

EFFECTS OF SOCIAL CAPITAL AND POWER ON SURVIVING TRANSFORMATIONAL CHANGE: THE CASE OF INITIAL PUBLIC OFFERINGS

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We examined how social capital and the power of venture capitalists and founder-CEOs affect IPO firm survival. Using data from 218 U.S. initial public offerings conducted in 1992, we found that average management team tenure and an IPO deal's network embeddedness decreased the likelihood of failure during a firm's first five years as a public entity. Founder-CEO presence at the time of an IPO interacted with CEO ownership to decrease the likelihood of failure, and CEO ownership and venture capitalist ownership concentration also decreased that likelihood.

Evolutionary perspectives on organizations are often accompanied by the presumption that organizations face an increased risk of failure early in their lives owing to liabilities of newness (Aldrich, 1999; Stinchcombe, 1965). As organizational goals and patterns of activity become routinized over time, increased reliability in performance and accountability for actions taken enhance a firm's survival chances (Hannan & Freeman, 1984). This process, however, also generates strong inertial pressures that not only discourage organizational change, but also, because of the potential for disruption to existing internal and external routines, make change hazardous. Research findings suggest that even in older, better-established firms, significant transformational events during their life cycles can effectively "reset the clock" and reintroduce risks associated with the liability of newness as firms struggle to adapt strategies, internal operational and administrative processes, and/or external ties and relationships (Amburgey, Kelly, & Barnett, 1993). Thus, transformational change in organizational operations decreases efficiency and

increases failure rates, at least in the short term, as resources and attention are diverted from normal, routinized operating functions to processes involving adaptation and reorientation (Haveman, 1992).

When organizations do survive initial transition periods by successfully managing any disruptive effects, transformation may ultimately be considered adaptive and enhance the firms' competitive capabilities (Amburgey et al., 1993). Supporting research has found that risks associated with resetting the liability of newness clock are minimized when a transforming firm uses and leverages existing competencies (e.g., Haveman, 1992) or when a specific type of change occurs so routinely that a firm develops a competency in a given form of adaptation (e.g., Amburgey & Miner, 1992). Miner, Amburgey, and Stearns (1990) also suggested that an organization may have certain characteristics or resources at the time of a transformational event that serve as "shields" by providing continued access to financial resources and/or legitimacy during a period of reorientation. In their study of the founding, transformation, and dissolution of Finnish newspapers, Miner, Amburgey, and Stearns found that the presence or absence of a link between a newspaper and a powerful political party influenced the newspaper's ability to survive core change.

By focusing on a single interorganizational link, however, Miner and her colleagues were unable to consider how broader network structures, and the nature of the ties within these networks, could also enhance a firm's ability to survive a transformational event. In addition, extant research has not yet explored how *intraorganizational* ties can also

Both authors contributed equally to this work. We would like to thank Ted Baker, Mason Carpenter, Anne Miner, Hitoshi Mitsuhashi, Huggy Rao, and Violina Rindova for their helpful comments on earlier versions. We would also like to thank associate editor Marshall Schminke and three anonymous *AMJ* reviewers for their invaluable comments and suggestions, as well as Pat Maggitti and Johanna Patrick for assistance in data collection. This study was supported by a grant from the University of Wisconsin—Madison School of Business Research Committee.

serve as potent transformational shielding mechanisms. Finally, little research on organizational change and survival has considered the important role that the involvement of key actors within an organization plays in helping it through a transformational period, and how the power associated with the concentration of ownership in the hands of these individuals can help protect the organization from potentially harmful environmental pressures. In this article, we begin to address these issues by introducing a third kind of protection, transformational shields based on sociopolitical forces, and by demonstrating how the power and commitment of key actors, as well as an organization's internal and external social capital, enhance a firm's ability to survive a transformational event that may reset the liability of newness clock (Amburgey et al., 1993).

Prior to evaluating how and what organizational characteristics present at the time of an event protect a firm from the potentially deleterious effects of the transformation process, it is critical to determine what sorts of changes are of sufficient magnitude and consequence to likely reexpose a firm to the risks associated with the liability of newness. Using theoretical perspectives drawn primarily from organizational ecology (e.g., Barnett & Carroll, 1995; Hannan & Freeman, 1984), researchers have attempted to differentiate "core" from "peripheral" change, arguing that changes to four structural features—mission, authority structure, technology, and marketing strategy—are those most likely to reset the liability of newness clock. This approach is somewhat limiting, however, as what constitutes a core or peripheral change, as well as its degree of criticality, can vary among firms and populations (Aldrich, 1999; Dobrev, Kim, & Carroll, 2003).

Aldrich (1999) suggested an alternative, nonordinal set of criteria for evaluating the degree to which a given event constitutes a significant transformation. He argued that events resulting in changes to certain organizational aspects were especially noteworthy. These key changes include the following: changes in *organizational goals* (for instance, a major change in domain, such as an HMO going from nonprofit to profit status or entering a new product-market); changes in *boundaries* (such as expansion through merger or contraction through divestiture); and changes in *activity systems* (for instance, adoption of new administrative, human resource, or technological systems). These events lead to developing new knowledge, new skills, and/or the creation and implementation of new strategic goals and objectives. Disruption to existing organizational routines (Amburgey et al., 1993), the need to learn new roles and skill sets (Aldrich, 1999), and

the potential cascade of additional, unintended changes resulting from a triggering transformational event are what prove deleterious and likely to re-expose firms to short-term increases in failure rates.

Employing the framework explicated by Aldrich, we argue that one highly significant and nonrepeatable event during many organizations' life cycles is the transformation from private to public ownership. Although an initial public offering (IPO) offers a number of benefits to firms that successfully navigate the transition (see Husick and Arrington [1998] and Price Waterhouse [1995] for discussions of these benefits), the transformation also brings with it a number of costs and risks. Like an HMO's change from nonprofit to for-profit status, the change from private to public status necessitates a change in goals, as management must deal with new kinds of investors who have different objectives and time horizons than early investors, and thus different needs that must be served. In addition, management must also determine how to deploy the new financial resources available to their firm by expanding existing strategic initiatives or implementing new strategies for it that can involve a range of activities, such as engaging in acquisitions that change the boundaries of the firm or entering new product or geographic markets with which the firm has little experience (Husick & Arrington, 1998).

IPO firms also undergo a number of changes to their activity systems that necessitate new learning. An organization will likely be restructured as new executives are hired, more formal governance procedures are put in place, and additional staff is added to handle the reporting requirements of the Securities and Exchange Commission and interact with the company's new investors (Husick & Arrington, 1998; Price Waterhouse, 1995). Management must also learn how to deal with reduced flexibility in managerial discretion, increased oversight from the firm's board of directors, greater demands from investors for short-term performance, and less tolerance of negative press and performance volatility (Price Waterhouse, 1995). As the company grows, management must also deal with significant cultural changes, as well as change resulting from its employees' newfound wealth as stock is sold and options are exercised. Some employees may leave the company, while others may be less willing to continue making the personal sacrifices that were required to get the firm to the IPO stage. Although IPO firms will vary in the intensity with which they experience each of these specific changes associated with the triggering IPO event, all will face the task of adapting their goals,

boundaries, and/or activity systems enough to incur some reexposure to the risks associated with liabilities of newness.

Over the last several years, IPOs have received a significant amount of attention in the finance (e.g., Ibbotson & Ritter, 1995), strategy (e.g., Certo, Covin, Daily, & Dalton, 2001) and organizational (e.g., Welbourne & Andrews, 1996) literatures. The primary focus of this research has been on discovering factors that impact the initial pricing of IPO stocks and their market returns over various periods of time. A topic that has received relatively little attention, however, is the subject of IPO firm failures. There are only three studies of which we are aware that have specifically examined the topic of why IPO firms fail. Platt (1995) used financial liquidity ratios in predicting whether IPO firms would go bankrupt within three years. Welbourne and Andrews (1996) found that the degrees to which IPO firms valued human resources and used compensation schemes based on organizational performance were positively associated with IPO firm survival. And Jain and Kini (2000) found that firms that received venture capitalist (VC) backing were more likely to survive than non-VC backed companies. Finally, in a related study Foster-Johnson, Lewis, and Seward (2001) suggested that long-run "underperformance" of IPOs can be attributed to investor overoptimism regarding the likelihood that IPO firms will survive.

Taken together, these studies suggest that a firm that has recently undergone an IPO is at a significant risk of failure, at least in the short term. While all of these studies touch, in different ways, on how financial, human, and social resources impact the ability of an IPO firm to survive, they do not integrate the different theories discussed with the broader organizational literature in this area. In this study, we argue that changing from a privately held to a publicly traded company constitutes a significant transformational event (Aldrich, 1999) that reintroduces an IPO firm to the risks associated with the liability of newness. In the following section, we develop theoretical arguments that suggest IPO firms may possess sociopolitical resources that can help protect them from these risks as they complete the transformation from privately to publicly owned firms. We tested these arguments using a sample of 218 U.S. companies that went public in 1992.

THEORY AND HYPOTHESES

Miner and her coauthors defined a transformational shield as "an organizational trait that insulates an organization against the probability of fail-

ure resulting from transformation" (1990: 695). The authors differentiated transformational shields from "buffers"—which can be defined as factors that insulate or protect an organization from general environmental pressures that result in the need to change (Aldrich, 1979; Thompson, 1967)—by focusing specifically on protections that come into play only when significant firm-level change occurs. Miner and colleagues' overall framework and review of the related literatures suggested two broad categories of protection involving resource- and/or legitimacy-based factors that are relevant to firm change. These transformational shields are derived primarily from external sources, and they give a firm access to slack resources and/or enhance perceptions of its compliance with social expectations or affiliations with important legitimating actors.

In this study, we suggest that firms can also possess a third class of protective shield that arises from both external *and* internal sociopolitical processes and resources. Specifically, we argue that the presence of a company founder as CEO following a company's initial public offering, the concentration of stock ownership in the hands of the CEO and/or venture capitalists post-IPO, and internal and external social capital, as reflected in key intra- and interorganizational networks, can all protect the IPO firm during a period of change and enhance its ability to survive the transformation from privately to publicly held firm. Although some or all of these factors may also change during the years following the IPO, their availability at the time the transformation occurs can have significant "imprinting" effects (Stinchcombe, 1965) that shape the evolutionary trajectory of the firm. In a study of the telecommunications industry, Noda and Collis (2001) found evidence that heterogeneity in the success of firms was the result of positive feedback loops that arose from small differences in initial conditions. We argue that similar effects can result from the presence of sociopolitical transformational shields that provide firms with necessary protections at critical junctures in the firms' development and that enhance their chances of surviving transformational events.

Founder-CEO Leadership as a Sociopolitical Transformational Shield

The presence of a founder-CEO at the time of a company's IPO may enhance the firm's survival chances. Prior research has demonstrated how the personal assumptions and perceptions of founders play a central role in both the formulation of strategy and the manner in which influence will be

distributed within a firm (Baron, Hannan, & Burton, 1999; Boeker, 1988). Nelson (2003) provided evidence that the presence of a founder-CEO at the time of an IPO results in higher firm valuations, as well less insider selling and greater retained ownership by the CEO. Since changes in leadership are also often associated with shifts in the strategic direction of a firm (Fredrickson & Westphal, 2001), the presence of a founder-CEO at the time of the IPO may also result in a continuation or extension of the firm's existing strategy, thus reducing the risks associated with radical strategic shifts requiring skills or knowledge the firm does not possess (Aldrich, 1999).

A founder-CEO may also have more ability than a nonfounder CEO to lead a company through its transformational period because his or her founder status reduces conflict and political battles within the firm. Recent research on the psychological bases of trust (e.g., Tyler & Degoey, 1996) has suggested that the degree to which individuals trust leaders significantly increases the likelihood they will accept their decisions and comply with their directives. Even if individuals do not personally agree with a decision, they will still comply with it if they believe that a leader's motivations are good (Brockner, Siegel, Daly, Tyler, & Martin, 1997).

Recent theorizing also suggests that the interpersonal trust resulting from belief in the good intentions and reliability of others, and the maintenance of a shared language and pattern of effective communication among organization members, lead to positive firm outcomes (Bolino, Turnley, & Bloodgood, 2002; Nahapiet & Ghoshal, 1998). Given the enormous personal investments of time, energy, and money a founder typically expends in getting his or her company to the IPO stage (Nelson, 2003; Smith & Miner, 1983), a founder-CEO is likely to be more committed to completing the transformation and seeing the company through the transition period than an outsider CEO with fewer "sunk costs" (Moon, 2001; Ross & Staw, 1993). In addition, since the founder-CEO has been involved in the growth and success of the company since its inception, her or his personal identification with the company (Tyler & Degoey, 1996) can be expected to be greater than that of a "mercenary" brought in from the outside. Thus, agency costs may also be lower for firms with founder-CEOs. Indeed, Nelson (2003) noted that the extraordinary commitment of some individuals to their firms can act as an "anti-agency" cost by making their drain on organizational resources lighter. Finally, employees have had opportunities to develop social bonds with founder-CEOs through their history of working together. Such social bonds have also been shown to

increase individuals' perceptions of the trustworthiness of leaders (Tyler & Degoey, 1996; Tyler & Lind, 1992). Taken together, these arguments suggest that the presence of a founder-CEO can reduce conflict and political wrangling within an IPO firm, providing a relatively stable internal environment that can enhance the IPO firm's ability to survive its transformational period. Thus, we hypothesize that:

Hypothesis 1. The presence of a founder-CEO at the time of a firm's transformation from private to public status will reduce the likelihood of the IPO firm's failure.

Ownership as a Sociopolitical Transformational Shield

CEO ownership. The proportion of outstanding stock owned by a company's CEO upon completion of its IPO can also serve as a valuable transformational shield. Recent research (e.g., Pollock, Fischer, & Wade, 2002; Tosi et al., 1999) has shown that direct CEO ownership of a company's stock is more effective than stock options and other forms of incentive compensation in aligning management and shareholder interests and in reducing self-serving CEO behaviors. Thus, CEOs with large ownership stakes may have a greater interest in making sure the resources of their companies are used prudently and efficiently, and in so doing they reduce the likelihood that newly public firms will fail (Hitt, Bierman, Shimizu, & Kochar, 2001). In addition, research on escalation of commitment has found that managers are more likely to maintain unsuccessful courses of action if they have low job security (Fox & Staw, 1979). Fox and Staw found that the more secure managers were in their jobs, the more willing they were to consider changes in policy. Since greater ownership provides a CEO with more discretion in decision making (Finkelstein & Hambrick, 1990; Tosi et al., 1999) and greater power within an organization (Finkelstein, 1992), the larger a CEO's post-IPO ownership stake, the less the CEO may be worried about a short-term performance setback leading to the loss of his or her position, and the more open the CEO will be to adaptations in existing organizational strategies and practices that may be necessary to enhance the long-term viability of the firm. We therefore hypothesize that:

Hypothesis 2. The greater the proportion of an IPO firm's stock owned by its CEO following the transformation from private to public status, the lower the likelihood of firm failure.

Venture capitalist ownership. Another organizational actor likely to possess substantial stock ownership following an IPO and that has also committed substantial time, energy, and financial resources to the IPO firm, is the venture capitalist (Bygrave & Timmons, 1992; Jain & Kini, 2000; Lee & Wahal, in press; Sahlman, 1990). The relationship between IPO firms and VCs goes beyond the simple provision of financial resources. A venture capitalist can serve as a valuable sounding board when a firm is formulating and implementing corporate strategies and is frequently involved in helping the firm recruit experienced personnel and acquiring other resources (Jain & Kini, 2000). Thus, venture capitalists are often instrumental in establishing the management teams that are in place at the time a company goes public. As a result, they may have personal commitments to seeing the company succeed that goes beyond just their financial interest in it (Moon, 2001; Ross & Staw, 1993).

To the extent that a significant proportion of an IPO firm's outstanding stock is concentrated in the hands of a single or small group of venture capitalists following the initial offering, the VCs are in a position to "protect" the leaders of the IPO firm from external pressures for significant short-term improvements in performance. This protection enhances the leaders' discretion (Finkelstein & Hambrick, 1990) and gives them the time necessary to adapt to their new environment. If ownership is dispersed among a large number of VCs, individual VC ownership is less likely to be effective as a transformational shield, even if the total percentage of stock owned by VCs is high. The individual commitment of a given venture capitalist to the company may be lower than it would be if that person held a larger percentage of the shares, communication and coordination costs among the owners may be greater, the interests of the various actors are more likely to diverge, and thus ownership power will be diluted (Tosi et al., 1999; Useem, 1996). We therefore hypothesize the following:

Hypothesis 3. The greater the concentrated ownership of stock by venture capitalists following a firm's transformation from private to public status, the lower the likelihood of the IPO firm's failure.

Although the effects of CEO and VC ownership may be additive (that is, more of each type of ownership reduces the probability of failure independently), it is also possible that ownership by these actors can have multiplicative effects. If only a firm's CEO or only its venture capitalists own a substantial block of stock, an inequity exists in the

formal power these actors have in determining the strategic direction of the company, should differences in opinion arise. Such a situation could result in intense political maneuvering and battles for corporate control (Westphal, 1998). If the CEO and VCs have relatively equivalent and substantial ownership power, however, neither can dominate the other, and they are more likely to negotiate a resolution to differences (Pfeffer, 1992). This argument suggests the following hypothesis:

Hypothesis 4. The greater the concentrated ownership of stock by both CEO and venture capitalists following a firm's transformation from private to public status, the lower the likelihood of the IPO firm's failure.

It is also possible that the commitment and trust associated with the presence of a founder-CEO and the control afforded by significant stock ownership may both be necessary for these factors to provide an effective sociopolitical transformational shield. If a founder gives up the majority of a company's stock during early rounds of financing, and/or the founder's retained ownership is diluted by a large initial public offering, he or she will have more limited power and discretion (Finkelstein, 1992; Finkelstein & Hambrick, 1990), even if the formal position of authority as CEO is maintained. In addition, ownership power may mean little if employees do not trust a CEO and his or her motivations. If the CEO is not a founder, the relational and cognitive social capital (Bolino et al., 2002) developed prior to a transformation may be destroyed, and political maneuvering within the company may increase as individuals vie to curry favor with powerful constituencies and form coalitions to advance their own interests and positions (Tyler & DeGoey, 1996; Westphal, 1998). Cannella and Hambrick (1993) suggested that the disruptive effects of executive departure in conjunction with a change in the formal authority structure can be especially harmful to a firm. The symbolic message sent to both internal and external stakeholders by the presence of a powerful founder-CEO with a significant ownership stake is that the firm's vision, culture, and strategic continuity will be preserved. Thus, we hypothesize that:

Hypothesis 5. The presence of a founder-CEO who owns a significant percentage of a firm's stock following its transformation from private to public status will reduce the likelihood of the IPO firm's failure.

Internal and External Social Capital as Sociopolitical Transformational Shields

Although Miner and her coauthors (1990) considered the value of interorganizational linkages as transformational shields, they focused primarily on single ties to powerful actors that could provide (or withdraw) resources and did not consider how the structure of broader networks and the nature of the ties within those networks could protect a firm from potentially negative environmental influences. They also did not consider how links inside an organization might shield it from the pressures associated with a significant transformation. We address both of these issues by drawing on social capital theory and research to demonstrate how both intra- and interorganizational links can serve as sociopolitical transformational shields.

Social capital has been defined in a variety of ways by numerous researchers in the social and organizational sciences (see Adler and Kwon [2002] for a review); however, all of these definitions share two common elements: (1) social capital arises from the structure of relations between and among actors in a network and (2) an actor has the ability to access these network, or social-structural, benefits (Coleman, 1988). In developing our hypotheses concerning the effects of social capital on IPO firm survival, we explored two aspects—one internal, one external—of an organization's social structure that can reduce the potential for conflict and political battles. An important but often overlooked dimension of social capital is whether network relations are *internal* or *external* to an organization (Adler & Kwon, 2002). Coleman (1988) asserted that social capital can be defined by its function, but no matter how it is expressed it must facilitate the action of actors within a social structure—be it among individuals within a firm, or between a firm and its external stakeholders. Ties within organizations have been described as “bonding” or “communal” forms of social capital, while external ties have been described as “bridging” or “linking” forms of social capital (e.g., Adler & Kwon, 2002). We argue that both forms of social capital affect the survival of IPO firms.

Internal social capital. Links within an organization that enhance cohesiveness and facilitate the pursuit of collective goals can appropriately be described as social capital (Adler & Kwon, 2002: 21). For an IPO firm, a top management team (TMT) whose members have worked with one another at the firm for a number of years represents such a source of internal social capital. Working together for substantial periods of time provides a management team with the opportunity to develop work-

ing patterns, routines, and interpersonal relationships that allow it to be more effective in handling the discontinuities associated with taking its company public.

Eisenhardt and Schoonhoven (1990) showed that the joint work experience of a TMT's members significantly contributed to growth among newly founded semiconductor firms. These effects were also found to increase over time, suggesting the possibility that the composition of a top team at the time of the IPO may have “legacy effects” that significantly affect subsequent survival rates. Carpenter (2002) found that average TMT tenure allowed diverse top teams to benefit from their executives' differences and enhance firm performance. Other research on groups (e.g., Bantel & Jackson, 1989) has also suggested that team members who are together longer tend to perform their tasks better, because they have had the time to develop working routines and understandings that allow them to leverage the distinctive benefits of their varied backgrounds. This issue can be of special importance to entrepreneurial firms that do not have deep reservoirs of managerial talent and therefore have to rely on key individuals to handle major activities more or less single-handed. Indeed, Rindova and Kotha (2001), in their study of the ability of firms to develop dynamic capabilities, cite the following from a e-mail received from Jerry Yang, one of the cofounders of Yahoo!: “While there are many factors that have enabled us to be in our current leadership position, I would say our biggest reason is our ability to have put together a management team that's stuck together for a long time” (2001: 1274). These arguments are consistent with the critical elements of the social capital construct, and they suggest the following hypothesis:

Hypothesis 6. The greater the average tenure of a firm's top management team at the time of the transformation from private to public status, the lower the likelihood of the IPO firm's failure.

External social capital. In addition to the communal, or internal, form of social capital that a firm's top managers can bring to bear in helping an IPO firm survive the transition from private to public status, the company also has access to valuable external social capital that can be used to enhance its chance of survival. One of the most important external links an IPO firm has when it goes public is its tie to the underwriter leading the IPO (Carter & Manaster, 1990; Pollock, Porac, & Wade, 2004). The lead underwriter works closely with the top management of an IPO firm, as well as with its lawyers, its auditors, and the Securities and Ex-

change Commission (SEC), to guide the firm through the IPO process (Husick & Arrington, 1998). One of the key functions of the lead underwriter in an IPO is to create a network of investors who become the IPO firm's initial shareholders (Pollock et al., 2004). The relationships that the underwriter has with these investors can affect the stability of these networks and the subsequent performance and survival potential of the IPO firm. More stable investor networks limit stock price and trading volatility in the secondary market (Carter & Dark, 1993; Ellis, Michaely, & O'Hara, 2000); relative stock stability can create positive impressions of a company that allow it to access resources (Pollock, Gulati, & Sadler, 2002). Stable investor networks also allow a firm to pursue longer-term strategic growth initiatives because they minimize management's concerns over investor reactions to short-term fluctuations in performance (Bushee, 1998).

Underwriters can enhance network stability by including investors with whom they have "embedded" relationships in the initial IPO deal network (Pollock et al., 2004). Granovetter (1985) argued that market relationships vary along a continuum, ranging from those that are instrumental and arm's length to those that are embedded in a dense network of social ties that promote trust and cooperation. The degree to which relationships are either embedded or arm's length depends on the frequency (e.g., Baker, 1984; Granovetter, 1985) and the concentration (e.g., Baker, 1990; Larson, 1992; Uzzi, 1996) of transactions between the actors involved. The more frequent transactions among a set of actors are, and the more the transactions involve the same set of actors, the more embedded the transactional relationships. Evidence suggests that embedded relationships based on prior transaction histories decrease opportunistic behavior (Uzzi, 1996), facilitate information transfer (Larson, 1992; Uzzi, 1996), influence the acquisition and use of power (Baker, 1990), build trust between the transaction partners (Uzzi, 1996), and reduce market volatility (Baker, 1984). Embedded relationships with regular market participants may therefore also be helpful to an underwriter as it attempts to create a stable network of investors for an IPO firm.

Underwriters place the vast majority of shares in IPOs with institutional investors (Hanley & Wilhelm, 1995). Many institutional investors participate regularly in the IPO market and thus have the potential to develop embedded relationships with underwriters who also participate in this market regularly (Hanley & Wilhelm, 1995). Institutional investors will be more likely to believe an underwriter's claims if they have interacted repeatedly

with that bank in past offerings, and this credibility reduces investors' uncertainty to some extent and increases their tolerance for variation in the short-term performance of a company undergoing a period of reorientation following its IPO. Investors' willingness to hold the company's stock for lengthy periods provides much-needed stability in the company's stock price, allowing it to focus on strategic and operational initiatives rather than spend excessive time trying to manage investor and analyst concerns about its performance (Rao & Sivakumar, 1999). To the extent that an IPO firm's lead underwriter has the social resources necessary to develop more embedded deal networks, we hypothesize that:

Hypothesis 7. The greater the proportion of investors with embedded ties to the lead underwriter in an IPO who are included in the deal network at the time of the transformation from private to public status, the lower the likelihood of the IPO firm's failure.

DATA AND METHODS

Sample

Unless otherwise noted, the data for this study were drawn from the offering prospectuses filed for all U.S. initial public offerings conducted in 1992. As has prior IPO research (e.g., Ritter, 1991; Welbourne & Andrews, 1996), we excluded the following from the analysis: closed-end mutual funds, real estate investment trusts (REITS), unit offerings, spin-offs, demutualizations of savings banks and insurance companies, and reverse leveraged buy-outs (LBOs). The final sample contained 245 IPOs. Missing data reduced the sample to 218 IPOs. The year 1992 was selected because in this year the IPO market was neither overheated nor dormant, and selecting companies from a single year allowed us to control for significant intertemporal fluctuations in the IPO market (Ibbotson & Ritter, 1995). Among firms in our sample, factors such as their average underpricing and the proportion delisted within five years of IPO are consistent with historical averages observed in samples drawn from longer time periods (e.g., Foster-Johnson, et al., 2001; Ibbotson & Ritter, 1995; Jain & Kini, 2000).

Dependent Variable

IPO firm failure. The dependent variable in this study was a firm's failure during the five years following its IPO. The five years following an IPO has been suggested as the time frame during which a company may be considered a newly public firm.

After five years IPO firms are considered “seasoned” public entities (Foster-Johnson et al., 2001; Loughran & Ritter, 1995; Welbourne & Andrews, 1996). As has prior research (Foster-Johnson et al., 2001), we defined IPO firm failure as delisting from the primary exchange on which a firm traded with a delisting code between 500 and 585. Delisting codes indicate the reason an exchange has dropped a firm. Codes between 500 and 585 are associated with firm bankruptcy and the inability of a firm to maintain the minimum size, shareholder number, and stock price requirements for continued listing on the exchange. We constructed a time-varying dichotomous outcome measure coded 1 during the year a firm was delisted and 0 otherwise. As was appropriate for our modeling strategy, a firm was dropped from the sample after delisting, and the others remained as “right-censored.” The data used to calculate IPO firm failure were drawn from the CRSP database.

Independent Variables

Founder-CEO presence. This measure was a dummy variable coded 1 if one of the original founders of a company was the CEO at the time the company went public.

CEO ownership. This measure equals the percentage of shares outstanding that were beneficially owned by an IPO firm’s CEO upon completion of the IPO.

VC ownership concentration. Unlike CEO ownership, which by definition reflects the concentration of stock ownership in the hands of a single individual, venture capitalist ownership reflects ownership by multiple entities. In our sample, for firms with VC backing, the number of VCs that owned stock in the company following the IPO ranged from 1 to 14. To capture the degree to which a large proportion of an IPO firm’s shares were concentrated in the hands of one or a few VCs, we constructed a Herfindahl index (Scherer, 1980) by squaring and summing the percentage of stock ownership of each venture capitalist that owned stock in the company upon completion of the IPO.

Average management team tenure. This measure captured how much experience a top management team’s members had working together at the time of an IPO. Evidence that a management team’s members have worked together for several years is an important indicator that they can function together effectively as a team (Carpenter, 2002). Like previous researchers (Carpenter, 2002; Finkelstein & Hambrick, 1990), we calculated average management team tenure by summing the tenure with an IPO company of each management team member

listed in the prospectus and dividing the sum by the total number of management team members.

Deal network embeddedness. Institutional investor participation in past deals managed by the lead investment bank for a given IPO was the basis for determining deal network embeddedness. Following prior research that has generated embeddedness measures using transaction data (e.g., Baker, 1990; Uzzi, 1996), we calculated deal network embeddedness using a Herfindahl index. First, we identified the lead underwriter for each IPO in the sample and the institutional investors that owned stock in each IPO at the end of the quarter in which the company went public. We then determined for each underwriter–institutional investor pair how frequently the two actors participated in offerings together. To do so, we collected data from IPOs conducted in 1991 on 4,754 such pairs. For each pair, we identified the number of offerings (D_{ij}) in which investment bank i participated as a lead manager or comanager and institutional investor j owned shares. We also identified the number of deals (D_i) that investment bank i participated in as a lead or comanager. The concentration ratio for each deal network k (DNE_k) was then calculated with this formula: $DNE_k = \sum (D_{ijk} / D_{ik})^2$. The data used to calculate deal network embeddedness were drawn from the Compact D SEC database.

Control Variables

VC backing. Venture capitalist backing was a dummy variable coded 1 if a company received venture financing while it was privately held and 0 otherwise. Prior research has shown that VC backing is negatively associated with IPO firm failure (Jain & Kini, 2000).

Underwriter reputation. When the quality and characteristics of an individual, product, or organization are difficult to ascertain, their relationships with highly reputable others can provide important signals that help reduce these uncertainties in the minds of stakeholders (Podolny, 1994). These types of relationships are a valuable source of external legitimacy and thus may also serve as a transformational shield of the type described by Miner and her coauthors (1990). In keeping with prior research (e.g., Carter & Manaster, 1990; Podolny, 1994), we measured underwriter reputation on the basis of an investment bank’s position in the tombstone announcements that officially notify the public of an offering. A list of underwriters participating in an offering syndicate appears on every tombstone, listed by status class. Underwriter status classes are communally defined by the members of the finan-

cial community and reinforced over time; thus, an investment bank's status position in an underwriting syndicate at a given time is the outcome of social ordering processes that have taken place over a long period (Podolny, 1994). We drew the data on tombstone position in 1991 underwriting syndicates, which included 3,365 participants representing 261 investment banks, from Compact Disclosure's Compact D database. We reverse-coded each underwriter's status class and divided the resulting number by the total number of classes represented in a tombstone. For example, if a tombstone had three classes of underwriters, the first class was coded 1, the second class was coded .67, and the third class was coded .33. An underwriter's reputational score equaled the average score across all the syndicates in which the underwriter participated, multiplied by 100.

Underpricing. The amount of underpricing a company experiences when its stock begins trading can affect stakeholder expectations regarding its potential, and thus its ability following the IPO to acquire resources (e.g., Jegadeesh, Weinstein, & Welch, 1993; Pollock et al., 2002) that could enhance its survival chances. *Underpricing* equaled the percentage change in a stock's price $[(price_{end} - price_{initial}) / (price_{initial})]$ on the first day the stock traded on a national exchange. The data used to calculate underpricing were drawn from CRSP.

Financial condition. All else being equal, the better a firm's financial condition, the less likely it is to fail. To control for the impact of financial condition on an IPO firm's survival, we included lagged measures of the firm's *total sales*, *net income*, and *annual stock price performance* for each year it was in the sample. To control for the effects of extreme values, we transformed total sales into their natural logarithms. Because some firms had no revenues in a given year, a 1 was added to all observations prior to transformation of the measure. The data used to create these measures were drawn from the offering prospectuses and COMPUSTAT. For a few observations (2.6%), we were only able to obtain sales and income data for a portion of the firm-year spells in our sample. As these measures varied annually, we used the "impute" command in Stata 7.0 to interpolate values for the missing sales and net income data in the years data were missing.¹

Industry dummy. Companies in different industries could vary systematically on both our inde-

pendent and dependent variables. Prior research has suggested that firms involved in more technologically complex industries are more prone to failure (Jain & Kini, 2000) and experience higher underpricing (Certo et al., 2001). To control for the effects of industry membership, we constructed a dummy variable coded 1 if a firm was in an industry identified as technologically complex by Certo and his colleagues and 0 otherwise.

Industry concentration. Competition in a firm's industry can also affect its survival (Hannan & Freeman, 1984). To control for the intensity of industry competition, we based a Herfindahl concentration ratio for each firm-year observation on the lagged sales for all of the companies in the same two-digit SIC code as an IPO firm. The data used to create this variable were drawn from COMPUSTAT.

Age of firm at IPO. Firm age at IPO was calculated as the years since incorporation. Younger firms are subject to a greater likelihood of failure for a variety of reasons (Hannan & Freeman, 1984; Stinchcombe, 1965). However, scholars have also argued that the disruptive effects of organizational change are the most severe among older firms (e.g., Amburgey et al., 1993), because the older firms are better developed and have greater inertia. Such inertia could actually make the change from private to public status more risky for older firms that go public. We transformed firm age into its natural logarithm to reduce the effects of extreme values on the analysis, adding 1 to all observations before transforming the measure.

Offering size. This measure equaled the total number of shares offered during an IPO multiplied by the offering price. The size of an offering, which can signal the market about its relative quality and stability, has been frequently used as a control in IPO research (Ibbotson & Ritter, 1995). Larger offerings also provide IPO firms with more cash, which can serve as a resource-based transformational shield following the IPOs. We also transformed this variable into its natural logarithm to reduce the effect of extreme values.

CEO experience. According to human capital perspectives (e.g., Pennings, Lee, & van Witteloostuijn, 1998) the experience of a CEO can affect an organization's efficiency and its ability to attract customers and new investor capital, which can affect firm survival. We measured CEO experience with two variables. The first, *public experience*, was a dummy variable coded 1 if a CEO had previously had a senior management role in a publicly traded company and 0 otherwise. CEOs with prior experience managing public firms have a specific form of human capital that should enhance their current firms' ability to operate effectively under

¹ A dummy variable controlling for whether any firm-year spell's measure was imputed did not affect our results.

public ownership. We obtained data on executives' prior work histories from the firms' offering prospectuses, the Dun & Bradstreet Million Dollar database, the Standard & Poors Net Advantage database, and the *Dun & Bradstreet Reference Book of Corporate Managements*.

The second measure, *CEO age*, indicated the age of a firm's CEO at the time of its IPO. The age of chief executives has also been discussed as an important element of human capital and has been shown to yield relatively consistent positive relationships with entrepreneurial firm performance (Daily, McDougall, Covin, & Dalton, 2002; Sapienza & Grimm, 1997). Certo and coauthors (2001) suggested investors may value older CEOs in firms that are going public more highly than younger CEOs because of the assumed presence of greater maturity and experience.

CEO tenure. Independent of a CEO's age and experience, the amount of time a CEO has been with a firm can affect his or her power and discretion within the firm (Finkelstein, 1992; Porac, Wade, & Pollock, 1999). CEO tenure was measured as the number of years a CEO had been with a firm at the time of its IPO.

Deal network size. This measure equaled the number of institutional investors who owned stock in a company at the end of the quarter in which the company went public. This measure was used as a control because the higher the number of investors, the less likely it is that an underwriter will have embedded relationships with a large proportion of the members of the network surrounding a deal.

Management team size. This measure equaled the number of members on an IPO firm's top management team, as identified in the firm's offering prospectus. This measure was included as a control because management team size can affect average management team tenure. All else being equal, the larger a TMT, the more likely it is to have short-tenured members.

Institutional ownership concentration. The concentration of shares in the hands of institutional investors can affect the discretion of management (Tosi et al., 1999). We measured institutional investor ownership using a Herfindahl index identical to the one described for venture capitalist ownership. Ownership levels were based on the number of shares owned at the end of the quarter in which a company went public, as reported in the Compact D SEC database.

Years since IPO. The net effects of organizational change are time-dependent, and the amount of time elapsed since going public may affect long-term survival chances. Because the disruptive effects of organizational change have been argued to

decrease with time nonmonotonically (Amburgey et al., 1993), we also included a squared term.

Method of Analysis

The data were analyzed using discrete-time event history techniques that estimate logit models of dichotomous outcomes for pooled time series data in which the same units are observed at multiple intervals (Allison, 1984; Yamaguchi, 1991). Covariates are allowed, but not required, to vary between time periods. Since the data contained multiple observations of the same IPO firm that were not independent across spells, we employed a cluster command using Stata 7.0, which provided a more conservative test of the hypotheses by using robust estimators of variance.

Using discrete-time event history models offered several advantages. First, although in this study we focused on the impact of initial conditions on IPO firm survival, given that we had right censoring in our data, the probabilities of a failure event occurring might change as a function of time since the company went public. By using discrete-time techniques, we could capture potential effects for time elapsed since an IPO in our analyses. Using discrete-time models also allowed us to include time-varying financial performance controls in our model. Finally, a number of firms in our sample did not fail, but were acquired or merged with other firms during our period of study. We did not consider an acquisition or merger an IPO firm failure, since IPO firms and their investors often see these as attractive and desirable outcomes (Price Waterhouse, 1995). However, once a firm is acquired, it is no longer at risk of delisting owing to failure. Using discrete-time models allowed us to keep these companies in the sample until they were acquired, thereby providing more complete information about the relationship between our independent variables and firm failure.

RESULTS

Table 1 presents the descriptive statistics and a correlation matrix for the variables used in our models. Of the final sample of 218 IPO firms, 20 that were delisted from their primary exchanges before the end of the five-year period were counted as firm failures. An additional 51 firms were delisted because they were acquired by other firms. We dropped these firms from the sample in the years they were acquired but did not count them as failures. Thus, 147 of the 218, or 67 percent, of the IPOs successfully managed the five-year transition from newly public to seasoned firms, and these

TABLE 1
Descriptive Statistics and Correlations^a

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. IPO firm failure	0.02	0.14																							
2. Years since IPO	2.86	1.40	.08																						
3. Years since IPO squared	10.12	8.43	.07	.98																					
4. High-technology firm ^b	0.40	0.49	-.02	.01	.01																				
5. Total sales ^{c, d}	10.53	2.28	-.02	.16	.16	-.35																			
6. Net income ^d	1,863.75	29,230.19	-.09	-.02	-.02	-.08	.24																		
7. Annual stock return ^d	15.46	82.40	-.11	.00	.03	.02	-.04	.07																	
8. Industry concentration ^d	0.07	0.07	-.02	-.09	-.10	-.09	.18	.07	.03																
9. Underpricing	12.51	19.23	-.06	.01	.01	.05	.02	.06	.01	.04															
10. Age of firm at IPO	2.13	0.91	-.03	.01	.01	-.15	.37	.13	-.01	.10	-.12														
11. Offering size ^c	16.98	0.85	-.04	.00	.00	-.13	.36	.11	-.08	-.07	.09	.24													
12. TMT size	6.26	2.05	-.03	-.02	-.02	.01	.23	.02	-.04	-.08	.00	.18	.36												
13. Deal network size	15.80	11.65	-.05	.01	.01	-.09	.36	.15	-.05	-.07	.24	.27	.80	.30											
14. CEO public experience	0.48	0.50	.01	-.01	-.01	.28	-.04	-.07	.05	-.06	-.02	-.07	.03	.00	.00										
15. CEO age	47.37	7.51	-.02	.00	.00	-.08	.12	.11	-.03	.06	.07	.06	.10	-.02	.13	.07									
16. CEO job tenure	5.24	5.14	-.06	.02	.02	-.10	.28	.13	-.01	.02	-.02	.34	.13	.15	.15	-.05	.22								
17. Venture capitalist backing	0.56	0.50	-.03	.00	.00	.36	-.21	-.18	.01	-.16	.03	-.25	-.01	.11	-.06	.32	-.10	-.08							
18. Underwriter reputation	82.12	24.07	-.05	.01	.01	.04	.19	.04	-.06	-.09	-.07	.09	.62	.29	.51	.14	.01	.17	.23						
19. Institutional investor ownership concentration	0.04	0.04	-.04	-.01	.00	.10	.01	-.13	.00	-.03	-.02	.02	.18	.19	.16	.17	-.04	-.02	.17	.36					
20. Founder-CEO ^b	0.75	3.50	-.02	.01	.01	-.08	.08	.04	-.01	.00	-.04	.00	.06	-.02	.00	.05	-.05	-.01	-.09	.05	-.02				
21. Average TMT tenure	5.52	4.30	-.07	.01	.01	-.23	.39	.18	.00	.09	-.11	.78	.24	.14	.25	-.14	.18	.42	-.34	.07	.00	.01			
22. Deal network embeddedness	1.14	1.07	-.08	.02	.03	.04	.21	.13	-.01	-.02	.23	.19	.57	.21	.68	.08	.05	.18	.05	.40	.18	-.01	.19		
23. CEO ownership	15.88	18.54	-.01	.02	.02	-.26	.21	.11	-.01	.18	.00	-.05	-.02	-.05	.07	-.33	.07	.22	-.49	-.08	-.10	.12	.12	.02	
24. Venture capitalist ownership concentration	3.91	7.26	.01	.00	-.01	.09	-.04	-.11	-.04	-.08	-.05	-.11	-.07	.05	-.10	.10	-.22	.10	.47	.15	.01	-.05	-.19	-.05	-.28

^a $n = 920$.

^b Dummy variable.

^c Logarithm.

^d Lagged variable.

were treated as right-censored in our sample. The delisting rate observed in this study is similar to those observed in other studies on IPO survival (e.g., Foster-Johnson et al., 2001; Jain & Kini, 2000; Welbourne & Andrews, 1996).

Table 2 presents the results of the discrete time models testing our hypotheses. Model 1, a baseline model, includes all the control variables. Model 2 includes the “main effects” of the variables used to test Hypotheses 1–3. In model 3 we added the interaction terms, and in model 4, the variables used to test Hypotheses 6 and 7. Analysis of the log-likelihoods indicated that, although adding the theoretical variables to model 2 did not significantly improve the fit of the model, adding the interactions in model 3 significantly improved model fit over both model 1 and model 2, and adding the social capital variables resulted in an

additional, significant improvement in model fit over model 3. We therefore used the results of model 4 to test the hypotheses.

Hypotheses 1, 2, and 3, which state that having a founder-CEO, a relatively high level of CEO ownership, and a relatively high level of venture capitalist ownership concentration will reduce the likelihood of IPO firm failure, were not supported. Although VC ownership concentration was significant, the effect was in the direction opposite that predicted by the hypothesis. The other main effects were not significant. However, our results support both Hypothesis 4, which states that VC ownership concentration will interact with CEO ownership to reduce the likelihood of failure, and Hypothesis 5, which states that having a founder-CEO will interact with CEO ownership to reduce the likelihood of failure. Both of the interaction terms were negative

TABLE 2
Results of Discrete Time Analyses Predicting IPO Firm Failure^a

Variable	Model 1	Model 2	Model 3	Model 4
Years since IPO	3.79* (1.91)	3.92* (1.96)	4.07 [†] (2.18)	4.11 [†] (2.43)
Years since IPO squared	-0.45 [†] (0.28)	-0.46 [†] (0.28)	-0.48 (0.30)	-0.47 (0.34)
High-technology firm ^b	-0.80 (0.58)	-0.75 (0.58)	-0.64 (0.55)	-0.98 (0.65)
Total sales ^{c, d}	-0.01 (0.11)	0.03 (0.11)	0.09 (0.13)	0.10 (0.14)
Net income ^d	-0.00 [†] (0.00)	-0.00 [†] (0.00)	-0.00 (0.00)	-0.00 (0.00)
Annual stock return ^d	-0.04* (0.02)	-0.04* (0.02)	-0.04* (0.02)	-0.03 [†] (0.02)
Industry concentration ^d	-0.46 (2.53)	-0.02 (2.52)	-0.41 (2.61)	-1.24 (3.06)
Underpricing	-0.06** (0.02)	-0.06** (0.02)	-0.05** (0.02)	-0.05** (0.02)
Firm age ^c	-0.05 (0.23)	-0.23 (0.23)	-0.37 (0.23)	0.37 (0.35)
Offering size ^c	-0.18 (0.53)	-0.18 (0.64)	-0.39 (0.78)	-0.04 (0.90)
TMT size	0.07 (0.16)	0.07 (0.16)	0.16 (0.15)	0.10 (0.12)
Deal network size	-0.01 (0.05)	-0.01 (0.06)	0.00 (0.06)	0.03 (0.08)
CEO public experience	0.44 (0.49)	0.33 (0.58)	0.59 (0.73)	0.79 (0.83)
CEO age	0.02 (0.03)	0.02 (0.03)	0.03 (0.04)	0.05 (0.04)
CEO job tenure	-0.16** (0.06)	-0.15* (0.07)	-0.14* (0.07)	-0.09 (0.08)
Venture capitalist backing	-0.92 (0.58)	-1.46* (0.72)	-1.19 (0.75)	-1.18 (0.78)
Underwriter reputation	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)
Institutional investor ownership concentration	-7.79 (7.30)	-6.54 (7.43)	-9.60 (8.11)	-7.40 (8.64)
Founder-CEO ^b		-0.32 (0.60)	0.71 (0.76)	0.77 (0.85)
Venture capitalist ownership concentration post-IPO		0.02 (0.03)	0.06* (0.03)	0.10* (0.04)
CEO ownership post-IPO		-0.02 (0.02)	-0.00 (0.21)	-0.00 (0.03)
Founder-CEO × CEO ownership			-0.06* (0.03)	-0.06* (0.03)
Venture capitalist ownership × CEO ownership			-0.03* (0.02)	-0.04* (0.02)
Average TMT tenure				-0.31 [†] (0.18)
Deal network embeddedness				-1.28* (0.63)
Constant	-8.61 (10.75)	-8.20 (12.65)	-6.53 (14.54)	-12.81 (16.66)
Log-likelihood	-58.58	-57.53	-54.96	-50.53

^a $n = 920$ for all models.

^b Dummy variable.

^c Logarithm.

^d Lagged variable.

[†] $p < .10$

* $p < .05$

** $p < .01$

and significant (at $p < .05$). Agency theoretic arguments would suggest that concentrated ownership is negatively related to IPO firm failure because it disciplines management. To address this alternative explanation, in models not reported here we tested interactions between institutional investor ownership concentration and both CEO ownership and the founder-CEO dummy. Neither interaction was significant. In addition, the positive main effect of venture capitalist ownership on IPO firm failure also ran counter to an agency-theoretic explanation. Finally, Hypotheses 6 and 7 state that the internal and external social capital available to an IPO firm can also serve as transformational shields. Hypothesis 6, which states that the amount of time top management team members have spent working together prior to an IPO will be negatively related to firm failure, was supported. Hypothesis 7, which states that deal network embeddedness will have a significant, negative relationship with IPO failure, is also supported.

An analysis of the coefficients for the variables with significant relationships provided us with some additional insight into the impact these transformational shields have on IPO firm failure. By multiplying a given coefficient by a change in the independent variable and then exponentiating the product, one can obtain the change in the odds of an event's occurring versus its not occurring. So, for example, if a company has a TMT with an average tenure of four years (the median average management team tenure for our sample), the probability of this firm's failing in the five years following its IPO is reduced by $1 - \exp[4 \times (-0.3090)]$, or approximately 71

percent, when it is compared to a company whose TMT members are all in their first year of employment with the firm. If a firm in our sample had a founder-CEO and CEO ownership of 7.9 percent (the median value for our sample), the odds of its failing within the first five years after its IPO are decreased by about 40 percent. This strong and significant interaction is even more dramatic when visually depicted by Figure 1, which plots CEO ownership against the multiplier of the failure rate for founder-CEOs versus nonfounders. In the case of CEO ownership of 7.9 percent, the multiplier of the failure rate for founders is approximately 0.60 (where $1.00 - 0.60 = 0.40$, or a 40 percent reduction in the odds of failure, all else being equal). At the same level of CEO ownership, the multiplier for nonfounders is about 0.99 ($1.00 - 0.99 = 0.01$, or a 1 percent reduction), resulting in an insignificant impact on the odds of IPO failure. Figure 2 similarly depicts the multiplier of the failure rate across the range of CEO ownership levels at the 25th, 50th, and 75th percentile of venture capitalist ownership concentration in our sample. The multiplier of the failure rate, and hence the odds of IPO firm failure, dramatically decrease as both values approach their maximum range values. Using the same method of interpreting the impact of a given variable on IPO firm failure, if a firm in our sample has a median deal network embeddedness score of 0.94, its odds of failure are decreased by about 70 percent relative to a firm whose network includes no embedded relationships.

FIGURE 1
Effect of CEO Ownership by Founder Status on IPO Failure Rate

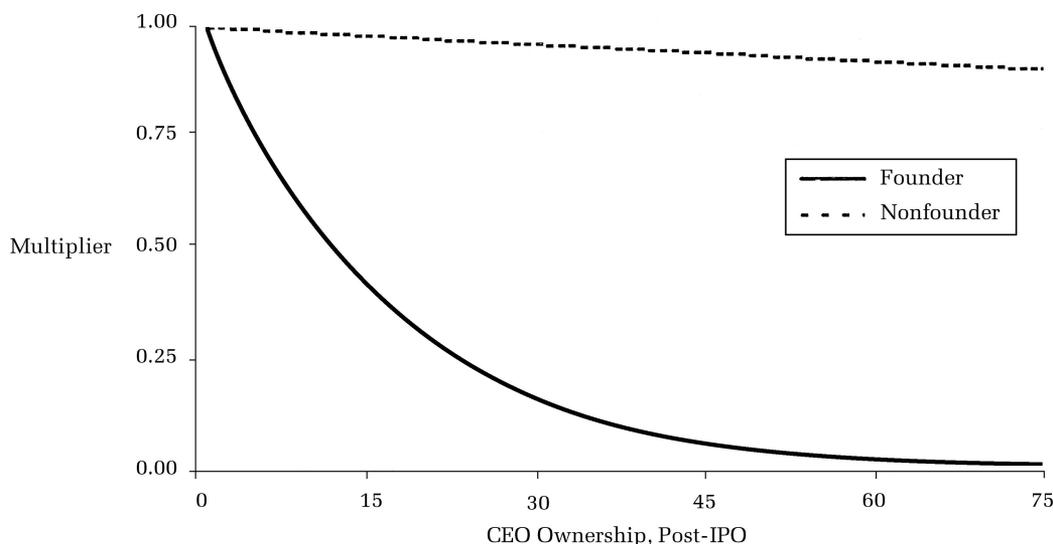
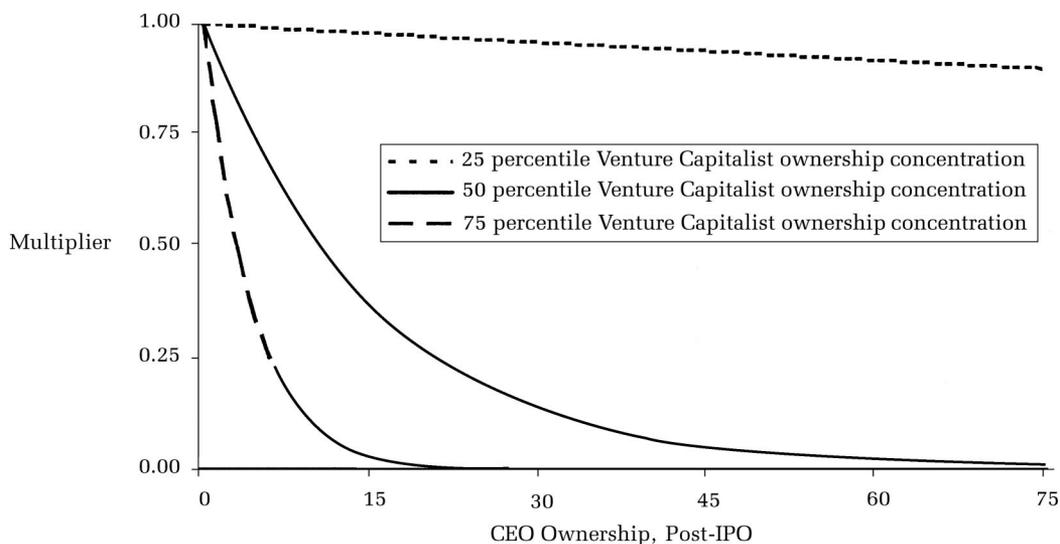


FIGURE 2
Effect of CEO Ownership by Venture Capitalist Ownership
Concentration on IPO Failure Rate



DISCUSSION

The ability of a firm to survive a significant transformation is an important yet understudied area in the organizations literature. Traditional evolutionary perspectives have focused on the effects of external or environmental conditions and organizational demographic characteristics on firms' vital rates following core change. In this study, we examined how sociopolitical features of a firm itself can serve as transformational shields that enhance the ability to survive the potentially disruptive period immediately following an IPO. In so doing, we have brought to bear and extended the original ideas of Miner and her coauthors (1990) by suggesting that factors related to an organization's social capital and power structure at the time a transformational event is initiated can have long-lasting effects on a firm's life chances. Specifically, we argued that these resources can mitigate the threats associated with resetting the liability of newness clock (Amburgey et al., 1993) and provide a valuable social base on which to further develop a company.

Theoretical Implications

Our findings have significant theoretical implications for perspectives addressing organizational change and evolution. The results of our analysis strongly support our hypotheses regarding the effectiveness of internal and external social capital as a transformational shield, and they begin to address a gap in organizational research and theory by spe-

cifically exploring how intraorganizational social capital can affect a firm's survival chances following a significant transformation. We argued that high average management team tenure provides a firm with valuable internal social capital that enhances management team effectiveness and information flow among its members, and in so doing contributes to management's ability to steer the company through the disruptive period following its IPO.

We also made and found support for the claim that characteristics of a company's external ownership network structure can protect it from environmental pressures. Additionally, this study is among the first to explicitly highlight the effects of internal political dynamics on the life chances of a firm experiencing a major transformation. We suggested that the involvement, at the time of a firm's IPO, of key individuals with both high commitment to the organization and power based on formal authority and concentrated ownership could significantly enhance the chances of the firm surviving the transformation. The significant impacts of two interactions—the interaction between having a founder-CEO and CEO ownership, and the interaction between the CEO and VC ownership variables—suggest that neither commitment nor ownership alone is sufficient to protect a firm. Rather, both factors are necessary to create an effective transformational shield.

Our primary theoretical arguments and findings can be extended to examine the extent to which a firm is protected from the disruptions and addi-

tional changes that initial firm transformations from private to public ownership may trigger. Barnett and Carroll (1995) suggested that core structural change can be defined in terms of the extensiveness of the concurrent and subsequent changes that are related to an initial transformation. Cascades of associated but unforeseen disruptions to routines and procedures throughout firms may be the primary cause of the observed spikes in failure rates associated with organizational change more generally (Amburgey et al., 1993; Dobrev et al., 2003).

It is worth reiterating the distinction between buffering mechanisms meant to insulate a firm from the need for transformation in the first place, and shielding mechanisms that protect the firm from the deleterious effects of a given transformation (Miner et al., 1990). Just as we argued that social and political factors, serving as transformational shields, may protect a firm from re-exposure to the internal and external threats commonly associated with newness, we speculate that these same factors may also ultimately enhance survival chances by minimizing the cascade effect following a transformation (Dobrev et al., 2003). Consider the interaction of CEO-founder status and CEO ownership in our study. Only the presence of a founder concurrently serving as CEO and retaining a high level of direct ownership in an IPO firm displayed a beneficial effect. Thus, one might interpret or extend our findings to imply that sociopolitical shielding, whether by enhancing trust and communication within a firm or by facilitating the development of external social capital and ties, effectively blocks the cascade of associated changes commonly understood to threaten the survival of transforming firms.

Although agency theory was not central to our analysis, our findings also have some interesting implications for this theoretical perspective. One of the primary assumptions of agency theory is that managers are self-interested and risk-avoiding and that, to the extent a firm's ownership and management are separated, its managers will not act in the best interests of the firm unless its owners use monitoring and control mechanisms to discourage self-interested behavior (Tosi et al., 1999). Our findings suggest that the simple but powerful logic underlying this presumption is incomplete, since neither CEO ownership, venture capitalist ownership concentration, nor institutional investor ownership concentration alone had a significant effect on IPO firm survival. However, when conditioned on aspects of a firm's internal social and political dynamics, ownership demonstrated a significant relationship with survival.

We have suggested that, compared to a CEO brought in from the outside, a founder-CEO will have greater personal identification with a firm, greater commitment to it, and greater trust from the firm's employees. Substantial retained ownership provides founder-CEOs with the power and protection necessary to focus their full attention, capabilities, and resources on leading their companies through their transformations. In terms of agency theory, these findings parallel the arguments of Lee and O'Neill (2003), who suggested that alignment mechanisms adopted on the basis of agency prescriptions may lead to misallocation of resources and unnecessary risk seeking. The authors distinguished between "the opportunistic manager" and "the steward" as CEO and suggested that stewards' motives are more aligned with the interests of their principals. Our finding that CEO-retained ownership benefits a firm as it transforms from private to public status only when the CEO is also founder lends support to these arguments.

In addition, contrary to our expectations, our results suggested that high retained venture capitalist ownership following an IPO actually *increased* the probability that a firm would fail, unless its CEO *also* retained substantial ownership. One explanation may be that, after IPO completion, CEO and venture capitalist interests may diverge. Since VC investment funds have finite life spans (Sahlman, 1990), VCs may be more focused on the short term than other principals. If a venture capitalist maintains substantial influence over the strategic direction and operations of a firm through concentrated ownership, the VC may be able to force the newly public firm to engage in activities that boost short-term performance but are damaging in the long term. However, if the CEO also retains substantial ownership, he or she may be in a strong position to resist these pressures. This finding also suggests that agency theory may benefit from a reexamination of its assumption that all managers share uniform, self-interested motivations and that all investors are motivated to enhance long-term performance (Wiseman, Gomez-Mejia, & Fugate, 2000). Taken together, our findings and our emphasis on the impact of sociopolitical factors are less consistent with traditional agency explanations of control than they are with Bolino and coauthors' (2002) arguments, which are based on relational and cognitive elements facilitating trust and communication.

Finally, although not hypothesized, the negative relationship between underpricing and IPO firm failure is noteworthy and merits some discussion. In the finance literature, underpricing is generally viewed as a negative consequence of information

asymmetries (see Ibbotson and Ritter [1995] for a review). Underpricing an IPO results in money being “left on the table” (Loughran & Ritter, 2002) that the IPO firm could presumably have captured if the offering had been valued more accurately. The results of this study, however, suggest that this perspective may be somewhat shortsighted; our findings suggest underpricing may lead to outcomes that enhance a firm’s ability to survive the transitional IPO period. Indeed, recent research (Pollock et al., 2002) has identified such beneficial outcomes as increased analyst coverage and a greater ability to form strategic alliances.

Implications for Management Practice

Our findings also have significant implications both for managers who have recently undergone IPOs and for those whose firms are at an earlier stage of development. Our results suggest that executives of early-stage firms, especially founders, should carefully consider the amount of stock they give up to outside investors as they seek financing for their ventures. Giving up too much stock too early in a venture’s life can decrease a firm’s chances of surviving its initial public offering. Venture capitalists should also seriously consider the consequences of replacing founders with different CEOs, especially if this change is to be made shortly before an IPO. Developing stable and trusting social and political ties within the organization prior to the IPO can enhance the firm’s survival chances following the offering. Finally, when selecting an underwriter to lead their IPO, managers should carefully consider not just the reputational capital of underwriters, but also the social capital reflected in their networks of relationships with institutional investors and the likelihood they will use their social capital on the firm’s behalf to construct an embedded deal network.

Limitations and Additional Future Research Directions

Like any study, this one has limitations that leave unanswered questions providing the opportunity to develop new research directions. For example, we have focused strictly on the conditions present at the time of a transition in order to extend the transformational shield argument (Miner et al., 1990). Subsequent research might instead explore the ongoing buffering properties of CEO and venture capitalist ownership and of founder-CEO presence and internal and external social capital by following these variables over time and evaluating their ability to insulate firms from the need for

future survival-threatening changes. A second research opportunity arises from the dependent variable considered in this study. We focused on the impact of sociopolitical firm characteristics on firm survival. Future research might consider their impact on the “quality” of firm survival by pursuing research that predicts firm performance.

Another opportunity arises from the limitations of the archival research method employed in this study. Our approach demanded certain theoretical assumptions and that constructs such as trust and escalation of commitment be “black boxed” rather than measured directly. Future research could use alternative methodologies, such as surveys, experiments, and simulations, to test the theoretical assumptions underlying our arguments.

Finally, additional research opportunities relate to the specific context of our study. We developed theory regarding the impact of a company’s sociopolitical characteristics in the context of one specific type of organizational transformation, an IPO. Future research could apply and extend our theory to different transformational contexts, such as mergers and acquisitions and adoptions of new production technologies. One limitation of focusing on discrete events such as IPOs is that it may not be the events themselves, but other, underlying events occurring around the time of the observed events that trigger resetting of the liability of newness clock. Although we recognize that firms will vary in the amount of organizational trauma that IPOs generate, we suggest that these events result in extensive changes to organizations’ goals, boundaries, and activity systems often enough to allow them to serve as a proxy for the many disruptive events associated with transformational change. Indeed, if IPOs did not constitute a transformational change most of the time, we would not expect to see significant results in our analysis. The significant findings of this study provide additional support for the notion that an IPO is indeed a transformational change event.

Conclusion

Overall, our findings have significant implications for theory that explores the ways in which firms attempt to mitigate the liabilities of newness that result from engaging in significant transformational change (Aldrich, 1999; Amburgey et al., 1993). As organizations grow and develop, they inevitably transform and evolve. Motivations for change that result in organizational transformations vary from experimentation to a simple need to “change or die” (Haveman, 1992). This process is understood to increase a firm’s risk of failure, at

least in the short term, as it attempts to cope with the internal and external threats to which changes expose it. Although prior research has examined the implications of environmental conditions for firm survival in these circumstances, little theorizing and empirical research at an organizational level has examined how firms can mitigate these threats. This study demonstrates how internal and external social resources and relationships that exist at the time a transformational change occurs can at least partially neutralize the threats a firm faces and enhance its likelihood of surviving the change.

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