executive turnover in organizations (Kesner & Sebora, 1994). According to Kesner and Sebora (1994), studies on executive turnover can be categorized into three major groups: (1) the antecedents of executive turnover,

i.e., the environmental, organizational or personal factors leading to executive departure (e.g., Boeker, 1992; Datta & Guthrie, 1994; Puffer & Weintrop, 1991; Wiersema & Bantel, 1993); (2) the consequences of executive turnover, including the subsequent organizational effects and market reactions to the event of executive change (e.g., Beatty & Zajac, 1987; Davidson, Worrell, & Cheng, 1990; Kesner & Sebora, 1994); and (3) executive turnover process, i.e., the pattern, timing, and selection decision of the turnover event (e.g., Dyck, Mauws, Starke, & Mischke, 2002; Guthrie & Datta, 1997; Ocasio & Kim, 1999). In relation to the topic of this paper, I will briefly review the first and second themes in the following section.

Antecedents of Executive Turnover

Scholars studying the antecedents of executive turnover commonly draw from three theoretical perspectives. The first is resource dependence theory (Pfeffer & Salancik, 1978), which predicts that replacement of executives results from the organization's response to external environmental forces. The second perspective, probably the most dominant, is that of agency theorists who argue that a major reason for executive turnover is the monitoring and disciplining activities of boards of directors, who are charged with overseeing the firm and upholding the interests of its shareholders. Hence, organizational performance, board composition, and ownership structure characteristics are typical antecedents of executive turnover in this perspective. The third perspective taken by scholars is power and socio-political perspective, which suggests that executive turnover is a social and political process, involving power struggles and contests between the management and the investors (or owners), and even

among the top executives. This perspective then, primarily focuses on power-related antecedents in explaining executive turnover in organizations.

Resource Dependence Perspective

Environmental Change. Because top executives are at the boundary of the organization and its environment (Keck & Tushman, 1993), a number of scholars have suggested that executive turnover acts as an organizational mechanism adapting to environmental changes (Pfeffer & Salancik, 1978; Thompson, 1967; Wiersema & Bantel, 1993). Adopting a resource dependence perspective (Pfeffer & Salancik, 1978), scholars argue that, in face of environmental changes, organizations tend to select executives whose skills or characteristics are more 'suited' to the new context and replace those who are ill suited to align their organizations with the environment. This notion has been empirically tested by studies of executive turnover in organizations following drastic environmental changes. For example, scholars have investigated the impact of regulatory change (Guthrie, Grimm, & Smith, 1991; Miles, 1982; Smith, 1988; Thomas & Ramaswamy, 1993), technological change (Jenkins, 1975), and competitive landscape change (Pettigrew, 1985) on executive turnover. Other scholars have examined the impact of industry conditions, such as industry stability, concentration and growth on executive tenures (Guthrie & Olian, 1991; Rajagopalan & Datta, 1996). Although these studies do not directly examine the phenomena of executive turnover, the findings suggest that environmental change encourages incumbent executive turnover within organizations. However, some scholars question the direct effect of environmental shifts on executive change, arguing that this effect may be constrained by

incumbent executives' power (Pfeffer & Salancik, 1978) and other inertial forces (e.g., Fredrickson & Iaquinto, 1989).

Agency Perspective

Firm Performance. Poor firm performance has long been investigated by scholars as an important precursor of executive turnover (Allen & Panian, 1982; Beatty & Zajac, 1987; Puffer & Weintrop, 1991; Salancik & Pfeffer, 1977; Schwartz & Menon, 1985; Tushman, Virany, & Romanelli, 1985; Warner, Watts, & Wruck, 1988). A consensus of these studies is that firm performance is negatively related to executive turnover, so as firm performance falls, the probability of executive turnover rises. This hypothesis is rooted in agency theory (Jensen & Meckling, 1976) which advocates that boards of directors have the right and responsibility to replace incompetent executives in order to safeguard shareholder interests. Although this logic is straightforward, empirical results are mixed (Puffer & Weintrop, 1991). As Puffer et al. (1991) found in their review, poor performance is associated with executive turnover in some studies (e.g., Allen & Panian, 1982; Lubatkin & Chung, 1985), but not in others (e.g., Harrison, Torres, & Kukalis, 1988; Wiersema & Bantel, 1993). Moreover, firm performance only explains a small amount of variation in executive turnover (Finkelstein & Hambrick, 1996). Two major reasons have been suggested contribute to this weakness. First, different measures of performance have been used in these studies (Pitcher, Chreim, & Kisfalvi, 2000; Puffer & Weintrop, 1991); and second, which is more important, previous studies have ignored other factors which may either compound the performance-turnover relationship or moderate this relationship. For instance, the

power dynamics between incumbent executives and board members, which has important implications for executive tenure, has been largely overlooked by studies that draw from the agency perspective (Cannella & Lubatkin, 1993; Shen & Cannella, 2002a; Zajac & Westphal, 1996).

Board Composition. According to agency theory, the board of directors is a mechanism through which shareholders can monitor and control the opportunism of managers (Fama & Jensen, 1983). Agency arguments suggest that boards can act as an effective monitoring system only if they are independent (Fama, 1980), therefore including outside directors will enhance the board's ability to monitor management actions and firm performance, since outside directors usually do not have bilateral dependence relationships with incumbent executives (Boeker, 1992; Zahra & Pearce, 1989).

In the executive turnover literature, scholars have paid much attention to the effect of board composition (proportion of inside and outside directors) on the likelihood of executive turnover. For example, Weisbach (1988) found inside directors and outside directors behave differently toward replacement of executives, and firms dominated by outside directors are more likely to replace incumbent executives when firm performance is poor. Similarly, Boeker (1992) found that executive dismissal is less likely in poorly performing firms with higher proportions of inside board members. More recently, Barker, Patterson, and Mueller (2001) show that increased outside representation on the board is associated with executive turnover. However, other studies have reported no relationship between board composition and the likelihood of

executive turnover (e.g., Allen & Panian, 1982; Chaganti, Mahajan, & Sharma, 1985; Salancik & Pfeffer, 1977).

Although the inconsistency in empirical studies may be due to measurement problems, i.e., the non-uniform classification of inside and outside members (Dalton, Daily, Ellstrand, & Johnson, 1998), a more realistic view of board involvement suggests that a weakened relationship between board composition and executive turnover reveals two facts of corporate governance: First, boards of directors may not always actually exercise their responsibilities since top executives may dominate the board through the selection of directors (Mace, 1971). Second, even if outside directors are willing to exercise their responsibilities, the effectiveness of their control may be weakened by the political coalition between inside directors and incumbent executives, as incumbent executives may ally together when facing replacement risks initiated by outsiders (Boeker, 1992; Shen & Cannella, 2002a).

Ownership Concentration. Another factor which affects executive turnover is the concentration of ownership. Agency theorists have suggested that a dispersed ownership structure decreases the control of owners on actions of managers (Berle & Means, 1932) while owners of large blocks of shares have both incentive and power to align managers' interests with their own (Bethel & Liebeskind, 1993). Similarly, Hill and Snell (1989) argue that concentrated ownership makes it easy for large stockholders to exercise their rights in monitoring management therefore the ability to remove a poorly performing manager is high. In another study, Boeker (1992) found that firms with dispersed ownership were less likely to dismiss incumbent executives when performance declined.

Power and Socio-Political Perspective

Top executives are the most powerful organizational members in the modern corporation (Eisenhardt & Bourgeois, 1988; Pearce & DeNisi, 1983). Unlike lower-level managers, the dismissal of top executives is often a political process in which power and influence are likely to be exercised (Zald, 1965). One of the major hypotheses in the extent executive turnover literature is that top executives use their power to resist a forced turnover (Drazin & Rao, 1999). Therefore the role of power in executive turnover has been a major focus in this literature (Boeker, 1992; Cannella & Lubatkin, 1993; Ocasio, 1994). Prior study has found that there is an inverse relationship between top executive power and turnover (e.g., Allen & Panian, 1982). Similarly, Boeker (1992) points out that top executive turnover is more likely when organization performance is poor and executive power is low.

Finkelstein (1992) has analyzed and validated four sources of executive power: structure, ownership, prestige, and expertise. Among these four dimensions of power, structural and ownership power have been the most investigated in studies of executive turnover.

Structural Power. Structural power is also referred to as hierarchical or legitimate power (Astley & Sachdeva, 1984; Daily & Johnson, 1997; Hambrick, 1981). Formal positions grant top executives high structural power within the organization (Brass & Burkhardt, 1993; Finkelstein, 1992). Structural power is enhanced when the executive holds multiple titles in the organization, for example, jointly serving as chairman of the board (Ocasio, 1994). Research has shown that such appointment may allow top executives to nominate board members who will be loyal to them (Belliveau,

Oreilly, & Wade, 1996; Wade, Oreilly, & Chandratat, 1990) therefore mitigating the performance-turnover relationship and reducing the likelihood of executive turnover (Boeker, 1992). In addition, evidence has also shown that it is difficult to replace long-tenured executives, because through long incumbency executives have more opportunities to develop social ties with other organizational leaders, and to accrue and institutionalize their power within the organization (Drazin & Rao, 1999; Ocasio, 1994).

Ownership Power. Executive stock ownership has long been considered a source of power by organization scholars (Finkelstein, 1992; Pfeffer & Salancik, 1978). In their model of CEO dismissal, Fredrickson, Hambrick, and Baumrin (1988) propose that executives with major stock ownership are less likely to be dismissed since they are able to influence board members and their actions. Many other studies have focused on empirical tests of this relationship. For example, Salancik & Pfeffer (1980) studied the relationship between firm performance and executive tenure in 84 U.S. corporations and found that executive ownership mediates the relationship between firm performance and executive turnover. Similarly, in their study of managerial successions in 242 large industrial corporations, Allen and Panian found that managers controlling significant blocks of corporations were less likely to be dismissed when firm performance declined than those who owned little stock (Allen & Panian, 1982). More recently, following the power perspective, several studies have further demonstrated the negative relationship between incumbent executive stock ownership and the likelihood of turnover (Boeker, 1992; Shen & Cannella, 2002a).

Finally, although most studies of executive turnover using a power perspective emphasize the relative power of executives to boards of directors, scholars also highlight

the power contest among executives and examine its influence on executive turnover. For example, Shen and Cannella (2002a) analyzed 387 large U.S. corporation executive turnovers and found that non-CEO executives play important roles in the turnover process after inside succession. Specifically, they found that CEO-origin, non-CEO directors, CEO tenure, and senior executive ownership all influence the competition for power among executives and hence importantly affect the likelihood of executive turnover after inside succession. Another study by Ocasio (1994) explored the power contest among top executives themselves and found that the presence of inside directors actually increases the likelihood of executive turnover since insiders are competitors for corporate leadership roles.

Consequences of Executive Turnover

Research on consequences of executive turnover has focused mostly on two major outcomes: organizational change and subsequent performance (both financial and market performance) (Kesner & Sebora, 1994). Because executive turnover is typically viewed as an intervention mechanism for organizations to adapt to environmental changes or to address poor performance, researchers have suggested that executive turnovers are beneficial to organizations (Helmich, 1974; Starbuck & Hedberg, 1977). However, other scholars argue that turnover of top executives may have disruptive effects on organizations and a corresponding negative effect on performance (Allen, Panian, & Lotz, 1979; Haveman, 1993). Many studies in this research stream attempt to contrast the succession impact of insiders – those promoted from within the firm – and outsiders, those promoted from outside the firm (e.g., Cannella & Lubatkin, 1993;

Dalton & Kesner, 1983; Davidson et al., 1990). Although the majority of studies associate greater improvement in performance and radical organizational change with outsider executive successions (Dalton & Kesner, 1985; Helmich, 1975; Helmich & Brown, 1972; Wiersema, 1992), empirical studies on consequences of executive turnover have provided contradictory results (Furtado & Karan, 1990; Pitcher et al., 2000).

Organizational Change

Managerial change has been suggested to have important effects on the firm's current strategy and structure (Kesner & Sebora, 1994). In particular, many studies in this stream support the argument that more strategic changes are associated with outside successions than with inside successions (Sakano & Lewin, 1999). For example, Wiersema (1992) examined a sample of Fortune 1000 diversified firms and found that firms with outside successions have a greater likelihood of experiencing significant changes in strategy. Similar results can be seen in Helmich and Brown (1972) who found succession by outsiders caused great organizational change. Several studies have focused on executive turnovers in declining firms and found that executive turnovers are more likely to lead to strategic change in declining firms attempting turnarounds (Barker & Duhaime, 1997; Barker et al., 2001; Hedberg, Nystrom, & Starbuck, 1976). However, due to the difficulty in measuring strategic change, empirical investigations are still limited (Pitcher et al., 2000). Also, some scholars are skeptical about the impact of executive turnover on strategic change, arguing that the effect depends on several contingencies, such as pre-succession performance (Friedman & Saul, 1991); the

abilities of successors (Greiner & Bhambri, 1989), and political activities within the firm (Welsh & Dehler, 1988).

Firm Performance

Compared to studies on strategic changes as consequences of executive turnover, studies on post-succession performance are numerous (see Furtado & Karan, 1990; Kesner & Sebora, 1994). However, empirical studies linking turnover to subsequent performance have produced inconsistent results. Some scholars found that executive turnover, especially outside succession, is positively related to post-succession performance (Davidson et al., 1993; Helmich, 1974; Helmich & Brown, 1972). Other studies found a negative performance effect of executive succession (e.g., Beatty & Zajac, 1987; Carroll, 1984). And some scholars have reported that there is no relationship between executive turnover and firm performance (e.g., Lieberson & O'Connor, 1972; Tushman et al., 1985; Zajac, 1990). Pitcher et al. (2000) argue that these inconsistencies can be attributed to both methodological problems and theoretical shortcomings. As Kesner and Sebora (1994) suggest, the effect of executive turnover varies depending on successor characteristics and contextual factors. Similarly, Finkelstein and Hambrick (1996) suggest that researchers need to consider both conditions and characteristics of successions in investigating post-succession performance, such as pre-succession performance, the characteristics of both incumbents and successors and the conditions surrounding succession.

Scholars also have examined the investor reaction to the event of executive turnover as one performance measure (Kesner & Sebora, 1994). As Furtado and Karan

(1990 :69) argued, market response to managerial change can be viewed as either due to the gain or loss of "human capital" of the company, or as a response to the "signal" of the change. However, empirical results are mixed. Some scholars report positive reactions (Davidson et al., 1990), yet others find negative (Beatty & Zajac, 1987), or no relationships (Warner et al., 1988; Weisbach, 1988). Others propose a contingent view and find that whether or not investors react positively to the event of executive turnover depends on firm's pre-succession performance (e.g., Friedman & Singh, 1989). Although results are mixed, recent event studies have provide sufficient evidence that in the U.S., executive succession does affect investor perceptions of firm value (see Sakano & Lewin, 1999). Moreover, scholars find that investor reaction differs between turnover initiated by boards as compared to turnover initiated by executives (e.g., Friedman & Singh, 1989; Furtado & Rozeff, 1987).

Conclusions

Executive turnover has been studied from three major theoretical perspectives. Resource-dependence theory emphasizes that executive turnover results in the responses of organizations adapting to environmental changes. Agency theorists propose that the monitoring and disciplining actions of boards of directors are the major forces behind managerial changes. The power and socio-political perspective argues that power distribution in the organization and socio-political factors importantly influence the likelihood of executive replacement. Scholars also have investigated the consequences of executive turnover, arguing that change in the executive cadre has important implications for strategic change and subsequent performance. However, in most cases,

the impact of executive change on firm strategy and performance is contingent upon organizational contexts as well as succession characteristics.

Extent research also suggests that executive power is an important factor influencing the likelihood of executive turnover. Although executive power is emphasized particularly in the studies from the power and socio-political perspective, scholars from resource dependence theory and agency theory also provide evidence of the influence of incumbent executive power in their studies on the antecedents of executive turnover. Particularly, studies have provided consistent evidence that executive ownership power reduces the risk of replacement, but the influence of structural power on executive turnover remains inconclusive. Another important antecedent of executive turnover is poor organizational performance. Studies from the three perspectives have reported consistent evidence that declining performance increases the likelihood of managerial changes in organizations.

STRATEGIC LEADERSHIP IN ENTREPRENEURIAL FIRMS

The review of extent research on strategic leadership shows that the majority of studies in this area focus on top executives in large public firms instead of entrepreneurial firms. Although there have been various definitions of an entrepreneurial firm in the literature (Daily et al., 2002), in this paper an entrepreneurial firm is defined as a new venture created by an individual or group of individuals, independently from any association with an existing organization (Low & Macmillan, 1988). Particularly I focus on technology-based venture firms. Although recent years have witnessed an increase in the studies of entrepreneurship in both the popular and the academic press, research on strategic leadership in new ventures is very fragmented.

Recently, scholars have called for more systematic research of strategic leadership in entrepreneurial settings (Daily et al., 2002). Daily and her colleagues argue that the impacts of strategic leadership in entrepreneurial settings are likely to be very pronounced since top executives have much more discretion in making strategic decisions and setting strategic direction in new venture firms. In order to help understand top executive turnover in entrepreneurial settings, the following section briefly reviews the studies on the influence of founders and entrepreneurial teams on strategic choices and performance in new venture firms.

The Founder's Role

A founder is the individual who creates the business. There has been persistent evidence suggesting that a new venture is largely an extension of the founder (Chandler & Jansen, 1992; Mintzberg, 1988). Chandler and Jansen (1992:78) suggest that the founder typically has two roles: (1) the entrepreneurial role, which involves scanning the environment, selecting opportunities, formulating strategies to take advantage of those opportunities; and (2) the managerial role, which involves acquiring resources, developing programs and procedures, evaluating performance, and performing other tasks essential to implement strategies. Given the central role of the founder with a venture, it has been suggested by many scholars that the founder has a very significant impact on firm performance (Chandler & Hanks, 1994; Chandler & Hanks, 1998; Sapienza & Grimm, 1997). According to the Daily et al. (2002) review, empirical investigations on the relationship between founders and firm performance comprise three categories: (1) studies on the relationship between CEO founder status and firm

performance (e.g., Certo, Covin, Daily, & Dalton, 2001a; Jayaraman, Khorana, Nelling, & Covin, 2000); (2) studies on the relationship between founder characteristics (such as personality, values and belief, education and experience) and firm performance (e.g., Chandler & Hanks, 1994; Chandler & Jansen, 1992; Cooper et al., 1994; Sapienza & Grimm, 1997); and (3) studies on the combined elements from the above two categories (Daily et al., 2002). Although empirical evidence is equivocal and sometimes controversial, the majority of this research stream has concluded that founders have a very important impact on firm performance, in terms of profitability, growth and survival (Daily et al., 2002).

The Role of Entrepreneurial Team

Recently, scholars have turned attention to the founding team rather than the individual entrepreneur and explored the relationship between founding team characteristics and firm performance (e.g., Cooper & Daily, 1997; Ensley et al., 2002). Both demographic and process-oriented characteristics of the founding team have been investigated. For example, Weinzimmer (1997) demonstrated that functional heterogeneity and team size positively relate to firm growth as large heterogeneous teams bring greater diversity of perspective and resources. Other studies have also reported a positive relationship between team size and entrepreneurial firm growth (Cooper & Gimeno, 1992; Feeser & Willard, 1990). More recently, scholars investigated how management team dynamics – the personal interactions among management team members -- affect firm performance. For example, Ensley et al. (2002) examined the relationship between the interactions within the founding team and

firm performance and found that team cohesion is positively associated with venture growth. Similarly, Francis and Sandberg (2000) proposed that friendship within entrepreneurial teams generally has a positive impact on venture performance.

EXECUTIVE TURNOVER IN ENTREPRENEURIAL FIRMS

Compared to the abundant research on the performance implications of founders or founding teams, studies on executive turnover in entrepreneurial settings are very scarce and scattered. Generally, studies in this area can be classified into two categories: (1) studies focusing on the founder's departure and (2) studies investigating the exits of other executive members of the entrepreneurial team.

Founder's Departure

Antecedents of Founder's Departure

The phenomenon of an entrepreneurial founder being replaced by a professional manager has been widely cited in the entrepreneurship literature (Boeker & Karichalil, 2002; Rubenson & Gupta, 1992). A common belief related to this phenomenon is that the entrepreneurial founder often has difficulty in developing the skills needed to fulfill the evolving needs of the growing venture (Rubenson & Gupta, 1992). However, although there have been very rich anecdotal descriptions of founder departures in the business and popular press, theoretical and empirical studies on this topic are rare. The following section will briefly reviews several important studies in this area.

In an early study of founder departure in 54 Fortune 1000 companies between 1945 and 1983, Rubenson and Gupta (1992) investigated the antecedents of founder replacement. Although the study was descriptive, several of its conclusions have

important implications. For example, the study challenged the notion that the departure of a founder is the norm, and found that founders with professional management skills tend to have longer tenures than those without such skills. Also, they found that executives in high-growth firms are more likely to leave than their counterparts in low-growth firms as they have less time to learn the needed skills.

In a conceptual study on founder departure, Rubenson and Gupta (1996) developed a contingency model of founder tenure to explore the antecedents of founder departure, by asking three critical questions: (1) are the needs of the organization changing? (2) is the founder able to adapt to those changes? and (3) does the founder have the power to impede a required replacement? Largely based on the growth stage and organization life cycle literature (Clifford, 1973), Rubenson and Gupta's conceptual model suggested that the interplay between the evolving organization and the unique characteristics of the founder determines whether or not the founder will step aside. Specifically, the authors proposed that the founder's tenure is negatively related to firm size, growth rate, and product proliferation, but positively related to the founder's educational level, general management experience, functional diversity, and industry familiarity. In addition, several structural and environmental characteristics are proposed to affect the founder's tenure, such as ownership structure, board composition, promotion policy regarding promotion from within, family dominance, and industry turbulence.

As one of the few empirical studies in this literature, Boeker and Karchalil (2002) examine both the firm and the executive level factors leading to founder departure using a sample of 78 semiconductor firms. The results of the study verified

several propositions from the Rubenson and Gupta (1996) model. For instance, the study found that founder departure is positively related to firm size, but negatively related to the founder's ownership and board membership. The study also suggested there is a U-shaped relationship between founder departure and firm growth, suggesting that both high growth firms and low growth firm have high rates of founder departure. In addition, founders with R&D functional backgrounds or who are also CEOs were found to be less likely to leave.

More recently, Wasserman (2003) used field research and grounded theory building to investigate founder successions in 202 Internet firms. Wasserman argues that traditional agency theory explanations of executive turnover may not be applicable to entrepreneurial settings. The study found that two critical events are related to founder departures in these firms: the completion of product development, and the raising of each round of funds from outside investors. An interesting finding of this study is that contrary to conventional views, the founder-CEO's success in achieving critical milestones actually increases the likelihood of his/her replacement.

Consequences of Founder Departure

Scholars have often suggested that founder departure is beneficial for an entrepreneurial firm's growth, and many studies have compared the performance of founder-led firms with that of non-founder or professionally-led firms (see Daily et al., 2002 for a review). Yet relatively little attention has been paid to the impact of founder departure on firm performance. Further, existing studies have reported inconsistent results. For example, Carroll (1984) found that founder departure has a

disproportionate negative impact on the likelihood of organizational survival. Beckman et al. (2003) reported that founder turnovers increase the likelihood of an IPO, frequently an important performance indicator for new or young firms.

Executive Turnover in Entrepreneurial Teams

Despite the increasing awareness of the importance of entrepreneurial teams in entrepreneurship and strategy literature (e.g., Cooper & Daily, 1997; Eisenhardt & Schoonhoven, 1990; Kazanjian & Rao, 1999), studies on the development of new venture teams remains relatively rare (Kamm et al., 1990). Although there have been a number of studies on executive turnover in new venture firms in venture capital studies (e.g., Fiet et al., 1997; Hellmann & Puri, 2002), studies of executive turnover in the entrepreneurial team are still scarce and scattered.

Recently, there have been several studies shedding light on this topic in the strategy and entrepreneurship literatures. An early study by Ucbasaran et al. (2001) on 58 owner-managed ventures is possibly the first study to systematically investigate the antecedents of executive team turnover in the entrepreneurial firm. The authors examined both the environmental and the team level antecedents of entrepreneurial team changes. The results suggest that the high levels of political and competitive pressures are positively associated with entrepreneurial team turnovers, and prior joint experience among entrepreneurial team members lowers the likelihood of member turnovers.

Another study by Chandler, Honing, and Wiklund (2002) examined founding team member changes in new venture teams with a combination of three studies. They found that a new venture tends to add and/or drop entrepreneurial team members in

order to adapt its resource base to changed circumstances over time. Although some results require further speculation, the study indicated that the turnover of team members was not significantly associated with performance in the emergence phases but was positively and significantly related to sales growth performance when new venture was more stable. Therefore the results suggest that executive team turnover may have different impacts on performance during different developmental stages of new ventures. Another study by Bruton et al. (1997) investigated the impact in CEO dismissals in venture-backed firms, and found that CEO dismissal by boards of directors on which venture capitalist(s) reside has a significant positive effect on firm performance.

More recently, Beckman, Burton and O'Reilly used longitudinal models to examine the influence of founding teams on the success of IPOs. The authors reported that executive turnovers in an entrepreneurial team have influential impacts on subsequent performance (measured as the likelihood of going public). Specifically, they found that the addition of new executives was the most important factor increasing the likelihood of an IPO, and non-founder executive turnover slows this process (Beckman et al., 2003). However, these studies did not directly explore the antecedents of executive changes in the entrepreneurial team.

Conclusions

Although numerous studies in the entrepreneurship literature have emphasized the important influence of founder executive(s) or entrepreneurial teams on venture strategy and performance, little attention has been paid to executive change in new venture firms. A few important studies are reviewed in this section. Scholars have

investigated founder departures and non-founder executive turnovers in entrepreneurial firms. A review of these studies reveals that research in this area is scarce and fragmented, and largely lacks strong theoretical foundations.

A typical scenario of executive change in entrepreneurial firms is the founder replacement as venture firms transit to professional-management stages. It is assumed that venture growth often outpaces the entrepreneurial founder's capacity. Although this notion has been widely cited in both the popular and the academic press, empirical studies are still warranted. Scholars consistently report that the ownership of founder executives is negatively associated with turnover. Firm attributes (such as size, growth rate, etc.) and team level factors (such as prior work experience, etc) are also found to impact entrepreneurial executive turnover.

In spite of the limited quantity, current research sheds important light on the study of executive turnover in entrepreneurial settings. Scholars have proposed that the traditional agency perspective may not fit entrepreneurial settings in which founding executive(s) typically hold large amount of equity in the firm. Instead, scholars argue that a contingency perspective is more appropriate for explaining executive changes in new venture settings as new ventures face different strategic contingencies and resource dependences in their development stages (Rubenson & Gupta, 1996; Wasserman, 2003).

Extent research also has examined the performance implications of executive turnover in new venture firms. The majority of studies focus on founder departures, but the results are mixed.

EXECUTIVES IN THE IPO CONTEXT

The Initial Public Offering

As an important source of financial capital for the entrepreneurial firm, the initial public offering (i.e., to sell stock to the general investing public for the first time, hereafter IPO) provides the financial resources required to pursue aggressive growth strategies. The IPO allows the firm to access large amounts of capital, the opportunity to restructure the balance sheet, and also brings greater name recognition to the company (Rasheed, Datta, & Chinta, 1997). Other than the benefits to the firm, the IPO also provides the initial investors (either informal private investors or professional venture capitalists) an turnover mechanism for harvesting their investments (Prasad, Vozikis, Bruton, & Merikas, 1995). Therefore a successful IPO presents an important milestone of venture development as well as a higher valuation for the initial investors so that they can extract value from the growing entrepreneurial firm.

Executives in the IPO Context

The literature on venture capital has frequently noted that the quality of the top executives is the most important factor the venture capitalist(s) consider before selecting a new venture to fund (Hall & Hofer, 1993). Similarly, in the IPO process, as required by the Security Exchange Commission (hereafter "SEC") regulation, top executives' information (including their backgrounds, prior work experience and board memberships) must be reported in the official documents with the SEC which are released to investors and made public. Also, on "road shows" (Ritter, 1998), the backgrounds of top executives are showcased. It has long been suggested that the

quality of upper echelons (including the board of directors as well as top executives) directly influences investor perceptions and decisions to provide financial resources to the firm engaging in the IPO process (see Bochner & Priest, 1993).

Recently, scholars have investigated the roles of top executives in the IPO context, looking at how top executives influence IPO performance. Using market signaling theory (Akerlof, 1970), Cohen and Dean (2001) test the impact of top executives on IPO performance (measured with the total proceeds – total capital raised in the IPO) in 218 IPO firms (including non-web based and web-based firms). They found that IPO performance was positively associated with top executives' experience and education, and this relationship is greater in non-web based firms. Similarly, Higgins and Gulati (2002) investigated the upper echelons (board of directors and top managers) of IPO firms in the biotechnology industry and found that upper echelon affiliations with prominent firms differentially affect a venture firm's IPO performance (measured by net proceeds, number of institutional investors, and number of dedicated institutional investors). More recently, scholars have started to investigate the influence of the top management team on IPO outcomes. For instance, Beckman et al. (2003) analyzed how top management team demographic characteristics affect IPO performance, measured as the likelihood that a firm achieves an IPO.

Conclusions

The review of the literature of entrepreneurial executives in the IPO context yields little study on executive changes in this setting. The majority of studies have focused on how top executive or entrepreneurial team characteristics affect the firm's

IPO performance, yet little work has focused on the change of executives in this particular context. However, both the popular and the academic press strongly suggest that going public probably presents the most salient transition process of the entrepreneurial firm from entrepreneurial management to professional management (Daily et al., 2002), as well as significant changes in firm structure (Stoughton & Zechner, 1988), which may have great impact on executive tenure within the firm. The existing gap calls for systematic study on both the antecedents and consequences of executive change in the IPO context.

SUMMARY

Resource dependence theory, agency theory and power and socio-political views are three major theoretical perspectives used in executive turnover in large companies. Studies from these perspectives all report that executive power and poor performance have important influences on the likelihood of executive turnover. Because of the importance of executives to organizations, changes in the executive cadre have important implications for firm strategy and subsequent performance.

To date, little study has focused on executive change in entrepreneurial settings. Current studies on this topic are scarce and scattered, and often lack theoretical bases. A typical scenario of executive change in entrepreneurial firms is the founder departure and executive replacement as the venture transits to a professionally managed firm. Although this phenomenon has been widely cited in both the popular and the academic press, theoretical and empirical studies are lacking. The findings of existing studies suggest that both contextual and individual factors influence the likelihood of entrepreneurial executive turnover.

More importantly, the review of the literature on entrepreneurial executives in the IPO context yields little study on either the antecedents or the consequences of executive turnover in IPO firms, suggesting an important need for systematic study on these topics.

CHAPTER III

THEORY AND HYPOTHESIS DEVELOPMENT (I) & (II): THE ANTECEDENTS OF MANAGEMENT TEAM RESTRUCTURING AND EXECUTIVE EXIT IN IPO-STAGE FIRMS

This chapter develops a theoretical framework for understanding executive changes in IPO stage firms, especially the management team restructuring and executive exit in the immediate pre- and post- IPO periods. The earlier literature review suggests that executive change in the IPO context has rarely been systematically studied -- either theoretically or empirically, despite its importance to the growth and success of an IPO firm. The purpose of this chapter is to start filling this gap by establishing a theoretical model for understanding executive change in the IPO context and developing hypotheses.

The literature review suggests that the agency perspective which is predominately employed in research on executive turnover in large public firms may not be fully applicable for the entrepreneurial setting (Cannella & Baglieri, 2001; Daily et al., 2002; Wasserman, 2003). Instead, as discussed below, a power and socio-political perspective seems more promising in investigating executive change in entrepreneurial firms. The following section will discuss executive power evolution in entrepreneurial firms during their transitions from private ventures to public companies. The objective is to construct the theoretical base for developing the power model of management team restructuring and executive exit in IPO-stage firms.

THEORY

A Political Perspective on IPO-Stage Technology Startups

I took a political perspective of technology startup firm due to the following reasons. First, startup firms are characterized by powerful individuals who come together to form the corporation. Startup firms usually lack resources and legitimacy (Singh et al., 1986), and do not have much to rely on except for the top executives and investors who bring their knowledge and financial resources to the firm. Therefore, the ownership of a startup firm is typically highly concentrated in the hands of a few individuals or groups. However, these individuals or groups do not have uniform interests (Espenlaub, Garrett, & Mun, 1999). Both business press and academic research have widely cited the divergent interests and conflicts between the executives and the investors of new venture firms (e.g., Higashide & Birley, 2002). Also, unlike public companies, where executives share a unitary set of interests as apposed to those of owners, management in startup firms usually have diverse, frequently conflicting interests as well (Pfeffer, 1981).

Second, technology startups typically face high ambiguous, uncertain environment, disagreements about strategic policy are sure to arise in the startup firm (Timmons, 1999; West & Meyer, 1998). Because startup firms lack history and precedent (Eisenhardt & Schoonhoven, 1990), the parties must work to resolve conflicts together, that is, disagreements must be removed through negotiations between the executive leadership of the firm and its financial investors. Some likely casualties of

these conflict resolution processes are the executives and outside directors who represent the powerful owners of the firm (Shen & Cannella, 2002a).

Third, in any startup situation, there is a high degree risk (Timmons, 1999). Executives in technology startups must be aware that possible firm failure may cause them to lose financial incentives and requires them find new employment elsewhere. The pressure of securing an equivalent job appointment subsequent to possible failure makes executives sometimes ally themselves with others (especially with powerful investors) to maintain the networks of contacts therefore lowering their risks of employment (Cannella & Baglieri, 2001). Coupled with the diverse interests and frequent conflicts among the parties in a startup firm, executive's coalition behavior may influence the management process of the firm.

In particular, the political view is appropriate for analyzing an IPO-stage startup firm. Writers from both the popular and academic press have concluded that the IPO process is a complex, tedious and often political one. Before going public, the entrepreneurial firm generally needs to seek an underwriter (or syndicate of underwriters) to coordinate the selling. The "road show" (Ritter, 1998) is a critical part of pre-IPO preparation in which the entrepreneurial firm is pitched to potential investors and the stock price is marketed. The initial offering price is always a result of negotiation between the underwriter and the entrepreneurial firm and is ultimately determined the day prior to the IPO. A very common phenomena of the IPO stock price is "underpricing", which means the firm offers a price that is lower than the price that prevails in the immediate after-market (Certo et al., 2001a; Prasad et al., 1995). Since underpricing represent a direct wealth transfer from the founders and initial shareholders

to the underwriters (Filatotchev & Bishop, 2002), scholars have suggested that the IPO process is a political process, which involves motivations, decisions, and actions of different players. Rasheed et al. (1997 :12) described the conflicts involved in this process:

"For example, issuers like to maximize the offering price per share to enhance their returns. In contrast, investors would like the lowest offering price, so that they can earn above-market returns when they subscribe to the issue. Underwriters, on the other hand, seek to maximize their income from the issue while reducing potential losses, including loss of prestige."

The divergent interests of different parties involved in the IPO process suggest that an inherently political setting is present in the IPO-stage firm. Scholars have suggested that different goals and motivations of entrepreneurial executives and investors often lead to disagreements and conflicts (Higashide & Birley, 2002). For example, venture capitalists may not be as interested in the long-term growth of the venture firm as the entrepreneurial executives are. Moreover, an IPO-stage firm imposes a problem of information asymmetry (Rock, 1986), that is, the success of entrepreneurial firm is often uncertain, and it is very difficult for potential investors to fully assess the capability of entrepreneurial executives before investing in the IPO firm. To solve this problem, the initial investors (venture capitalists and other original shareholders) frequently require the executive team to address the perceived weaknesses, in which case the investors may push for a change of executive team (Wasserman, 2003). However, entrepreneurial executives may not want to leave the firm as they have developed personal attachments to the company and may think replacement

humiliating (Hellmann, 1998). As such, it is expected that political contests and struggles over the control of the firm are inevitable in an IPO-stage firm.

Executive Power in Organizations

Power is critical to understanding the decisions made by social actors in organizations (Pfeffer, 1981). Researchers have long been interested in investigating the sources of power within organizations. Hickson et al. (1971) propose that operating departments, divisions, or subunits have power if they control strategic contingencies, which are activities on which other subunits depend. Specifically, the power of a subunit depends on how effectively it copes with uncertainty; how central the unit's activities are to the workflow; and how easily the activities could be substituted. Following that logic, Pfeffer (1981) argues that power stems from the control of resources or skills in the five dimensions of the organization: (1) provision of resources, which involves allocation of financial, human, and information resources which other members rely on; (2) coping with uncertainty, which includes the ability to manage or absorb uncertainties; (3) irreplacebility, which involves possession of unique skills or capabilities that are difficult to substitute; (4) decision influence, which requires the ability to influence decision rights in an organization; and (5) political influence, which requires the political skills to influence others within or outside the organization.

Similar logic can be applied to executives in organizations. Each of the five dimensions can create executive power. For example, Hambrick (1981) proposes that environment and strategy create two critical contingencies an organization faces, and how executives cope with uncertainties associated with these two contingencies

importantly affect their power in the organization. Specifically, Hambrick (1981) argues that formal authority, coping behaviors (functional expertise and environmental scanning), and personal characteristics are three bases of power in an organization.

More recently, Finkelstein (1992) describes four basic dimensions of executive power and provides validations and measurements for these dimensions. According to Finkelstein (1992), power accrues to executives from four major sources: (1) the organizational structure and hierarchical authority -- the official organizational position of the executive; (2) executive's ownership – the shareholdings of the executive in the organization (3) executive's expertise –the skills and abilities of the executive to deal with environmental and organizational contingencies; and (4) executive's prestige – the executive's personal status, reputation in the institutional environment. In this study, I followed Finkelstein (1992) dimensions of executive power.

High technology ventures provide particularly excellent settings for consideration of the importance of executive power in explaining executive turnover and management team change, because the above-mentioned four sources of power become especially salient in these firms. Technology ventures are less constrained by inertia and precedent, giving founders and top executives very high managerial discretion (Hambrick & Finkelstein, 1987). Research has shown that founders and top executives of young firms usually wield the greatest influence on strategies and management (Meyer & Dean, 1990). Also, contrary to public companies, executives in venture firms usually own significant portion of shares of the company, which gives them ability and chances to exercise ownership power. Executives in technology ventures gain much power also because they posses highly-specialized knowledge and their expertise

and prior experience can act as buffer against the liabilities of newness for the firms (Stinchecombe, 1965). This is particularly important when an executive's expertise is in an area critical to the firm (Hickson et al., 1971). Additionally, executive prestige is another important source of power because it helps the venture reduce the level of uncertainty of the institutional environment by enhancing the firm's legitimacy, status and providing external information of value to the firm (Finkelstein, 1992).

Executive Power Evolution in IPO-Stage Technology Startups

Organizational life cycle theory (Adizes, 1979; Greiner, 1972; Kazanjian, 1988; Kimberly & Miles, 1980; Miller & Friesen, 1984; Terpstra & Olson, 1993) suggests that an organization progresses sequentially through several major stages of development. A central premise of this theory is that as organizations move through various stages of growth, both organizational attributes and the major problems facing organizations change, resulting in the need for different management skills, priorities, and structural configurations. The transition between different stages is profound since the firm faces dramatic changes and great challenges of obtaining and replenishing human capital in the organization (Welbourne & Cyr, 1999). For a technology venture which eventually goes public, the initial public offering is the milestone point in the life cycle of the company. In order to achieve continuous growth, an IPO firm needs to overcome many "bottleneck problems" imposed by the lack of necessary resources and skills, because the requirements for resources and skills are quite different in the IPO stage compared to the early startup stage. The so-called phenomenon of an "entrepreneurial growth

ceiling" (Welbourne, Neck, & Meyer, 1998) describes this type of problem as a venture converts from a private to a public organization.

The above arguments suggest that top executive power within an organization evolves with the development of the organization. Prior research on power evolution in organizations has suggested that power distribution within an organization changes as organization evolves through different stages (Mintzberg, 1984). As noted by Mintzberg (1984 :208), " … the shifts in power seem to lie at the root of transitions in the organization, these trends might be particularly well explained by considering stages of organizational development from the perspective of power". In addition, as Finkelstein (1992) emphasized, the internal sources of uncertainties, such as conflicting preferences of top managers in decision-making processes, and the controls and influences of outside shareholders on top managers, also shape the internal contingencies of the firm and affect the power distribution in the management team.

A central thesis of this study is that the power distribution among the dominant coalition changes as the firm grow; in particular, as the entrepreneurial firm converts from a private company to a public one, there are drastic changes in both resource and skill requirements for executives. Moreover, as was mentioned, an IPO-stage firm presents a political arena which involves conflicts of interests, goals, and orientations from different powerful players (such as entrepreneurs, venture capitalists, and large investors) (Higashide & Birley, 2002; Rasheed et al., 1997). The transition from a private venture to a public company induces changes in political coalition which forms the firm's dominant coalitions, therefore induces executive changes. The following

section will propose a power model of management team restructuring and executive exit in IPO-stage firms and develop hypotheses.

THE POWER MODEL OF MANAGEMENT TEAM RESTRUCTURING AND EXECUTIVE EXIT IN IPO-STAGE TECHNOLOGY STARTUPS

As a critical event in a venture's lifetime, the IPO provides the venture additional resources for survival and growth (Prasad et al., 1995). A successful transition of a private company to a public one involves much more than publicly listing the stock. As a privately held technology venture goes public, two major types of changes occur. First, the executive and managerial skills needed to be successful change in the IPO process. For example, as a venture transforms to a public company, technological expertise decreases in importance, and managerial skills increase in importance (Virany & Tushman, 1986). Second, the political coalition that comprises the firm's dominant coalition is changed by the IPO. A large volume of new shares are sold and a large volume of existing shares transfer to new owners. This causes sharp changes to the ownership structure of the firm, and these changes are likely to importantly alter the political coalition of the firm.

Adopting a political perspective, I propose a power model (see Figure 1) to explain the antecedents of management team restructuring and executive exit in the pre- and post-IPO stages. The drastic differences in the resource and skill requirements for executives and the firm political coalition structure between the pre-IPO and post-IPO stage suggest that executive power evolves over these two stages, affecting the management team restructuring and executive exit. The following section is divided into two parts: (1) hypotheses regarding the antecedents of pre-IPO management team

restructuring and executive exit; and (2) hypotheses regarding the antecedents of post-IPO executive exit. In each part, both firm level and individual level factors are examined.

Hypothesis Development (I): Antecedents of Management Team Restructuring and Executive Exit in the Pre-IPO Stage

Studies on IPO firms suggest that these firms frequently change their ownership and corporate governance structure in preparation for going public (e.g., Aggarwal & Klapper, 2003). Since the quality of the management team is a very important signal to potential investors, private ventures often change their management teams in order to impress the investors at the time of IPO (Hellmann & Puri, 2002). Therefore a typical factor affecting executive change in the pre-IPO stage is the pressure from the investors to develop a professionalized management team. This frequently occurs among venture capital-backed startups (Hellmann & Puri, 2002). On the other hand, as discussed earlier, taking a venture public through IPO is a complex, tedious, and expensive process, in which many decisions must be negotiated, because the company has little prior experience to fall back upon (Prasad et al., 1995). The parties to decisions (technical, financial, and managerial executives, and large investors) have different motivations, inclinations, and objectives (Rasheed et al., 1997), so it is expected that power and political struggles will be present before the IPO, eliciting management team restructuring and executive exit. The following section considers two types of factors which may impact management team restructuring and executive exit in this stage: (1) the firm level factors which reflect the “needs” or the pressures of investors to

professionalize the management team, i.e., factors reflecting investor power at this stage, and (2) the individual factors reflecting executive power within the pre-IPO political arena. According to the previous discussion, both types of factors have impact on the likelihood of management team restructuring and executive exit in pre-IPO stage firms.

Firm Level Factors

VC Control. The role of venture capitalists in the creation of public companies has been widely studied by finance and VC scholars (Barry, Muscarella, Peavy III, & Vetsuypens, 1990; Lerner, 1994). Research suggests that venture capitalists are actively involved in the management of ventures that they finance, often taking positions on the board of directors along with concentrated equity shares (Megginson & Weiss, 1991; Sahlman, 1990). As VCs usually invest in young, high-risk entrepreneurial ventures with unpredictable cash flows and uncertain future prospects, they must carefully select ventures. To venture capitalists, the quality of the management team is one of the most important criteria they use to select venture for investment (Hall & Hofer, 1993). Similarly, Fried and Hisrich (1995) argue that a major role of VCs is to serve as a disciplinary force on management. Because the VC industry is typically a small tight-knit community where VC performance is closely monitored (Sahlman, 1990), VCs have very strong incentives to monitor venture management in order to establish a trustworthy reputation, not only to secure follow up funds from syndicates (Jain & Kini, 1995), but also to make it easy for them to find investment banks willing to take their companies public (Espenlaub et al., 1999; Megginson & Weiss, 1991).

Unlike other financial resource providers, VCs not only have strong incentives to monitor management teams in private ventures, they also specialize in particular industries and have detailed knowledge of the ventures they finance (Lerner, 1995). This allows them to be more able to screen candidate companies and monitor their management. In addition, they can bring to the venture not only financial resources, but also managerial and technical expertise since they have talent reservoirs from their current and prior investments that they can call upon (Cannella & Baglieri, 2001). Evidence has shown that before the venture goes public, VCs play an active role in the professionalization of start-up companies, such as establishing human resource policies, the adoption of stock option plans, the hiring of a marketing VP, and even the replacement of founding managers with outside CEOs (Hellmann & Puri, 2002).

Although VCs may have power to replace the founding executives, such replacement is not without resistance. Founding managers usually have strong desires to control their own firm and are motivated to retain themselves as much as they can of their business value (Gorman & Sahlman, 1989). They have strong psychological attachments to the ventures (Rubenson & Gupta, 1991) and may look replacements humiliating (Hellmann, 1998). As such, executive exit in VC-backed firms is often the result of power contests between executives and VCs. However, in the pre-IPO stage, because of the resource constrains problem, the power of founding mangers is weakened by the venture's high dependency on external resources. Research has shown that technology-based ventures require large resource commitments to conduct exploratory research and development (Shane, 2002). Particularly, securing financial capital is central to the evolution of new venture (Timmons, 1994). In technology-based

ventures, initial financial capital requirement is very high and often exceeds founders' resources (Chandler & Hanks, 1998), thus executives may accede to the demands of outside capital providers, such as VCs (Wasserman, 2003). In addition, the legitimating role the venture capitalist is important for venture's IPO performance (Hoffman & Blakely, 1987). Therefore founding executives may have to relinquish their controls in order to exchange for critical resources from VCs (Hellmann, 1998). The relative power of executives is diminished also when most venture-backed ventures use stage-financings prior the IPO, which allows VCs the options to terminate their involvement if executive performance is unsatisfactory. Summarizing the above arguments, I expect:

Hypothesis 1.1: VC control increases management team restructuring in the years immediately prior to the IPO.

Hypothesis 1.2: VC control increases new executive entry in the years immediately prior to the IPO.

Hypothesis 1.3: VC control increases the likelihood of executive exit in the years immediately prior to the IPO.

VC Prestige. Another factor which influences the power relationship between founding executive and venture capitalist is VC's prestige. The VC literature has shown that reputation play important roles in VCs' success in both follow-up capital markets and the IPO market (Gompers, 1996). Prestigious VCs have strong incentives to monitor and involve in venture management, including restructuring the management team before the IPO. This is because prestigious VCs have much industrial experience and well-established relationships with professional managers within the industries

where they focus their investments. This makes it easier to find appropriate personnel to replace entrepreneurial managers when needed. For ventures that pursue public offerings, prestigious VCs are valuable as they have established good relationships with investment banks and potential customers, and they are more proficient than less prestigious VCs in timing the IPO (Gompers, 1996). Because prestigious VCs can provide such benefits to the ventures, they have much power over entrepreneurial executives in the pre-IPO stage. For example, they can establish high performance expectations and make strict contractual covenants for executives as preconditions for funding the venture (Tyebjee & Bruno, 1984), therefore increasing the risks of executive exit before the IPO.

In contrast, less-prestigious VCs are typically young and less experienced in the VC industry. Evidence has shown that these VC firms are more eager to go public earlier than established and prestigious VC firms. Gompers (1996) observed this "grandstanding" phenomenon and argued that a major incentive for young VC firms to take their companies public earlier is to raise the VC firm's profile in the market and attract capital for new venture capital funds, since taking a company public is interpreted by investors as a signal of their ability and skills in financing start-up companies. Compared to prestigious VCs, less-prestigious VCs have shorter relationships with executives and serve on the boards of their IPO firms for shorter lengths of time (Gompers, 1996), which weakens their ability to screen and monitor the quality of venture team, and also diminish their value to the ventures. Therefore less-prestigious VCs do not have much power in the negotiations with entrepreneurs as prestigious VCs simply because they cannot provide the same benefits to the venture as prestigious VCs

do. From entrepreneurial executive's perspective, managers with strong desires to control the firm may be willing to contract with less-prestigious VCs because they have less power over the venture. Therefore, the rush to public market combined with the limited pool of talent that they can draw upon, make it difficult for less-prestigious VCs to replace executives in the pre-IPO stage. Hence, I expect:

Hypothesis 2.1: VC prestige increases management team restructuring in the years immediately prior to the IPO.

Hypothesis 2.2: VC prestige increases new executive entry in the years immediately prior to the IPO.

Hypothesis 2.3: VC prestige increases the likelihood of executive exit in the years immediately prior to the IPO.

Individual Level Factors

Prior research on executive turnover suggests that executive individual characteristics can be an important factor affecting executive tenure within an organization (Kesner & Sebora, 1994). The following section will discuss two important individual characteristics of executives in entrepreneurial settings: human capital and social capital, as these two types of capital have important influences on the power of executives.

Human capital refers to the knowledge and skills of individuals (Becker, 1964). The knowledge and skills are acquired over a lifetime through education, training, and experience. In a new venture, the human capital resides in the founding team and other employee, constituting a repository of different knowledge and skills (Chandler &

Hanks, 1994). As new venture firms usually lack resources due to "the liability of newness" (Stinchecombe, 1965), the skills and capabilities the management team brings to the business constitute an important resource for the firm (Chandler & Jansen, 1992). Entrepreneurship research has emphasized, and mostly concluded, that human capital provided by founding members or top executives has a great impact on venture performance (Cooper et al., 1994; McGee, Dowling, & Megginson, 1995). As discussed earlier, the skills and capabilities help executive gain expert power in the organization (Finkelstein, 1992).

Another important type of resource entrepreneurial executives contribute to new ventures is social capital (Coleman, 1988, 1990). Leenders and Gabbay (1999 :2) define social capital as "the set of resources, tangible or virtual, that accrue to an actor through the actor's social relationships, facilitating the attainment of goals". Social capital theory suggests that social relationships can provide access to necessary resources and external knowledge which may leverage the productivity of the human and financial capital committed to the venture (Bourdieu, 1985; Portes, 1998). In recent years, entrepreneurial studies have shown the role of executive social capital in venture growth and success. For example, Shane and Stuart (2002) investigated the relationship of resource endowment and performance in 134 university startups, and found that ventures with founders who have direct or indirect relationships with venture investors are more likely to receive venture funding and less likely to fail. Other studies also have supported the important role of executive social capital to venture growth and overall performance (e.g., Steier & Greenwood, 2000). According to Finkelstein (1992), social capital help enhance executive's prestige power in the organization.

In the pre-IPO stage, the executive's technical skills, external directorships, and executive's founding status have important implications for executive power in the organizations. Hence these factors are described below as the key individual level antecedents of executive exit.

Technical Skills. A technology venture is typically created because a person or persons with substantial technical and scientific knowledge needs capital and management skills in order to capitalize on their technical knowledge. While technical, financial and managerial knowledge are all important for a venture's growth, life cycle theory suggests that the relative importance of each type of knowledge varies across different developmental stages (Kazanjian, 1988; Miller & Friesen, 1984). In the early stage of a technology venture, the focus of the venture is typically on the technical issues involved in developing the company's initial product or service. At this stage leading the organization requires a relatively narrow range of skills, because the tasks to be accomplished are predominately in research and development; general management, marketing and financial skills are less critical. Particularly for ventures aiming to secure venture capital and eventually launch a successful IPO, the finishing of the initial product is critically important as it serves as a concrete indicator of the success and future prospects of the company (Wasserman, 2003). Also, a major source of competitive advantage for a technology-based venture resides in the firm's capability to keep a sustainable competitive advantage through continuous innovation on products and services. Therefore, potential investors in the IPO market will be more concerned with a venture's research and development capability than other types of skills. This relative emphasis on technical skills is also due to the lack of solid financial performance

history as technology-based ventures usually emphasize growth over profitability in the early stages. Therefore, due to the importance of technical skills in the pre-IPO stage, executives with technical skills will have greater power than other executives and have less risk of exit.

Hypothesis 3: Technical skills decrease the likelihood of executive exit in the years immediately prior to the IPO.

External Directorships. Research has shown that executives who serve as outside directors on other company boards bring many types of resources to the focal firm (Mizruchi, 1996). Geletkanycz, Boyd, and Finkelstein (2001 :809) summarize these benefits, arguing that executives with external directorships can help the firm reduce the level of uncertainty surrounding external resource dependence, bring the firm greater access to strategic information and opportunities, and confer legitimacy and status benefits on the firm. These benefits are particularly significant for a technology venture seeking a successful IPO. First, technology ventures are typically resource-constrained, so the external directorships of executives can provide the firm with more opportunities to secure additional resources for product development. Second, having executives with external directorships sends a positive signal to potential investors about the quality of top executives, enhancing the legitimacy of the new venture team in the IPO setting. Scholars have concluded that such signals positively affect the valuation of the firm at the time of IPO (Certo, Daily, & Dalton, 2001b).

Prior research has demonstrated that CEOs often use their external ties to gain status over and influence other stakeholders within the firm (Belliveau et al., 1996). Similarly, the power of executives will be enhanced if their external directorships

contribute considerable strategic benefits to technology-based ventures. Indeed, during the pre-IPO periods, both the founder(s) and outside investors intend to recruit and retain those executives with external directorships to overcome resource constrains problem and enhance the legitimacy of the firm. Therefore I expect that executives with external directorships will have much power and be less likely to exit the firm in the pre-IPO stage.

Hypothesis 4: External directorships decrease the likelihood of executive exit in the years immediately prior to the IPO.

Founding Status. Founders are the initiators of the startup firms. For technology startups, a major purpose the firm is to capitalize on the specialized knowledge of founders. As the initiator(s) of a venture, the original founding manager(s) play a critical role in startup and later development stages of the venture, such as acquiring necessary resources, building external networks and recruiting other executives, etc. As such, a founder typically holds the center position of the management team in a private firm. The centrality of the founder in the firm is formed also because a startup's long-term success is dependent on the firm's vision, which in turn, is reliant on the founder's characteristics (Schein, 1991). Research has indicated that founders are more likely to have long-term horizons than non-founder executives, reflecting their greater concern with the long-range development and the survival of the organization (Schein, 1983). Therefore founders have strong desire to oversee and control the activities of the startups (Mintzberg, 1984). Additionally, founders also tend to own a large proportion of the venture's equity, and have important influence over the venture's policies. Clearly founder managers wield great power in their ventures'

management due to their roles and responsibilities. Meanwhile, founder's ownership tends to insulate and protect their positions within their firms as well (Jensen & Meckling, 1976).

The above arguments lead to:

Hypothesis 5: Founding status decreases the likelihood of executive exit in the years immediately prior to the IPO.

Hypothesis Development (II): Antecedents of Executive Exit in the Post-IPO Stage

As noted earlier, the initial public offering is a critical milestone in the development of a startup firm. The IPO provides the venture access to outside capital market, yet also weakens the controlling roles of entrepreneurial executives in the firm. After IPO, the entrepreneurial team's ownership proportion decreases. Particularly, as new investors and/or new senior managers are brought in, the IPO also changes the relative power of entrepreneurial executives and the political coalition within the firm. The relative power of executive changes also because the skills and resources needed by the firm change. The following section considers both firm level and individual level factors affecting the likelihood of post-IPO managerial change because of these changes brought by the IPO. The firm level factors include: (1) addition of outside directors; (2) addition of post-IPO new senior executives; and (3) pre-IPO management team restructuring. The individual level factors (executive characteristics) include: (1) managerial skills (including prior public company managerial experience and formal business education); (2) financial skills (prior public company financial experience) and (3) technical skills.

Firm Level Factors

Addition of Outside Directors. The duties of boards of directors can be described in terms of three overlapping roles: service, resource dependence, and control (Johnson, Daily, & Ellstrand, 1996). Much corporate governance research has concluded that board composition, especially the proportion of outside directors, has a great influence on governance effectiveness (Daily & Schwenk, 1996; Zahra & Pearce, 1989). The prevailing argument holds that outside directors more effectively control managerial opportunism since outside directors are independent and more objective than inside directors when evaluating executive performance (Finkelstein & Hambrick, 1996; Johnson et al., 1996; Zahra & Pearce, 1989). Specifically, research has shown that when performance is unsatisfactory, companies with outsider-dominated boards are more likely to have executive replaced than for companies with inside-dominated boards (Weisbach, 1988).

While the control role of outside directors has been emphasized in large public companies, scholars tend to argue that this role is less prominent in small or private firms (Forbes & Milliken, 1999) due to either a higher ratio of inside directors (Lorsch, Zelleke, & Pick, 2001) or CEO/founder entrenchment (Finkelstein & Daveni, 1994). Scholars also suggest that in small, private firms, outside directors provide more service and counseling (Hillman, Cannella, & Paetzold, 2000). Similarly, it is suggested that outside directors play a key role in facilitating small firm life-cycle changes, particularly the transition to professional management (Daily & Dalton, 1992).

IPO firms are new to the public market, and differ from privately held, owner-managed ventures *and* from old, established public companies. As the venture transits to a public company, new investors bring outside directors to the board to protect their interests. After the IPO, the firm needs to fulfill certain requirements to formalize its board of directors, and these tend to increase the capacity to exercise control by outside directors. Further, an IPO represents the first time that the firm's board is subjected to public scrutiny, and firms may select more outside directors to send a positive signal to investors about the quality of the firm's monitoring system (Certo et al., 2001b). Moreover, from the outside directors' perspective, there is more incentive to exercise control after an IPO. Outside directors are usually representatives of large investors, whose interests are different from entrepreneurial managers and VCs. As, such, they need to monitor management's opportunism to protect these large investments. Last, outside directors are very concerned about their reputations as expert decision makers (Fama, 1980). Therefore when management opportunism is present in the IPO management team, concern for their reputations motivates outside directors to act.

Additionally, from a power and socio-political perspective, adding new outside directors give rise to power contest among initial shareholders (executives and VCs) and new investors. Executives and VCs favor insider-dominated boards, because inside directors represent the common interests of incumbent executives and VCs, and they usually take side with these current executives when conflicts arise between investors and management team. Also inside directors have more firm-specific knowledge making them superior to outside directors in assisting executives in formulating firm strategies (Zahra, 1996). However, new investors, especially large investors, like to

have their own representatives on the boards, and they are much better placed to find and bring prestigious new directors to the firm because they have better connections with professional talents in public companies. As new outside directors are relatively new to the firm and have not had adequate time to develop relationships with entrepreneurial executives, they may have little confidence in those charged with managing the firm (Wasserman, 2003). The lack of confidence, coupled with the conflicts around the selection of board of directors between the original and new investors increase the tension between new investors and insiders, encouraging executive exit in the post-IPO firm.

Hypothesis 6: The addition of outside directors increases the likelihood of executive exit in the first few years following an IPO.

Pre-IPO Management Team Restructuring. Pre-IPO management team restructuring refers to the deletion(s) and/or the addition(s) of chief executives in the management team prior to the IPO. Related to the present study, chief executives include chief executive officer, chief financial officer, chief technology (scientific) officer, and chief operating officer. Pre-IPO management team restructuring is expected to decrease the need to change executives in the post-IPO period. Most high technology ventures are in high-risk industries with unpredictable cash flows and uncertain future prospects. Hence, the investors in private ventures must carefully select which venture management teams they finance. This is particularly important for venture capitalists. As discussed earlier, reputation concerns are very strong incentives for VCs to monitor the venture management teams. The payoff for the VC is that when they establish a trustworthy reputation, they are better able to access the IPO market on

favorable terms (Espenlaub et al., 1999; Megginson & Weiss, 1991). Because VCs usually specialize in particular industries and have detailed knowledge of the ventures they finance (Lerner, 1995), they can effectively screen investment candidates and monitor their management. They can bring to the venture not only financial resources, but also managerial and technical expertise. Therefore if a venture has experienced a pre-IPO management team restructuring, the executives has been adequately screened and the venture has had a carefully selected management team in place, therefore the venture will have a lower likelihood of executive exit in the post-IPO period.

Hypothesis 7: Pre-IPO management team restructuring decreases the likelihood of executive exit in the first few years following an IPO.

Addition of Post-IPO New Senior Executives. Because of high uncertainty of outcomes, technology ventures engage in continuous experimentation (Starr & Macmillan, 1990), and thus constantly seek new resources, competencies and capabilities for sustaining their competitive advantages and growth (Birley & Stockley, 2000). Particularly, going public changes a private firm in many ways, therefore requiring new skill sets (for example, financial reporting, public and investor relations) which are not previously as critical among venture executives. In order to make a smooth transition to a public company and keep its sustainable long- term growth, technology ventures may hire new senior executives from outside. Chandler et al. (2002) suggest that adding new members to the entrepreneurial team will have an important impact on new venture performance.

While adding outside senior executives may be beneficial for a venture's long-term performance, it may also increase the likelihood of post-IPO executive exit.

Compared to large established companies, young, technology-based IPO firms have close-knit management teams. The arrival of new senior executives limits the opportunities for incumbent executives to be promoted to higher positions. As a result, the ambitious executives may choose to leave the companies to pursue alternative job opportunities. Also, research has suggested that new outside senior executives are usually appointed by large investors (VCs) to replace the current founding managers when investors perceive problems with the original founding executives (Hellmann, 1998). Because of their close ties to large investors, new senior executives often lack integration with incumbent management teams. Meanwhile, adding new executives from outside the company may make the original team feel disfranchised (Maruca, 2000). Also, as new senior executive typically stands for the interests of investors, they may pursue different directions of firm development with that of incumbent executives. Therefore conflicts between the new executives and incumbent ones are also likely to arise, leading to a high rate of executive exit. Hence, I expect,

Hypothesis 8: The addition of post-IPO new senior executives increases the likelihood of executive exit in the first few years following an IPO.

Individual Level Factors

As discussed earlier, new venture executives tend to be powerful not necessarily because of their ownership positions, though ownership is important, they can obtain power through the knowledge resources and talents that they bring to the firm. The following section will discuss how the individual characteristics of executives may affect

the relative power of executives in the post-IPO firm, and influence the likelihood of exit.

According to organizational life cycle theory (Kazanjian, 1988), as firms grow, different problems and challenges need to be addressed, resulting in the need for different knowledge and skills. Scholars have suggested that this change could necessitate augmentation and transition in the entrepreneurial team (Birley & Stockley, 2000). This is especially important for ventures in emerging and dynamic industries (Churchill & Lewis, 1983; Greiner, 1972). Similarly, entrepreneurship scholars note that managerial work is quite different from entrepreneurial work, and a transition from entrepreneurial work to managerial work is necessary for long-term venture success (Willard et al., 1992). Although important, it is often difficult for founding executives make such transition (Hambrick & Crozier, 1985; Rubenson & Gupta, 1992).

Therefore, it is expected that the power of top executives with respect to their skills and resources needed by the firm will be diminished if the executives cannot meet the challenges of the transition. However, some scholars have suggested that entrepreneurial executives may have the ability to adapt to this transition if they posses the skills needed by the new public firm (Rubenson & Gupta, 1992). Hence, the likelihood of post-IPO executive exit depends on whether current executives are willing and able to meet the challenges of the transition.

This paper considers three different skills of pre-IPO executives and the associations between these skills and the likelihood of post-IPO executive exit: (1) managerial skills (including prior public company managerial experience and formal

business education); (2) financial skills (prior public company financial experience) and (3) technical skills.

Prior Public Company Managerial Experience. Contrary to popular stories of lone college drop-out entrepreneurs, most new technology ventures are founded by people with prior employment experience (Cooper, 1985; Robinson & Sexton, 1994). Managerial skills are mostly tacit knowledge and are commonly acquired through prior experience (Cooper et al., 1994). Particularly, public company managerial experience are directly reflective of the executive's ability to make the transition from a private to a public company. Related to the present study, public company managerial experience refers to executive work experience as top executive in public traded companies. Research has concluded that an entrepreneur's prior work experience has a major impact on the venture's human capital stocks (Burton, Sorensen, & Beckman, 2002), and that prior work experience shapes the manager's outlook and the predispositions which he or she brings to the venture (Hambrick & Mason, 1984). Additionally, managers' prior work experience contributes social capital to the venture in terms of interpersonal networks and access to valuable resources, therefore buffering the liabilities of newness and smallness (Burton et al., 2002). For instance, entrepreneurs with prior senior management experience likely have more legitimacy with external constituents and are more likely to obtain external resources and support.

Executives with prior public company managerial experience are particularly important for an IPO firm. Because of the problem of information asymmetry between executives and owners in the post-IPO context (e.g., Rock, 1986), an executive's prior managerial experience may signal to potential investors the ability and capacity of that

executive to manage a newly public firm (Higgins & Gulati, 2003). Studies have demonstrated, for example, that venture capitalists are particularly interested in the backgrounds, experiences, and managerial capabilities of entrepreneurs (Macmillan, Siegel, & Subba Narasimha, 1985). As a privately held venture transforms to a public company, it is expected that executives with prior public company managerial experience will have more expert power, because the managerial skills from such experiences better prepare the executives for the wide range of problems confronting the new public firm. Therefore,

Hypothesis 9: Prior public company managerial experience decreases the likelihood of executive exit in the first few years following an IPO.

Formal Business Education. Scholars have argued that the level of executive educational attainment contributes to the effectiveness of a top management team (Cooper & Gimeno, 1992). In the IPO context, the educational backgrounds of top executives also signal to investors the quality of the founding team (Cohen & Dean, 2001). While previous studies have often considered the level of general education of top managers, business education is also very important in a new IPO firm. Numerous studies have shown that the transition from a private venture to a public company dramatically increases managerial complexity for entrepreneurial managers (Boeker & Karichalil, 2002; Wasserman, 2003). This is especially the case for technology ventures which typically compete in risky, uncertain, and high growth contexts. Without adequate business education, venture executives will be less able to spot opportunities or generate a wide range of possible alternatives (Rubenson & Gupta, 1992). Conversely, executives with formal educations in business will be better

equipped to deal with the variety of managerial problems generated by their ventures' transitions to public firms.

In addition, organizational life cycle theory suggests that as firm develops from startup stage to growth stage, the organization becomes more formal and standardized, and the structure form becomes more functional (Hanks, Watson, Jansen, & Chandler, 1993). Going public represents such critical point of venture development. Accordingly, executives' functional or specialty knowledge are emphasized therefore general business principles can be applied to the organization. This creates great dependence on executives who have obtained formal business educations. Therefore,

Hypothesis 10: Formal business education decreases the likelihood of executive exit in the first few years following an IPO.

Prior Public Company Financial Experience. The financial expertise needed in a public company differs importantly from that needed by a typical startup firm (Hambrick & Mason, 1984). Because raising financial capital is such an important part of the entrepreneurial process (Cooper et al., 1994), for CFOs in privately held startups, a major task is to help the startup acquire financial capital for growth. In this sense, the CFO of a privately held venture serves more as a financial resource acquirer than a financial resource manager. As the firm goes public, it enters into a new growth stage with significant financial funding through the sale of its stock. This transition will cause the financial reporting systems to change dramatically. For public company CFO's, the key responsibilities include financial reporting, budgeting, and financial strategy and the primary responsibility is to manage the financial system for the entire firm (Mian, 2001). In addition, public companies face close scrutiny, not only from

their own shareholders, but also from the investment community, the Securities and Exchange Commission (SEC), and prospective investors. Because the required skills differ sharply from those needed before the IPO, the original financial executives may not be proficient at these critical tasks (Hambrick & Crozier, 1985). However, if the executives have had previous public company financial experience, they will be better prepared for such challenges. Indeed, studies show that public firm CFOs that do well are likely to be heavily recruited by other firms and they can often leave the firm in pursuit of more attractive job opportunities elsewhere (Mian, 2001). A new IPO firm, therefore, can probably attract an experienced public company CFO, if needed. Therefore in the post-IPO period, I predict that an executive with prior public company financial experience will be less likely leave the position than one without such experience.

Hypothesis 11: Prior public company financial experience decreases the likelihood of executive exit in the first few years following an IPO.

Technical Skills. The IPO represents a key event in the life of a technology venture, because it suggests that the success of the venture's technology is perceived as likely. Before undertaking an IPO, most technology-based ventures have achieved one or more key milestones in product development. Prior to the incredible (and unsustainable) IPO market of the late 1990s, firms had to demonstrate positive cash flows and usually sustained profitability before an IPO was even possible. Now that the IPO boom is over, the market is returning somewhat to these earlier requirements. For these reasons, it is expected that the value of technical expertise will decline among the very senior officers of the firm, as the technology has been proven prior to the IPO, and

the post-IPO firm is more concerned with commercialization than with development. Wasserman (2003) made a similar observation that after achieving major milestones of product development, ventures shift emphasis toward the sales and revenues of their products.

Having said the above, technical skills are clearly very important to the post-IPO technology-based firm. However, unlike the pre-IPO setting in which technical skills dominate the venture, in the post-IPO phases, financial and management skills are of increasing importance. This is complicated by the fact that most technical executives have little or no prior experience in managerial or financial contexts. After the IPO, a technology venture faces more frequent and stricter scrutiny from the business press and investors on financial performance and product development progress (Meyer & Rowan, 1977). Investors demand quick and successful technology commercialization. In other words, although technical skills are still important for the venture's long term competitive advantage, they no longer tend to dominate as the pressure for positive cash flows and profitability increases in the new public firm. Virany and Tushman (1986) demonstrated that as successful ventures evolve, they shift their emphasis on executives' skills from engineering expertise to sales and marketing skills. Therefore, as the dependence on technological expertise decreases after the IPO, the likelihood of exit among technical executives in the post-IPO period will increase.

Hypothesis 12: Technical skills increase the likelihood of executive exit in the first few years following an IPO.

Failure to Meet Performance Objectives: The Moderating Effect

Research on executives of large firms has shown that poor financial performance is one of the most important reasons behind executive turnover (Fredrickson et al., 1988). Privately held technology ventures, competing in knowledge intensive and sometimes capital intensive industries, often lack one or more key resources. Their financial performance during initial years is typically shaky at best. However, since investors emphasize high growth potential and are especially interested in the very high returns of successful IPOs, to some extent financial difficulties are tolerated in pre-IPO venture firms. As the private venture goes public, its executives face higher pressure to deliver solid financial performance. After the IPO, the venture faces more frequent and stricter scrutiny from the investment community with respect to financial performance and product development progress (Meyer & Rowan, 1977). As shareholders of the newly public firm emphasize the long term growth of the venture, and therefore place more emphasis on its financial performance and demonstrated growth, failure to meet performance objectives may result in investor wealth loss, shrinking the wealth of founders and insiders, and a general distrust of management's abilities. This will lead to conflicts among the firm's dominant coalition. Therefore, I expect that firm's ongoing performance moderates the positive relationships between the following related factors and the likelihood of executive exit in the first few years following an IPO.

Hypothesis 13-1: The positive relationship between the addition of outside directors and the likelihood of executive exit will be strengthened when the firm's financial performance is poor in the first few years following an IPO.

Hypothesis 13-2: The positive relationship between the addition of post-IPO new senior executives and likelihood of executive will be strengthened when the firm's financial performance is poor in the first few years following an IPO.

SUMMARY

The present chapter develops a power model of management team restructuring and executive exit in IPO-stage firms. Following the model, hypotheses were generated concerning the factors influencing the occurrence of management team restructuring, new executive entry, and executive exit in the pre-IPO stage, as well as the occurrence of executive exit in the post-IPO stage. The following chapter will develop hypotheses concerning the performance effects of pre-IPO management team restructuring and post-IPO executive exit.

CHAPTER IV

HYPOTHESIS DEVELOPMENT (III): PERFORMANCE EFFECTS OF PRE-IPO MANAGEMENT TEAM RESTRUCTURING AND POST-IPO EXECUTIVE EXIT

The reviewed literature on executive turnover suggests that executive turnover has important implications for firm performance, although the empirical evidence is inconsistent (Kesner & Sebora, 1994; Pitcher et al., 2000). Given the importance of entrepreneurial executives to venture firm growth and performance, it is expected that the change of executives in entrepreneurial firms will have a critical influence on firm performance. However, as reviewed in the previous chapter, there has been very little research published in major management or entrepreneurship journals investigating the change of executives in entrepreneurial settings, as well as the consequences of the change for new venture performance. This section begins to fill this gap by exploring the performance implications of management change in IPO-stage firms.

It should be noted that previous studies of large company executive turnover have emphasized the impact of successor origin on subsequent firm performance (e.g., Friedman & Singh, 1989). In entrepreneurial settings, however, this differentiation loses its importance, as internal succession requires a promotable group of lower-level executives while most entrepreneurial firm do not have that depth of talent. Scholars have shown that most executive turnover is followed by external successors in entrepreneurial firms (Wasserman, 2003). Therefore successor origin may not be an important factor in determining the turnover-performance relationship in this setting.

PRE-IPO MANAGEMENT TEAM RESTRUCTURING, VENTURE CAPITAL AND FIRM PERFORMANCE

In entrepreneurial ventures, founding executives of technology firms bring different skills and abilities to their ventures. The weaknesses of individual executives can often be offset by the strengths of others. Scholars studying entrepreneurial management teams have concluded that diverse team provides more complete knowledge which integrates technical, managerial, market familiarity and financial control abilities in the venture (Chandler & Lyon, 2001). In the IPO context, the broader the range of knowledge of the management team, the greater confidence investors should have in the venture's overall ability to address multiple problems arising after the IPO, indicating its potential future success. Research has shown that as a new venture develops, it continuously adds and drops management team members to adapt its resource base to the changed contingencies (Chandler et al., 2002). Therefore I expect there is a positive impact of pre-IPO management team restructuring on firm performance.

VCs play important roles in developing the management team in the pre-IPO stage. As discussed earlier, VCs not only have strong incentives to monitor management teams in private ventures, they also have specialized knowledge about particular industries and the ventures they finance (Lerner, 1995; Warner et al., 1988). Because they have strong connections with the investing community and professional managers, they can bring to the venture not only financial resources, but also managerial and technical expertise. The VC literature has demonstrated the value of venture capital involvement in the professionalization of private firms. For example, Bruton et al.

(1997) found that CEO dismissal by boards of directors on which venture capitalist(s) reside have a significant positive effect on firm performance. Other studies also have demonstrated that VC involvement in management of private ventures has positive impact on venture growth (Lerner, 1995; Megginson & Weiss, 1991). Indeed, scholars have demonstrated that venture capitalist effectively screen the ventures they back and help certify the quality of their IPOs (Espenlaub et al., 1999). These arguments suggest that the relationship between pre-IPO management team restructuring and firm performance will be stronger in a VC-controlled firm than that in a non-VC-controlled firm, simply because of the above benefits VCs bring to the firm. Therefore, I expect,

Hypothesis 14: Pre-IPO management team restructuring has a positive effect on firm performance.

Hypothesis 15: The positive relationship between pre-IPO management team restructuring and firm performance will be strengthened when the firm is controlled by VCs.

POST-IPO EXECUTIVE EXIT, EXECUTIVE BACKGROUND, AND FIRM PERFORMANCE

The previous discussion on antecedents of executive exit in the IPO context suggests that executive exit may originate from resource-dependency concerns or socio-political concerns, or both. As discussed earlier, a major reason for executive exit in the IPO firm is because the venture's growth outpaces the skills and capabilities of its executives. If replacing an executive is intended to remedy the skills or resource limitations of the founding team, the exit is likely to have a positive impact on firm

performance. This logic is consistent with resource-based theory (Barney, 1991; Wernerfelt, 1984). Because the entrepreneurial team constitutes the fundamental set of knowledge-based resources for a new venture (Chandler & Jansen, 1992), the removal of incapable executives and hiring of better ones will enhance the overall skills and capabilities of the entrepreneurial team, and therefore have a positive impact on subsequent performance. On the other hand, as previously discussed, the entrepreneurial setting presents a fertile arena for political contests among various players, executive exits resulting from power contests may not have positive effect on firm performance, because power contests involves divergent motivations and self-interests of powerful parties of the firm. Prior research on large company executive succession suggests that politically oriented management change is likely to have a negative impact on organizational performance (Ocasio, 1994). Therefore, executive exit originating from political contests in IPO stage firms may have a negative impact on firm performance.

The above arguments suggest that we can use exiting executive's background to identify the extent of political contests in post-IPO stage firms. The logic is very straightforward. After the IPO, the firm develops to a new growth stage in which managerial and financial skills are gaining increasing importance (Virany & Tushman, 1986). Therefore, if the exiting executive had prior public company managerial/financial experience, it is expected that such exit will have negative impact on subsequent firm performance. This is because, on one hand, the exit weakens the resource and knowledge base of the management team; on the other hand, such exit

indicates there is a high degree of political and power contest within the firm, because executives with the highly needed expertise are forced out from the company.

Therefore, I expect:

Hypothesis 16.1: The exits of executives with prior public company managerial experience in the post-IPO stage negatively affect firm performance.

Hypothesis 16.2: The exits of executives with prior public company financial experience in the post-IPO stage negatively affect firm performance.

SUMMARY

The present chapter develops the hypotheses regarding the performance effects of pre-IPO management team restructuring and post-IPO executive exit. In the following chapter, I discuss the methods used for testing the hypotheses generated in the proceeding and the present chapter.

CHAPTER V

METHODOLOGY

This chapter describes the methodology used to test the hypotheses developed in Chapter III and Chapter IV. It consists of three sections. The first section describes the sample and data collection process. The second section discusses measurement issues. The last section describes the statistical methods employed in this research.

SAMPLE

I focus the analysis on the U.S. biotechnology industry. The reasons for choosing the biotechnology industry are as follows. First, previous studies have shown that initial public offerings (IPOs) are critically important to the biotechnology industry due to the capital-intensive nature of this industry (Finkle, 1998). Because IPOs are a critical part of the study, I need a sample frame with an adequate number of IPO firms. Second, the biotechnology industry is one in which highly specialized scientific expertise is the driving force behind the creation of the firm (Nonaka, 1994). The knowledge-intensive nature makes the biotechnology industry an ideal setting for investigating how executives' knowledge and the skills they bring in the venture might influence the power distribution of the management team and how that power may shift during the different developmental stages of the firm. Third, most previous research that has studied executives and/or founding teams in the IPO context are conducted in the biotechnology industry (Gulati & Higgins, 2003; Stuart, Hoang, & Hybels, 1999). Thus using a sample of biotech IPO firms allows us to compare the findings of the present study with previous ones.

IPOs made between January 1, 1991 and December 31, 1999 were identified from the Securities Data Corporation database (SDC). Using the global new issuers database (U.S. public common stock only) in the SDC database and restricting the IPO firm's primary industry to biotechnology (the Standard Industry Codes are 2836 and 8731, representing biological products, except for diagnostic substances, and commercial physical and biological research respectively), a total of 156 companies were identified as dedicated biotechnology IPO firms in the initial sample.

Several steps were taken before the final sample was obtained. First, as the study is focusing on independent entrepreneurial firms, IPO firms that are either spin-offs or subsidiaries of large firms were excluded, as these firms are not really start-ups (this step excluded 12 firms from the original sample). Second, to restrict the analysis to small venture firms, those with 500 (or above) employees or assets of over 500 million, or those that had been established for more than eight years at the time of IPO were excluded (this step excluded 23 firms from the original sample). These sampling criteria are in line with previous studies on new ventures (McDougall, Shane, & Oviatt, 1994; Robinson, 1999; Welbourne & Andrews, 1996). In addition, 27 firms had to be dropped because their IPO prospectuses are not available, leaving 94 firms in the final sample.

As the present study investigates management team and executive changes in both pre- and post- IPO periods, multiple data sources were used. A key data source is the prospectus the firm registered with the SEC prior to the IPO. The prospectus contains a wealth of information regarding the firm's management, its business, the risks it faces, and the capitalization of the offering. For the current study, a large portion of

data about the pre-IPO firm, such as executive backgrounds, management team composition, principal investors, lead underwriters, and financial performance were all collected from prospectus. For executives exited before the IPO, the background data were collected from company documents the firm registered with the SEC before the prospectus date (such as S-1 registration statement) as well as company websites. The executive exit events were also double checked with the "history of executive change" section in the investor reports listed in the Business and Industry Research Center Database.

Post-IPO executive exit was identified through a comparison of the management section of each firm's prospectus with the officer-and-director list of each annual report. The latter were collected from Compact Disclosure.

Two types of firm performance are investigated in this study: the firm's IPO performance and its financial performance in the post-IPO period. Data on IPO performance were collected from the SDC database, and data on post-IPO financial performance were obtained from COMPUSTAT and CRSP.

MEASURES

The following section discusses measures used for testing the hypotheses developed in the previous chapters. As the present study examines management team restructuring and executive exit pre- and post-IPO, as well as their performance implications, measures for testing hypotheses in these three parts are discussed separately.

Antecedents of Management Team Restructuring and Executive Exit in the Pre-IPO Stage

Dependent Variables

Pre-IPO Management Team Restructuring. Pre-IPO management team restructuring measures how frequent the management team changes its members (adding or dropping executives) prior to the IPO. To test the immediate effect of the upcoming IPO event on the top management team, in this study, I define pre-IPO period as the two-year-period before the firm's IPO. Pre-IPO management team restructuring in this period (RESTRU) is defined as:

$$\frac{\left(\begin{array}{c}Number\\ of\\ Executive\\ Entries\end{array}\right)+\left(\begin{array}{c}Number\\ of\\ Executive\\ Exits\end{array}\right)}{\left(\begin{array}{c}Management\\ Team\\ Size\\ at\\ IPO\end{array}\right)}$$

Pre-IPO Executive Exit. Executive exit events were identified from prospectuses as well as various types of company documents the firm filed with the SEC before the IPO. In this study, if the executive is reported as a resigned or a former executive, and no longer employed with the firm, he/she is counted as an exiting executive. Exits due to death, illness and mergers were excluded from the sample. A dummy variable PREEXIT was created, and was coded as 1 if the executive exited the firm within two years prior to the IPO, and otherwise 0.

Independent Variables

VC Control. Venture backing refers to the existence of venture capital involvement prior to the IPO (Barry et al., 1990). A dummy variable, VC control (VCCONTROL), was coded as 1 if 50% of the shares of the IPO firm are controlled by venture capital firms before the IPO, and otherwise 0. Venture capital backing information was obtained from the SDC database and verified against each firm's prospectus. VC ownership percentage information was collected from the prospectus.

VC Prestige. VC prestige is measured with a dummy variable (NVCA). Venture capital firms which are members of National Venture Capital Association (NVCA) are considered to be high prestigious VCs. Established in 1973, the National Venture Capital Association (NVCA) is the trade association that represents the venture capital industry, and currently is the U.S. venture capital industry's leading source of advocacy, networking, professional development and information. For non-VC backed firms, this variable is equal to zero.

Technical Skills. Technical skills was operationalized through a dummy variable. If an executive's primary position shown in the prospectus is in technology (for example, research and development), a dummy variable TECH was coded as 1, and 0 otherwise.

External Directorships. An executive's external directorships serve as a signal of the executive's knowledge and experience as well as a proxy of social capital brought to the firm (Kassinis & Vafeas, 2002). A dummy variable EDIR was created to reflect if the executive holds directorships in other companies as of the prospectus date. These data were collected from prospectuses and Compact Disclosure.

Founding Status. A dummy variable FOUNDER was used to capture whether an executive is the founder (or co-founder) of the firm, with 1 indicating the founder, and 0 otherwise. The founder information was acquired from company profiles and prospectuses.

Control Variables

To test the hypotheses regarding management team restructuring and executive exit, pre-IPO firm performance, firm size, firm age at the IPO year, and firm development stage (whether the firm has started to commercialize its products) were used as firm level control variables. To test the hypotheses regarding executive exit, other than the above mentioned firm-level control variables, executive tenure and executive ownership were also included.

Previous research has suggested that good recent firm performance leads to a lower likelihood of management team change and executive exit (Kesner & Sebora, 1994). Accordingly, firm performance in the pre-IPO period was used as a control variable. Researchers have suggested that measuring private startup performance is problematic as these firms are typically young and have limited track records (Stuart et al., 1999). In particular, in the biotechnology industry, the large need for capital investment in research and development, and the very long product cycles (Deeds, Decarolis, & Coombs, 1997) makes traditional profitability-based performance measures inappropriate for this setting. Instead, growth measures have been commonly used to measure new venture performance (Baum, Calabrese, & Silverman, 2000; Eisenhardt & Schoonhoven, 1990; McDougall & Oviatt, 1996). In this study, I use two growth

measures of pre-IPO performance. One is the average growth rate in revenue per asset during the pre-IPO years (REVGROWTH), as revenue generation is also critical important for early stage firms (Baum et al., 2000). Revenue and asset data were collected from financial reports in each firm's prospectus. Another dimension of growth of the venture, the firm's average growth rate in research and development expenditure during the pre-IPO years (RDGROWTH), which serves as a proxy of firm's innovation capability (Baum et al., 2000), was also created as a control.

Three other firm-level variables were also included as controls. First, firm developmental stage was created as a control, based on whether the firm's products have been commercially introduced into the market or not. In many firms preparing for an IPO, no actual product has been commercially introduced. As the market introduction of the first product significantly changes the firm's dominant problem (Kazanjian, 1988) and thus the management skills required of executives, it is important to differentiate firms in these two different stages. Therefore, firm developmental stage (STAGE) was created with a value of 0 for the firms in the pre-sales development stage and 1 for the firms that have commenced sales. Second, firm age at the IPO (AGEIPO) was created as a control because it is an important indicator of the life cycle of an organization. Firm age at the IPO was calculated as the difference between a firm's IPO year and the founding year. Third, firm size, operationalized by the number of employees (EMPL) and average total assets in the two years prior to the IPO (FIRMSIZE), were also included as control variables.

To test the hypotheses of executive exit, aside from these firm level control variables, executive ownership before the IPO (PREOWN) was included to capture the

power of executives, as ownership is a clear indicator of dominance in the firm (Allen & Panian, 1982; Cannella & Lubatkin, 1993; Ocasio, 1994). Executive ownership was calculated as the percentage of total ownership held by the executive prior to the IPO. In addition, executive tenure (TENURE) was used as a control variable. Executive tenure was calculated as the difference between the IPO year and the year the executive first joined the company.

Antecedents of Executive Exit in the Post-IPO Stage

Dependent Variable

Post-IPO Executive Exit. A post-IPO executive exit event is defined as one where an executive in the management team at the time of IPO leaves the focal firm in three years after the IPO. At the end of each of these three years, for each executive, a dummy variable EXIT was created, and was coded as 1 if the executive exits the firm, otherwise 0.

Independent Variables

Addition of Outside Directors. Previous research on governance has shown that investors tend to align the board with their interests through board re-composition by using their ownership power (Mace, 1971). This is particularly important in the IPO process when outside ownership increases substantially. New outside directors were identified through comparison between the firm's current director list and the previous year's. A count variable NEWDIRS was used to measure the addition of outside directors, which records the number of new outside directors in each year after the IPO.

Pre-IPO Management Team Restructuring. See "Pre-IPO Management Team Restructuring" in previous section.

Addition of Post-IPO New Senior Executives. Outside new executives were identified from the comparison between the prospectus and the annual reports at the end of each fiscal year in the three years after the IPO. A count variable (NEWEXECS) was created to record the number of new senior executives joining the company in each year.

Prior Public Company Managerial Experience. As discussed above, each executive's background information was obtained through prospectuses, annual reports, and company websites. If the executive had worked for a public company as top executive before joining the founding team, the dummy variable PUBLIC was coded to 1, and otherwise to 0. Executive's prior employer information was collected from the prospectus.

Formal Business Education. Executive formal business education was defined as having a degree in a business major. A dummy variable UBUS was coded as 1 to identify those executives who had obtained undergraduate level degrees in business. A dummy variable GBUS was coded as 1 if the executive had a graduate level degree in business (MBA or MS in business).

Prior Public Company Financial Experience. Because of the importance of financial expertise in a public firm (Hambrick & Mason, 1984), the present study links financial executives' prior public company financial experience to their post-IPO exits. A dummy variable PPFIN was created. It was coded as 1 if the financial executive had

worked as a chief or senior financial officer in a public company before joining the IPO firm, and otherwise 0.

Technical Skills. Executive technical skills were operationalized through a dummy variable. If an executive's primary functional background was in technology (i.e., research and development), a dummy variable SCI was coded as 1, and 0 otherwise.

Founding Status. See "Founding Status" in previous section.

Post-IPO Financial Performance. Firm financial performance is proposed to have moderating effects on the positive relationships between political structure changes and executive exits in the post-IPO period. Shareholder return (RETURN) was used to measure the market-based performance of the firm. IPO firms showing superior stock return performance in the post-IPO period are commonly considered successful. The shareholder return was calculated by compounding the daily returns to shareholders from CRSP tapes over each fiscal year. In addition, a dummy variable was also created to differentiate high or low return of the firms. If the shareholder return is lower than the average industry value-added shareholder return, the dummy variable was coded as 1; for firms with shareholder return higher than this average, the dummy variable was coded as 0.

Control Variables

Several controls used under the pre-IPO scenario can be applied to the post-IPO stage. First, researchers have found that IPO firms are quite heterogeneous in the development stages of their product. I used a dummy variable, firm developmental

stage (STAGE), to measure this. The dummy was set to 1 if the firm has commercially introduced their product in the market, and 0 if the firm's product is still in the developing stage. Similarly, firm age (FIRMAGE) was also included as a control since it was importantly related to firm growth. To capture the level of managerial complexity faced by the executive, firm size (FIRMSIZE) was also included as a control. In the post-IPO scenario, it was calculated as the natural logarithm of the total assets of the firm during each fiscal year after the IPO. In addition, top management team size (TEAMSIZE), executive's tenure (TENURE) and post-IPO ownership (POSTOWN) were also included as control variables in the model of post-IPO executive exit. Executive post-IPO ownership was collected from prospectuses, and was measured as the percentage of shares the executive owns after the IPO.

Performance Effects of Pre-IPO Management Team Restructuring and Post-IPO Executive Exit

Dependent Variable (Pre-IPO Restructuring-Performance Model)

Firm Performance. To test the performance implications of pre-IPO management team restructuring, I examined the IPO performance of the firm. Two measures were used to evaluate the firm's IPO performance. First, I followed Welbourne and Andrews (1996) and used the firm's stock price premium (PREMIUM) on the first trading day to measure its IPO performance. This measure has also been used by other scholars (e.g., Certo, 2003, etc.). According to Welbourne and Andrews (1996), the price premium reflects the amount of stock price that is beyond the book value, and therefore it represents the perceived value of the firm. The formula is as

follows: percent price premium = (stock price – book value) / (stock price). The stock price refers to the closing price of the firm's stock on the first trading day. Both stock price and book value are reported in the SDC database. Second, following Stuart et al. (1999), I used the firm's pre-money market valuation as the second measure to opertionalize the IPO performance. The pre-money market valuation of an IPO firm was calculated as follows:

$$V = \left(p_u q_t - p_u q_i \right)$$

where p_u is the final IPO subscription price;

q_t is the number of shares outstanding;

q_i is the number of shares offered in the IPO;

V is therefore the market valuation of the IPO firm just preceding the first day of trading. As it is the total market capitalization less the dollar amount raised through the IPO, it represents the market's assessment of the value of an IPO firm (Stuart et al., 1999)

Independent Variable (Pre-IPO Restructuring-Performance Model)

Pre-IPO Management Team Restructuring. See "Pre-IPO Management Team Restructuring" in previous section.

Moderating Variable

VC Control. See "VC Control" in previous section.

Control Variables

Studies have shown that the underwriter's prestige has an important influence on the firm's IPO performance as it reduces the uncertainty of investors and grants legitimacy to the IPO firm (Higgins & Gulati, 2002; Rasheed et al., 1997; Stuart et al., 1999). As such, it was included as control variable (UWRANK). I adopted the widely-used Carter-Mannaster Reputation Ranking for IPO Underwriters 1980-2000 (revised by Jay Ritter, 2003)[1]. The assigned ranking is on a 0-9 scale, with 9 as the highest reputation. Risk factor (RISK), another control variable, was introduced into analysis as it represents the risk surrounding an IPO firm. Following Certo et al. (2001a) and Cyr et al. (2000), I used the count of the individual risks factors listed in each firm's prospectus as the measure. Lastly, firm developmental stage, average growth rate in research and development expenditures, and number of employees were also included as control variables.

Dependent Variable (Post-IPO Exit-Performance Model)

Firm Performance. To test the performance implications of post-IPO executive exit, both accounting-based and market-based performance measures were used. I used the average financial performance three years following the post-IPO executive exit to assess the exit effect. This is consistent with previous studies (e.g., Kesner & Dalton, 1994). Firm performance was measured with average return on assets (AVRETURN) during the first three years following the year of executive exit,

[1] For the construction of Carter-Mannaster Reputation Ranking, see Carter and Manaster (1990).

and average shareholder return (AVRETURN) during the fist three years following the exiting year.

Independent Variables

Exits of Managerial Executives. Exits of executives with prior managerial experience in public companies (PPGMEXITS) were measured as the sum of exiting executives in the post-IPO period who had prior managerial experience in public companies.

Exits of Financial Executives. Exits of executives with prior financial experience in public companies (PPINEXITS) were measured as the sum of exiting executives in the post-IPO period who had prior financial experience in public companies.

Control Variables

The following control variables were included in the analysis of the performance consequences of post-IPO executive exit. First, firm performance of the exiting year was controlled. Prior ROA (ROA_1) was calculated as the ROA during the year of executive exit. Prior shareholder return (RETURN_1) was calculated as the shareholder return in the exiting year. Second, firm size was controlled as firm size has been suggested as an important determinant of firm performance (Porter, 1979). In this model, firm size was measured as the natural logarithm of the firm's total assets during the fiscal year when the executive exit occurs. Lastly, firm's research and development expenditures at the exiting year and firm developmental stage (at the IPO time) were also included as control variables.

STATISTICAL METHODS

To test the hypotheses developed in the Chapter III and Chapter IV, multiple linear regression, Poisson regression, logistic regression and event history analysis were used. These models are discussed as follows.

Multiple Regression Analysis

Multiple linear regression analyses was used to test the antecedents of pre-IPO management team restructuring, the performance effects of pre-IPO management team restructuring and the performance effects of post-IPO executive exit.

In general, the statistical model of multiple linear regression is specified as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_1 X_2$$

where Y is the vector of dependent variable;

β_0 is the vector of constants;

X_1 is the vector of independent variables and control variables;

β_1 is the vector of estimated coefficients of vector X_1;

X_2 is the vector of moderating variables;

β_2 is the vector of estimated coefficients of vector $X_1 X_2$.

Poisson Regression Analysis

Poisson regression analysis was used to test the model of antecedents of new executive entry in the pre-IPO stage. Poisson regression is often used to analyze count data. It can be used to model the number of occurrences of an event of interest or the rate of occurrence of an event of interest, as a function of some independent variables.

In present study, the dependent variable of the model is the sum of new executive entries in the firm during the pre-IPO years. In Poisson regression it is assumed that the dependent variable -- number of occurrences of an event, has a Poisson distribution given the independent variables. The maximum likelihood method is used to estimate the parameters of Poisson regression models. The Poisson regression model is specified as follows:

$$\mu_i = Exp(a + b_1 X_{1i} + b_2 X_{2i} + \ldots + b_k X_{ki})$$

where μ is the expected number of counts for the i^{th} observation.

Logistic Regression Analysis

Logistic regression was used to test the model of antecedents of pre-IPO executive exit. Logistic regression allows one to predict a discrete outcome using a set of independent variables that may be continuous, discrete, dichotomous, or a mix of any of these. In the power model, the dependent variable is whether or not the executive leaves the firm during the two years prior the IPO. Logistic regression applies maximum likelihood estimation after transforming the dependent variable into a logit variable (the natural logarithm of the odds of the dependent variable occurring or not). Unlike OLS regression, logistic regression does not assume linearity of relationship between the independent variables and the dependent, and does not require normally distributed variables, does not assume homosceddasticity, and in general has less stringent requirements.

In general, the logistic model is specified as below:

$$Logit\left[\theta(x)\right] = \log\left[\frac{\theta(x)}{1-\theta(x)}\right] = \alpha + \beta_1 x_1 + \beta_2 x_2 + ... + \beta_i x_i$$

where Logit [θ(x)] is the logarithm of the odds of occurrence of the interested event.

Cox Proportional Hazard Analysis (Event History Analysis)

Event history models are designed to analyzing longitudinal data when the dependent variable is a discrete event and timing of the event's occurrence is of particular interest (Yamaguchi, 1991). In general, event history analysis is concerned with the patterns and correlates of the occurrences of events. In present study, event history analysis was used to test the model of antecedents of post-IPO executive exit.

In present study, the data were converted into executive-year units. For each executive-year, the dependent variable exit is coded 1 if an executive exit occurred in that year, and 0 otherwise. The independent variables were assigned the values they had in each person-year, which includes both time-dependent and time-independent variables. Since the interval between the IPO year and the first fiscal year are not the same across the sample firms, a Cox proportional hazard model was chosen. The hazard in present model was defined as the probability that an executive exit in the interval from t to $t+s$, given that the executive was at the risk of exit at time t. Partial likelihood estimations were used in the Cox model.

In general, a Cox proportional hazard model is specified as:

$$h_i(t) = h_0(t)\exp[\sum b_k X_{ik}(t)]$$

where $h_0(t)$ is the baseline hazard function,

$X_{ik}(t)$ is the value of the k^{th} co-variate for executive i at time t.

SUMMARY

This chapter discusses the methodology to be used to test the hypotheses generated in Chapter III and Chapter IV. Data sources, sampling procedures, measures and statistical methods were discussed. The following chapter will present the results from the analyses respectively.

CHAPTER VI

STATISTICAL ANALYSIS AND RESULTS

Each of the hypotheses developed in the previous chapters were tested and the results of the tests are reported in this chapter. The chapter consists of the following four parts: (1) the tests on the hypotheses regarding the antecedents of management team restructuring and executive exit in the pre-IPO stage; (2) the tests on the hypotheses regarding the antecedents of executive exit in the post-IPO stage; (3) the tests on the hypotheses of performance effects of pre-IPO management team restructuring; and (4) the tests on the hypotheses of performance effects of post-IPO executive exit. In each part, I will present the descriptive statistics of all variables included in the model, followed by the analysis and results.

ANTECEDENTS OF MANAGEMENT TEAM RESTRUCTURING AND EXECUTIVE EXIT IN THE PRE-IPO STAGE

The Model of Antecedents of Pre-IPO Management Team Restructuring

Descriptive Statistics

Table 1 presents the means, standard deviations, and the Pearson correlations of all the variables in the study of antecedents of pre-IPO management team restructuring (N=92 because two outliers were dropped from final analysis, see discussion below). During the two years before the IPO, over 50% of sample firms have management team restructuring ratios greater than 58% (median=.586), suggesting a high rate of team restructuring, on average, in pre-IPO stage firms. Average total assets (log) and number

of employees (log) were found to be highly correlated (correlation coefficient =.760, p<.001), suggesting that only one of the two might be needed in the model.

Analysis

Multiple linear regression models were used to test hypothesis 1.1 and hypothesis 1.2. Preliminary regressions showed that neither average total assets (log) nor numbers of employees (log) has significant effect on management team restructuring. Therefore I just choose average total assets (log) as the firm size control. Leverage scores, studentized residuals, DF-Fit scores, and Cook's distance statistics were calculated to detect outlier problems. The results consistently indicated two outliers had extraordinary influential effects on the regression models; therefore they were dropped for the final analyses.

Stepwise regression models were made as follows. The first model (model 1 in Table 2) only includes four control variables (firm age, firm size, firm performance, and firm developmental stage). Hypothesized variables were added to the model one by one (model 2 and model 3 in Table 2). Finally, the integrated management team restructuring model was estimated (model 4 in Table 2). For each of the four models, the Skewness-Kurtosis tests and the Cook-Weisburg tests were conducted on residuals to test normality and homoscedasticity assumptions. The results indicated that the residuals are nearly normally distributed [2] and there were no heteroscedasticity problems. In addition, no multicollinearity relationships exit among the independent

[2] Although the p-values for skewness test are slightly less than .05, the joint Skewness/Kurtosis tests fail to reject the null hypotheses of normality for residuals of these four models.

variables (mean VIF = 1.04, 1.04, 1.07 and 1.15 for the four models in Table 2 respectively, and none of individual VIFs is greater than 3.0).

Results

I will report the statistical evidence below, following each of the hypotheses in this pre-IPO management team restructuring model.

Hypothesis 1.1: VC control increases management team restructuring in the years immediately prior to the IPO.

This hypothesis predicts a positive relationship between VC control and pre-IPO management team restructuring during the years before the IPO. Unexpectedly, the results in Table 2 show no support for hypothesis 1.1. The coefficient for VC control is positive in model 2 (b=.030) but negative in model 4 (b=-.010). Neither coefficient is statistically significant. Therefore hypothesis 1.1 is not supported. That is, there is no evidence to support the prediction that VC control increases management team restructuring in the pre-IPO period.

Hypothesis 2.1: VC prestige increases management team restructuring in the years immediately prior to the IPO.

This hypothesis predicts a positive relationship between VC prestige and pre-IPO management team restructuring. Consistent with the hypothesis, both model 3 and model 4 in Table 2 report that VC prestige has a positive effect on pre-IPO management team restructuring (b=.094 and b=.098, respectively). However, the effect is weak and marginal ($p<.1$). Therefore hypothesis 2.1 is weakly supported.

Among control variables, I found firm age at the IPO year had a significant negative relationship with pre-IPO management team restructuring (b=.1, p<.001 in all four models of Table 2), suggesting that a young firm may have higher rate of restructuring in the management team than a more established firm before going to IPO.

Besides looking at management team restructuring in this period, as noted earlier, I conducted additional analyses on pre-IPO new executive entries, to further develop our understanding of the process of management team restructuring. In this model, the dependent variable is PREENTER, standing for the sum of new executives entering the management team during the pre-IPO period. Since the dependent variable is a count variable, Poisson regression was used to test the hypotheses. The following section will report the descriptive statistics, analyses and results of this model.

The Model of Antecedents of Pre-IPO New Executive Entry

Descriptive Statistics

Table 3 presents the means, standard deviations, and correlations of all the variables in the model of antecedents of new executive entry. Similarly, the significant positive correlation between the two firm size measures, average total assets (log) and number of employees (log) suggests only one measure is needed. Initial regression results suggest that neither has a significant effect in the model. However, when comparing the Poisson goodness of fit chi-square, using number of employees (log) gives a smaller chi-square and a higher p-value (.08), suggests a model with better fit. For this reason, in this model, I chose number of employees (log) as the firm size control.

Analysis

Long (1997) suggests that the Poisson regression model rarely fits in practice as in most applications the variance of the count data is greater than the mean. To test if this overdispersion problem exits the current count data, I performed a negative binomial regression, using the same variables. The alpha value from the negative binomial regression is .033, which is very close to zero. In addition, the likelihood-ratio test of H_0 that alpha equals zero shows that we could not reject the null hypothesis (p>.189). Therefore, the observed data are Poisson distributed, and there is no need to conduct the negative binomial regression. The results of the Poisson goodness of fit tests supported this notion (Table 4). I first ran a Poison regression analysis of antecedents of new executive entry with only control variables entered as predictors. Then I entered VC control and VC prestige into the analysis. Lastly I ran the analysis with all the variables.

Results

Statistical results from Poison regressions are presented as below, following each of the hypotheses in the model of antecedents of new executive entry in the pre-IPO stage.

Hypothesis 1.2: VC control increases new executive entry in the years immediately prior to the IPO.

This hypothesis predicts that VC control increases the number of new executive entries in the pre-IPO period. Contrary to my speculation, model 4 in Table 4 reports that VC control is negatively associated with the number of new executive entries during

the two years prior to the IPO (b=-.010, p<.1), although the effect is very marginal. In model 2 of Table 4, I found no significant relationship between VC control and the number of new executive entries. Hence hypothesis 1.2 is not supported.

Hypothesis 2.2: VC prestige increases new executive entry in the years immediately prior to the IPO.

This hypothesis predicts a positive relationship between VC prestige and the number of new executive entries in the pre-IPO period. Model 3 and model 4 in Table 4 indicate that VC prestige is significantly and positively associated with the number of new executive entries in pre-IPO stage firm (b=.209, p<.1 in model 3, and b=.299, p<.05 in model 4). Therefore hypothesis 2.2 is supported.

Among the control variables, all the models in Table 4 consistently indicate that firm age at the year of IPO had a very strong negative relationship with the number of new executive entries in the pre-IPO period (p<.001). Firm size, measured as the logarithm of number of employees, was reported to have a positive relationship with the number of new executive entries during the pre-IPO years (p<.05). All four models in Table 4 support this association. The coefficients of firm performance and firm development stage are negative in all four models in Table 4, but neither is significant.

The Model of Antecedents of Pre-IPO Executive Exit

Descriptive Statistics

There are a total of 58 pre-IPO executive exits among all the executives (N=640). The percentage is about 9.06%. Table 5 and Table 6 summarize the distributions of

individual level and firm level independent variables over total 58 pre-IPO executive exits respectively.

As shown in Table 5, among the 58 pre-IPO exiting executives, 14 cases (24.24%) are technical executives and 44 cases (75.86%) are non-technical positions in the firms. Among total 239 technical executives, only 14 executives left the company before the IPO (5.86%), suggesting that technical executives face less risk of exit during the pre-IPO period. The associated Person Chi-square test shows that the difference between technical and non-technical executives is significant ($p<.05$). Similarly, the table indicates that among the 107 founders, only nine of them (8.41%) left the company before the IPO. Among the 58 exiting executives, founders accounted for 15.52%. Also, as the table shows, among all 67 executives who hold external directorships in other companies, only seven of them exited prior to the IPO; they accounted for 12.07% of the exiting executives. However, for the latter two measures, Pearson Chi-square tests yielded no significant results.

Table 6 shows that, among 58 exiting executives, 25 cases (43.1%) were exiting from VC-controlled firms. The 25 executives only accounted for 10.87% of a total 230 executives of VC-controlled firms. In addition, among the 58 exiting executives, executives of the firms backed by prestigious VCs accounted for 41.38%. In both tabulations, the results of Pearson Chi-square tests were not significant.

The means, standard deviations, and correlations of all the variables in the model of antecedents of executive exit are summarized in table 7.

Analysis

Logistic regression was used to test the model of antecedents of pre-IPO executive exit. I first ran model 1 with the five control variables (executive tenure, executive ownership, firm developmental stage, number of employees, and firm average growth rate in R&D expenditures). Then the two sets of independent variables, firm-level and executive-level variables, were entered in the model 2 and model 3 separately and sequentially. Finally, an integrated model (model 4) included all the variables.

Several diagnostic steps were taken before running the models. First, I checked for multicollinearity in the independent variables. I used the dependent variable in the logistic models as the dependent variable; and then ran four multiple linear regressions on all the independent variables included in the four models. The mean of VIF was 1.08, 1.14, 1.17 and 1.20 respectively, also none of the independent VIFs is greater than 3.0, indicating no sign of a multicollinearity problem in the independent variables in all the four models. Next, I examined the issue of discrimination problem; the cross tabulations shown in Table 5 and Table 6 indicate no sign of such problem[3]. Third, change in Person Chi-square Statistics and Pregibon's dBeta were calculated to detect any influential patterns in the integrated model. Among 545 covariant patterns, 8 patterns (associated with 9 executives in the sample) were identified to have substantial influences on model regression. Removal of these observations lead to significant overall improvement of the model. In the following section, regression results on the original sample and the reduced sample were both reported. (Table 8 and Table 9).

[3] In fact, STATA can automatically handle the issue of discrimination.

Results

Results from logistic regressions are reported below, following each of the hypotheses in the model of antecedents of pre-IPO executive exit.

Hypothesis 1.3: VC control increases the likelihood of executive exit in the years immediately prior to the IPO.

This hypothesis predicts that there is a positive relationship between VC control and the likelihood of executive exit in the pre-IPO period. Model 2 and model 4 in Table 8 and Table 9 test this hypothesis. Although the signs of the coefficients are positive as predicted, none of the coefficients is statistically significant (b=.299 in model 2 of Table 8, b=.253 in model 4 of Table 8, b=.383 in model 2 of Table 9, and b=.347 in model 4 of Table 9). Therefore hypothesis 1.3 is not supported.

Hypothesis 2.3: VC prestige increases the likelihood of executive exit in the years immediately prior to the IPO.

This hypothesis predicts that VC prestige positively affects the likelihood of pre-IPO executive exit. Model 2 and model 4 in Table 8 and Table 9 test this hypothesis. Surprisingly, the signs of the coefficients are negative (b=-.324 and b=-.313 in model 2 and 4 of Table 8 respectively; b=-.569, and b=-.565 in model 2 and model 4 of Table 9 respectively). Among these coefficients, only the one in model 2 of Table 9 is weakly significant ($p<.1$), all others are not statistically significant. Therefore, hypothesis 2.3 is not supported.

Hypothesis 3: Technical skills decrease the likelihood of executive exit in the years immediately prior to the IPO.

This hypothesis predicts that being a technical executive decreases the likelihood of exit in the pre-IPO stage. Model 3 and 4 of Table 8 and Table 9 test this hypothesis. Results from the four models indicate that being technical executive has a significant negative relationship with executive exit (b=-.730 in model 3 of Table 8, b=-.712 in model 4 of Table 8, b=-.831 in model 3 of Table 9, b=-.814 in model 4 of Table 9; $p<.05$ in all the models). Hence, hypothesis 3 is strongly supported.

Hypothesis 4: External directorships decrease the likelihood of executive exit in the years immediately prior to the IPO.

This hypothesis predicts that executive's external directorship is negatively associated with the likelihood of executive exit in the pre-IPO period. Model 3, model 4 in Table 8 and Table 9 test this hypothesis. The reported coefficients are inconsistent in sign, and none is statistically significant (b=-.102, b=-.079, b=.193, b=.232 in the four models respectively). Therefore hypothesis 4 is not supported.

Hypothesis 5: Founding status decreases the likelihood of executive exit in the years immediately prior to the IPO.

This hypothesis predicts a negative effect of executive founding status on pre-IPO executive exit. Model 3 and 4 of Table 8 and Table 9 test this hypothesis. All the four coefficients in these models are negative as predicted (b=-.204, b=-.207 in model 3 and 4 of Table 8 respectively; b=-.009, b=-.002 in model 3 and 4 of Table 9 respectively), but none of them is statistically significant. Therefore hypothesis 5 is not supported.

Among control variables, executive tenure is unexpectedly reported to be positively associated with the likelihood of pre-IPO exit. This relationship is marginally significant ($p<.1$) in the full-sample model (models 1-4 of Table 8), but is more significant ($p<.05$) in the reduced-sample model (models 1-4 of Table 9). I also found executive exit is negatively associated with firm size (measured by number of employees) ($p<.05$ in models 1, 3, 4 of Table 8, and $p<.01$ in model 1 and model 3 of Table 9). The regression models report that executive ownership has a negative relationship with executive exit in the pre-IPO period, but this association is only marginally significant ($p<.1$).

ANTECEDENTS OF EXECUTIVE EXIT IN THE POST-IPO STAGE

The Model of Antecedents of Post-IPO Executive Exit

Descriptive Statistics

The unit of analysis of this model is the executive-year. Among the total 1,447 observations, 249 executive exits occurred in the risk period – the three years after the IPO. The distributions of these exits over the years are described in Table 10. The table shows a decreasing rate of executive exit in the first three years following the IPO. As shown in the table, among the total 249 executive exits, 113 cases (45.38%) occurred during the first year after the IPO. 83 cases (33.33%) occurred in the second year following the IPO, and 53 cases (21.29%) took place in the third year after the IPO.

The model of post-IPO executive exit includes both firm level and individual level antecedents of executive exit in the post-IPO period. In particular, I am interested in the distributions of executive exits among several executive-level characteristics such

as education, founding status, and prior work experience. Due to the large number of independent variables, I only report those of which Pearson Chi-Square tests were significant (Table 11). As shown in Table 11, among 249 post-IPO executive exits, there are 202 cases (81.12%) where the executive did not have prior public company management experience. For founding status of exiting executives, among the 249 executives, 29 cases (11.65%) were founders, and 220 cases (88.35%) were non-founders. For formal business education, among these exiting executives, only 62 cases (25%) had earned graduate degree in business; 187 cases (75%) did not have formal business education at a graduate level.

The above comparisons suggest that executives with prior public company management experience and/or with formal business education at a graduate level, may have a lower likelihood of exit in the post-IPO period. Similarly, the risk of turnover of a founder executive is seemingly lower than a non-founder.

The means, standard deviations, and correlation coefficients of all the variables were reported in Table 12 and Table 13. Multicollinearity test shows there is no such threat to the variables included in the model (mean of VIF=1.39, and none of the individual VIFs is greater than 3.0).

Analysis

To test the hypotheses, I used Cox event-history model. In general, event-history analysis enables us to make causal inferences about how changes in one variable affect the likelihood that the focal event will occur (Blossfeld & Rohwer, 1995). For

each of the three years that an executive was at risk, I created a separate observation record. The final sample had 1,447 executive-year observations.

One of the assumptions of Cox hazard model is that the hazard for any one individual is proportional to the hazard for any other individual. Although the importance of meeting this assumption is debated in the literature (Allison, 1984), it is recommended that groups need to be stratified if their survivor functions are not proportional. Therefore I ran the long-rank tests for the categorical independent variables included in the Cox hazard model. The results indicated that survivor functions of founder executives and non-founder executives are significantly different from each other ($p>Chi2 = .005$). Therefore, in addition to the Cox proportional hazard model, I ran a separate stratified Cox model using stratified estimations to test the hypotheses as well. Actually this is another advantage of using Cox model, that is, it allows the estimation of stratified models.

In each of these models, the regressions were made as follows. I first ran a model only with seven control variables. Then two sets of firm-level independent variables and executive-level independent variables were input sequentially and separately. Then an integrated model including all the independent variables and control variables was tested. Following that, the interaction variables were included sequentially in last two models. Reports of Cox proportional hazard models and the stratified Cox models are presented in Table 14 and Table 15 respectively.

Results

Results from the Cox models are reported below, following each of the hypotheses in the model of antecedents of post-IPO executive exit.

Hypothesis 6: The addition of outside directors increases the likelihood of executive exit in the first few years following an IPO.

This hypothesis predicts a positive relationship between the addition of new outside directors and the likelihood of post-IPO executive exit. Models 2, 4, 5, and 6 in Table 14 and Table 15 test this hypothesis. In the Cox models, the directions of hazard coefficients in the first three models (without the interaction variable) are mixed (b= -.069, b= -.004, and b= .006, respectively), and none of them is significant. After entering the interaction between addition of outside directors and firm performance, model 6 in Table 14 reports a significant negative hazard coefficient (b= -.221, $p<.05$). However, the direction is opposite to what I predicted. The stratified Cox model reports the similar results. The models without the interaction term in Table 15 are inconsistent. However, the coefficient from model 6 of Table 15 is negative and significant (b=-.221, $p<.05$). Therefore hypothesis 6 is not supported. That is, no evidence to indicate that addition of new outside directors increases the likelihood of post-IPO executive exit.

Hypothesis 7: Pre-IPO management team restructuring decreases the likelihood of executive exit in the first few years following an IPO.

This hypothesis predicts that pre-IPO management team restructuring has a negative effect on the likelihood of post-IPO executive exit. Models 2, 4, 5, and 6 in

Table 14 and Table 15 test this hypothesis. In the Cox proportional hazard models, the hazard coefficients are all negative (b= -.679 in model 2, b= -.735 in model 4, b= -.721 in model 5, and b= -.736 in model 6 of Table 14 respectively) and they are statistically significant (p<.01 in all the models). The hazard coefficients in the stratified Cox models report similar results. The hazard coefficients are all negative and significant (b=-.672, p<.05 in model 2; b= -.735, p<.01 in model 4; b= -.721, p<.01; and b= -.737, p<.01 in model 6 of Table 15 respectively). Therefore hypothesis 7 is strongly supported. That is, pre-IPO management team restructuring has a significant negative impact on the likelihood of executive exit in the three years following the IPO.

Hypothesis 8: The addition of post-IPO new senior executives increases the likelihood of executive exit in the first few years following an IPO.

The hypothesis predicts a positive relationship between the addition of post-IPO new senior executives and the likelihood of post-IPO executive exit. Models 2, 4, 5, and 6 in Table 14 and Table 15 test this hypothesis. The hazard coefficients reported in the four Cox proportional models are positive as predicted. Except for model 6, in which the hazard coefficient is only weakly significant (p<.1), the hazard coefficients in all the other three models are significant (p<.05, p<.05, and p<.01 in Model 2, 4, and 5 of Table 14 respectively). The stratified Cox model shows similar results. The hazard coefficients in models 2, 4, 5, and 6 of Table 15 are positive and statistically significant (b=.091, p<.05, b=.095, p<.05; b=.190, p<.01; and b=.081, p<.1 in these models respectively). Therefore hypothesis 8 is supported. That is, the addition of post-IPO new senior executives has a positive effect on the likelihood of post-IPO executive exit.

Hypothesis 9: Prior public company managerial experience decreases the likelihood of executive exit in the first few years following an IPO.

This hypothesis predicts that executives who have prior public company managerial experience are less likely to exit the firm post IPO. Models 3, 4, 5, and 6 in Table 14 and Table 15 test this hypothesis. The hazard coefficients reported in the Cox proportional hazard models are negative and significant as predicted (b=-.302 in model 3, b=-.306 in model 4, b=-.299 in model 5, and b=-.306 in model 6 of Table 14 respectively), and all these coefficients are statistically significant ($p<.05$). The hazard coefficients reported by the stratified Cox models are negative and significant as well (b=-.302, b=-.306, b=-.300, b=-.306 in models 3, 4, 5, and 6 of Table 15 respectively). Therefore hypothesis 9 is strongly supported. That is, executive prior public company managerial experience negatively affects the likelihood of executive exit in the post-IPO period.

Hypothesis 10: Formal business education decreases the likelihood of executive exit in the first few years following an IPO.

This hypothesis predicts that formal business education negatively affects the likelihood of executive exit in the post-IPO years. Models 3, 4, 5, and 6 in Table 14 and Table 15 test this hypothesis. When undergraduate business degree is used as the measure of formal business education, the hazard coefficients reported in the Cox proportional hazard models are negative as predicted, but none of them are significant (b= -.429, b= -.487, b=-.481, b=-.508 in models 3, 4, 5 and 6 of Table 14 respectively). When graduate business degree is used as the formal business education measure, the

hazard coefficients in these models display unexpected positive signs, and are strongly significant (b=.472, p<.01; b=.487, p<.01; b=.484, p<.01; and b=.488, p<.01 in models 3, 4, 5, and 6 of Table 14 respectively). The stratified Cox models indicate similar results. The hazard coefficients for business education measured with undergraduate business degree are all negative but none of them are significant (b=-.429, b=-.487, b=-.482 and b=-.508 in models 3, 4, 5, and 6 of Table 15 respectively). When graduate business degree is used to measure formal business education, the hazard coefficients in the stratified Cox models are positive and significant (b=.472, b=.487, b=.484 and b=.488 in models 3, 4, 5, and 6 of Table 15, respectively). Therefore hypothesis 10 is not supported. That is, formal business education does not decrease the likelihood of executive exit in the post-IPO period.

Hypothesis 11: Prior public company financial experience decreases the likelihood of executive exit in the first few years following an IPO.

This hypothesis predicts that prior public company financial experience is negatively associated with executive exit in the post-IPO period. Models 3, 4, 5, and 6 in Table 14 and Table 15 test this hypothesis. The hazard coefficients reported in the Cox proportional hazard models are unexpectedly positive (b=.228, b=.276, b=.275, and b=.297 in models 3, 4, 5 and 6 of Table 14, respectively), but none of them is significant. Similarly, the hazard coefficients reported in the stratified Cox models are positive as well (b=.229, b=.277, b=.275, and b=.297 in models 3, 4, 5, and 6 of Table 15, respectively). Again, none is significant. Therefore hypothesis 11 is not supported. That is, prior public company financial experience is not negatively associated with the likelihood of post-IPO executive exit.

Hypothesis 12: Technical skills increase the likelihood of executive exit in the first few years following an IPO.

This hypothesis predicts a positive association between technical skills and the likelihood of executive exit in the post-IPO period. Models 3, 4, 5, and 6 in Table 14 and Table 15 test this hypothesis. The hazard coefficients reported in the Cox proportional hazard models are positive as predicted (b=.263, b=.290, b=.287, and b=.285 in models 3, 4, 5, and 6 of Table 14 respectively); however, all these coefficients are marginally significant ($p<.1$). These results correspond exactly the same with those of the stratified Cox models (b=.263, b=.290, b=.287, and b=.285 in models 3, 4, 5, and 6 of Table 15 respectively; $p<.1$ in all the four models). Therefore, hypothesis 12 receives weak support. That is, technical skills have a positive effect on the likelihood of post-IPO executive exit, but the effect is marginal.

Hypothesis 13.1: The positive relationship between the addition of outside directors and the likelihood of executive exit will be strengthened when the firm's financial performance is poor in the first few years following an IPO.

This hypothesis predicts a positive interaction effect on post-IPO executive exit between addition of outside directors and poor firm performance. Model 6 in Table 14 and Table 15 test this hypothesis. As shown in the tables, the coefficients for the interaction between addition of outside directors and poor firm performance in both models are positive and significant (b=.266, $p<.05$ in model 6 of Table 14; b=.266, $p<.05$ in model 6 of Table 15). Therefore hypothesis 13.1 is supported. That is, the addition

of outside directors interacts with poor firm performance to increase the likelihood of executive exit in the post-IPO period.

Hypothesis 13.2: The positive relationship between the addition of post-IPO new senior executives and the likelihood of executive exit will be strengthened when the firm's financial performance is poor in the first few years following an IPO.

This hypothesis predicts a positive interaction effect on post-IPO executive exit between the addition of post-IPO new senior executives and poor firm performance. Model 5 in Table 14 and Table 15 test this hypothesis. Contrary to the prediction, the coefficients for this interaction are negative in both the Cox proportional hazard model and the stratified Cox model (b=-.133 in model 5 of Table 14, and b=-.133 in model 5 of Table 15). Neither coefficient is significant. Therefore hypothesis 13.2 is not supported. That is, the addition of post-IPO new senior executives does not interact with poor firm performance to increase the likelihood of post-IPO executive exit.

PERFORMANCE EFFECTS OF PRE-IPO MANAGEMENT TEAM RESTRUCTURING AND POST-IPO EXECUTIVE EXIT

The Model of Performance Effects of Pre-IPO Management Team Restructuring

Descriptive Statistics

Table 16 summarizes the means, standard deviations, and correlation coefficients for all the variables in the models of performance effects of pre-IPO management team restructuring. The Skewness-Kurtosis tests indicated that none of the variables is normally distributed; therefore I suspect the residuals of the models may not be normally

distributed. The correlation coefficients indicate there are no serious threats to the variables in the models.

Analysis

The firm level IPO price premium and pre-money market valuation are two measures of firm performance used to test the hypotheses. I ran separate models on firm performance with these two different measures. First, I ran the models with untransformed dependent variables. In both models, normality tests show that residuals are not normally distributed. Cook-Weisburg tests indicated that none of the models has heteroscedasticity problem. In addition, there is no multicollinearity relationships exit among the independent variables in both models.

Next, I used the Box-Cox power transformation to address the normality problems. The Box-Cox regressions indicated that a cube transformation was appropriate for price premium (theta = 2.962). Some firms have negative price premiums, so I had to use (price premium+1) as the dependent variable in the Box Cox regression. That is, the new dependent variable used in the final regression when firm performance is measured with price premium is [(price premium+1)^3]. Similarly, a logarithm transformation was made on the dependent variable in the model with firm performance measured with pre-money market valuation. The new dependent variable in this model is [Log(market valuation+1)].

Regressions with these new dependent variables show great improvement in meeting the normality distribution assumptions, relative to untransformed models. However, results of the combined Skewness/Kurtosis tests suggest that the residuals are

still not normal distributed. Hence, I chose regression with robust standard errors to address the remaining normality problems. In regression with robust standard errors the estimates of the regression coefficients are the same as in the standard OLS linear regression but the estimates of the standard errors are more robust to departure from normality and homogeneity of variance of the residuals. I enter the control variables, the independent variables and the moderating variables sequentially. Preliminary analysis indicated that there was a serious multicollinearity problem when the variable VC control and the moderating variable were entered into the analysis. Therefore I dropped the "VC control" variable in models testing the moderating effects. The results of two models are summarized in Table 17.

Results

Results from regressions with robust standard errors models are reported below, following each of the hypotheses in the model of performance effects of pre-IPO management team restructuring.

Hypothesis 14: Pre-IPO management team restructuring has a positive effect on firm performance.

This hypothesis predicts that management team restructuring in the pre-IPO period has a positive effect on firm performance. Models 2, 3, 5, and 6 in Table 17 test this hypothesis. As shown in the table, when firm performance is measured with IPO price premium, the coefficients are positive as predicted but not significant (b=.357 and b=.208 in model 2 and 3 of Table 17 respectively). When firm performance is measured as pre-money market valuation, the coefficients are positive and significant

(b=6.089, p<.05; b=6.441, p<.05 in model 5 and 6 of Table 17 respectively). Therefore hypothesis 14 is partially supported. That is, when firm performance is measured with pre-money market valuation of the firm, pre-IPO management team restructuring has a positive effect on firm performance.

Hypothesis 15: The positive relationship between pre-IPO management team restructuring and firm performance will be strengthened when the firm is controlled by VCs.

This hypothesis predicts a positive moderating effect of VC control on the relationship between pre-IPO management team restructuring and firm IPO performance. Model 3 and model 6 in Table 17 test this hypothesis. When IPO price premium is used as the firm performance measure, the interaction effect is positive but not significant (b=.097 in model 3 of Table 17). When firm pre-money market valuation is used as the performance measure, the interaction term displays an unexpected negative sign (b=-2.240), and the coefficient is not significant. Therefore, hypothesis 15 is not supported. That is, VC control does not interact with pre-IPO management team restructuring to increase firm performance.

The Model of Performance Effects of Post-IPO Executive Exit

Descriptive Statistics

Table 18 and Table 19 summarize the means, standard deviations, and correlation coefficients for all the variables in the models of performance effects of post-IPO executive exit. I use both market-based and accounting-based performance measures to measure post-IPO firm performance. Specifically, the dependent variables used in the

models are average ROA and average shareholder return of the firm within the three years following an executive exit. I transformed team size to a logarithm form of the variable, as the transformation improved the normality distribution of the original variable significantly. The correlation coefficients indicate there are no serious threats to the variables in the models. The original dataset includes a total of 264 executive exits; however, because of limited firm performance data, only 171 executive exits were included in the model of average ROA, and 163 executive exits were included in the model of average shareholder return.

Analysis

As two firm performance measures were used, I ran separate models to test the hypotheses. Cook-Weisburg tests indicated that both models have heteroscedasticity problems. Thus I use regressions with robust standard errors to cope with this problem and the normality problem. The heteroscedasticity problems disappeared in using this approach. In the model with average ROA, I dropped ROA of the exiting year due to the multicollinearity problem (VIF=3.59). No multicollinearity problem was found in the model of average shareholder return.

I first enter the control variables in the model, followed by each independent variable. The results of two models are summarized in Table 20 and Table 21.

Results

Results from regressions with robust standard errors models are reported below, following each of the hypotheses in the model of performance effects of post-IPO executive exit.

Hypothesis 16.1: The exits of executives with prior public company managerial experience in the post-IPO stage negatively affect firm performance.

This hypothesis predicts that the exits of executives with prior public company managerial experience in the post IPO years negatively affect firm performance. Models 2 and 4 in Table 20 and Table 21 test this hypothesis. As shown in the tables, when firm performance is measured with average ROA within the three years after exit, the coefficient is negative as predicted and overall significant (b=-8.984, p<.1 in model 2, b= -9.533, p<.05 in model 4 of Table 20). However, when firm performance is measured with average shareholder return within the three years after exit, the coefficients are unexpectedly positive and insignificant (b=.111 in model 2, and b=.137 in model 4 of Table 21). Therefore, hypothesis 16.1 is partially supported. That is, the exits of managerial executives negatively affect the average ROA in the three years following the exits, but have no significant impact on the average shareholder return in this period.

Hypothesis 16.2: The exits of executives with prior public company financial experience in the post-IPO stage negatively affect firm performance.

This hypothesis predicts that the exits of executives with prior public company financial experience in the post IPO years negatively affect firm performance. Models 3 and 4 in Table 20 and Table 21 test this hypothesis. As shown in Table 20, when firm performance is measured with average ROA within the three years after exit, contrary to the hypothesized prediction, the coefficient is positive and insignificant (b= 4.474 in model 3, b=6.465 in model 4 of Table 20). When firm performance is measured with

average shareholder return within the three years after exit, the coefficients become significantly negative (b=-.278, p<.05 in model 3, and b=-.308, p<.01 in model 4 of Table 21). Therefore, overall, hypothesis 16.2 is partially supported. That is, the exits of financial executives have no impact on the average ROA in the three years following the exits, but have a significant negative impact on the average shareholder return in this period.

SUMMARY

The empirical results regarding the antecedents of pre-IPO management team restructuring, new executive entry, executive exit and post-IPO executive exit are summarized in Table 22. As shown in the table, VC prestige has a marginal positive effect on management team restructuring and has a significant positive effect on new executive entry in the pre-IPO stage. Technical skills are significantly negative associated with executive exit in the pre-IPO stage but have a positive impact on executive exit in the post-IPO stage. In the post-IPO period, the addition of new senior executives has a significant positive impact on executive exit. Pre-IPO management team restructuring decreases post-IPO executive exit. For executives who have prior public company management experience, the likelihood of exit in the post-IPO period is significantly lower than those without such experience. Post-IPO poor firm performance interacts with the addition of outside directors to significantly increase the strength of the effect on the likelihood of executive exit in the post-IPO stage.

Contrary to my predictions, VC control has no impact on pre-IPO management team restructuring, new executive entry and executive exit in the pre-IPO stage. Executive formal business education (graduate level) has a significant positive

association with post-IPO executive exit. I found no impact of external directorships on executive exit in the pre-IPO period. No significant evidence was found that founding status lowers the likelihood of executive exit in the pre-IPO stage. Further, there is no association between addition of outside directors and post-IPO executive exit. Among control variables, firm age has a significant negative association with pre-IPO management team restructuring and pre-IPO new executive entry. Firm size, measured as logarithm of number of employees, has significant negative associations with pre-IPO management team restructuring and pre-IPO executive exit, but has a significant positive relationship with new executive entry in the pre-IPO stage. Executive tenure is positively associated with executive exit in the pre-IPO stage, but has a significant negative association with executive exit in the post-IPO stage. Top management team size has a significant effect on post-IPO executive exit. Post-IPO firm performance (measured as a poor shareholder return dummy) has a significant association with executive exit in the post-IPO period. Another firm size measure, the logarithm of average total assets, negatively affects the likelihood of post-IPO executive exit.

The performance implications of pre-IPO management team restructuring and post-IPO executive exit were also investigated. The results indicate that pre-IPO management team restructuring has a significant positive impact on the firm's pre-money market valuation. However, it has no significant impact on the firm's IPO price premium. After the IPO, exit of managerial executives has a significant negative effect on the firm's average ROA in the three years following the exits; but has no effect on firm's average shareholder return for this period. Finally, I find that exit of financial executives in the post-IPO stage has no significant effect on the firm's average ROA in

the three years following the exit; however, it significantly decreases the average shareholder return for this period.

Discussion of the above results is presented in the following chapter.

CHAPTER VII

DISCUSSION

This chapter discusses the results presented in the previous chapter. The first section discusses the results regarding the antecedents of management team restructuring, new executive entry, and executive exit in the pre-IPO stage. The second section discusses the results regarding the antecedents of executive exit in the post-IPO stage. The last section discusses the performance implications of pre-IPO management team restructuring and post-IPO executive exit.

ANTECEDENTS OF MANAGEMENT TEAM RESTRUCTURING, NEW EXECUTIVE ENTRY AND EXECUTIVE EXIT IN THE PRE-IPO STAGE

This section discusses the empirical results provided in the previous chapter regarding the antecedents of management team restructuring, new executive entry and executive exit in the pre-IPO stage. As it has shown, VC prestige and the technical skills of executives have significant impacts on Pre-IPO management team restructuring and executive exit. VC prestige also has a significant positive effect on new executive entry in the pre-IPO stage. However, some hypotheses were not supported. The rest of this section discusses these findings and their implications for our understandings of the power model of management team restructuring and executive exit in pre-IPO stage firms.

Firm Level Factors

VC Control

The VC literature has widely emphasized the important roles venture capitalists play in the professionalization process of private firms (Lerner, 1995; Schefczyk & Gerpott, 2001). The power model proposes that VC control increases the level of management team restructuring and the likelihood of executive exit in the pre-IPO stages. Prior studies have shown that in venture-capital-backed firms, a founder is more likely to be replaced by an outside CEO (Hellmann & Puri, 2002). Surprisingly, in this study, I didn't find any significant impact of VC control on pre-IPO management team restructuring, new executive entry or executive exit. The coefficients for VC control in models of these events are positive as predicted, but none was statistically significant.

The lack of significant effects of VC control on pre-IPO management team restructuring, new executive entry and executive exit suggests that although VC investment confers significant ownership power relative to the executives, VCs may not exercise this power effectively. Evidence from extent research supports this speculation. For example, in a study of VCs' oversight roles on private biotechnology ventures, Lerner (1995) emphasized that the monitoring roles of VCs involve substantial costs. In addition, geographic distance may prevent VCs from overseeing management effectively (Lerner, 1995). Prior research has also indicated that VCs may not be involved in the day-to-day operations of their portfolio companies due to time constrains, unless major problems arise (Gifford, 1997; Gorman & Sahlman, 1989). Therefore the lack of significant impact reported here may be due to the fact that VCs

were not differentiated in this study, in terms of their abilities and the costs involving in the management of the private firm.

The failure to witness a significant association between VC control and pre-IPO management team restructuring, new executive entry and executive exit may also due to sample limitations. Limited by data availability, I could only focus the analyses on firms which eventually go public (IPO firms) and focus the investigation on the two years before the IPO. In fact, research shows that many private VC-backed biotechnology firms are acquired or terminated before going public (Lerner, 1995). For companies preparing the IPO, VCs may have screened and carefully recruited the management team well before the two year window prior to the IPO. Hellmann & Puri (2002) study of 173 Silicon Valley startup companies found that venture-capital-backed firms tend to replace the founder early in the life of the venture. Unfortunately, I could not include management team restructuring and executive exit data before the two years prior to the IPO because the data was not available. Future studies should strive to overcome this limitation by following a sample of firm from birth through IPO.

VC Prestige

The power model proposes that VC prestige has a positive impact on pre-IPO management team restructuring, new executive entry and executive exit. The evidence reported in Chapter VI shows that VC prestige has a significant positive association with pre-IPO management team restructuring and new executive entry, but does not have a significant impact on pre-IPO executive exit.

The positive effects of VC prestige on pre-IPO management team restructuring and new executive entry suggest that ventures backed by prestigious venture capitalists will be more likely to restructure their management teams and/or recruit new executives from outside before the IPO. Studies have shown that prestigious VC's endorsement is an important factor for IPO success (Gulati & Higgins, 2003). Barry et al. (1990) argues that VC expertise and experience in monitoring investments send important signals to investors at the time of IPO. This endorsement is valuable to the firm preparing for an IPO, since due to the information asymmetry problems (Rock, 1986), external investors often lack detailed information about managers' abilities. As such, the endorsement of prestigious venture capitalists sends a positive signal to outside executives about the potential for success of the focal firm. Therefore because of the important resources they bring to the firm; more prestigious venture capitalists will wield greater power against entrepreneurial executives than less prestigious VCs.

The findings of the VC prestige's impact also confirm the prior argument that VCs become involved in the management of their investment because their reputational capital is at stake (Jain & Kini, 1995). The result has shown that a firm backed by a prestigious VC tends to have more restructuring of the management team prior to the IPO. Despite this, the results don't support the hypothesized positive association between VC prestige and pre-IPO executive exit. This may due to the limitations of data on pre-IPO executive exit as well. The concerns about their reputations may make prestigious VCs carefully screen and select the management team in advance of the two years prior to the IPO, but data from that time period were not available to the present study.

Individual Level Factors

Technical Skills

The power model proposes that executives with technical skills are less likely to exit the firm in the pre-IPO stage. Results in the previous chapter support this hypothesis. This finding confirms the critical role of technical resources in technology-based ventures (Kelly & Rice, 2001). Technical skills influence the founding of the firm, the development of current products and services, and contribute importantly to the firm's potential for future growth. In particular, for biotechnology startups, many of them have not commercialized their products, and in some instance, the products are not even close to market before the initial public offerings. As the companies lack a history of financial performance, executive technical competence serves as an important indicator of the technological promise of the firm to potential investors. Therefore, the significant negative association between executive technical skills and pre-IPO executive exit confirms the importance of technical knowledge to a technology-based startup in the pre-IPO stage.

Interestingly, the results in the model of post-IPO executive exit suggest technical skills actually increase the likelihood of executive exit in the post-IPO stage. Discussion on this different impact is presented in the next section.

External Directorships

External directorships were proposed to have a negative impact on executive exit in the pre-IPO stage. The logic is that sitting on other companies' boards confers personal status and prestige, as well as management knowledge and external resources

which the executive can bring to the focal firm. Therefore, executives with external directorships may possess greater power than those without. However, though coefficient signs were negative as predicted, the associations between external directorships and executive exit in the pre-IPO stage were not significant.

The unsupported hypothesis suggests that there is a need to reexamine the role of executive external directorships in pre-IPO technology ventures. Scholars have emphasized the roles of executive external ties in established firms (Geletkanycz et al., 2001; Geletkanycz & Hambrick, 1997). External directorships help the firm get access to strategic information and opportunities, reduce the level of uncertainty, and enhance the firm's legitimacy and status. However, most of the pre-IPO stage technology ventures, as discussed earlier, are still in their early development stages, and the dominant problems facing the firms are to demonstrate the value of their technical innovation to potential investors (Kazanjian, 1988). This focus simplifies the executive's management tasks and lowers the need for acquiring business management expertise. Therefore, although external directorships confer prestige power to the executive, the effects might be limited due to the emphasis on technological development in the firm at the pre-IPO stage.

Another reason for this unsupported hypothesis might be the lack of variance in executive external directorships. As shown in Table 5, among a total of 640 executives, only 67 (10.47%) held external directorships, while nearly 90% executives did not have. This may also contribute to the lack of significant impact of external directorships on executive exit in the pre-IPO stage.

Founding Status

The power model proposes that executive founding status negatively affects the likelihood of executive exit in the pre-IPO stage. Although the direction of the associations between executive founding status and pre-IPO executive exit are negative in all the models, none of the coefficients was significant. The post-IPO executive exit model also indicated no significant relationship between executive founding status and post-IPO executive exit. Therefore in any of the models examined, founding status had no significant impact on executive exit.

In retrospect, perhaps this result should not be surprising. In fact, evidence in extent research on the antecedents of founder departure have been very inconsistent. Rubenson et al. (1996) argue that due to the complex interplay between the evolving organization and the founders, it is hard to examine founder departure without taking into account various organizational contingencies and the unique characteristics of founders. Unfortunately, other than founding status, data on the individual characteristics of founding executives are very limited in pre-IPO setting.

Similarly, the failure to witness a significant association between founding status and executive exit may also be due to sample limitations. That is, founding executives who had already left the firm before the two-year-window prior to the IPO were not included in the logistic analysis. Although this does not threaten the validity of the present study, it would be desirable if more years of data could be collected in the pre-IPO period.

ANTECEDENTS OF POST-IPO EXECUTIVE EXIT

The results presented in Chapter VI revealed a number of interesting findings regarding the likelihood of executive exit in the post-IPO period. The following section discusses these findings and their contributions to our understanding of the power model of post-IPO executive exit.

Firm Level Factors

Addition of Outside Directors and Its Interaction with Firm Performance

The power model of post-IPO executive exit proposes that the addition of new outside directors in the post-IPO years increases the likelihood of executive exit. Interestingly, the results in Chapter VI show that addition of outside directors alone has no significant relationship with the likelihood of executive exit. However, after entering the interaction term between addition of outside directors and poor firm performance (measured as a below-industry-average-return dummy variable), the coefficients of addition of directors become statistically significant. In the latter model, it is also found that there is a significant positive association between the interaction term and post-IPO executive exit. However, although the direction of the interaction effect is positive as predicted, the main effect of addition of directors on executive exit shows an opposite negative direction.

The findings suggest that, overall, there is no evidence that the addition of outside directors will increase the risk of executive exit in the post-IPO stage. However, the impacts of addition of new outside directors are significantly different between firms with low financial performance and those with high financial

performance. That is, as firm performance is lower, addition of directors is more likely to increase executive exit in the post-IPO period.

The lack of a significant main effect may be due to the limited power of outside directors in the venture firm. Scholars have argued that when high-technology firms go public, their boards tend to be dominated by VCs and entrepreneurial executives (Lorsch et al., 2001). This suggests that to enrich our understanding of the power model, it is desirable to investigate the origins of outside directors in future studies, i.e., are they coming from the founder's side or are they standing on outside investors' sides?

Firm performance has been proposed as a primary contextual factor influencing executive turnover and succession (Kesner & Dalton, 1994). The above results conform to this notion. The significant interaction affect of addition of outside directors and firm performance is consistent with the previous argument that outside directors often rely on financial performance to make executive dismissal decisions because they are limited in their ability to strategically evaluate firm operations and executive performance (Baysinger & Hoskisson, 1990; Mizruchi, 1983). Furthermore, the positive direction of the association between the interaction term and the likelihood of executive exit provides support for the power model. According to the power model, new outside directors are relatively new to the firm and they typically have little confidence in entrepreneurial executives. Therefore, poor financial performance sharpens doubts about the abilities of the executives and triggers conflicts between new outside directors and executives.

Pre-IPO Management Team Restructuring

Pre-IPO management team restructuring is proposed to have a negative relationship with the likelihood of post-IPO executive exit. The power model suggests that pre-IPO management team restructuring implies that the management team has been screened and selected by original investors prior to the IPO, therefore the incumbent executives tend to possess expert power as their abilities and credentials have been accepted by original investors. The negative association between pre-IPO management team restructuring and post-IPO executive exit supports this speculation.

Addition of Post-IPO New Senior Executives and Its Interaction with Firm Performance

The power model proposes that there is a significant positive association between the addition of post-IPO new senior executives and post-IPO executive exit. As shown in the proceeding chapter, the main effect of addition of new executives on post-IPO executive exit is significantly positive. However, no support was found for its interaction effect with firm performance on executive exit.

The positive main effect of addition of post-IPO new senior executives on the post-IPO executive exit conforms to speculations that adding new executives in the post-IPO period increases tensions and conflicts between original entrepreneurial executives and new executives (Maruca, 2000). Prior research in large corporation executive turnover has emphasized the power dynamics and contests among senior executives (Shen & Cannella, 2002a). The power model suggests that this type of contest will be even more prevalent in new venture settings because venture firms have limited

opportunities for executive promotions. Also, because new senior executives are often brought in from outside the company, they have less integration with original team members than the founding executives.

The predicted, but unsupported interaction effect suggests that poor firm performance does not necessarily strengthen the positive relationship between the addition of new executives and executive exit in the post-IPO period. This contradicts the power model. However, an interpretation of this finding may indeed support the power model. That is, new senior executives might be brought in as "firefighters" when firm performance falls. Although investors/owners may trust the ability of new executives in helping the firm turn around, new senior executives may still feel intense pressure to make a quick return to health. However, because new executives in technology ventures are typically from outside the firm, the lack of inside information and integration with the management team may prevent them from implementing strategies to improve firm performance effectively. Therefore, new executives still need to maintain good relations with entrepreneurial executives, at least during the turnaround period. For these reasons, the tensions and conflicts between new executives and original founding executives might be alleviated, therefore decreasing the likelihood of executive exit in post-IPO stage firm.

Individual Level Factors

Technical Skills

The post-IPO executive exit model proposes that technical skills increase the likelihood of executive exit after the IPO. Unlike the pre-IPO stage, in the post-IPO

stage, executive technical skills have a significant positive relationship with executive exit. This finding supports one of the basic arguments of this study, that is, the relative power of executives decreases if their skills are limited in helping the new public firm address the dominant problems after the IPO. As pointed out earlier, firms have various dominant problems as they progress through different developmental stages (Kazanjian, 1988; Terpstra & Olson, 1993). Prior to the IPO, technical executives have much power because it is the primary concern of the firm to impress potential investors with promising technology. However, as the technology became proven, in the post-IPO stage, managerial and public financial knowledge become more important. Firms in growth stages emphasize strategic, administrative and managerial problems (Kuratko & Hodgetts, 1989). The evidence provided here regarding the different effects of technical skills provides strong support for the power model and the above arguments.

Prior Public Company Managerial Experience

The power model proposes that executive prior public company managerial experience decreases the likelihood of executive exit in the post-IPO period. The results in Chapter VI strongly support this hypothesis. Consistent with the power model and prior discussion, this finding suggests that executives with prior public company managerial experience will be less likely to exit in the post-IPO period. This is because in post-IPO firms, the managerial and administrative skills developed in prior public company managerial experiences better prepare the executives for the wide range of strategic and organizational problems confronting the new public firm. The evidence

reported in previous chapter shows strong support for this prediction of the power model.

Prior Public Company Financial Experience

Prior public financial experience is proposed to negatively affect the likelihood of post-IPO executive exit. No evidence was found to support this argument. Although this finding is inconsistent with prior research on the importance of public financial experience in new public firms (Mian, 2001), it is not surprising, given that in the sample firms nearly 90% of the executives have no prior public company financial experience. Therefore, this lack of variance may be the major factor contributing to the lack of significance of the impact of prior public company financial experience on post-IPO executive exit.

Formal Business Education

The power model proposes that executive formal business education has a negative impact on the likelihood of executive exit in the post-IPO stage. When formal business education is measured with undergraduate level business degree, the association has the predicted sign, but lacks statistical significance. When is measured with graduate-level business degree (e.g., MBA, etc), the association with post-IPO executive exit becomes significant, but is opposite to the predicted negative effect. Therefore overall, the results show no evidence that executive formal business education decreases the likelihood of post-IPO executive exit.

These findings are contradictory to current theoretical expectations. The significant positive association between graduate-level business degree and executive

exit suggests that graduate-level business education does not necessarily lower the risk of executive exit in the post-IPO stage. Further, the failure to witness a significant negative association between undergraduate-level business degree and post-IPO executive exit, might again, be due to the lack of variance of undergraduate-level business education among sample executives. An examination of the distribution of executive undergraduate-level business degrees confirms this suspicion. As shown in Table 11, among 1,447 cases, there are only 92 cases where executives hold an undergraduate business degree (0.06%). This is not surprising given that many executives in the sample have scientific backgrounds. Therefore the unexpected non-significant association between undergraduate business degree and executive exit may be due to the limitation of current dataset.

Control Variables

Several control variables also display interesting findings. For example, interestingly, in the pre-IPO stage model, executive tenure was found to have a positive association with executive exit. But it is found to be negatively associated with the likelihood of executive exit in the post-IPO period. The negative association is consistent with the prior argument that tenure helps the executive institutionalize their power in the firm (Ocasio, 1999). The change of direction implies that organizational hierarchy and structure becomes more formalized in the post-IPO stage, which facilitates the institutionalization of executive power. Top management team size is found to be positive related to the likelihood of post-IPO executive exit. This finding can be explained with the power model, which suggests that the conflicts and power struggles

among executives in a larger team may cause executives to leave the firm after the IPO. This result is also consistent with the supported positive relationship between addition of new executives and post-IPO executive exit. I found firm size was significantly negatively associated with executive exit in the post-IPO stage. This suggests that executives in larger firms have less likelihood of exit than those in smaller firms. The direction of this relationship is contradictory to the prior finding of top management team size, as large firms typically have large top management teams therefore they should have similar directions of their associations with executive exit. However, the Pearson correlation between firm size and top management team size shows negative, although not statistically significant. This correlation may imply that in the sample, firm size and top management team size are not necessarily positively associated with each other, which deserves further examination. Lastly, among the control variables, poor financial performance has a significant positive impact on the likelihood of executive exit. This is consistent with prior argument that firm performance is an important precursor of executive turnover (Kesner & Sebora, 1994).

PERFORMANCE EFFECTS OF PRE-IPO MANAGEMENT TEAM RESTRUCTURING AND POST-IPO EXECUTIVE EXIT

This section discusses the results in the proceeding chapter regarding the performance implications of pre-IPO management team restructuring and post-IPO executive exit. I will discuss the findings of these models as follows.

Performance Effects of Pre-IPO Management Team Restructuring

The power model proposes that management team restructuring in the pre-IPO stage has a positive impact on firm performance. Two performance measures, IPO price premium and firm pre-money market valuation at the IPO, were used in the analyses.

The findings suggest that the performance implications of pre-IPO management team restructuring, to a large degree, depend on how firm performance is measured. When firm performance is measured with IPO price premium, no significant effect was found, although the direction is positive as predicted. However, when pre-money market valuation is used as the firm performance measure, a positive association was found between pre-IPO management team restructuring and IPO performance. And pre-IPO management team restructuring explains the variance in the firm market valuation at a significant level of ($p<.05$). That is, management team restructuring before the IPO can enhance investors' market valuation of the firm at the time of IPO. This result is consistent with previous research on management team effects of IPO performance (Higgins & Gulati, 2003).

Several control variables included in the models display interesting findings too. First, firm developmental stage, in both models, is found to have a consistently positive effect on performance at the IPO market. This suggests that at the time of IPO, investors put higher values on the firms with commercialized products than early-development stage firms. Underwriter's prestige also has a strong positive impact on IPO performance. This finding is consistent with previous studies of the effect of

underwriter prestige on IPO success (Carter & Manaster, 1990; Higgins & Gulati, 2003; Stuart et al., 1999).

Performance Effects of Post-IPO Executive Exit

The power model proposes that post-IPO managerial executive exit and financial executive exit have negative impacts on average firm performance in the subsequent three years following the exit. Two performance measures, average ROA, and average shareholder return, were used in the analyses.

The results in Chapter VI indicate that the impact of post-IPO executive exit on firm performance depends largely on the type of exiting executive as well as the measure of firm performance. The previous chapter reported that managerial executive exit has a significant negative association with firm's average ROA in the subsequent three years following the exit, but has no significant relationship with firm's average shareholder return. Financial executive exit, on the other hand, was found to have a significant negative relationship with average shareholder return during the three years after the exit, but has no significant relationship with average ROA during this period.

Prior research on the performance implications of executive turnover reveals mixed results (Pitcher et al., 2000). However, the above results indicate that the exits of managerial executives or financial executives have negative consequences to firm performance in the following years, decreasing either accounting-based performance or market-based performance. This is consistent with the power model and prior discussion of the importance of the context of executive exit in predicting its performance consequences. According to the power model, executives with prior

managerial or financial experience should be valued as their skills and knowledge are critically important for firm operation in the post-IPO stage. Therefore, their exit from the company might be due to the power contests in the firm, which will negatively affect firm performance.

SUMMARY

This chapter discusses the empirical evidence regarding the antecedents of pre-IPO management team restructuring, new executive entry, executive exit and the antecedents of post-IPO executive exit. Results regarding the performance implications of pre-IPO management team restructuring and post-IPO executive exit were also discussed. The significant results were reported and discussed in this chapter. The explanations for the unsupported hypotheses are also included in the discussions.

CHAPTER VIII

CONCLUSIONS, LIMITATIONS AND IMPLICATIONS

Strategic leadership in entrepreneurial settings has received increasing attention from both strategic management and entrepreneurship scholars in recent years (Daily et al., 2002). The present study is an endeavor to enrich this research steam by investigating management team restructuring and executive exit in IPO-stage firms, particularly during the immediate pre- and post-IPO periods. This concluding chapter summarizes both the theory and the empirical evidence of the present study, discuss its limitations, and points out its implications for future research and managerial practice.

CONCLUSIONS

This study examines the antecedents of management team restructuring, new executive entry and executive exit in IPO-stage technology ventures. The performance implications of pre-IPO management team restructuring and post-IPO executive exit were also investigated.

The literature review in Chapter II reveals that resource-dependence theory, agency theory and power and socio-political perspective have been used to explain the antecedents of executive turnover as well as their performance consequences in large corporation settings. However, despite abundant research in large corporations, studies on executive and management team change in entrepreneurial firms are very limited; and the theoretical foundations need strengthening. Due to the sharp differences between large public company contexts and entrepreneurial firm settings, as well as the unique

political settings in the IPO-stage firms, it is concluded in Chapter II that a socio-political perspective is most appropriate in the context of IPO-stage startup firms.

Taking a political view of technology startups, Chapter III proposes a power model of pre- and post-IPO executive change. The central thesis developed in the model is that the resources and skills needed by the firm and the political coalition structure of the firm change substantially when the firm goes public. The model proposes that both firm-level factors (VC investors, outside directors, and new senior executives) and individual-level factors (the human capital and social capital of the executive) contribute to the relative power of the executive in the firm during these two periods, hence having main effects on the likelihood of executive exit in both stages. Firm performance is proposed to interact with firm level factors to affect the likelihood of executive exit in the post-IPO stage. In addition, the model also proposes firm level factors impact management team restructuring and new executive entry before the firm goes public. Chapter IV also investigates the performance implications of pre-IPO management team restructuring and post-IPO executive exit.

Empirical evidence provides supports for both the pre- and post-IPO power model and insights for further improvements. In the pre-IPO stage, at the firm level, VC prestige was found to have a strong positive association with pre-IPO management team restructuring and new executive entry. That is, a venture backed by prestigious VCs is more likely to change its management team and recruit new executives during the two years prior to the IPO. VC control, however, has no significant relationship with management team restructuring, new executive entry and executive exit. At individual level, executive technical skills are negatively associated with pre-IPO exit as predicted.

The other two individual characteristics, executive external directorships and founding status, were found to have no significant impact on the likelihood of executive exit. Results from performance models indicate that pre-IPO management team restructuring improves the firm's pre-money market valuation at the time of the IPO.

The analyses of post-IPO models provide some encouraging and interesting results. At the firm-level, I found that adding new senior executives will increase the likelihood of executive exit during the three years following an IPO. Addition of new outside directors was proposed to positively impact executive exit, but no such association was found. Instead, evidence shows that when firm performance is poor, adding new outside directors tends to increase the probability of executive exit in the firm. Evidence also indicated that executives in the firm which had restructured the management team before the IPO tend to have lower likelihood of exit in the post-IPO period. At the individual level, it was found that technical executives have a higher likelihood of exit than non-technical executives. Executives with prior public company managerial experience have a significantly lower likelihood of exit than those without. Due to data limitations, the hypothesized negative relationship between executive formal business education and the risk of exit was not found. Similarly, there is no evidence to indicate that executives with prior public company financial experience have lower risk of exit than executives without such experience. Results of the performance implication model reveal that after the IPO, the exit of managerial executives has a negative effect on average ROA in the three years following the exit, and the exit of financial executives has negative effects on average shareholder return over the same period.

Overall, findings from the present study lead to the following conclusions: (1) prestigious investors have an important impact on management team restructuring before the IPO; (2) the relative power of executives changes as the firm transforms from a private firm to a public company, due to the change in the political coalition and the resources and skills needed by the firm; (3) pre-IPO management team restructuring has positive implications for IPO performance, when measured as pre-money market valuation; (4) post-IPO managerial and financial executive exit have negative effects on firm performance following the exit event.

LIMITATIONS

The present study is not without limitations. First, due to the data availability problems, I can only employ two years prior to the IPO event as the pre-IPO window for the power model. Data on executive exit, management team restructuring, and the exiting executives were collected from firm prospectuses for only two years prior to the IPO. The two-year-window limits the ability to study the antecedents of executive exit and management team restructuring in the pre-IPO stage. Although this limitation does not threaten the validity of the present study, it would be desirable to observe one or two more year prior to the IPO.

Second, the present study did not directly measure executive power. Prior research has suggested that direct measurement of executive power is often difficult as power is a sensitive subject for many managers (Finkelstein & Daveni, 1994; Pfeffer, 1981). Due to the difficulty in obtaining direct measures of executive power, the present study relied on publicly observable information to infer executive power in the model. Although this does not threaten the logic of the present study, it would be

desirable if executive power could be directly measured in the pre- and post-IPO power models.

Third, the present study focuses on biotechnology startups. As mentioned earlier, I chose the biotechnology industry because this is an excellent setting for investigating how executives' knowledge and skills might influence the power distribution of the management team in the IPO-stage. However, the problem of lack of variance for particular variables suggests that including multiple high-technology industries might be desirable in future studies.

IMPLICATIONS

The present study examines the antecedents and performance effects of management team restructuring and executive exit in IPO-stage firms. The study provides several important implications for both academic research and managerial practice.

Implications for Theory Development

The present study develops a theoretical model and empirically tested the model for explaining executive change in entrepreneurial firms. This makes several contributions to research on executive turnover, entrepreneurial teams, and IPO firms.

First, I developed a theoretical model for explaining executive changes in the evolution of an IPO-stage entrepreneurial firm. Different from traditional agency theory (Fama, 1980), in which the executives (owners) are considered to share a unitary set of interests as opposed to owners (executives), the political view of technology ventures argues that management (and owners) in technology startups usually have

diverse, and frequently conflicting interests. The model argues that the relative power of investors and managers change over the different phases of development of the firm. The power and socio-political views have been employed in large company executive turnover studies (Ocasio, 1994; Shen & Cannella, 2002a, b). The present study furthers our understanding of the power and socio-political view by applying this view in a different context, and enriches our understanding of the executive turnover literature by investigating this phenomenon in entrepreneurial settings.

Second, by examining both pre-IPO management team restructuring and executive exit in IPO-stage firms, this study is filling a gap in entrepreneurial team research. Kamm et al. (1990) argues that entrepreneurial team studies lack sufficient attention to team building process and lack a theoretical base. The present study proposes a power and socio-political view of entrepreneurial teams and provides empirical evidence for explaining the antecedents as well as performance implications of management team restructuring in IPO-stage firms. Therefore the present study helps us better understand the team building process of an entrepreneurial firm.

Third, by focusing the analysis on entrepreneurial team change during pre- and post-IPO periods, the present study contributes to IPO firm studies. Recent years have witnessed increasing research on IPO firms in the fields of entrepreneurship and strategic management (e.g., Certo et al., 2001a; Higgins & Gulati, 2003; Nelson, 2003). However, very few studies have investigated how the entrepreneurial team changes when a previously private firm transforms to a public company and how these changes affect firm performance. The power model views the IPO-stage firm as a political context consisting of power contests and interest conflicts among original investors,

entrepreneurial executives, new investors, and new senior executives. Empirical evidence presented here supported this view and demonstrated that the relative power of entrepreneurial executives and the political structure of the firm have important consequences for management team restructuring and executive change.

Implications for Managerial Practice

The present study has several implications for managerial practice. First, for technology ventures wishing to go public, it is very important for the founding executives to understand that the initial public offering changes resources and skill requirements for the executives and the firm's dominant coalition substantially. The risks of losing control and power in the new public company may be even greater if the executive cannot meet the new challenges after the IPO, or if the executives do not have advantageous positions in the political contests during this transition. Second, founding executives in private firms should be clear about whether it is worth relinquishing their control over the firm in exchange for the long-term development of the firm. Inviting prestigious venture capitalists to join the firm not only enables the firm to get the access to financial capital, but also to provide access to other qualified executives. However, this exchange is not without costs. Founding members should seek a balance between the benefits and the risks of relying on prestigious VCs. Third, the study shows that pre-IPO management team restructuring helps the firm achieve better IPO performance, at least to some extent. Hence, in order to achieve a good outcome at the IPO, founding executives and original investors need to carefully assemble a qualified management team in preparation for the IPO. Lastly, the present study indicates that post-IPO

managerial and financial executive exit tends to lower subsequent performance. How to retain these executives in the firm becomes important in the post-IPO stage.

REFERENCES

Adizes, I. 1979. Organizational passages -- Diagnosing and treating lifecycle problems of organizations. ***Organizational Dynamics***, 8(1): 3-25.

Aggarwal, R., & Klapper, L. 2003. Ownership structure and initial public offerings, ***Working Paper***. Georgetown University.

Akerlof, G. 1970. The market for "Lemons": Qualitative uncertainty and the market mechanism. ***Quarterly Journal of Economics***, 89: 488-500.

Allen, M. P., & Panian, S. K. 1982. Power, performance, and succession in the large corporation. ***Administrative Science Quarterly***, 27(4): 538-547.

Allen, M. P., Panian, S. K., & Lotz, R. E. 1979. Managerial succession and organizational performance - Recalcitrant problem revisited. ***Administrative Science Quarterly***, 24(2): 167-180.

Allison, P. D. 1984. ***Event History Analysis: Regression for Longitudinal Data***. London: Sage Publications.

Astley, W. G., & Sachdeva, P. S. 1984. Structural sources of intraorganizational power - A theoretical synthesis. ***Academy of Management Review***, 9(1): 104-113.

Barker, V. L., & Duhaime, I. M. 1997. Strategic change in the turnaround process: Theory and empirical evidence. ***Strategic Management Journal***, 18(1): 13-38.

Barker, V. L., & Mueller, G. C. 2002. CEO characteristics and firm R&D spending. ***Management Science***, 48(6): 782-801.

Barker, V. L., Patterson, P. W., & Mueller, G. C. 2001. Organizational causes and strategic consequences of the extent of top management team replacement during turnaround attempts. ***Journal of Management Studies***, 38(2): 235-269.

Barnard, C. 1938. ***The Functions of the Executive***. Cambridge, MA: Harvard University Press.

Barney, J. 1991. Firm resources and sustained competitive advantage. ***Journal of Management***, 17(1): 99-120.

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

Baum, J. A. C., Calabrese, T., & Silverman, B. S. 2000. Don't go it alone: Alliance network composition and startups' performance in Canadian biotechnology. ***Strategic Management Journal***, 21(3): 267-294.

Baysinger, B., & Hoskisson, R. E. 1990. The composition of boards of directors and strategic control - Effects on corporate-strategy. ***Academy of Management Review***, 15(1): 72-87.

Beatty, R. P., & Ritter, J. R. 1986. Investment banking, reputation and the underpricing of initial public offerings. ***Journal of Financial Economics***, 15: 213-232.

Beatty, R. P., & Zajac, E. J. 1987. CEO change and firm performance in large corporations - Succession effects and manager effects. ***Strategic Management Journal***, 8(4): 305-317.

Becker, G. S. 1964. ***Human Capital***. New York: National Bureau for Economic Research.

Beckman, C., Burton, M., & O'Reilly, C. 2003. Early teams: The impact of team demography on VC financing and going public, ***Working Paper***. University of California, Irvine.

Belliveau, M. A., Oreilly, C. A., & Wade, J. B. 1996. Social capital at the top: Effects of social similarity and status on CEO compensation. ***Academy of Management Journal***, 39(6): 1568-1593.

Berle, A., & Means, G., C,. 1932. ***The Modern Corporation and Private Property***. New York: Macmillan.

Bethel, J. E., & Liebeskind, J. 1993. The effects of ownership structure on corporate restructuring. ***Strategic Management Journal***, 14: 15-31.

Birley, S., & Stockley, S. 2000. Entrepreneurial teams and venture growth. In D. L. Sexton, & H. Landstrom (Eds.), ***The Blackwell Handbook of Entrepreneurship***. Malden, MA: Blackwell Publishers.

Blossfeld, H. P., & Rohwer, G. 1995. ***Techniques of Event History Modeling: New Approaches to Causal Analysis***. Mahwah, NJ: Lawrence Erlbaum Associates.

Bochner, S. E., & Priest, G. M. 1993. ***Guide to the Initial Public Offering***. New York: Merrill Corporation.

Boeker, W. 1992. Power and managerial dismissal - Scapegoating at the top. ***Administrative Science Quarterly***, 37(3): 400-421.

Boeker, W., & Karichalil, R. 2002. Entrepreneurial transitions: Factors influencing founder departure. ***Academy of Management Journal***, 45(4): 818-826.

Bourdieu, P. 1985. The forms of capital. In J. Richardson (Ed.), ***Handbook of Theory and Research for the Sociology of Education***: 241-258. New York: Greenwood.

Brass, D. J., & Burkhardt, M. E. 1993. Potential power and power Use - An investigation of structure and behavior. ***Academy of Management Journal***, 36(3): 441-470.

Bruton, G., Fried, V., & Hisrich, R. D. 1997. Venture capitalist and CEO dismissal. ***Entrepreneurship Theory and Practice***, 21(3): 41.

Burton, M. D., & Khurana, R. 2000. ***The routinization of charisma: An empirical examination of founding CEO succession in entrepreneurial companies***. Paper presented at the University of Maryland Technology Entrepreneurship Conference, College Park, MD.

Burton, M. D., Sorensen, J. B., & Beckman, C. M. 2002. Coming from good stock: Career histories and new venture formation, ***Social Structure and Organizations Revisited***: 229-262: Elsevier Science Ltd.

Cannella, A. A., & Baglieri, D. 2001. Executive job change in biotech startups: Knowledge integration in an inherently political setting, ***Working Paper***. Texas A&M University.

Cannella, A. A., & Lubatkin, M. 1993. Succession as a sociopolitical process - Internal impediments to outsider selection. ***Academy of Management Journal***, 36(4): 763-793.

Cannella, A. A., & Monroe, M. J. 1997. Contrasting perspectives on strategic leaders: Toward a more realistic view of top managers. ***Journal of Management***, 23(3): 213-237.

Carroll, G. R. 1984. Dynamics of publisher succession in newspaper organizations. ***Administrative Science Quarterly***, 29(1): 93-113.

Carter, R. B., & Manaster, S. 1990. Initial public offerings and underwriter reputation. ***Journal of Finance***, 45: 1045-1067.

Certo, S. T., Covin, J. G., Daily, C. M., & Dalton, D. R. 2001a. Wealth and the effects of founder management among IPO-stage new ventures. ***Strategic Management Journal***, 22(6-7): 641-658.

Certo, S. T., Daily, C. M., & Dalton, D. R. 2001b. Signaling firm value through board structure: An investigation of initial public offerings. ***Entrepreneurship Theory and Practice***, 26(2): 33.

Chaganti, R. S., Mahajan, V., & Sharma, S. 1985. Corporate-board size, composition and corporate failures in retailing industry. ***Journal of Management Studies***, 22(4): 400-417.

Chandler, G. N., & Hanks, S. H. 1994. Founder competence, the environment, and venture performance. ***Entrepreneurship Theory and Practice***, 18(3): 77.

Chandler, G. N., & Hanks, S. H. 1998. An examination of the substitutability of founders human and financial capital in emerging business ventures. ***Journal of Business Venturing***, 13(5): 353-369.

Chandler, G. N., Honig, B., & Wiklund, J. 2002. ***Initial size and membership change in emerging and new venture teams: Implications for team stability and venture performance***. Paper presented at the Academy of Management Annual Meeting, Denver, CO.

Chandler, G. N., & Jansen, E. 1992. The founders self-assessed competence and venture performance. ***Journal of Business Venturing***, 7(3): 223-236.

Chandler, G. N., & Lyon, D. 2001. ***Entrepreneurial teams in new ventures: Composition, turnover and performance***. Paper presented at the Academy of Management Annual Meeting, Washington, D.C.

Churchill, N. C., & Lewis, V. L. 1983. The five stages of small business growth. ***Harvard Business Review***, 61(3): 30-39.

Clifford, D. K. 1973. Growth pains of a threshold company. ***Harvard Business Review***, 51(5): 143-154.

Cohen, B. D., & Dean, T. J. 2001. ***Top management teams and investors' valuation of initial public offerings: An examination of web-based and non-web based new ventures***. Paper presented at the Babson Kauffman Entrepreneurship Conference, Jonkoping, Sweden.

Coleman, J. S. 1988. Social capital in the creation of human capital. ***American Journal of Sociology***, 84: S95-S120.

Coleman, J. S. 1990. ***Foundation of Social Theory***. Cambridge, MA: Harvard Business Press.

Cooper, A. C. 1985. The role of incubator organizations in the founding of growth oriented firms. ***Journal of Business Venturing***, 1(1): 75-86.

Cooper, A. C., & Daily, C. 1997. Entrepreneurial teams. In D. L. Sexton, & R. W. Smilor (Eds.), ***Entrepreneurship 2000***: 127-150. Chicago, IL: Dearborn Publishing.

Cooper, A. C., & Gimeno, F. J. 1992. Entrepreneurs, processes of founding and new firm performance. In D. L. Sexton, & J. D. Kasarda (Eds.), ***The State of the Art of Entrepreneurship***: 301-340. Boston, MA: PWS-Kent Publishing Co.

Cooper, A. C., Gimeno, F. J., & Woo, C. Y. 1994. Initial human and financial capital as predictors of new venture performance. ***Journal of Business Venturing***, 9(5): 371-395.

Cyr, L. A., Johnson, D. E., & Welbourne, T. M. 2000. Human resources in initial public offering firms: Do venture capitalists make a difference? ***Entrepreneurship Theory and Practice***, 25(1): 77.

Daily, C. A., McDougall, P. P., Covin, J. G., & Dalton, D. R. 2002. Governance and strategic leadership in entrepreneurial firms. ***Journal of Management***, 28(3): 387-412.

Daily, C. M., & Dalton, D. R. 1992. The relationship between governance structure and corporate performance in entrepreneurial firms. ***Journal of Business Venturing***, 7(5): 375-386.

Daily, C. M., & Johnson, J. L. 1997. Sources of CEO power and firm financial performance: A longitudinal assessment. ***Journal of Management***, 23(2): 97-117.

Daily, C. M., & Schwenk, C. 1996. Chief executive officers, top management teams, and boards of directors: Congruent or countervailing forces? ***Journal of Management***, 22(2): 185-208.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. ***Strategic Management Journal***, 19(3): 269-290.

Dalton, D. R., & Kesner, I. F. 1983. Inside outside succession and organizational size - The pragmatics of executive replacement. ***Academy of Management Journal***, 26(4): 736-742.

Dalton, D. R., & Kesner, I. F. 1985. Organizational performance as an antecedent of inside outside chief executive succession - An empirical-assessment. ***Academy of Management Journal***, 28(4): 749-762.

Datta, D. K., & Guthrie, J. P. 1994. Executive succession - Organizational antecedents of CEO characteristics. ***Strategic Management Journal***, 15(7): 569-577.

Davidson, W. N., Worrell, D. L., & Cheng, L. 1990. Key executive succession and stockholder wealth - The influence of successors origin, position, and age. ***Journal of Management***, 16(3): 647-664.

Davidson, W. N., Worrell, D. L., & Dutia, D. 1993. The stock-market effects of CEO succession in bankrupt firms. ***Journal of Management***, 19(3): 517-533.

Day, D. V., & Lord, R. G. 1988. Executive leadership and organizational performance - Suggestions for a new theory and methodology. ***Journal of Management***, 14(3): 453-464.

Deeds, D. L., Decarolis, D., & Coombs, J. E. 1997. The impact of firm-specific capabilities on the amount of capital raised in an initial public offering: Evidence from the biotechnology industry. ***Journal of Business Venturing***, 12(1): 31-46.

Drazin, R., & Rao, H. 1999. Managerial power and succession: SBU managers of mutual funds. ***Organization Studies***, 20(2): 167-196.

Dyck, B., Mauws, M., Starke, F. A., & Mischke, G. A. 2002. Passing the baton - The importance of sequence, timing, technique and communication in executive succession. ***Journal of Business Venturing***, 17(2): 143-162.

Eisenhardt, K. M. 1989. Agency theory - An assessment and review. ***Academy of Management Review***, 14(1): 57-74.

Eisenhardt, K. M., & Bourgeois, L. J. 1988. Politics of strategic decision-making in high-velocity environments - Toward a midrange theory. ***Academy of Management Journal***, 31(4): 737-770.

Eisenhardt, K. M., & Schoonhoven, C. B. 1990. Organizational growth - Linking founding team, strategy, environment, and growth among United-States semiconductor ventures, 1978-1988. ***Administrative Science Quarterly***, 35(3): 504-529.

Ensley, M. D., Pearson, A. W., & Amason, A. C. 2002. Understanding the dynamics of new venture top management teams - Cohesion, conflict, and new venture performance. ***Journal of Business Venturing***, 17(4): 365-386.

Espenlaub, S., Garrett, I., & Mun, W. P. 1999. Conflicts of interest and the performance of venture-capital-backed IPOs: A preliminary look at the U.K. ***Venture Capital***, 1(4): 325-349.

Fama, E. 1980. Agency problems and the theory of the firm. ***Journal of Political Economy***, 88: 288-307.

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

Feeser, H. R., & Willard, G. E. 1990. Founding strategy and performance - A comparison of high and low growth high tech firms. ***Strategic Management Journal***, 11(2): 87-98.

Fiet, J. O., Busenitz, L. W., Moesel, D. D., & Barney, J. B. 1997. Complementary theoretical perspectives on the dismissal of new venture team members. ***Journal of Business Venturing***, 12(5): 347-366.

Filatotchev, I., & Bishop, K. 2002. Board composition, share ownership, and underpricing' of UKIPO firms. ***Strategic Management Journal***, 23(10): 941-955.

Finkelstein, S. 1992. Power in top management teams - Dimensions, measurement, and validation. ***Academy of Management Journal***, 35(3): 505-538.

Finkelstein, S., & Daveni, R. A. 1994. CEO duality as a double-edged-sword - How boards of directors balance entrenchment avoidance and unity of command. ***Academy of Management Journal***, 37(5): 1079-1108.

Finkelstein, S., & Hambrick, D. 1996. ***Strategic Leadership: Top Executives and Their Effects on Organizations***. Minneapolis/St. Paul: West Pub. Co.

Finkle, T. A. 1998. The relationship between boards of directors an initial public offerings in the biotechnology industry. ***Entrepreneurship Theory and Practice***, 22(3): 5.

Forbes, D. P., & Milliken, F. J. 1999. Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. ***Academy of Management Review***, 24(3): 489-505.

Francis, D. H., & Sandberg, W. R. 2000. Friendship within entrepreneurial teams and its association with team and venture performance. ***Entrepreneurship Theory and Practice***, 25(2): 5.

Fredrickson, J. W., Hambrick, D. C., & Baumrin, S. 1988. A model of CEO dismissal. ***Academy of Management Review***, 13(2): 255-270.

Fredrickson, J. W., & Iaquinto, A. L. 1989. Inertia and creeping rationality in strategic decision processes. ***Academy of Management Journal***, 32(3): 516-542.

Fried, V. H., & Hisrich, R. D. 1995. The venture capitalist - A relationship investor. ***California Management Review***, 37(2): 101-113.

Friedman, S. D., & Saul, K. 1991. A leaders wake - Organization member reactions to CEO succession. ***Journal of Management***, 17(3): 619-642.

Friedman, S. D., & Singh, H. 1989. CEO succession and stockholder reaction - The influence of organizational context and event content. ***Academy of Management Journal***, 32(4): 718-744.

Furtado, E., & Karan, V. 1990. Cause, consequences, and shareholder wealth effects of managerial turnover: A review of the empirical evidence. ***Financial Management***: 60-75.

Furtado, E., & Rozeff, M. 1987. The wealth effects of company initiated management changes. ***Journal of Financial Economics***, 18: 147-160.

Geletkanycz, M. A., Boyd, B. K., & Finkelstein, S. 2001. The strategic value of CEO external directorate networks: Implications for CEO compensation. ***Strategic Management Journal***, 22(9): 889-898.

Geletkanycz, M. A., & Hambrick, D. C. 1997. The external ties of top executives: Implications for strategic choice and performance. ***Administrative Science Quarterly***, 42(4): 654-681.

Gifford, S. 1997. Limited attention and the role of the venture capitalist. ***Journal of Business Venturing***, 12(6): 459-482.

Gompers, P. A. 1996. Grandstanding in the venture capital industry. ***Journal of Financial Economics***, 42(1): 133-156.

Gorman, M., & Sahlman, W. A. 1989. What do venture capitalists do? ***Journal of Business Venturing***, 4(4): 231-248.

Greiner, L. E. 1972. Evolution and revolution as organizations grow. ***Harvard Business Review***, 50(4): 37-46.

Greiner, L. E., & Bhambri, A. 1989. New CEO intervention and dynamics of deliberate strategic change. ***Strategic Management Journal***, 10: 67-86.

Gulati, R., & Higgins, M. C. 2003. Which ties matter when? The contingent effects of interorganizational partnerships on IPO success. ***Strategic Management Journal***, 24(2): 127-144.

Guthrie, J. P., & Datta, D. K. 1997. Contextual influences on executive selection: Firm characteristics and CEO experience. ***Journal of Management Studies***, 34(4): 537-560.

Guthrie, J. P., Grimm, C. M., & Smith, K. G. 1991. Environmental-change and management staffing - An empirical study. ***Journal of Management***, 17(4): 735-748.

Guthrie, J. P., & Olian, J. D. 1991. Does context affect staffing decisions? The case of general managers. ***Personal Psychology***, 44: 263-292.

Haleblian, J., & Finkelstein, S. 1993. Top management team size, CEO dominance, and firm performance - The moderating roles of environmental turbulence and discretion. ***Academy of Management Journal***, 36(4): 844-863.

Hall, J., & Hofer, C. W. 1993. Venture capitalists decision criteria in new venture evaluation. ***Journal of Business Venturing***, 8(1): 25-42.

Hambrick, D. C. 1981. Environment, strategy, and power within top management teams. ***Administrative Science Quarterly***, 26(2): 253-275.

Hambrick, D. C., & Crozier, L. M. 1985. Stumblers and stars in the management of rapid growth. ***Journal of Business Venturing***, 1: 31-45.

Hambrick, D. C., & Finkelstein, S. 1987. Managerial discretion: A bridge between polar views on organizations. In B. M. Staw (Ed.), ***Research in Organizational Behavior***. Greenwich, CT: JAI Press.

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

Hanks, S. H., Watson, C. J., Jansen, E., & Chandler, G. N. 1993. Tightening the life-cycle construct: A taxonomic study of growth stage configurations in high-technology organizations. ***Entrepreneurship Theory and Practice***, 18(2): 5-30.

Hanley, K. W. 1993. The underpricing of initial public offering and the partial adjustment phenomenon. ***Journal of Financial Economics***, 34(2): 177-198.

Harrison, J. R., Torres, D. L., & Kukalis, S. 1988. The changing of the guard - Turnover and structural change in the top-management positions. ***Administrative Science Quarterly***, 33(2): 211-232.

Haveman, H. A. 1993. Ghosts of managers past - Managerial succession and organizational mortality. ***Academy of Management Journal***, 36(4): 864-881.

Hedberg, B. L. T., Nystrom, P. C., & Starbuck, W. H. 1976. Camping on seesaws - Prescriptions for a self-designing organization. ***Administrative Science Quarterly***, 21(1): 41-65.

Hellmann, T. 1998. The allocation of control rights in venture capital contracts. ***Rand Journal of Economics***, 29(1): 57-76.

Hellmann, T., & Puri, M. 2002. Venture capital and the professionalization of start-up firms: Empirical evidence. ***Journal of Finance***, LVII(1): 169-197.

Helmich, D. L. 1974. Organizational growth and succession patterns. ***Academy of Management Journal***, 17(4): 771-775.

Helmich, D. L. 1975. Corporate succession - Examination. ***Academy of Management Journal***, 18(3): 429-441.

Helmich, D. L., & Brown, W. B. 1972. Successor type and organizational change in corporate enterprise. ***Administrative Science Quarterly***, 17(3): 371-381.

Hickson, D. J., Hinings, C. R., Lee, C. A., Schneck, R. E., & Pennings, J. M. 1971. Strategic contingencies theory of intraorganizational power. ***Administrative Science Quarterly***, 16(2): 216-229.

Higashide, H., & Birley, S. 2002. The consequences of conflict between the venture capitalist and the entrepreneurial team in the United Kingdom from the perspective of the venture capitalist. ***Journal of Business Venturing***, 17(1): 59-81.

Higgins, M. C., & Gulati, R. 2002. Who's onboard?: The effects of upper echelon affiliations on IPO process, ***Working Paper***. Harvard University.

Higgins, M. C., & Gulati, R. 2003. Getting off to a good start: The effects of upper echelon affiliations on underwriter prestige. ***Organization Science***, 14(3): 244-263.

Hill, C. W. L., & Snell, S. A. 1989. Effects of ownership structure and control on corporate productivity. ***Academy of Management Journal***, 32(1): 25-46.

Hillman, A. J., Cannella, A. A., & Paetzold, R. L. 2000. The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. ***Journal of Management Studies***, 37(2): 235-255.

Hoffman, H., & Blakely, J. 1987. You can negotiate with venture capitalists. ***Harvard Business Review***, March-April: 6-24.

Hoffman, R. C., & Hegarty, W. H. 1993. Top management influence on innovations - Effects of executive characteristics and social culture. ***Journal of Management***, 19(3): 549-574.

Jain, B. A., & Kini, O. 1995. Venture capitalist participation and the post-issue operating performance. ***Managerial and Decision Economics***, 16(6): 593-606.

Jayaraman, N., Khorana, A., Nelling, E., & Covin, J. 2000. CEO founder status and firm financial performance. ***Strategic Management Journal***, 21(12): 1215-1224.

Jenkins, R. 1975. ***Images and Enterprise: Technology and the American Photographic Industry, 1839-1925***. Baltimore: Johns Hopkins Press.

Jensen, M., & Meckling, W. 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., & Ellstrand, A. E. 1996. Boards of directors: A review and research agenda. ***Journal of Management***, 22(3): 409-438.

Kamm, J., Shuman, J., Seeger, J. A., & Nurick, A. 1990. Entrepreneurial teams in new venture creation: A research agenda. ***Entrepreneurship Theory and Practice***, 15(4): 7-17.

Kassinis, G., & Vafeas, N. 2002. Corporate boards and outside stakeholders as determinants of environmental litigation. ***Strategic Management Journal***, 23(5): 399-415.

Kazanjian, R. K. 1988. Relation of dominant problems to stages of growth in technology-based new ventures. ***Academy of Management Journal***, 31(2): 257-279.

Kazanjian, R. K., & Rao, H. 1999. The creation of capabilities in new ventures - A longitudinal study. ***Organization Studies***, 20(1): 125-142.

Keck, S. L., & Tushman, M. L. 1993. Environmental and organizational context and executive team structure. ***Academy of Management Journal***, 36(6): 1314-1344.

Kelly, D. J., & Rice, M. P. 2001. Technology-based strategic actions in new firms: The influence of founding technology resources. ***Entrepreneurship Theory and Practice***, 26(1): 55.

Kesner, I. F., & Dalton, D. R. 1994. Top management turnover and CEO succession - An investigation of the effects of turnover on performance. ***Journal of Management Studies***, 31(5): 701-713.

Kesner, I. F., & Sebora, T. C. 1994. Executive succession - Past, present and future. ***Journal of Management***, 20(2): 327-372.

Kimberly, J. R., & Miles, R. H. 1980. ***The Organizational Life Cycle***. San Francisco: Jossey-Bass.

Kuratko, D. F., & Hodgetts, R. M. 1989. ***Entrepreneurship: A Contemporary Approach***. Chicago: Dryden Press.

Leenders, R. T. A. J., & Gabbay, S. M. (Eds.). 1999. ***Corporate Social Capital and Liability***. Boston: Kluwer Academic Press.

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

Lerner, J. 1995. Venture capitalist and the oversight of private firms. ***Journal of Finance***, 50(1): 301-318.

Lieberson, S. L., & O'Connor, J. F. 1972. Leadership and organizational performance. ***American Sociological Review***, April: 117-130.

Long, J. S. 1997. ***Regression Models for Categorical and Limited Dependent Variables***. Thousand Oaks, CA: Sage Publications.

Lorsch, J. W., Zelleke, A. S., & Pick, K. 2001. Unbalanced boards. ***Harvard Business Review***, 79(2): 28-30.

Low, M. B., & Macmillan, I. C. 1988. Entrepreneurship - Past research and future challenges. ***Journal of Management***, 14(2): 139-161.

Lubatkin, M., & Chung, K. 1985. Leadership origin and organizational performance in prosperous and decline firms. ***Academy of Management Best Paper Proceedings***: 25-29.

Mace, M. 1971. ***Directors: Myth and Reality***. Boston: Harvard University Press.

Macmillan, I. C., Siegel, R., & Subba Narasimha, P. N. 1985. Criteria used by venture capitalists to evaluate new venture proposals. ***Journal of Business Venturing***, 11(1): 119-128.

Maruca, R. F. 2000. Entrepreneurs versus executives at Socaba.com. ***Harvard Business Review***, July-August: 30-38.

McDougall, P. P., & Oviatt, B. M. 1996. New venture internationalization, strategic change, and performance: A follow-up study. ***Journal of Business Venturing***, 11(1): 23-40.

McDougall, P. P., Shane, S., & Oviatt, B. M. 1994. Explaining the formation of international new ventures - The limits of theories from international-business research. ***Journal of Business Venturing***, 9(6): 469-487.

McGee, J. E., Dowling, M. J., & Megginson, W. L. 1995. Cooperative strategy and new venture performance - The role of business strategy and management experience. ***Strategic Management Journal***, 16(7): 565-580.

Megginson, W., & Weiss, K. 1991. Venture capitalist certification in initial public offerings. ***Journal of Finance***, 46: 879-903.

Meyer, G. D., & Dean, T. J. 1990. An upper echelons perspective on transformational leadership problems in high technology firms. ***Journal of High Technology Management***, 1: 223-242.

Meyer, J., & Rowan, B. 1977. Institutionalized organizations: Formal structure as myth and ceremony. ***American Journal of Sociology***, 83(2): 340-363.

Mian, S. 2001. On the choice and replacement of chief financial officers. ***Journal of Financial Economics***, 60(1): 143-175.

Miles, R. 1982. ***Coffin Nails and Corporate Strategies***. Englewood Cliffs, NJ: Prentice-Hall.

Miller, D., & Friesen, P. 1984. A longitudinal study of the corporate life cycle. ***Management Science***, 30: 1161-1183.

Mintzberg, H. 1984. Power and organization life-cycles. ***Academy of Management Review***, 9(2): 207-224.

Mintzberg, H. 1988. The simple structure. In J. B. Quinn, H. Mintzberg, & R. M. James (Eds.), ***The Strategy Process: Concepts, Contexts and Case***. Englewood Cliffs, NJ: Prentice Hall.

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(3): 426-435.

Mizruchi, M. S. 1996. What do interlocks do? An analysis, critique, and assessment of research on interlocking directorates. ***Annual Review of Sociology***, 22: 271-298.

Nelson, T. 2003. The persistence of founder influence: Management, ownership, and performance effects at initial public offering. ***Strategic Management Journal***, 24(8): 707-724.

Nonaka, I. 1994. A dynamic theory of organizational knowledge creation. ***Organization Science***, 5(1): 14-37.

Norburn, D., & Birley, S. 1988. The top management team and corporate performance. ***Strategic Management Journal***, 9(3): 225-237.

Ocasio, W. 1994. Political-dynamics and the circulation of power - CEO succession in United-States industrial corporations, 1960-1990. ***Administrative Science Quarterly***, 39(2): 285-312.

Ocasio, W. 1999. Institutionalized action and corporate governance: The reliance on rules of CEO succession. ***Administrative Science Quarterly***, 44(2): 384-416.

Ocasio, W., & Kim, H. 1999. The circulation of corporate control: Selection of functional backgrounds of new CEOs in large US manufacturing firms, 1981-1992. ***Administrative Science Quarterly***, 44(3): 532-562.

Pagano, M., Panetta, F., & Zingales, L. 1998. Why do companies go public? An empirical analysis. ***Journal of Finance***, 53(1): 27-64.

Pearce, J. A., & DeNisi, A. S. 1983. Attribution theory and strategic decision-making - An application to coalition-formation. ***Academy of Management Journal***, 26(1): 119-128.

Pettigrew, A. 1985. ***The Awakening Giant: Continuity and Change in Imperial Chemical Industries***. London: Blackwell.

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

Pfeffer, J. 1992. Understanding power in organizations. ***California Management Review***, 34(2): 29-50.

Pfeffer, J., & Salancik, G. R. 1978. ***The External Control of Organizations: A Resource Dependency Perspective***. New York: Harper & Row.

Pitcher, P., Chreim, S., & Kisfalvi, V. 2000. CEO succession research: Methodological bridges over troubled waters. ***Strategic Management Journal***, 21(6): 625-648.

Porter, M. E. 1979. The structure within industries and companies' performance. ***Review of Economics and Statistics***, 61: 602-613.

Portes, A. 1998. Social capital: Its origins and applications in modern sociology. ***Annual Review of Sociology***, 24: 1-24.

Prasad, D., Vozikis, G. S., Bruton, G. D., & Merikas, A. 1995. "Harvesting" through initial public offerings (IPOs): The implications of underpricing for the small firm. ***Entrepreneurship Theory and Practice***(Winter): 31-41.

Puffer, S. M., & Weintrop, J. B. 1991. Corporate performance and CEO turnover - The role of performance expectations. ***Administrative Science Quarterly***, 36(1): 1-19.

Rajagopalan, N., & Datta, D. K. 1996. CEO characteristics: Does industry matter? ***Academy of Management Journal***, 39(1): 197-215.

Rasheed, A., Datta, K. D., & Chinta, R. R. 1997. Determinants of price premiums: A study of initial public offerings in the medical diagnostic and devices industry. ***Journal of Small Business Management***, Oct.: 11-22.

Ritter, J. R. 1991. The long run performance of initial public offerings. ***Journal of Finance***, 9(2): 141-156.

Ritter, J. R. 1998. Initial public offerings. ***Contemporary Finance Digest***, 2(1): 5-30.

Robinson, K. C. 1999. An examination of the influence of industry structure on eight alternative measures of new venture performance for high potential independent new ventures. ***Journal of Business Venturing***, 14(2): 165-187.

Robinson, P. B., & Sexton, E. A. 1994. The effect of education and experience on self-employment success. ***Journal of Business Venturing***, 9(2): 141-156.

Rock, K. 1986. Why new issues are underpriced? ***Journal of Financial Economics***, 15: 187-212.

Rubenson, G. C., & Gupta, A. K. 1991. The founder's disease: A critical re-examination, ***Frontiers of Entrepreneurship Research***. Wellesley, MA: Babson College.

Rubenson, G. C., & Gupta, A. K. 1992. Replacing the founder: Exploring the myth of the entrepreneur's disease. ***Business Horizon***, November-December: 53-57.

Rubenson, G. C., & Gupta, A. K. 1996. The initial succession: A contingency model of founder tenure. ***Entrepreneurship Theory and Practice***, 21(2): 21.

Sahlman, W. A. 1990. The structure and governance of venture-capital organizations. ***Journal of Financial Economics***, 27(2): 473-521.

Sakano, T., & Lewin, A. Y. 1999. Impact of CEO succession in Japanese companies: A coevolutionary perspective. ***Organization Science***, 10(5): 654-671.

Salancik, G. R., & Pfeffer, J. 1977. Effects of ownership and performance on executive tenure in U.S. corporations. ***Academy of Management Journal***, 23: 653-664.

Salancik, G. R., & Pfeffer, J. 1980. Effects of ownership and performance on executive tenure in United-States corporations. ***Academy of Management Journal***, 23(4): 653-664.

Sapienza, H. J., & Grimm, C. M. 1997. Founder characteristics, start-up process, and strategy/structure variables as predictors of shortline railroad performance. ***Entrepreneurship Theory and Practice***, 22(1): 5.

Schefczyk, M., & Gerpott, T. J. 2001. Qualifications and turnover of managers and venture capital-financed firm performance: An empirical study of German venture capital-investments. ***Journal of Business Venturing***, 16(2): 145-163.

Schein, E. 1983. The role of the founder in creating organizational culture. ***Organizational Dynamics***, Summer: 13-28.

Schein, E. H. 1991. The role of founder in the creation of organizational culture. In P. J. Frost, L. F. Moore, M. R. Louis, C. Lundburg, & J. Martin (Eds.), ***Organizational Culture***: 14-25. London: Sage.

Schwartz, K. B., & Menon, K. 1985. Executive succession in failing firms. ***Academy of Management Journal***, 28(3): 680-686.

Selznick, P. 1957. ***Leadership in Administration: A Social Interpretation***. New York: Harper & Row.

Shane, S. 1995. Is the independent entrepreneurial firm a valuable organizational form? ***Academy of Management Best Paper Proceedings***: 110.

Shane, S. 2002. Executive Forum: University technology transfer to entrepreneurial companies. ***Journal of Business Venturing***, 17(6): 537-552.

Shane, S., & Stuart, T. 2002. Organizational endowments and the performance of university start-ups. ***Management Science***, 48(1): 154-170.

Shen, W., & Cannella, A. A. 2002a. Power dynamics within top management and their impacts on CEO dismissal followed by inside succession. ***Academy of Management Journal***, 45(6): 1195-1206.

Shen, W., & Cannella, A. A. 2002b. Revisiting the performance consequences of CEO succession: The impacts of successor type, postsuccession senior executive turnover, and departing CEO tenure. ***Academy of Management Journal***, 45(4): 717-733.

Singh, J. V., Tucker, D. J., & House, R. J. 1986. Organizational legitimacy and the liability of newness. ***Administrative Science Quarterly***, 31(2): 171-193.

Smith, G. 1988. ***From Monopoly to Competition: The Transformation of Alcoa, 1888-1896***. Cambridge: Cambridge University Press.

Starbuck, W. H., & Hedberg, B. 1977. ***Saving an Organization From a Stagnating Environment: Strategy+Structure=Performance***. Bloomington, IN: Indiana University Press.

Starr, J. A., & Macmillan, I. C. 1990. Resource cooptation via social contracting - Resource acquisition strategies for new ventures. ***Strategic Management Journal***, 11: 79-92.

Steier, L., & Greenwood, R. 2000. Entrepreneurship and evolution of angel financial networks. ***Organization Studies***, 21(1): 163-192.

Stinchecombe, A. L. 1965. Social structure and organizations. In J. G. March (Ed.), ***Handbook of Organizations***: 142-193. Chicago: Rand McNally & Company.

Stoughton, N. M., & Zechner, J. 1988. IPO-mechanisms, monitoring and ownership structure. ***Journal of Financial Economics***, 49: 45-77.

Stuart, T. E., Hoang, H., & Hybels, R. C. 1999. Interorganizational endorsements and the performance of entrepreneurial ventures. ***Administrative Science Quarterly***, 44(2): 315-349.

Terpstra, D. E., & Olson, P. D. 1993. Entrepreneurial start-up and growth: A classification of problems. ***Entrepreneurship Theory and Practice***, 17(3): 5.

Thomas, A. S., & Ramaswamy, K. 1993. Environmental-change and management staffing - A comment. ***Journal of Management***, 19(4): 877-887.

Thompson, J. D. 1967. Theory and research in administration - Halpin,Aw. ***Administrative Science Quarterly***, 11(4): 691-694.

Timmons, J. A. 1994. ***New Venture Creation***. Boston, MA: Irwin.

Timmons, J. A. 1999. ***New Venture Creation: Entrepreneurship for the 21st Century***. Boston: Irwin/McGraw-Hill.

Tushman, M., Virany, B., & Romanelli, E. 1985. Executive succession, strategic reorientations and organizational evolution. ***Technology in Society***, 7: 297-313.

Tyebjee, T., & Bruno, A. V. 1984. A model of venture capital investment activity. ***Management Science***, 30: 1051-1066.

Tyler, B. B., & Steensma, H. K. 1998. The effects of executives' experiences and perceptions on their assessment of potential technological alliances. ***Strategic Management Journal***, 19(10): 939-965.

Ucbasaran, D., Westhead, P., Wright, M., Lockett, A., & Lei, A. 2001. ***The dynamics of entrepreneurial teams***. Paper presented at the Babson Kauffman Entrepreneurship Conference, Jonkoping, Sweden.

Virany, B., & Tushman, M. 1986. Top management teams and corporate success in an emerging industry. ***Journal of Business Venturing***, 1(3): 261-274.

Wade, J., Oreilly, C. A., & Chandratat, I. 1990. Golden parachutes - CEOs and the exercise of social-Influence. ***Administrative Science Quarterly***, 35(4): 587-603.

Warner, R. R., Watts, R. L., & Wruck, K. H. 1988. Stock prices and top management changes. ***Journal of Financial Economics***, 20: 461-192.

Wasserman, N. 2003. Founder-CEO succession and the paradox of entrepreneurial success. ***Organization Science***, 14(2): 149-172.

Weinzimmer, L. G. 1997. Top management team correlates of organizational growth in a small business context. ***Journal of Small Business Management***, 35: 1-9.

Weisbach, M. 1988. Outside directors and CEO turnover. ***Journal of Financial Economics***, 20: 431-460.

Welbourne, T. M., & Andrews, A. O. 1996. Predicting the performance of initial public offerings: Should human resource management be in the equation? ***Academy of Management Journal***, 39(4): 891-919.

Welbourne, T. M., & Cyr, L. A. 1999. The human resource executive effect in initial public offering firms. ***Academy of Management Journal***, 42(6): 616-629.

Welbourne, T. M., Neck, H. M., & Meyer, G. D. 1998. ***Getting past the "entrepreneurial growth ceiling": A longitudinal study of IPO firm growth through solution driven strategies***. Paper presented at the 18th Annual Entrepreneurship Research Conference, Babson College, Wellesley, MA.

Welsh, M. A., & Dehler, G. E. 1988. Political legacy of administrative succession. ***Academy of Management Journal***, 31(4): 948-961.

Wernerfelt, B. 1984. A resource-based view of the firm. ***Strategic Management Journal***, 5(2): 171-180.

West, G. P., & Meyer, G. D. 1998. To agree or not to agree? Consensus and performance in new ventures. ***Journal of Business Venturing***, 13(5): 395-422.

Wiersema, M. F. 1992. Strategic Consequences of Executive Succession within Diversified Firms. ***Journal of Management Studies***, 29(1): 73-94.

Wiersema, M. F., & Bantel, K. A. 1993. Top management team turnover as an adaptation mechanism - The role of the environment. ***Strategic Management Journal***, 14(7): 485-504.

Willard, G. E., Krueger, D. A., & Feeser, H. R. 1992. In order to grow, must the founder go - A comparison of performance between founder and non-founder managed high-growth manufacturing firms. ***Journal of Business Venturing***, 7(3): 181-194.

Yamaguchi, K. 1991. ***Event History Analysis***. Newbury Park, CA: Sage.

Zahra, S. A. 1996. Governance, ownership, and corporate entrepreneurship: The moderating impact of industry technological opportunities. ***Academy of Management Journal***, 39(6): 1713-1735.

Zahra, S. A., & Pearce, J. A. 1989. Boards of directors and corporate financial performance - A review and integrative model. ***Journal of Management***, 15(2): 291-334.

Zajac, E. J. 1990. CEO selection, succession, compensation and firm performance - A theoretical integration and empirical analysis. ***Strategic Management Journal***, 11(3): 217-230.

Zajac, E. J., & Westphal, J. D. 1996. Who shall succeed? How CEO board preferences and power affect the choice of new CEOs. ***Academy of Management Journal***, 39(1): 64-90.

Zald, M. 1965. Who shall rule? A political analysis of succession in a large welfare organization. ***Pacific Sociological Review***, 8: 52-60.

APPENDIX (A)

TABLE 1

Means, Standard Deviations, and Correlations of Variables in the Study of Antecedents of Pre-IPO Management Team Restructuring

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7
1. Pre-IPO Management Team Restructuring	.601	.293							
2. VC control	.391	.491	.060						
3. VC prestige	.446	.500	.191	.401***					
4. Firm age	4.554	1.769	-.655***	.013	-.046				
5. Firm size	15.568	1.235	-.066	-.035	.233	.087			
6. Firm performance	1.301	2.219	.024	.028	.063	-.078	-.101		
7. Firm developmental stage	.109	.313	-.243*	-.131	-.173	.168	-.107	-.091	
8. Number of employees (Log)	3.720	.821	-.079	.006	.208*	.090	.760***	-.068	-.045

N=92
*** p<.001; * p<.05

TABLE 2

Results of Multiple Linear Regression on Antecedents of Pre-IPO Management Team Restructuring

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	1.209***	1.188***	1.297***	1.308***
Firm age	-.104***	-.105***	-.103***	-.103***
Firm size	-.007	-.006	-.016	-.016
Firm performance	-.005	-.006	-.007	-.007
Firm developmental stage	-.135†	-.128	-.114	-.116
VC control		.030		-.010
VC prestige			.094†	.098†
F	17.72***	14.15***	15.4***	12.69***
R^2	.449	.451	.472	.473
Adjusted R^2	.424	.420	.441	.435

N=92

***p<.001, **p<.01, *p<.05, †p<.1

TABLE 3

Means, Standard Deviations, and Correlations of Variables in the Study of Antecedents of Pre-IPO New Executive Entry

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7
1. Pre-IPO new executive entry	3.755	2.487							
2. VC control	.383	.489	-.073						
3. VC prestige	.447	.500	.210*	.392***					
4. Firm age	4.521	1.770	-.427***	.028	-.035				
5. Firm size	15.599	1.255	.154	-.059	.219*	.051			
6. Firm performance	1.407	2.512	-.050	-.009	.117	-.071	-.046		
7. Firm developmental stage	.117	.323	-.125	-.151	-.194	.118	-.047	-.114	
8. Number of employees (Log)	3.750	.852	.182	-.023	.174	.039	.771***	-.0540	.043

N=94
***p<.001, **p<.01, *p<.05

TABLE 4

Results of Poisson Regression on Antecedents of Pre-IPO New Executive Entry

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	1.473***	1.517***	1.446	1.539***
Firm age	-1.652***	-1.640***	-.162***	-.160***
Number of employees (Log)	.162*	.160*	.140*	.125*
Firm performance	-.025	-.025	-.032	-.035
Firm developmental stage	-.274	-.298	-.189	-.205
VC control		-.099		-.010†
VC prestige			.209†	.299*
LR Chi2	37.24***	38.02***	40.66***	43.91***
Pseudo R^2	.087	.089	.095	.102
Goodness-of-fit Chi2	113.07	112.28	109.65	106.39
Prob>Chi2	.043	.041	.059	.077

N=94
***p<.001, **p<.01, *p<.05, †p<.1

TABLE 5

Distribution of Technical Executive, Founding Status, and External Directorships over Pre-IPO Executive Exit

Pre-IPO Executive Exit	Technical Executive (1)			Founding Status (2)			External Directorship (3)		
	0	1	Total	0	1	Total	0	1	Total
0	357.00	225.00	582.00	484.00	98.00	582.00	522.00	60.00	582.00
	61.34	38.66	100.00	83.16	16.84	100.00	89.69	10.31	100.00
	89.03	94.14	90.94	90.81	91.59	90.94	91.10	89.55	90.94
1	44.00	14.00	58.00	49.00	9.00	58.00	51.00	7.00	58.00
	75.86	24.14	100.00	84.48	15.52	100.00	87.93	12.07	100.00
	10.99	5.86	9.06	9.19	8.41	9.06	8.90	10.45	9.06
Total	401.00	239.00	640.00	533.00	107.00	640.00	573.00	67.00	640.00
	62.66	37.34	100.00	83.28	16.72	100.00	89.53	10.47	100.00
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(1) Pearson Chi2(1) =4.754, $p<.05$
(2) Pearson Chi2(1) =.066, n.s.
(3) Pearson Chi2(1)=.174, n.s.
Note: Numbers in each cell present count, row percentage, and column percentage, respectively.

TABLE 6

Distribution of VC Control and VC Prestige over Pre-IPO Executive Exit

Pre-IPO Executive Exit	VC Control (1)			VC Prestige (2)		
	0	1	Total	0	1	Total
0	377.00	205.00	582.00	307.00	275.00	582.00
	64.78	35.22	100.00	52.75	47.25	100.00
	91.95	89.13	90.94	90.03	91.97	90.94
1	33.00	25.00	58.00	34.00	24.00	58.00
	56.90	43.10	100.00	58.62	41.38	100.00
	8.05	10.87	9.06	9.97	8.03	9.06
Total	410.00	230.00	640.00	341.00	299.00	640.00
	64.06	35.94	100.00	53.28	46.72	100.00
	100.00	100.00	100.00	100.00	100.00	100.00

(1) Pearson Chi2(1) =1.423, n.s.
(2) Pearson Chi2(1) =.731, n.s.
Note: Numbers in each cell present count, row percentage, and column percentage, respectively.

TABLE 7

Means, Standard Deviations, and Correlations of Variables in the Study of Antecedents of Pre-IPO Executive Exit

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10
1. Pre-IPO executive exit	.091	.287										
2. Executive tenure	2.564	1.845	.060									
3. Executive ownership	.025	.061	-.004	.284***								
4. Firm developmental stage	.120	.326	-.016	.093	.060							
5. Number of employees	64.413	66.740	-.073	-.002	-.118*	.208***						
6. Ave. growth rate in R&D exp.	.405	.989	-.019	.016	-.023	-.051	-.153***					
7. VC control	.359	.480	.047	-.008	-.059	-.127**	-.121**	-.203***				
8. VC prestige	.467	.499	-.034	-.089*	-.091*	-.221***	-.005	-.150***	.350***			
9. Technical executive	.373	.484	-.086*	-.047	-.102**	-.117**	-.085*	.002	-.040	.022		
10. External directorship	.105	.306	.017	.194***	.269***	.015	-.038	-.001	-.022	-.013	-.222	
11. Founding status	.167	.374	-.010	.392***	.375***	-.024	-.063	-.012	.014	-.042	.122	.120

N=640

*** p<.001, **p<.01, *p<.05

TABLE 8

Results of Logistic Regression on Antecedents of Pre-IPO Executive Exit (Full Sample)

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	-2.036***	-2.056***	-1.779***	-1.786***
Executive tenure	.146†	.138†	.159†	.151†
Executive ownership	-2.746	-2.652	-2.689	-2.643
Firm developmental stage	-.291	-.303	-.385	-.403
Number of employees	-.009*	-.008†	-.010*	-.008*
Ave. growth rate in R&D exp.	-.136	-.128	-.144	-.138
VC control		.299		.253
VC prestige		-.324		-.313
Technical executive			-.730*	-.712*
Executive external directorships			-.102	-.079
Founding status			-.204	-.207
LR Chi2	9.770†	11.280	15.880*	17.120†
Pseudo R^2	.025	.029	.041	.044

N=640
***p<.001, **p<.01, *p<.05, †p<.1

TABLE 9

Results of Logistic Regression on Antecedents of Pre-IPO Executive Exit (Reduced Sample)

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	-1.978***	-1.965***	-1.706***	-1.682***
Executive tenure	.195*	.1828*	.192*	.179*
Executive ownership	-6.370	-6.302	-7.342†	-7.488†
Firm developmental stage	-.681	-.716	-.763	-.804
Number of employees	-.015**	-.013*	-.015**	-.013*
Ave. growth rate in R&D exp.	-.165	-.166	-.172	-.175
VC control		.383		.347
VC prestige		-.569†		-.565
Technical executive			-.831*	-.814*
Executive external directorship			.193	.232
Founding status			-.009	-.002
LR Chi2	15.590**	18.760**	22.260**	25.230**
Pseudo R^2	.045	.054	.065	.073

N=631

***p<.001, **p<.01, *p<.05, †p<.1

TABLE 10

Distribution of Executive Exit over Post-IPO Years *

Exit	Year 1	Year2	Year 3	Total
0	489.00	395.00	314.00	1198.00
	40.82	32.97	26.21	100.00
1	113.00	83.00	53.00	249.00
	45.38	33.33	21.29	100.00
Total	602.00	478.00	367.00	1447.00
	41.60	33.03	25.36	100.00

* Numbers in each cell present count and row percentage respectively.

TABLE 11

Distribution of Executive Prior Managerial Experience, Education and Founding Status over Post-IPO Exit

Pre-IPO Executive Exit (Graduate) (3)	**Prior Managerial Experience(1)**			**Founding Status (2)**			**Formal Business Education**		
	0	1	Total	0	1	Total	0	1	Total
0	839.00	359.00	1198.00	971.00	227.00	1198.00	960.00	238.00	1198.00
	70.03	29.97	100.00	81.05	18.95	100.00	80.13	19.87	100.00
	80.60	88.42	82.79	81.53	88.67	82.79	83.70	79.33	82.79
1	202.00	47.00	249.00	220.00	29.00	249.00	187.00	62.00	249.00
	81.12	18.88	100.00	88.35	11.65	100.00	75.10	25.00	100.00
	19.40	11.58	17.21	18.47	11.33	17.21	16.30	20.67	17.21
Total	1041.00	406.00	1447.00	1191.00	256.00	1447.00	1147.00	300.00	1447.00
	71.94	28.06	100.00	82.31	17.69	100.00	79.27	20.73	100.00
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(1) Pearson Chi2(1) =12.563, p<.001
(2) Pearson Chi2(1) = 7.548 p<.01
(3) Pearson Chi2(1)=3.178, p<.01
Note: Numbers in each cell present count, row percentage, and column percentage, respectively.

TABLE 12

Means, Standard Deviations, and Correlations of Variables in the Study of Antecedents of Post-IPO Executive Exit (Part I)

Variable	Mean	Std. Dev.	1	2	3	4	5	6
1. Post-IPO executive exit	.172	.378						
2. Executive age	47.114	7.211	.015					
3. Executive post-IPO ownership	.020	.047	-.026	.168***				
4. Executive tenure	3.375	2.076	-.06*	.136***	.291***			
5. Top management team size	10.504	5.855	.080**	-.0490	-.096***	-.257***		
6. Firm size	3.250	.961	.000	-.032	-.118***	.026	-.031	
7. Shareholder return	.135	.971	-.030	-.022	.078**	.005	-.104***	.042
8. Poor return dummy	.660	.4739	.092***	.006	-.078**	.029	.010	-.040
9. Addition of new executives	1.269	1.478	.030	-.007	-.013	-.067*	-.128***	.191***
10. Addition of new directors	1.026	1.755	.003	.032	-.029	.058*	-.215***	.019
11. Pre-IPO management team restructuring	.590	.292	.011	-.131***	-.027	-.474***	.048	.056*
12. Executive public company managerial experience	.645	.479	-.017	.038	-.107***	-.166***	-.003	-.009
13. Executive public company financial experience	.100	.300	.019	-.148***	-.122***	-.116***	-.023	-.010
14. Technical executive	.487	.500	.022	.056*	.005	.055*	.065*	.054*
15. Formal business education (Undergraduate)	.064	.244	-.029	-.134***	.008	-.089***	-.044	-.050
16. Formal business education (Graduate)	.207	.406	.0470	-.099***	-.031	-.057	-.042	-.006
17. Founding status	.177	.382	-.072**	.100***	.411***	.374***	-.093***	.010

N=1447
*** p<.001, **p<.01, *p<.05

TABLE 13

Means, Standard Deviations, and Correlations of Variables in the Study of Antecedents of Post-IPO Executive Exit (Part II)

Variable	7	8	9	10	11	12	13	14	15	16
7. Shareholder return										
8. Poor return dummy	-.577***									
9. Addition of new executives	.005	.002								
10. Addition of new directors	.055*	-.029	.093***							
11. Pre-IPO management team restructuring	.082**	-.093***	.115***	-.062*						
12. Executive public company managerial exp.	-.058*	.074**	.001	.013	.050					
13. Executive public company financial exp.	.033	-.008	-.009	.010	.038	.248***				
14. Technical executive	.025	-.005	-.006	-.001	.000	-.069*	-.325***			
15. Formal business education (Undergraduate)	.008	.002	.039	.011	.030	-.014	.281***	.254***		
16. Formal business education (Graduate)	-.018	.011	.027	-.014	.049	.152***	.335***	.443***	.041	
17. Founding status	-.001	-.050	-.010	.035	-.071**	-.137***	-.137***	.176***	-.084**	-.081**

N=1447
*** p<.001, **p<.01, *p<.05

TABLE 14

Results of Cox Proportional Hazard Model of Antecedents of Post-IPO Executive Exit

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Executive age	.002	-.001	.004	.001	.001	.002
Executive post-IPO ownership	1.577	2.253	2.217	2.875†	2.821†	2.730†
Executive tenure	-.181***	-.228***	-.186***	-.241***	-.242***	-.242***
Top management team size	.084***	.088***	.084***	.088***	.090***	.085***
Firm size	-.164*	-.195**	-.172†	-.201**	-.202**	-.204**
Shareholder return	.134†	.140†	.124	.131†	.134†	.129†
Poor return dummy	.672***	.655***	.696***	.681***	.885***	.443*
Addition of new executives		.091*		.095*	.190**	.081†
Addition of outside directors		-.069		-.004	.006	-.221*
Pre-IPO management team restructuring		-.679**		-.735**	-.721**	-.736**
Public company managerial experience			-.302*	-.306*	-.299*	-.306*
Public company financial experience			.228	.276	.275	.297
Technical executive			.263†	.290†	.287†	.285†
Formal business education (undergraduate)			-.429	-.487	-.481	-.508
Formal business education (graduate)			.472**	.487**	.484**	.488**
Founding status			-.176	-.134	-.106	-.103
Poor Return* Addition of new executives					-.133	
Poor Return* Addition of outside directors						.266*
LR Chi2	113.25***	123.84***	127.69***	139.7***	142.08***	146.26***
Pseudo R^2	.033	.037	.038	.041	.042	.043

N=1447

***p<.001, **p<.01, *p<.05, †p<.1

TABLE 15

Results of Stratified Cox Model of Antecedents of Post-IPO Executive Exit

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Executive age	.002	-.001	.004	.001	.001	.002
Executive post-IPO ownership	1.831	2.383	2.218	2.876†	2.822†	2.730†
Executive tenure	-.175***	-.224***	-.186***	-.241***	-.242***	-.242***
Top management team size	.084***	.088***	.084***	.088***	.090***	.085***
Firm size	-.162*	-.194**	-.172*	-.201**	-.209**	-.204**
Shareholder return	.136†	.138†	.124	.131†	.134†	.129†
Poor return dummy	.665***	.652***	.695***	.680***	.885***	.443*
Addition of new executives		.091*		.095*	.190**	.081†
Addition of outside directors		-.006		-.004	.006	-.221*
Pre-IPO management team restructuring		-.672*		-.735**	-.721**	-.737**
Public company managerial experience			-.302*	-.306*	-.300*	-.306*
Public company financial experience			.229	.277	.275	.297
Technical executive			.263†	.290†	.287†	.285†
Formal business education (undergraduate)			-.429	-.487	-.482	-.508
Formal business education (graduate)			.472**	.487**	.484**	.488**
Poor Return* Addition of new executives					-.133	
Poor Return* Addition of outside directors						.266*
LR Chi2	105.34***	115.74***	119.54***	131.54***	133.92***	138.08***
Pseudo R^2	.033	.036	.037	.041	.042	.043

N=1447

***p<.001, **p<.01, *p<.05, †p<.1

Stratified by founding status

TABLE 16

Means, Standard Deviations, and Correlations of Variables in the Study of Performance Effects of Pre-IPO Management Team Restructuring

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10
1. Price premium	.413	-.697										
2. (Price premium+1)^3	3.639	1.986	.958***									
3. Pre-money Market Valuation (mil.)	69.374	101.536	.491***	.583***								
4. Ln(pre-money market valuation+1)	12.279	8.487	.770***	.810***	.533***							
5. Pre-IPO management team restru.	.600	.296	.003	.000	-.040	.121						
6. Risk factors	19.692	3.286	.021	.090	.011	-.130	.024					
7. Firm developmental stage	.117	.323	.145	.163	.117	.110	-.182	.105				
8. Ave. growth rate in R&D exp.	.376	.998	.099	.090	-.087	-.029	-.030	.017	-.051			
9. Number of employees (Log)	3.751	.852	-.140	-.118	.201	.162	-.040	-.129	.043	-.134		
10. Underwriter's rank	7.004	2.485	.022	.072	.323**	.279**	-.024	-.376***	-.026	-.137	.518***	
11. VC control	.383	.489	-.047	-.077	-.121	-.026	.060	-.214*	-.151	-.178	-.023	.013

N=94
*** p<.001, **p<.01, *p<.05

TABLE 17

Results of Multiple Linear Regression with Robust Standard Errors on Performance Effects of Pre-IPO Management Team Restructuring

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dependent Variable	DV=(Price Premium+1)^3			DV= Log(Market Valuation+1)		
Intercept	.732	.824	1.181	8.734	4.253	4.258
Firm risk factors	.134†	.121†	.111	-.369	-.370	-.386
Firm developmental stage	1.231**	1.093*	1.081*	5.446**	6.482**	6.558**
Ave. growth rate in R&D exp.	.212	.248	.1660	.055	.588	.718
Number of employees (Log)	-.383†	-.481†	-.533†	1.146	1.192	.794
Underwriter rank	.251**	.252**	.248*	.843†	.910*	1.138*
VC control	.131	.186		-.315	-.792	
Pre-IPO management team restructuring		.357	.208		6.089*	6.441*
Pre-IPO management team restructuring* VC control				.097		-2.240
Number of observations	92	92	91	91	91	90
F	4.76***	3.17**	3.17**	4.81***	4.96***	5.84***
R^2	.117	.118	.122	.162	.202	.222

***p<.001, **p<.01, *p<.05, †p<.1

TABLE 18

Means, Standard Deviations, and Correlations of Variables in the Study of Performance Effects of Post-IPO Executive Exit, with Firm Performance Measured with Average ROA

Variable	Mean	Std. Dev.	1	2	3	4	5
1. Average ROA	-42.624	37.556					
2. Exits of managerial executives	.205	.531	-.151*				
3. Exits of financial executives	.117	.340	-.019	.127			
4. Top management team size (Log)	2.175	.488	.111	.066	.109		
5. Firm size	3.130	.943	.465***	.007	-.167*	.034	
6. R&D expenditures of exiting year	7.516	5.880	.050	.157*	-.099	.188*	.491***

N=117
*** p<.001, **p<.01, *p<.05

TABLE 19

Means, Standard Deviations, and Correlations of Variables in the Study of Performance Effects of Post-IPO Executive Exit, with Firm Performance Measured with Average Shareholder Return

Variable	Mean	Std. Dev.	1	2	3	4	5	6
1. Average shareholder return	.222	.693						
2. Exits of managerial executives	.209	.538	.083					
3. Exits of financial executives	.117	.341	-.138	.136				
4. Top management team size (Log)	2.179	.497	-.095	.066	.118			
5. Firm size	3.105	.956	.003	.011	-.167*	.038		
6. R&D expenditures of exiting year	7.266	5.385	-.035	.128	-.090	.220**	.515***	
7. Shareholder return of exiting year	.220	1.109	-.083	-.058	-.075	-.100	.069	.233**

N=163
*** p<.001, **p<.01, *p<.05

TABLE 20

Results of Multiple Linear Regression with Robust Standard Errors on Performance Effects of Post-IPO Executive Exit with Firm Performance Measured with Average ROA

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	-127.137***	-125.75***	-127.662***	-126.427***
Top management team size (Log)	10.829†	11.143†	10.443†	10.605†
Firm size	23.581***	23.128***	23.818***	23.443***
R&D expenditures of exiting year	-1.711**	-1.553**	-1.698**	-1.524**
Managerial executive exits		-8.984†		-9.533*
Financial executive exits			4.474	6.465
F	16.62***	13.06***	12.44***	10.74***
R^2	.278	.293	.279	.297

N=171
***p<.001, **p<.01, *p<.05, †p<.1

TABLE 21

Results of Multiple Linear Regression with Robust Standard Errors on Performance Effects of Post-IPO Executive Exit with Firm Performance Measured with Average Shareholder Return

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	.527	.508	.560	.539
Top management team size (Log)	-.148	-1.150	-.124	-.124
Firm size	.008	.013	-.007	-.003
R&D expenditures of exiting year	.001	-.001	.000	-.002
Shareholder return of exiting year	-.060†	-.055†	-.064†	-.058†
Managerial executive exits		.111		.137
Financial executive exits			-.278*	-.308**
F	1.02	1.12	2.54*	2.28*
R^2	.018	.025	.036	.047

N=163
***p<.001, **p<.01, *p<.05, †p<.1

TABLE 22

Summary of the Results Regarding the Antecedents of Pre-IPO Management Team Restructuring, Executive Entry, Executive Exit and Post-IPO Executive Exit *

Variable	Pre-IPO Management team restructuring	Pre-IPO Executive Entry	Pre-IPO Executive Exit	Post-IPO Executive Exit
Independent variables				
VC control				
VC prestige	+ (s) ***	+ (s)		
Technical skills			– (s)	+ (s)
External directorships				
Founding status				
Addition of outside directors				– (r)
Pre-IPO management team restructuring				– (s)
Addition of post-IPO new senior executives				+ (s)
Prior public company management experience				– (s)
Formal business education (graduate)				+ (r)
Prior public company financial experience				
Addition of outside directors * Poor return				+ (s)
Addition of post-IPO new senior executives * Poor return				
Control variables **				
Firm age	–	–		
Number of employees (Log)	–	+	–	
Executive tenure			+	–
Top management team size				+
Firm size(average total assets, log)				–
Poor return				+

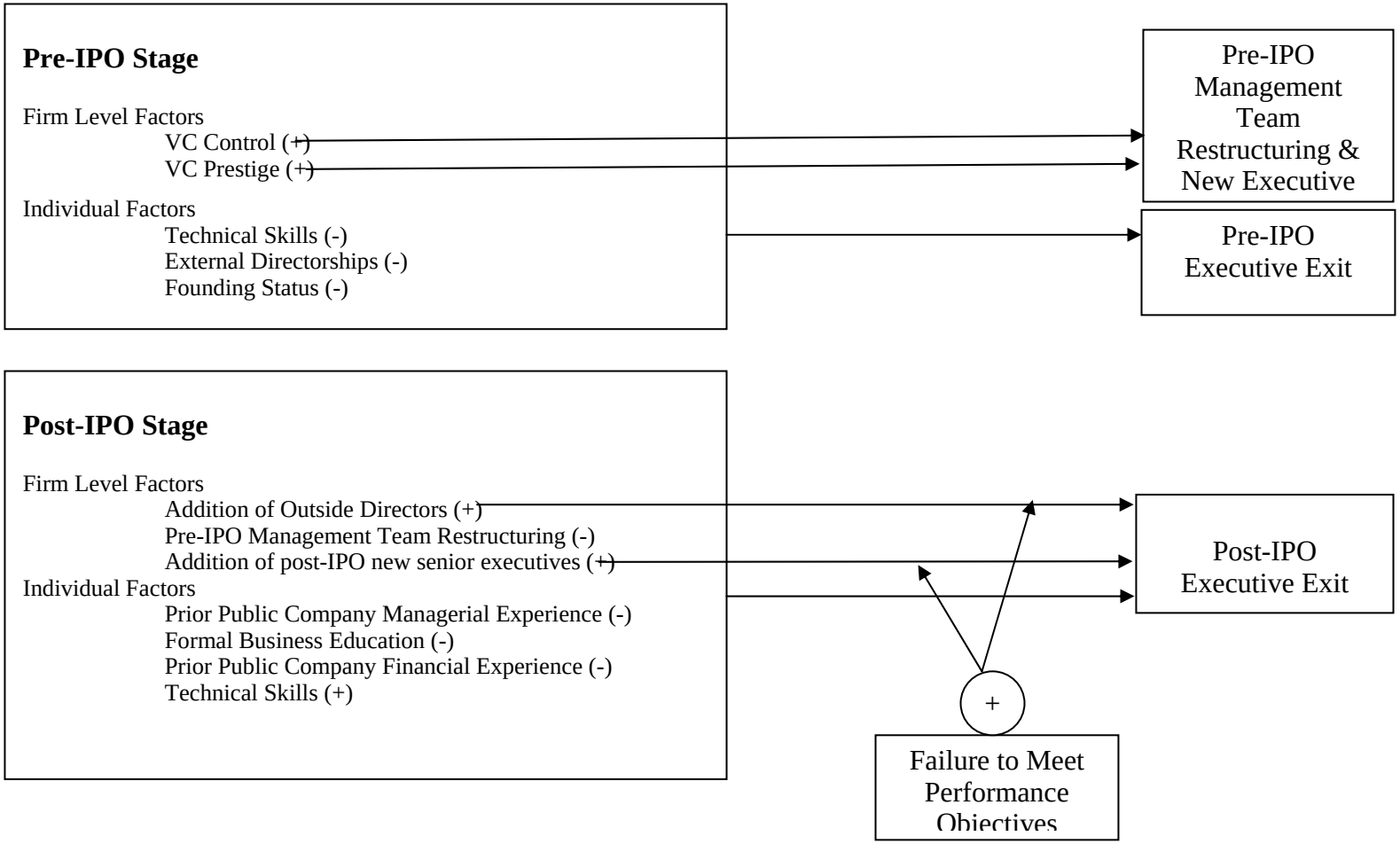
* The sign "+" represents a positive association, and the sign "–" represents a negative association.

** Only significant associations with DVs are reported

*** "s" represents the association supports the hypothesis, "r" represents the association rejects the hypothesis.

FIGURE 1

A Power Model of Management Team Restructuring and Executive Exit in IPO-Stage Firms



APPENDIX (B)

LIST OF COMPANIES IN THE SAMPLE			
Firm Number	**Permno**	**Company Name**	**IPO Date**
1	84511	Aastrom Biosciences Inc	2/4/1997
2	86235	Abgenix Inc	7/2/1998
3	86709	Albany Molecular Research Inc	2/4/1999
4	83111	Alexion Pharmaceuticals Inc	2/28/1996
5	76736	Alkermes Inc	7/16/1991
6	77086	Alteon Inc	11/1/1991
7	77264	Amylin Pharmaceuticals Inc	1/17/1992
8	77020	Anergen Inc	10/10/1991
9	79757	Aprogenex Inc	10/15/1993
10	80918	Ariad Pharmaceuticals Inc	5/20/1994
11	84052	Arqule Inc	10/16/1996
12	82670	Atlantic Technology Ventures Inc	12/14/1995
13	78812	Autoimmune Inc	1/20/1993
14	83475	Avigen Inc	5/22/1996
15	84192	Aviron	11/5/1996
16	80306	Biocryst Pharmaceuticals Inc	3/3/1994
17	77393	Biotime Inc	3/5/1992
18	77207	Bradley Pharmaceuticals Inc	11/12/1991
19	85668	C V Therapeutics Inc	11/19/1996
20	83769	Cadus Pharmaceutical Corp	7/17/1996
21	83849	Cambridge Heart Inc	8/2/1996
22	78815	Cell Genesys Inc	1/26/1993
23	76848	Cellpro Inc	9/24/1991
24	76625	Cephalon Inc	4/25/1991
25	84413	Cerus Corporation	1/30/1997
26	83246	Chirex Inc	3/5/1996
27	79807	Clintrials Research Inc	11/23/1993
28	86254	Collateral Therapeutics Inc	7/2/1998
29	86057	Combichem Inc	5/8/1998
30	85463	Corixa Corp	10/1/1997
31	84414	Coulter Pharmaceutical Inc	1/28/1997
32	85864	Curagen Corp	3/18/1998
33	85686	Depomed Inc	11/5/1997
34	83859	Diacrin Inc	2/12/1996
35	78965	Enchira Biotechnology Corp	3/12/1993
36	83651	Entremed Inc	6/11/1996
37	82695	Ergo Science Corp	12/14/1995
38	81862	Exogen Inc	7/20/1995
39	82700	Fuisz Technologies Ltd	12/14/1995
40	82576	Geltex Pharmaceuticals Inc	11/8/1995
41	77171	Genaera Corp	12/11/1991
42	85549	Gene Logic Inc	11/21/1997
43	80750	Genemedicine Inc	7/13/1994
44	77180	Genta Inc	12/17/1991
45	77274	Gilead Sciences Inc	1/22/1992

Firm Number	Permno	Company Name	IPO Date
46	82493	Gliatech Inc	10/19/1995
47	76700	Glycomed Inc	6/13/1991
48	82577	Gynecare Inc	11/22/1995
49	79977	Human Genome Sciences Inc	12/1/1993
50	82824	Hybridon Inc	1/24/1996
51	76693	I C O S Corp	6/6/1991
52	76841	I D E C Pharmaceuticals Corp	9/17/1991
53	76662	Immulogic Pharmaceutical Corp	5/22/1991
54	79906	Incyte Genomics Inc	11/4/1993
55	80539	Inhale Therapeutic Systems	5/3/1994
56	79703	Insite Vision Inc	10/18/1993
57	76661	Isis Pharmaceuticals Inc	5/17/1991
58	80598	L X R Biotechnology Inc	5/6/1994
59	77362	Lifecell Corp	2/27/1992
60	77291	Matrix Pharmaceutical Inc	1/28/1992
61	81724	Metra Biosystems Inc	6/30/1995
62	78131	Microcarb Inc	12/17/1992
63	80560	N P S Pharmaceuticals Inc	5/26/1994
64	82831	Neopharm Inc	1/25/1996
65	83151	Neose Technologies Inc	2/15/1996
66	80258	Neurobiological Technologies Inc	2/16/1994
67	83534	Neurocrine Biosciences Inc	5/23/1996
68	83541	Onyx Pharmaceuticals Inc	5/9/1996
69	79516	Oxigene Inc	8/26/1993
70	82604	Pathogenesis Corp	11/21/1995
71	77292	Protein Design Labs Inc	1/28/1992
72	77270	Protein Polymer Technologies Inc	1/21/1992
73	82610	Sano Corp	11/6/1995
74	76845	Sepracor Inc	9/20/1991
75	82216	Sequana Therapeutics Inc	7/31/1995
76	76773	Somatogen Inc	8/2/1991
77	77280	Sphinx Pharmaceuticals Corp	1/23/1992
78	77437	Stemcells Inc	3/25/1992
79	81012	Sugen Inc	10/3/1994
80	87418	Symyx Technologies Inc	11/18/1999
81	81665	Systemax Inc	8/6/1991
82	80577	Targeted Genetics Corp	5/20/1994
83	84136	Transkaryotic Therapies Inc	10/16/1996
84	83378	Trega Biosciences Inc	3/29/1996
85	77320	Univax Biologics Inc	2/4/1992
86	85382	Valentis Inc	9/15/1997
87	76744	Vertex Pharmaceuticals Inc	7/24/1991
88	80053	Viagene Inc	12/16/1993
89	79022	Vical Inc	3/9/1993
90	83707	Virus Research Institute Inc	6/5/1996
91	80485	Vivus Inc	4/6/1994
92	83432	Xenometrix Inc	10/17/1995

Firm Number	Permno	Company Name	IPO Date
93	79025	Zonagen Inc	3/25/1993
94	77298	Zynaxis Inc	1/30/1992

VITA

JUN LI

Department of Management, University of New Hampshire
McConell Hall, 15 College Road, Duhram, NH 03824

EDUCATION

Texas A&M University, Mays Business School, College Station, TX
Ph.D. in Strategic Management, August 2004

Peking University, Beijing, P. R. China
Master of Economics, July 1999

Peking University, Beijing, P. R. China
Bachelor of Economics, July 1995

RESEARCH INTERESTS

Strategic leadership in entrepreneurial firms
Business strategy and entrepreneurship of technology ventures
International business policy and international management

PAPERS UNDER REVIEW

Eden, Lorraine & Li, Jun, 2003. "Renegades in International Tax Space? Tax Havens and Inward Foreign Direct Investment." Under review at *Journal of International Business Studies.*

CONFERENCE PRESENTATIONS

Li, Jun & Cannella, Albert. A. Jr., 2003. "Skills, Motives, and Political Structure Change: A Framework for Understanding Post-IPO Executive Turnover." Entrepreneurship Division, *Academy of Management Annual Meeting,* Seattle, WA.

Li, Haiyang & Li, Jun, 2002. "Environment, Founding Team Attributes and Entrepreneurial Orientation in Chinese Technology Ventures." Entrepreneurship Division, *Academy of Management Annual Meeting,* Denver, CO.

Eden, Lorraine & Li, Jun, 2001. "Black Holes in Tax Space? Tax Havens and Inward Foreign Direct Investment." Invited Paper, *Academy of International Business Annual Meeting,* Sydney, Australia.